

U.S. DEPARTMENT OF COMMERCE

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
(NOAA)

HYDROGRAPHIC SERVICES REVIEW PANEL

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PUBLIC MEETING

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WEDNESDAY  
AUGUST 31, 2016

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The Hydrographic Services Review Panel  
met in the City Club of Cleveland, Conference  
Room 200, 850 Euclid Avenue, Cleveland, Ohio, at  
8:00 a.m., Bill Hanson, Chair, presiding.

MEMBERS PRESENT

BILL HANSON, HSRP Chair  
JOYCE E. MILLER, HSRP Vice Chair  
DR. LAWSON W. BRIGHAM  
LINDSAY GEE\*  
KIM HALL  
EDWARD J. KELLY  
CAROL LOCKHART  
DR. DAVID MAUNE  
CAPTAIN ANNE MCINTYRE  
SCOTT R. PERKINS  
EDWARD J. SAADE  
SUSAN SHINGLEDECKER  
GARY THOMPSON

\*participating telephonically

NON-VOTING MEMBERS

ANDY ARMSTRONG, Co-Director, NOAA/University  
of New Hampshire Joint Hydrographic  
Center

RICH EDWING, Director, CO-OPS, NOAA

DR. LARRY MAYER, Co-Director,  
NOAA/University of New Hampshire Joint  
Hydrographic Center

STAFF PRESENT

REAR ADMIRAL SHEP SMITH, HSRP Designated  
Federal Official

MIKE ASLASKEN, Chief, Remote Sensing  
Division, NOAA/NGS

GLENN BOLEDOVICH, NOAA/NOS

ASHLEY CHAPPELL

DAVID CONNER, NOAA/NGS

JENNIFER DAY

SAM DEBOW, NOAA/OCS

DAVE HOLST, NOAA/NOS

CHRISTA JOHNSTON, NOAA/NOS

BRANDON KRUMWIEDE, NOAA/OCM

TOM LOEPER, NOAA/OCS

GARY MAGNUSON, NOAA/OCS

RACHEL MEDLEY, NOAA/OCS

LYNNE MERSFELDER-LEWIS, HSRP Coordinator

RUSS PROCTOR, Chief, Navigation Services  
Division, NOAA/OCS

ALSO PRESENT

JACKIE ADAMS, Environmental Scientist, Great  
Lakes Restoration Initiative, Great  
Lakes National Program Office, U.S.  
Environmental Protection Agency

JOHN T. ALLIS, Chief, Great Lakes Hydraulics  
and Hydrology Office, U.S. Army Corps  
of Engineers - Detroit District; U.S.  
Chair, Great Lakes Coordinating  
Committee

HELEN BROHL, Director, Committee on Marine  
Transportation System, U.S. Department  
of Transportation

SAMANTHA BRUCE, QPS

THOMAS R. CRANE, Deputy Director, Great  
Lakes Commission

DEBORAH H. LEE, Director, Great Lakes  
Environmental Research Laboratory

SCUDDER MACKEY, Ohio Department of Natural  
Resources

CAPTAIN SCOTT SMITH, U.S. Coast Guard

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P-R-O-C-E-E-D-I-N-G-S

(8:07 a.m.)

CHAIR HANSON: Well, good morning, everyone. Welcome back for Day 2 of the Hydrographic Services Review Panel Public Meeting in Cleveland, Ohio. I was going to ask a trivia question this morning, but it looks like the -- it's already up on the list and I was going to ask who can name all five Great Lakes.

Well, four. Okay. It's a Rick Perry moment, so what was the fifth one? Which one was missing? Superior. Superior is missing. All right. We want to start off this morning reviewing, quickly, some of the highlights from yesterday's discussions and panel presentations before we get into today's business, which is going to include panel discussions this morning about some of the things we've been working on as a panel and then followed by some presentations and stakeholder engagement as well.

So, Joyce, I think you had a list, you were going to kick us off this morning, on highlights from yesterday.

VICE CHAIR MILLER: Yes. Good morning. What we try to do is to summarize issues we heard brought up that are direct impacts to NOAA that we might reflect in our -- the letter that follows every panel meeting. So from Captain Paul Arnett's presentation, I got two issues that -- and I think there is going to be cooperation, but better ability to track the U.S. Coast Guard chart recommendations, that a way to efficiently track feedback was necessary.

And the second issue, I believe, Captain Arnett raised was, the clutter on the charts from AIS, and that there's simply too many things, and that --- a way to de-clutter charts. And that was mentioned again, I believe, in Admiral Smith's presentation.

From Josh Feldman, U.S. Army Corps activities, we have run into this multiple times in multiple places. The difficulty in connecting a particular district's data, the ability to get it in one place, and the ability to get it to NOAA in an efficient manner so that it can be shared with everyone, because people tend to look at the NOAA site for information and they don't necessarily know about every different Army

1 Corps.

2 And I think we need to highlight Dave  
3 Holst's presentation that the Lake Carrier's  
4 Association stepped forward for the PORTS system.  
5 One of the issues, papers, that we're dealing  
6 with is PORTS and we believe -- and also, later  
7 on, let's see, this was not directly Great Lakes,  
8 but Cape Cod said that any system must be a PORTS  
9 installation.

10 And then later on that the pilots, I  
11 believe -- one of the pilot's requests was that  
12 Toledo get a PORTS system as well as several  
13 other harbors. And if anybody noted which  
14 harbors those were, I'd appreciate it, because I  
15 didn't get it all down.

16 And then also from the Lake Pilots  
17 Association, continue maintaining the Toledo  
18 Maumee River current meter and another important  
19 recommendation was getting water levels, wind  
20 speed, and direction on VHF or AIS; either one.  
21 And those were the highlights that I had. Anyone  
22 want to add to that or --

23 MEMBER BRIGHAM: Yes. This is Lawson  
24 Brigham. I think that we were going to mention  
25 the positive theme about public/private  
26 partnerships and federal/state relations, and all  
27 of that, that we saw and heard across the board  
28 in one of the panels, that we should say  
29 something in our letter about the new engagements  
30 and the importance of those partnerships in  
31 actually funding some of the PORTS hardware.

32 VICE CHAIR MILLER: Okay.

33 CHAIR HANSON: Of course, these issues  
34 are important for us. As the panel concludes our  
35 business, we will begin preparation of letter  
36 recommendation that goes to the Undersecretary,  
37 underscoring issues that we believe need to come  
38 to her attention and are very important for this  
39 advisory committee to get in front and believe  
40 need to be dealt with.

41 I will note, need to note, for the  
42 record, sir, I know we already talked about  
43 privately, but letter of recommendation that came  
44 out of this panel at the last meeting has not  
45 received a response and that's unfortunate, and  
46 disappointing, and all the other words that go  
47 along with that, for us, and so we appreciate  
48 your attention on that.

1 And as we present our next letter of  
2 recommendation, we will track that a little  
3 closer, although, we would like to see as much  
4 excitement in the response as there is in our  
5 submittal, so hopefully, next time we can be more  
6 timely and more productive in making use of the  
7 time that we spend here. Didn't want to belabor  
8 that point, but I did want to get that on the  
9 record.

10 And finally, Dave Holst mentioned to  
11 me this morning that apparently he and I are the  
12 only two that paid attention to the business  
13 casual mandate, no ties, so I know some of you  
14 wear ties as pajamas, so you keep them on all the  
15 time, but feel free to be a little more  
16 productive, so thank you.

17 MR. ASLASKEN: Mr. Chair, one thought,  
18 I was talking to Mr. Holst last night and one of  
19 the previous jobs I had was working downtown and  
20 supporting the Undersecretary, and at that point  
21 in time, when Scott Rainey was the Chair, I  
22 believe it was either quarterly or every half  
23 year, the Chair met directly with the  
24 Undersecretary.

25 And I would recommend that we try to  
26 reinstate that fact, that not only taking your  
27 letter to the Undersecretary directly, but also  
28 speaking to her, or the follow-on, directly, I  
29 think, is more effective, and try to reinstate  
30 that.

31 CHAIR HANSON: Very good. Actually,  
32 we had talked about that and perhaps one of the  
33 reasons we had high hopes this going time is  
34 because we had had, Joyce and I, had that meeting  
35 with Captain Brennan and with Admiral Brown, and  
36 found it very effective, very encouraging, and  
37 thought we were on the right trajectory, so if we  
38 can just close that loop, I think we'll keep  
39 everyone on the right trail, so appreciate that.

40 MR. ASLASKEN: I think that's an  
41 action for us here at NOS. We have a PCO, the  
42 person who works directly on the Undersecretary's  
43 staff, and I think that's something very easily  
44 we can do. It just takes a little bit of time.

45 CHAIR HANSON: Understood. Okay.  
46 Thanks for that, Mike. All right. Next, let's  
47 go ahead and get started with our committee  
48 business. We're going to talk about the good

1 work of the Planning and Engagement Working  
2 Group, led by Colonel Dave Maune and Joyce  
3 Miller. And this is where a lot of work on our  
4 issue papers is being done.

5 Something that the former Chair  
6 instituted, Scott Perkins, and I've had the  
7 privilege of just tracking with him on it, but  
8 this is an idea of instead of putting bullet  
9 points in our letters of recommendation, let's  
10 give some real meat and some backup, and I think  
11 it's been very successful, it gives us a lot to  
12 talk about, and a lot to work on in the future.

13 So, Joyce and Dave, I'll turn it over  
14 to you guys.

15 VICE CHAIR MILLER: Can we have this  
16 put up on the screen? Do they have a copy of it?  
17 It would be -- of the three papers. Okay. We  
18 were going to discuss the PORTS paper because  
19 it's the one that is --that we've been working  
20 on, clear up until this morning, and we're  
21 waiting for a new printout to make sure it  
22 printed out correctly. For some reason we have a  
23 severe technical glitch.

24 So we're going to discuss the first  
25 one, Hydrography, A Core NOAA Mandate, first, and  
26 are those -- do they have a copy of that?

27 MEMBER MAUNE: Yes. Everybody should  
28 have one in their folder in the right side in the  
29 back.

30 VICE CHAIR MILLER: Okay. I was  
31 hoping that maybe we could put it up on the  
32 screen. Okay. All right. So I think as a  
33 summary, I'll read the second paragraph, which --  
34 so people in the audience understand, the last  
35 meeting in Galveston, we put forth three papers,  
36 one was on the fleet -- the needs for hydrography  
37 vessels, the second was on, what's the correct  
38 title, New Hampton, or on Hampton Roads. Hampton  
39 Roads Regional Pilot Project and then the third  
40 one was a one-page report, which was a follow-up  
41 to a quite lengthy report on the Arctic.

42 So this time we have three candidate  
43 papers, Hydrography, it's actually A Core NOAA  
44 Mandate, Reference Frames 2022, and the PORTS  
45 issue, that has been a recurrent issue, so let's  
46 go ahead and discuss Hydrography, A Core NOAA  
47 Mandate.

48 For the audience, I'll read the second



1 paragraph, which is kind of our bottom line up  
2 front. Although NOAA's missions have grown  
3 substantially since its formation in 1970, these  
4 original mandates are as critically important  
5 today as they have been over the past two  
6 centuries. The two original mandates were survey  
7 the coast of the United States, 1807, and provide  
8 nautical charts and products for safe maritime  
9 commerce and navigation, the Coast and Geodetic  
10 Survey Act of 1947.

11 NOAA's leadership should emphasize the  
12 importance of these mandates to the Department of  
13 Commerce, Office of Management and Budget, and  
14 the Congress, and request funding for NOAA's  
15 Office of Coast Survey at levels that will  
16 decrease the hydrographic survey and charting  
17 backlog, maintain NOAA's status as a world leader  
18 in hydrography, and sustain U.S. economic growth.

19 So that's essentially what we're  
20 asking and we have four direct recommendations  
21 for NOAA actions; stress the importance of  
22 legislative mandates for hydrographic services to  
23 the Department of Commerce, Office of Management  
24 and Budget, and Congress, and request funding to  
25 decrease the hydrographic survey backlog, return  
26 hydrographic services as one of the highest  
27 internal priorities for NOAA's National Ocean  
28 Service.

29 If NOS does not highlight hydrographic  
30 services as one of its critical priorities, it  
31 will never be perceived as such within or outside  
32 of NOAA. Formulate a long-term sustainable plan  
33 for recapitalization of the NOAA fleet and make  
34 replacement of hydrographic survey ships one of  
35 the highest priorities.

36 Support appropriations for additional  
37 hydrographic training centers, as authorized in  
38 the Integrated Ocean and Coastal Mapping Act of  
39 2009, to provide trained hydrographers for both  
40 government and commercial positions.

41 So does any -- we have discussed this  
42 multiple times in telephone conversations and  
43 were fairly satisfied that all recommendations  
44 that could be possibly fit into two pages were  
45 included, which is always a challenge. So are  
46 there any further questions or comments?

47 MR. ARMSTRONG: Thanks, Joyce. At the  
48 risk of sounding self-serving, on the last

1 recommendation, support appropriations for  
2 additional hydrographic training centers, so the  
3 IOCMA actually provides authorization for  
4 additional integrated ocean and coastal mapping  
5 centers, including one hydrographic.

6 VICE CHAIR MILLER: Okay. So Ocean  
7 and Coastal Mapping.

8 MR. ARMSTRONG: Yes, and that would be  
9 -- those would have education, not as a primary  
10 mission, but as a --

11 VICE CHAIR MILLER: So instead of  
12 hydrographic --

13 MR. ARMSTRONG: Yes, I would just say  
14 Ocean and Coastal Mapping Center.

15 VICE CHAIR MILLER: Okay. Thank you.  
16 That's an easy change to make. I did have some  
17 discussion last night whether -- because  
18 hydrography, the title -- oh. I did have some  
19 discussion with others last night because  
20 hydrography is a confusing term to some. Some  
21 people take it mean CTDs, and whether the title  
22 might be misleading and perhaps we should say  
23 ocean and coastal mapping or navigation services,  
24 perhaps, but we're talking, really, about the  
25 mapping functions here. Any discussion?

26 MEMBER BRIGHAM: I mean, the word  
27 hydrography is in the title of our group, so I  
28 would stick with hydrography.

29 VICE CHAIR MILLER: That's kind of my  
30 --

31 MEMBER BRIGHAM: In the professional  
32 world and the people -- the network that we -- I  
33 think even the staffers on the Hill will know  
34 what hydrography is, unless you want to put  
35 hydrography and charting, but, I mean --

36 VICE CHAIR MILLER: Yes.

37 MEMBER MAUNE: This one seems to be  
38 non-controversial, we've coordinated this a lot  
39 and received a lot of feedback from people, so I  
40 think this one's ready to go.

41 VICE CHAIR MILLER: Okay.

42 MEMBER MAUNE: Any objections?

43 MR. BOLEDOVICH: Maybe a couple  
44 technical corrections. The statute, it's the  
45 Ocean and Coastal Mapping Integration Act, those  
46 types of things.

47 VICE CHAIR MILLER: Yes, I was just ad  
48 hoc'ing it. I've got it quoted in here.

1 MEMBER MAUNE: Okay. Are we ready to  
2 move on to the second paper then? Okay. Please  
3 go to the paper entitled, Replacement of the  
4 North American Datum of 1983 and the North  
5 American Vertical Datum of 1988. The reason this  
6 one is significant is that, in 2022, basically,  
7 every map and chart that we use in the country is  
8 going to be obsolete because the basis of the  
9 measurement, the datum, is going to change.

10 We are going to have new horizontal  
11 and vertical datums and every horizontal position  
12 is going to change by X amount in easting and Y  
13 amount in northing, and every elevation is going  
14 to change by some amount vertically, and even  
15 though this paper pretty much reports what NGS is  
16 probably going to do anyway, we thought it was  
17 important to bring the issue upfront so that the  
18 NOAA administrator, and anybody that we can get  
19 to read this paper, will recognize that there are  
20 major changes ahead and the significance of what  
21 NGS is doing with these new datums.

22 Gary Thompson wrote this paper and,  
23 Gary, I wonder if you wanted to make any comments  
24 on it?

25 MEMBER THOMPSON: No, I think you  
26 covered it well. Just one question for Mike,  
27 there's one sentence in here I may ask to remove.  
28 Mike, look on the one, two, third paragraph down,  
29 one, two, three, fifth line, we have a short  
30 sentence that says, furthermore, all state plane  
31 coordinate systems will change.

32 More than likely they will, but  
33 there's a possibility some states may keep their  
34 same state plane coordinate system constants. So  
35 do you think that sentence should be removed or?

36 MR. ASLASKEN: No. I think one of the  
37 big issues that we see, and face and discuss it,  
38 at least at headquarters in NGS, have been the  
39 state laws are going to be changed and how this  
40 will impact state plane coordinates. So I think,  
41 you know, highlighting the fact that will or will  
42 not change should be in there, and maybe  
43 stressing even more the fact that at the state  
44 legislative level, you know, that we really need  
45 to make a push across the nation.

46 MEMBER THOMPSON: Right. Yes, because  
47 I think there's 40, 43 states that have  
48 legislation that's going to have to be modified.

1 MR. ASLASKEN: Okay.

2 MEMBER THOMPSON: I'm okay with  
3 leaving it in there.

4 MEMBER MAUNE: Thank you.

5 Essentially, the only issue has been, is the  
6 paper too technical? Starting at the bottom of  
7 the first page, we get into subjectology here  
8 that gets into spherical harmonics and different  
9 things on procedures they use to adjust the  
10 gravity model. It's rather technical language,  
11 but it does show that there's a lot of technical  
12 calculations that go into coming up with a  
13 mathematical model that basically describes the  
14 bumps in the gravity changes in the Earth.

15 And how you define this mathematically  
16 is done with a tool called spherical harmonics.  
17 When I studied this at Ohio State University it  
18 was the most complicated subject I took. We talk  
19 about it here a little bit, it just gives you a  
20 flavor that there's a lot of technology in there,  
21 but it's a part of the process.

22 And so I thought to leave it in, but  
23 there may be people who think it will cause  
24 people's eyes to glaze over, and if anybody has  
25 any objections, please let me know now or forever  
26 hold your peace.

27 DR. MAYER: Just a question, as I read  
28 through this, it is technical, and depending on  
29 what its purpose is, it's fine, and I agree that  
30 it's important to let, even, people who don't  
31 understand the technical aspects understand that  
32 this is a complicated thing.

33 But I wonder if somewhere, I mean,  
34 something that really hits home, a statement that  
35 says -- you know, just the GPS each one of us  
36 uses every day is dependent on this sort of  
37 backbone, something that would standup to anybody  
38 on the street, more than just saying  
39 transportation, but it's something where that,  
40 you know, they really can associate with it.  
41 Just a one-liner in there might really help right  
42 upfront.

43 MEMBER MAUNE: Gary, what do you  
44 think?

45 MEMBER THOMPSON: Well, in the second  
46 paragraph, we say how much change, there is going  
47 to be a change both horizontally and vertically,  
48 and give some mathematical values. You know, we

1 can always add --

2 DR. MAYER: You know, I think,  
3 already, that's getting so technical that a  
4 staffer will get glazey-eyed the minute they  
5 start seeing GNSS and the time-tracked geoid  
6 gravity models, so I'm just saying right upfront,  
7 if we don't want to get lost, we need to do this.

8 VICE CHAIR MILLER: We could state  
9 that the third paragraph says, new referencing to  
10 impact all maps, charts, geographic information  
11 systems, surveying -- so in the third paragraph,  
12 there is a statement that it will effect  
13 everything. We could include GPS in there. I  
14 mean, it might be more impactful upfront.

15 MEMBER SHINGLEDECKER: I was one of  
16 those people who commented that it might be too  
17 technical. It's too technical for me, but I  
18 recognize that this is not my area of expertise.  
19 My concern was exactly that, if we could --  
20 something upfront that gets your attention as to,  
21 okay, you know, maybe if you don't understand the  
22 technical details, understand that it's important  
23 that somebody else is, and these are the --  
24 maybe, is there an example we can give of the  
25 kind of things that this is fixing or either  
26 avoiding and why it's so important?

27 MEMBER MAUNE: Kim -- I'm sorry,  
28 Lawson.

29 MEMBER BRIGHAM: And I agree with  
30 Larry. I think he's looking for a punchline  
31 like, national security, national economic  
32 impacts, I mean, it affects a whole range of  
33 security issues, I think, but how do you say  
34 that? I mean, I know it's technical, but I think  
35 it has to be, but there are no punchlines that a  
36 staffer can reach out and say that this affects  
37 everything.

38 It's what we're saying, but --

39 MEMBER MAUNE: You're lacking that  
40 upfront zinger, and that's what Kim specializes  
41 in over there. Kim, I wonder if you'd care to  
42 come up with an opening sentence for this paper.

43 MEMBER HALL: I'll work on it. This  
44 is, obviously, been one that's been a little bit  
45 over my head, for as technical as it is, but as  
46 my father used to say as I was growing up,  
47 where's the so what for the general person? Why  
48 am I going to read this? And that's why I am the

1 outspoken person for that bottom line upfront.

2 I just want to make sure that it isn't  
3 -- it doesn't lead the person to believe that  
4 they're going to understand everything else in  
5 the paper. As has been said by everybody else,  
6 hey, by the way, maybe you don't know what this  
7 means, but you should care to know that other  
8 people know what it means.

9 So I will work on that. It's  
10 something I'm going to put up right now.

11 MEMBER MAUNE: And if you can talk  
12 with Gary about that, maybe at lunch or  
13 something, if you two can agree on a zinger like  
14 that to start the paper, I think this one's ready  
15 to go.

16 MEMBER HALL: Sounds good to me.

17 MEMBER MAUNE: Thank you. Are we  
18 ready yet, Lynne, with the third paper? We're  
19 going to do it on the screen? Okay.

20 VICE CHAIR MILLER: Okay. A little  
21 background on this. This paper, we've been  
22 struggling with. It's very important,  
23 particularly to people like Ed Kelly and others  
24 on the panel, and we hear at every single meeting  
25 just how important PORTS is to the stakeholders  
26 in a community.

27 And there's other things that are also  
28 important from Sal Rassello, who's not here, he  
29 is a cruise industry person and is very aware of  
30 ever larger ships entering ports. So we probably  
31 had six different versions of this and this is  
32 something that Ed Kelly provided the backbone and  
33 then Kim and I did some rearranging and editing,  
34 and I'll give warning upfront here that we're  
35 talking about PORTS, precision navigation and  
36 high resolution bathymetric surveying in a much  
37 shortened form.

38 And this may not be satisfactory, but  
39 we needed something to work with. And we still  
40 have the original thing that Ed's group came up  
41 with. So this, I'm afraid, is going to have to  
42 be sort of a paragraph-by-paragraph. Okay. And  
43 so Ms. Bottom Line Upfront, you want to introduce  
44 the first paragraph? I'm sorry, Mrs. Bottom Line  
45 Upfront.

46 MEMBER HALL: Thank you. So this has  
47 been, and we all saw that there were some  
48 comments yesterday by Lindsay Gee, followed up by

1 Lawson, and I just sent out another email  
2 regarding what we were trying to do. I think we  
3 had been given previous advice that it shouldn't  
4 just be about PORTS. I think that Joyce and I  
5 talked about it being, you know, precision  
6 navigation is a nice follow-on. What do you do  
7 with the data that you get from PORTS? How do  
8 you integrate that into a useful and reliable  
9 product?

10 So what we have here, what we tried to  
11 do, and maybe it's not quite the zinger that we  
12 would normally have, and I happily provided that  
13 in an email this morning, that maybe we can add  
14 that in instead, but the intent here was to try  
15 to give a much broader overview of why we think  
16 NOAA should continue to prioritize and support  
17 PORTS prevision navigation like we've seen in LA-  
18 LB.

19 And so that's kind of what this first  
20 paragraph gets -- that we need to work on -- you  
21 know, NOAA can't go it alone. And we just saw  
22 the presentation yesterday of the plaque to, you  
23 know, seeing the Lake Carriers Association become  
24 involved in putting together a PORTS and being  
25 part of that funding and process.

26 So here what we've done in this first  
27 paragraph is just done a very basic overview  
28 about the services that NOAA provides and how  
29 invaluable we think they are overall. Then we  
30 move into, here's why it's important. You know,  
31 there's a real economic boon. I think the only  
32 data that we had, and I have looked in the past  
33 for what, maybe, the passenger data would be, as  
34 kind of the cargo that we see here provided by  
35 the report from AAPA.

36 I'm not sure if we need to go into  
37 that much, and I don't know if there's a better  
38 general way we can show that, but we thought it  
39 was a pretty important one, you know, 23.1  
40 million jobs, \$4.6 trillion, I mean, those are  
41 big numbers and those mean something, so we  
42 thought that that helped support the reason why  
43 these systems needed to be there.

44 VICE CHAIR MILLER: Can you go down?

45 MEMBER HALL: I'm not running it.

46 Sorry.

47 VICE CHAIR MILLER: Could whoever is  
48 running the -- page down? Yes. Okay.

1 MEMBER HALL: And then we know that  
2 there's -- you know, we talked and Sal, and Ann,  
3 and Ed in Galveston had talked --

4 VICE CHAIR MILLER: Wait. Go up.  
5 Second paragraph first. We need to give people a  
6 chance to read it since we don't have written  
7 copies of it. Okay.

8 MEMBER HALL: So the second paragraph  
9 is where the numbers are there. You know, 95  
10 percent of U.S. international trade moves through  
11 ports and harbors. That's a huge number; huge  
12 percentage. It's then broken down, using an AAPA  
13 study, into jobs, mostly related to cargo, again,  
14 I don't have the numbers for passenger,  
15 necessarily, which would also be a fairly high  
16 number, actually, between cruise lines and  
17 ferries, and the transport of people.

18 So from there, we bounce down to --  
19 you know, and the talks we've had about this  
20 before, we're worried about mega ships, we're  
21 worried about other things that make these ports  
22 and harbors much more complex systems. So, you  
23 know, in an effort to do our most to be concise,  
24 we listed out, just kind of very generically, if  
25 this was going to be a mega ships paper, I'm not  
26 sure that actually is applicable for this  
27 particular committee, but we could do that as  
28 well.

29 And maybe we say that, we put, you  
30 know, larger and then define what larger actually  
31 means with regard to a mega ship. We went  
32 through and, you know, the waterway congestions,  
33 more and more people are turning to the water.

34 It's really hard when you're trying to  
35 keep it at two pages to go into depth about any  
36 of those things, and we thought a high-level  
37 intro, or a high-level highlight, was what would  
38 suffice here as we move forward.

39 We then, the next paragraph down, the  
40 annually, over 600 commercial vessels. This came  
41 out of, I believe, Dave, you quoted this out of  
42 the value of the PORTS system. I did see that we  
43 had a comment this morning from Lindsay that it  
44 was kind of out of place.

45 I think it's actually really important  
46 to show whether we know why they were caused or  
47 not, understanding that the safety of navigation  
48 and the efficiency of navigation, and increasing



1 that would obviously help us reduce accidents.  
2 Maybe we can't codify exactly how many it would  
3 be, but we know a lot of those can be created by  
4 people having bad charting, people don't -- you  
5 know, grounding because they don't have the right  
6 depths.

7 VICE CHAIR MILLER: There's a comment  
8 from --

9 MEMBER BRIGHAM: Yes, I mean, I think  
10 it's Lindsay and I have a problem with the way  
11 the --

12 MEMBER HALL: It's not on. You're not  
13 on right now.

14 MEMBER BRIGHAM: -- 600 ships, I mean,  
15 okay. Fine. Even the data that was given, the  
16 economic data, I mean, I think on the ship stuff  
17 it should reference the Coast Guard's statistics  
18 or something; very specifically. I mean, I see  
19 this as gratuitous. Throw it out there, and not  
20 justified, but where is it in the government's  
21 data -- you know, if it's 600? So that's what  
22 our issue is.

23 MEMBER KELLY: We got it from a NOAA  
24 report.

25 MEMBER BRIGHAM: Okay. Great. We  
26 should reference it then.

27 VICE CHAIR MILLER: I did and I need  
28 to check the actual title of that paper. That's  
29 what that comment is, NOAA Value of PORTS to the  
30 Nation.

31 MEMBER HALL: Yes, we were working on  
32 getting that footnote in there, we just hadn't  
33 gotten it, but that is a quote and we needed to  
34 put the quotes around it because it's a direct  
35 quote, but that was directly from the NOAA  
36 report. We wanted to reference NOAA and the  
37 value of the PORTS versus just generic Coast  
38 Guard stats at this point.

39 But it was a great quote that I  
40 thought Dave pulled out for us and the comments  
41 that we were going back and forth. We were  
42 trying to integrate not just Joyce and Kim's  
43 thoughts on this, but the comments that we'd  
44 received back from the panelists as well,  
45 including Susan, Lawson, Ed, and Dave.

46 So it's always writing by committee,  
47 we always know, is a little bit difficult, but we  
48 thought that that was, you know, key. We told

1 you how much things cost and now we think that,  
2 with all these things happening, to continue to  
3 invest in these systems would be huge for  
4 reducing, potentially, some of these 600 million,  
5 or excuse me, 600 accidents.

6 Maybe it's too generic, happy to put  
7 a couple other words in there, and looking for  
8 some insight as to how to do that.

9 VICE CHAIR MILLER: Could we make that  
10 the last bullet there? Because it's one of the  
11 issues and challenges. With quotes rather than a  
12 separate paragraph, although it's much, much  
13 longer. I mean, the reason we didn't was it  
14 doesn't fit.

15 MEMBER HALL: Right.

16 VICE CHAIR MILLER: Yes.

17 MEMBER MAUNE: I like that as a  
18 separate paragraph.

19 MEMBER HALL: I'll let you go, Joyce,  
20 into the next couple of paragraphs?

21 MS. BROHL: It's a technical  
22 correction, if I may?

23 VICE CHAIR MILLER: Sure.

24 MS. BROHL: Helen Brohl. Committee on  
25 the Marine Transportation System. It is commonly  
26 used, 95 percent, 99 percent of trade through the  
27 U.S. is on water. That's technically incorrect.  
28 That is a world transportation number. Through  
29 the United States, it is 72 percent of  
30 international trade by volume and 44 percent by  
31 value.

32 Those are DOT numbers by Bureau of  
33 Transportation statistics. So I know that we  
34 commonly use the 95, 99 percent, that is not a  
35 citable number for the United States. A citable  
36 number is 74 percent by volume and 44 percent by  
37 value, if you want to refer to just the numbers  
38 for U.S. maritime transportation through the  
39 United States specifically.

40 MEMBER MAUNE: Would you repeat those  
41 statistics again? 75 percent by value?

42 MS. BROHL: Yes, sir. It is,  
43 technically, 71.6 percent, so 72 percent by  
44 weight, 44.2 percent by value. And we can get to  
45 the citation after this if you'd like.

46 VICE CHAIR MILLER: Thank you.

47 MEMBER MAUNE: Thank you.

48 MR. ARMSTRONG: I guess I -- it's

1 important to get the details right and the  
2 statistics are often mixed together. They  
3 include imports and exports, local, you know,  
4 interior shipping, and exterior, so we need to be  
5 sure that in addition to the number, we have the  
6 -- what that refers to, very carefully laid out.  
7 Thank you.

8 VICE CHAIR MILLER: And those  
9 statistics in the previous paragraph came from --  
10 they came from your wording and the AAPA report,  
11 but we'll make sure -- and perhaps that's  
12 something that NOAA can help us with in the final  
13 edit is to --

14 DR. MAYER: And if I could just chime  
15 in and maybe speak to Glenn or Admiral Smith, I  
16 think it's really important that the agency  
17 itself be consistent. I think we saw an example  
18 last night where one report comes up with one  
19 number, and from the same agency, another number,  
20 and when that gets up to a staffer, that really  
21 undermines credibility.

22 And so I think we have to be very  
23 careful that there's consistency. Whatever is  
24 chosen, just be consistent.

25 VICE CHAIR MILLER: Okay. Let's go  
26 down to the bottom of this page. The next  
27 section simply discusses what PORTS and precision  
28 navigation are. And this, Dave, I believe you  
29 wrote the PORTS part of it, did you not, the  
30 explanation of what it was?

31 MEMBER MAUNE: Oh, I probably pulled  
32 that off the website.

33 VICE CHAIR MILLER: Okay. So this was  
34 -- this is an explanation. Go down to the  
35 remains of that paragraph on the first page -- or  
36 on the second page. Okay. So it basically  
37 explains, and the figure as well, explains what  
38 the PORTS system is and, you know, all of the  
39 sensors that are included, and is it now 26 PORTS  
40 systems or is it now 27 PORTS systems?

41 MR. WRIGHT: It's 28 right now.

42 VICE CHAIR MILLER: Twenty-eight.  
43 Okay.

44 MR. EDWING: That number will be  
45 changing soon. It's a fluid number.

46 VICE CHAIR MILLER: Maybe I should  
47 say, in August 2016, yes, so that's general, and  
48 then the second paragraph on that page, I hope

1 that printed out correctly. Okay. Yes. That's  
2 correct. Here, guys. So we now have copies of  
3 this and people can look at it.

4 And we wanted to include here in this  
5 paragraph, the number of people that use it. And  
6 our recommendations are for federal  
7 recommendations and that is partly because not  
8 only does NOAA use these systems, but FEMA,  
9 Homeland Security, Coast Guard, just, there are,  
10 literally, hundreds of users, everywhere down to  
11 recreational boaters, being the little guys, and  
12 so -- and each PORTS system is somewhat  
13 different, depending upon the conditions, air gap  
14 sensors, you know, current meters, et cetera.

15 So this has been kind of longstanding  
16 in the writing. The third paragraph, which goes  
17 down, which is what Kim and I added, down a  
18 paragraph, okay. And this is quite short and I  
19 wrote it, and I'm probably not the best person to  
20 write about precision navigation. I saw it in  
21 Long Beach. So I would -- I said it's a -- my  
22 perception is that it's an expanded version of  
23 PORTS that integrates many of the sensors into  
24 ship motion models based upon ship parameters and  
25 water movements.

26 And then comes in the up-to-date data,  
27 which is what Sal really wanted included, from  
28 highly accurate bathymetric surveys, provide the  
29 information needed to determine safety margins  
30 when navigation -- I'm sorry, that should be  
31 navigating, in approach channels, and within the  
32 port.

33 And as we saw in LA, Long Beach, it is  
34 a system much like we saw on the DIS yesterday,  
35 that provides ship captains, pilots, and onshore  
36 personnel with information required to make good  
37 decisions.

38 And then let's go down to  
39 recommendations. Ed, for your information,  
40 having issues and then recommendations that  
41 really stated the same thing, Kim very much felt  
42 we should be positive here, rather than saying,  
43 this doesn't happen, here's our recommendation,  
44 and so we combined your issues and  
45 recommendations into the same one.

46 And again, notice we said federal  
47 funding. I was encouraged to hear from Glenn  
48 that the PORTS system was mentioned in the Senate

1 mark this year as deserving full funding, whether  
2 that gets to the point, so I'll give you a chance  
3 to read through the recommendations and see if --  
4 and feel free to -- if you don't think this is  
5 the right approach, we've just been struggling  
6 with it for so long, and we wanted to get  
7 something ready to potentially go out.

8 One suggestion I would make to those  
9 who are specifically concerned with this is, we  
10 could follow this with individual papers on PORTS  
11 only, precision navigation only, or bathymetry  
12 only, with more detail on each of them, if we  
13 want to. I don't know if that's a good idea or  
14 not, so any discussion? Dave?

15 MEMBER MAUNE: My only discussion is  
16 that this was the main issue throughout the last  
17 six months is, is this one paper or is it three  
18 papers? And the three papers would heavily  
19 overlap one another. And we decided that --  
20 well, we didn't decide, it was when Kim and Joyce  
21 got together and figured out that they could pull  
22 at least these two together, that it might make a  
23 good single paper that covered safety of  
24 navigation in many respects. Yes.

25 VICE CHAIR MILLER: Ed, feel free to  
26 object.

27 MEMBER HALL: Just really quickly  
28 before Ed -- I did, you know, when we got the  
29 comments last night from Lindsay Gee about this,  
30 you know, maybe there needs to be a more specific  
31 bottom-line upfront, and what I had come up with,  
32 and it's not exactly right, but something where  
33 NOAA should continue to support value-added  
34 seaport systems that increase the safety and  
35 navigation, such as PORTS.

36 Without such systems and the  
37 integration of their data into practical and  
38 reliable products for end users, U.S. seaports  
39 may encounter, I don't know if it's increased,  
40 significant impediments to the safe, effective,  
41 and efficient transfer of people and goods. That  
42 puts it right out there. That's how I would  
43 normally operate, but I know the way we were  
44 trying to put it together, that would make it go  
45 over two pages.

46 But that's, ultimately, what we were  
47 trying to do with the paper is explain that. And  
48 so, you know, I think we really needed, as Joyce

1 said, and as Dave had said, and we'll let Ed  
2 talk, I apologize, what is the purpose of this  
3 paper? Because I think, as we've gone back and  
4 forth, everybody has an idea and I think this is  
5 where we thought we came up with something that  
6 was a good third option to try to get as much of  
7 it together in one without going into too much  
8 detail or too little detail.

9 MEMBER MAUNE: Ed, would you like to  
10 speak next?

11 MEMBER KELLY: Just a couple quick  
12 comments. Motherhood, apple pie, the American  
13 flag, I don't think there's anybody against  
14 safety of navigation or the fact that we should  
15 disseminate this information, valuable  
16 information. The problem that I've consistently  
17 faced with this paper is that it can be  
18 tremendously complex. There are overlapping  
19 issues, and with a constraint to fit it on two  
20 sides of one piece of paper, and include a  
21 graphic, and leave room up on top so that we can  
22 get the banner about the panel, is a daunting  
23 challenge.

24 You know, I don't think it's possible  
25 to get safety of navigation into a two-page  
26 paper. I also feel that some of the overview and  
27 some of the backdrop might be extraneous. We  
28 have to remember who we are and what the purpose  
29 of the paper is. It's professional groups  
30 addressing professional groups. We kind of  
31 should all understand safety of navigation and  
32 with compressed space, there's not much room for  
33 prologue.

34 To combine PORTS, precision  
35 navigation, and bathymetry into one paper, I  
36 think is probably going to be too much. There's  
37 a possibility of breaker PORTS paper and then a  
38 bathy and precision navigation paper, perhaps,  
39 and I think if we can cut this a little bit more,  
40 we might be able to focus more specifically on  
41 PORTS.

42 Some of the issues that we're  
43 addressing here, clearly, are important. I don't  
44 know if we've blown it into enough definition.  
45 As an example, NOAA should work with federal and  
46 state governmental agencies, and other  
47 stakeholders, to provide consistent ongoing  
48 funding for these critical systems, is kind of

1 where we are right now, and very frankly, it  
2 doesn't work.

3 We have mentioned down further, the  
4 very large and broad-based numbers of users of  
5 this system, yet, almost without exception, if  
6 you go to see who is actually funding the O&M,  
7 it's Ports Authority and commercial shipping  
8 operations.

9 I think we need to be more specific in  
10 who we suggest NOAA go after, i.e., cost-sharing  
11 on O&M with other federal agencies. It should be  
12 a federal. That's how you provide consistent  
13 ongoing funding. And whenever something is  
14 everyone's business, it's nobody's business.

15 I would like to know how we're going  
16 to send a share of an invoice for O&M to the  
17 paddleboarders, to the kayakers, to the  
18 commercial fisherman, to academia, I don't know  
19 if you bill Navy, they're a big user, Coast  
20 Guard, there's, obviously, NOAA has a certain  
21 share of that as well, but I think it's kind of  
22 impractical. We're kind of painting ourselves  
23 into the same corner by suggesting, you know, and  
24 not really saying this has got to be a federal  
25 obligation.

26 And we can work with NOAA to perhaps  
27 find some way to construct that, but the reality  
28 is, these systems in some locations have gone  
29 dark in the past. The Port Authority, as an  
30 example, in New York, pays for ours. They have  
31 told us that as soon as the last piece of work on  
32 the Bayonne Bridge is done, they are ceasing  
33 payment. We have nobody else to pay for that.

34 It's a hodge-podge of port  
35 authorities, local agencies, there's some oil tax  
36 in California, the co-op group has some payments,  
37 it's just a dog's breakfast as far as getting  
38 this done, and it's really inconsistent, and it's  
39 unfair, based on who the actual end users of this  
40 are.

41 We go a big retinue here, I mean, how  
42 do we charge academia? They're big users. Maybe  
43 we should put in a 900 number and people will pay  
44 for it, whoever are the actual users can pay for  
45 it. We suggested that, not being facetious, in  
46 the past with New York, and we were told we  
47 couldn't sell government data.

48 So, you know, it continues to be a

1 problem and we may have to refine this a little  
2 bit more into PORTS itself. Also, in the line  
3 with the recommendations, I don't know if it's  
4 hard-hitting enough, but it says, update all  
5 technology for equipment processing, display  
6 modeling, and forecasting, and modeling and  
7 forecasting are key requirements we'd like PORTS  
8 to move into, particularly modeling.

9 You know, we have very accurate real-  
10 time data where the sensors are located. We  
11 don't have it at some other areas. If we could  
12 get accurate modeling where any mariner in any  
13 position would be able to basically say, I need  
14 to know what's happening right where I am, not  
15 where that meter is, that would be very helpful,  
16 and forecasting is also very valuable to us here.

17 So, you know, I think that's very key.  
18 Identify the users beyond commercial maritime is  
19 very important. I don't know how much outreach  
20 there's been to academia, to commercial  
21 fisherman, to recreational users, to OEM  
22 operators, first responders, et cetera, all of  
23 whom are using this data and may also have some  
24 requirements for the formatting.

25 So, you know, I'm a little bit  
26 embarrassed, quite apologetic, that we haven't  
27 been able to put this out. I certainly  
28 appreciate all the help and the collaboration  
29 that we've had, and I think the more  
30 collaboration in the work we've done, we've  
31 found, it's more difficult to do.

32 So that's just a few comments and I  
33 think it kicks the can down the road. I think  
34 we're very close to getting a PORTS paper  
35 together. I think we might dilute the issue a  
36 little bit by bringing in precision navigation  
37 and bathy requirements, and maybe that's a  
38 separate paper, because those two do dovetail  
39 much better, perhaps.

40 VICE CHAIR MILLER: But don't PORTS --  
41 doesn't PORTS need accurate bathymetry too?

42 MEMBER KELLY: The more data we can  
43 get, the better. Is that currently an extensive  
44 piece of the PORTS product? Not to the degree  
45 that it is with, say, precision navigation.

46 VICE CHAIR MILLER: I mean, I don't --  
47 actually, Lawson has a comment.

48 MEMBER BRIGHAM: I agree with Ed. I



1 think we've gone full cycle. I think this should  
2 be focused entirely on PORTS as the topic and  
3 that a more technical paper, which we started  
4 with, with Sal, myself, and Ann, that had a  
5 wiring diagram of what it means to have a large  
6 ship and all the technical issues, and all the  
7 responses, so I think this paper should be  
8 focused entirely on PORTS.

9 I don't know if I agree with Ed that  
10 it should require -- it should include the very  
11 sensitive topic of user fees. I mean, I'm  
12 hearing user fees and I don't know. I mean, I  
13 don't know if this is the paper to do that,  
14 although it's a huge topic, but then again, PORTS  
15 can be the public/private partnerships, the  
16 federal/state relationships, and what we talked  
17 about yesterday, so maybe that theme could be  
18 rolled in.

19 But I'm sorry, we've gone kind of full  
20 cycle here, but I don't think the safety issues  
21 can be combined all in one mega paper that Ed  
22 tried to do.

23 MEMBER MAUNE: Well, last night I got  
24 the impression from Ed that this paper was pretty  
25 close to being ready and maybe would take about  
26 ten minutes of work to straighten it out, but  
27 right now it sounded like you want to deep dive  
28 the whole thing, or whatever you call it, and --

29 MEMBER KELLY: Dave, based on the  
30 comments I've seen, even just, you know, last  
31 night, I don't know if it was last night, Lindsay  
32 had sent something, I think we could tweak this  
33 and perhaps, you know, if we could dive a little  
34 bit -- my original opinion on this is, if we  
35 could dive a little bit deeper into the PORTS  
36 funding issue, and into the modeling and  
37 forecasting issue, and perhaps, at the expense of  
38 the space on the two-page paper of trimming back  
39 precision navigation, I think it can still work.

40 MEMBER MAUNE: Is this possible to be  
41 salvaged by tomorrow if we can have a revised  
42 version to review tomorrow? I think we have a  
43 little time on the schedule tomorrow, don't we  
44 Lynne?

45 MEMBER KELLY: I would think that if  
46 we could sit down with interested parties, in  
47 about 15 minutes or so, to maybe a half hour  
48 tops, we could probably knock this into something

1 that's useable. That's in my estimation, anyway.

2 MEMBER MAUNE: Oh, Susan.

3 MEMBER SHINGLEDECKER: I just wanted  
4 to echo that, as I read it, you know, today there  
5 are 26 or 29 PORTS systems. To a layperson  
6 hearing that, hmm, that sounds pretty good.  
7 We're doing all right. I don't think it -- there  
8 isn't that piece. I was wondering, almost, if  
9 there is a graphic that shows, you know, ports  
10 that are federally funded, ports that -- you  
11 know, the different funding mechanisms and how  
12 stable they are.

13 How long do we have certainty of that  
14 funding that might convey where the gaps are and  
15 where the gaps may soon be, and how fragile and  
16 dicey the funding situation really is, and how it  
17 is kind of hodge-podged together, if there was a  
18 way to do that, because as I read it, 26, 29, I  
19 think there are a lot of people that would pat  
20 themselves on the back and say, we're doing all  
21 right.

22 And to get that funding urgency in  
23 there, I agree, is really important.

24 MEMBER MAUNE: Yes, Andy.

25 MR. ARMSTRONG: I'm sort of of the  
26 opinion that we can't merge precision navigation,  
27 and bathymetry, and PORTS in this single paper at  
28 this point, and I don't think it's correct, as  
29 this paper says, that precision navigation is a  
30 kind of port system, or even, in fact, a system.

31 It's a concept that can happen, you  
32 know, with lots of different kinds of data input  
33 and I think we've -- I think if we want to get  
34 something out for this meeting, we should just go  
35 with PORTS.

36 MEMBER KELLY: Andy, Ed Kelly here,  
37 yes, I would kind of agree with that. I think,  
38 as my comments are, I think we need to be a  
39 little -- delve into the depth a little bit more  
40 regarding the funding issue and the requirement  
41 for the expansion of modeling and forecasting.

42 And with the limited space we have in  
43 the paper, to kind of take the issue of precision  
44 navigation out and park that in a separate paper,  
45 but I think that's very doable in a pretty quick  
46 piece of time here.

47 MEMBER MAUNE: Who would you work  
48 with?

1 MEMBER KELLY: If we could just sit  
2 down without microphones and a couple of pencils,  
3 and whoever wants to get involved in the  
4 wordsmithing of it.

5 MEMBER MAUNE: Who wants to work with  
6 Ed on that today?

7 MEMBER HALL: Yes, I think the biggest  
8 piece that we maybe missed, and this is just kind  
9 of in the iterations that we've, kind of, seen  
10 where this is going and the objective has changed  
11 slightly, is that we have not in any way  
12 explained the vulnerability of the PORTS system,  
13 which is the funding piece, and I think that  
14 that's really a key piece.

15 Hey, you've got it. It seems to be  
16 going really well. You've got 29 sites, or 28  
17 sites, this sounds great, but hey, New York's is  
18 losing its funding soon and if there's a couple  
19 of examples we can give to show that it's a  
20 vulnerable system, that is, maybe, where the  
21 objective here is, so happy to help.

22 VICE CHAIR MILLER: And that more  
23 systems are needed.

24 MEMBER HALL: Indeed.

25 VICE CHAIR MILLER: Yes, as we've  
26 heard here in this meeting.

27 MEMBER HALL: Right.

28 MEMBER KELLY: And the component of  
29 modeling and forecasting is essential. The two  
30 really make the product more usable. Yes. But  
31 having just said that, it's fairly simplistic.  
32 We've got the bulk of it, I'd say, and by taking  
33 out the space that we've devoted to precision  
34 navigation, we can put those comments back in and  
35 then just wordsmith it to fit.

36 MR. EDWING: And I'm more than happy  
37 to sit in and be a technical consultant, so to  
38 speak.

39 MEMBER MAUNE: Okay. Ed, is that a go  
40 for you and Rich, and Kim? Anybody else? Not  
41 Joyce?

42 VICE CHAIR MILLER: No.

43 MEMBER MAUNE: Okay.

44 VICE CHAIR MILLER: I've written  
45 enough.

46 MEMBER MAUNE: You've written enough.  
47 Okay.

48 MR. BOLEDOVICH: I'll provide some

1 reference materials for the contribution  
2 background.

3 MEMBER MAUNE: Well, with that being  
4 said, we are ahead of schedule as far as  
5 reviewing the issue papers that we had planned to  
6 discuss today and hopefully finalize today.  
7 Perhaps we can use the remaining time to discuss  
8 future issue papers. What do you think, Joyce?

9 VICE CHAIR MILLER: Sure. I mean, I  
10 don't think it will take that long. If this is  
11 only a PORTS paper, we obviously have a precision  
12 navigation/bathymetry paper that needs to come  
13 up, and there was already -- Anne, were you  
14 working on that already?

15 MEMBER MCINTYRE: We've had a number  
16 of iterations on and trying to decide where it  
17 ends up as far as integrating the PORTS and  
18 pulling it out. I agree that it's a good idea to  
19 pull precision navigation out of PORTS and just  
20 address PORTS.

21 MEMBER MAUNE: Okay. For next time,  
22 then, will you be drafting a precision nav paper?

23 MEMBER MCINTYRE: Sure.

24 VICE CHAIR MILLER: And, Anne, was  
25 there something you wanted to show at this time?

26 MEMBER MCINTYRE: If we can capture my  
27 desktop here. I just wanted to show you how  
28 we're using all this information together being,  
29 you know, integrated. I just wanted to show you  
30 the navigation system that we're using on our  
31 laptops and I think we're setup and ready to go  
32 with that.

33 So I just wanted to show everybody,  
34 very quickly, how we're using all the information  
35 that we get from NOAA, that we get from the Army  
36 Corps of Engineers, and how it integrates into,  
37 you know, something that's useful.

38 So what you're seeing here, this is  
39 just like a baseline of our Portable Pilot unit,  
40 and we can layer different information that we  
41 get from different entities on this. So this is  
42 the Port of Longview in Washington and right  
43 here, you see some ships on here, and this  
44 information is all being received over AIS.

45 And so, here, I can layer an ENC on  
46 top of it. Here comes the ENC, and you can see -  
47 - it's not working quite right, but you can see  
48 there's a little bit of data here, and what I

1 wanted to point out is, so we can see some survey  
2 data here on the ENC.

3 And so the next thing I'm going to  
4 layer on top of this now is the Army Corps  
5 soundings. And see, now it gets to a point where  
6 the information is useful from a navigation  
7 standpoint. Again, just kind of having little  
8 spot soundings that we have from the survey, you  
9 know, it's good information, but it's not enough.

10 So what you see here are Army Corps of  
11 Engineer soundings that are layered on that, and  
12 I'll try to zoom it in a bit more, and you can  
13 see all the soundings here now. And then, in  
14 addition to that, we can add surveys from  
15 terminals, so we have private soundings that we  
16 can put on top. And now the information becomes  
17 really useful because we've got Army Corps of  
18 Engineers' surveys, we have the NOAA, you know,  
19 ENC, and we have information from the private  
20 terminals.

21 And you can see here where the  
22 soundings are a bit closer together and now we  
23 really have information that we can work with.  
24 And then the other thing that I wanted point out  
25 to everybody in what we do, so now we have all  
26 the surveys, we have the physical features of the  
27 docks, and when you really zoom in, you know,  
28 we're even seeing little fenders where we come  
29 along side with the ship.

30 So you can see all this has been  
31 entered, but what's unique about our system and  
32 what we're moving towards nationally is that  
33 we're receiving all the PORTS data into our  
34 system. So over here, every one of these over  
35 here is a PORTS gauge, it's a river level gauge,  
36 and so right now I know that at the various  
37 stations, so I'm saying, Skamokawa, for instance,  
38 we have on the gauge, it's 3.2 feet and it's  
39 falling.

40 And so that's my real-time information  
41 what the river level is at that location, and  
42 then again, it's updated every six minutes. So  
43 when I'm moving a ship down the river, I can look  
44 ahead and I can see what's happening ahead.

45 And then, some of the stations have  
46 additional information besides the tide level.  
47 It's not working that great, but -- well, you  
48 can't get it in there, but again, it's got the

1 wind speed and direction. And so the point in  
2 showing this is that when we have all the  
3 information from the various agencies integrated  
4 together, it really becomes a useful tool.

5 And when you only have, like, one  
6 piece of the information, it's good, but it  
7 doesn't work in the way that we need it to.

8 VICE CHAIR MILLER: What is the  
9 software, Anne?

10 MEMBER MCINTYRE: This is the  
11 software, it's called Transview 32, and it was  
12 developed by the Volpe Center, which is a part of  
13 the Department of Transportation, and they do a  
14 lot of public/private partnerships. And the St.  
15 Lawrence Seaway, the information we saw from them  
16 yesterday, had a component of it. It's used in  
17 the Panama Canal, and my understanding, it was  
18 also setup that the railroads use it a lot  
19 because it has predictive features and it's not  
20 moving very quickly.

21 You can see, here's a ship coming up  
22 the river here right now, where we can predict  
23 where we're going to meet and pass vessels in  
24 real time at any point on the river, and I don't  
25 know -- it's moving pretty slowly. I can try to  
26 show that. So here is, like, we call it the blue  
27 dot, but here's a predicted meeting point of, you  
28 know, in time of when this ship is going to pass  
29 this.

30 And so for everything, it's kind of a  
31 silent Vessel Traffic Service, where you can see  
32 where you're going to pass all the ships, but the  
33 point in this is that, unless you can layer and  
34 integrate the information, it's not particularly  
35 useful just having one thing.

36 So some of the other things we can  
37 pull off of this, like, you know, we have ETAs  
38 for various points up and down the river. And  
39 then if I wanted to know how long it was going to  
40 take me to move up, you can get time to go just  
41 by moving, you know, your cursor forward you can  
42 see, you know, what time you're going to be at a  
43 particular spot.

44 And then, like, in-house, we've added  
45 information and so it's enabled us to better  
46 utilize our anchorage areas, where each of these  
47 little yellow dots, you essentially put the bow  
48 of the ship on this dot, you drop the anchor, and

1 so now we can anchor ships more closely together  
2 than we used to be able to in the past when you  
3 were not able to be so precise, I guess, in your  
4 navigation.

5 So here's another example of, kind of,  
6 the layered soundings, and I'll pull those off  
7 just so you can see, so I'm removing, like, the  
8 private soundings. So I can remove the ENC, that  
9 takes another layer away, and now I'm going to  
10 remove the Army Corps soundings that you see  
11 right here. That's just one little bit of  
12 shoaling.

13 CHAIR HANSON: Well, thanks, Anne. I  
14 think I hear a lot wheels turning. How do you  
15 get the data?

16 MEMBER MCINTYRE: So I can show you  
17 very quickly. So we can download the data  
18 immediately from the Army Corps of Engineers'  
19 website, and I'll do a download here real quick  
20 just so you can see it happen. It works really  
21 well. So you go to work and it's like, boom. So  
22 all the private soundings are on here, all the  
23 Army Corps of Engineers soundings are on here.

24 Like, when we update the ENC, we have  
25 to just manually load that into the system to  
26 have that information. It's almost done.

27 MR. ASLASKEN: So, Anne, as part of  
28 the software service, they set this up where you  
29 can go and gather all the -- they gather the data  
30 for you?

31 MEMBER MCINTYRE: Yes, the Volpe  
32 Centers set it up and for the Army Corps of  
33 Engineers, we essentially, it logs into their  
34 server and we download the information. And so  
35 then again, it shows you how it's updated and  
36 then if I were to start the software again.

37 CHAIR HANSON: Next question is, how  
38 do you get the private terminal data?

39 MEMBER MCINTYRE: We call around and  
40 we ask for it, you know, within that. And then,  
41 you know, every year we kind of have a list that  
42 we go through, we ask for it, and we coordinate.  
43 We have about three companies that do surveys and  
44 we just let the ports know, if you want to bring  
45 in these deep ships, we really need to have the  
46 information and it needs to be timely, and it  
47 works pretty well.

48 And so again, here, these are all, you

1 know, you can see all the traffic in the system  
2 here too.

3 MEMBER KELLY: Virtually, every port  
4 pilotage group has got some version of this  
5 software that does, basically, the same thing.  
6 It's very locality specific and it pulls in data,  
7 either automatically, like, from the Corps, or  
8 you can just create links, or you can  
9 aggressively go out to Port Authority terminal  
10 operators, et cetera, to get the private  
11 information and input that and use that.

12 So there are systems like this in  
13 virtually every major port where the pilot  
14 organizations setup the systems and then populate  
15 this for the PPUs, the portable, or personal  
16 pilotage unit, the hand-held-type devices, that  
17 they'll take with them onto the ships to utilize.

18 This type of system is not available  
19 on just regular commercial vessels, even large  
20 commercial vessels. Obviously, recreational  
21 users or others are not going to get this type of  
22 thing, so this is a very sophisticated system for  
23 a specific locality, just to kind of frame what  
24 we're looking at right here.

25 But each major port, their pilotage  
26 groups have implemented this type of a system.

27 RADM SMITH: Can I ask a quick  
28 question? And that is, so is this the right  
29 model for you to do this?

30 MEMBER MCINTYRE: Absolutely.

31 RADM SMITH: So every -- I guess I'm  
32 just trying to, you know, every once in a while  
33 NOAA gets scolded for not doing this, right, with  
34 the Army Corps data, why aren't you bringing it  
35 in and providing more soundings, or that sort of  
36 thing, and we could, because we have access to  
37 all the same data, but so I'm hearing two  
38 different things, both that we should be doing  
39 this, and that we don't need to because you're  
40 already doing it.

41 MEMBER BRIGHAM: I think in ports  
42 where there are hundreds of very large cruise  
43 ships that, maybe, NOAA ought to provide, and  
44 maybe we should be selective based upon, well,  
45 this mega ship issue. I don't know. Is it the  
46 sole domain of the pilots or is it for this very  
47 integrated and microinformation, or should it be  
48 provided to certain users because of the safety



1 considerations?

2 RADM SMITH: I guess I would also note  
3 that we spend a lot of time, but what we do is  
4 spend all our time getting rid of all that extra  
5 information, right, just simplifying it down.  
6 And that's a huge resource and nobody seems to be  
7 using it. In fact, you seem to be going back and  
8 undoing everything that we did to simplify it.

9 And so I guess I'm wondering aloud  
10 whether we should be changing the way we do  
11 things so that we do provide more information at  
12 lower costs to -- through the, sort of, official  
13 navigation distribution channels.

14 MEMBER KELLY: The issue with data is  
15 always, how do you process it and use it? And I  
16 think the broad range of users involved,  
17 obviously, you know, a pilotage group is going to  
18 need this type of information, recreational  
19 users, other tug barge operators, et cetera, may  
20 or may not. The beauty of the electronic charts  
21 is the ability to layer.

22 And as Anne just showed, when you can  
23 make it more or less detailed, depending on your  
24 need, that's essential to have that option that  
25 it's there.

26 VICE CHAIR MILLER: One thing that  
27 we've discussed in other -- for instance, well,  
28 in Galveston, is that less sophisticated users  
29 don't know where to get all the data, and it was  
30 particularly on the ICW that we were discussing  
31 it, because Army Corps District A had this data,  
32 and you had to go to their website and know how  
33 to get to it, and then the next district had a  
34 different website.

35 And how many people on a 20 to 50-foot  
36 sailboat are going to know which Army Corps  
37 District they're in right now? This is a very  
38 different application than the Columbia River  
39 where you've got -- you know, but I think the  
40 frustration is, I mean, we had the Army Corps guy  
41 here say that, you know, everything's available  
42 in a pdf. How do you merge that with the NOAA  
43 data?

44 RADM SMITH: To be fair to him, he did  
45 say, pdf, XYZ, blah-blah, blah-blah, it was a  
46 list of things, and we've insisted, pdf is not  
47 easy to work with for mapping purposes.

48 MEMBER SHINGLEDECKER: Yes, I would

1 just kind of echo what Joyce said. I mean,  
2 that's beautiful. And, I mean, especially on the  
3 ICW, I mean, figuring out the frustration between  
4 if there's more current data out there that Army  
5 Corps has, how can we get it into one place so  
6 that every user can benefit from that data that's  
7 already been paid for, already been collected?

8 How can we -- because exactly what  
9 Joyce said, and that's what I say all the time,  
10 I'm really lucky if I can get my recreational  
11 community to regularly update the NOAA charts  
12 that they have, but they're not going to go to  
13 every different Army Corps District website.  
14 They don't even know what an Army Corps District  
15 is or that they just transferred between one to  
16 another as they were heading up or down the ICW.

17 So if there's a way to make that  
18 product more dynamic, that'd be great.

19 MEMBER MAUNE: I'm wondering what Anne  
20 envisions for the precision nav paper; some of  
21 the main points you'd like to cover.

22 MEMBER MCINTYRE: Accuracy and  
23 understanding what the data is based on are the  
24 things that are important to me. I need to  
25 understand how the datums integrate. You know,  
26 when you're dealing with inches, you need to  
27 understand how things are derived and everything  
28 needs to be on a common platform, if that makes  
29 sense.

30 And again, being able to layer it and  
31 being able to have it perform in real time is  
32 what we need.

33 MEMBER MAUNE: Okay. And how long  
34 will it take you to prepare your first draft of  
35 this paper?

36 MEMBER MCINTYRE: A couple days.

37 MEMBER MAUNE: Have a question in the  
38 rear? Can he get a microphone, please?

39 CAPT SMITH: Hi. Good morning. Scott  
40 Smith again. I'm the Chief of Navigation Systems  
41 Office at Coast Guard Headquarters, and the owner  
42 of the NDGPS system within the United States, so  
43 if I may make a recommendation in the paper, if  
44 you choose to do so, is tout how important or  
45 non-important NDGPS is to your systems and how  
46 you're getting that precision navigation piece as  
47 far as your position from PNT.

48 Are you using DGPS or WAAS, or what

1 you would use for that correction, because I  
2 think that's a key component, if you could add  
3 that in there. It's one of the things we  
4 struggle with from our end, just seeing how  
5 valuable NDGPS is. If you saw the recent  
6 shutdown of some of the system on the inland  
7 side. We've protected the marine side, but I'm  
8 not sure how long we're going to be able to do  
9 that.

10 So the information from bodies like  
11 yours would be important for us to have.

12 MEMBER MAUNE: Okay. Thank you.  
13 Okay. Brigham? I'm sorry, Lawson.

14 MEMBER BRIGHAM: It's Lawson Brigham.  
15 We want to make sure that we chat with -- I'll  
16 work with you, Anne, also get Captain Rasello to  
17 weigh-in because at the beginning, he showed us a  
18 graphic, showed, with these large cruise ships,  
19 have a lot of windage, heeled over, and what that  
20 meant to the whole dynamic of precision  
21 navigation, so I think we'll get Captain Rasello  
22 to weigh-in on this one as well.

23 MEMBER MAUNE: Okay. And we're trying  
24 to have three issue papers for next time. Do you  
25 envision one, Ed Saade, on technology?

26 MEMBER SAADE: Not yet. I think we  
27 have a -- you'll see when we present later on,  
28 there's still a lot of weeding out on what we're  
29 going to focus on.

30 MEMBER MAUNE: Okay. Suzanne, we had  
31 been talking about recreational navigation for a  
32 long time.

33 MEMBER SHINGLEDECKER: I'm hoping that  
34 I can have a draft for you, but the earliest  
35 would be in January.

36 MEMBER MAUNE: Okay. That's --

37 VICE CHAIR MILLER: Dave?

38 MEMBER MAUNE: Yes, Joyce.

39 VICE CHAIR MILLER: I have a -- I've  
40 been thinking about one. The vital role that --  
41 and I think you mentioned this, someone else  
42 mentioned this, that NOAA plays in emergency  
43 response, and that would look over the role of  
44 the Navigation Managers in coordination, both  
45 before and after, the role that the NRTs and the  
46 NOAA ships play, not only in aftersurvey, but how  
47 the ships function as, you know, to provide, in  
48 some cases, lodging, in some cases, electricity,

1 and sort of a, I don't know if it's OCS' role or  
2 NOAA's role in emergency response, just to  
3 highlight the importance of that because it's a  
4 very -- you know, I've heard such praise of all  
5 the people, the Nav Managers, and the NRTs, and  
6 stuff after, you know, in New Orleans, in New  
7 York, et cetera, so that's one idea for a paper.

8 MEMBER MAUNE: Do we have anybody on  
9 our panel qualified to write on that subject?

10 VICE CHAIR MILLER: I can take a cut  
11 at it. I mean, I think we have an idea, and talk  
12 to people in OCS for --

13 MR. ASLASKEN: Joyce, I think it's  
14 much broader than just that aspect of it. I  
15 mean, there is a National Response Framework,  
16 which NOAA has several different entities part of  
17 that the FACA actually does have oversight over,  
18 so I think it'd be broader than just, you know,  
19 the shipborne assets that do that work.

20 In fact, we have pre-mission  
21 assignment agreements with FEMA now that not only  
22 include the shipborne, but the airborne assets as  
23 well as onsite coastal advisors that probably  
24 could be brought into this. And I know Glenn  
25 stepped out, but Glenn's kind of the expert on  
26 it, because actually, Glenn was kind of lead on  
27 that with working with FEMA to get that broader  
28 NOS aspect with FEMA brought to the table and  
29 then the agreements, have them in place.

30 And in fact, you know, we've been  
31 mission assigned twice this year just for the  
32 airborne part of that. That'd be a good  
33 highlight.

34 MEMBER KELLY: Joyce, I could work  
35 with you, and perhaps it might be good just to  
36 throw things against the wall and see what  
37 sticks, because there are various layers and  
38 applicability, but we have quite a bit of  
39 experience from Sandy, and I can help you with  
40 the Coast Guard piece of the MTRU, the Marine  
41 Transportation Recovery Unit, and it's, you know,  
42 under Coast Guard command, but NOAA played an  
43 essential part, particularly with NRT capacity,  
44 to clear channels, and we were reopened in 48  
45 hours after Sandy.

46 But it did require the surveying and  
47 the deployment of a lot of the NOAA assets and  
48 the teamwork that went into that, and, you know,

1 basically, you know, commercial port recovery.

2 MR. ASLASKEN: And one thing from  
3 Sandy that did not happen is still the awareness  
4 of the capability from the hydro assets that what  
5 NOAA can do, especially when the ports shut down,  
6 you know, I know this from just working with  
7 remote sensing coordinator at FEMA and those  
8 things that, you know, that awareness needs to go  
9 up.

10 MEMBER KELLY: Yes, definitely. I  
11 mean, we had the, kind of, boots-on-ground  
12 experience, but we -- you know, in the aftermath,  
13 what we did find is that there were other assets,  
14 including NOAA assets, that may have been  
15 available that people were not aware of at the  
16 time, and I think by identifying the response  
17 capabilities, it could be helpful.

18 It'd be a dynamic tool, really, to put  
19 out to any port or any estuary because the  
20 awareness level just wasn't there. I mean, we,  
21 New Yorkers, consider ourselves fairly  
22 sophisticated and we had, you know, table  
23 exercised a lot of this stuff and we still were  
24 not aware of some of the assets that were  
25 available.

26 And, you know, bottom-line, you know,  
27 if you can make it in New York, you can do it  
28 anywhere. If we didn't know it, I can guarantee  
29 a lot of other people didn't know that also, and  
30 it might be worthwhile for us to try to find a  
31 path forward on identifying that and, you know,  
32 impelling, perhaps, you know, in a paper,  
33 charging NOAA to take a lead position on putting  
34 together a response capability.

35 MEMBER MAUNE: Okay. Is this  
36 something, then, that Joyce and Ed can work  
37 together with and maybe you consult with Mike  
38 Aslasken to pull this paper together?

39 VICE CHAIR MILLER: I think Shep had  
40 --

41 RADM SMITH: I was trying to sneak in  
42 one more topic before we break. After you.

43 MEMBER THOMPSON: So, Dave, we've had  
44 a lot of experience with Mike on the airborne, so  
45 I can help with the airborne capabilities of what  
46 NOAA provides. We've used it quite exclusively  
47 in North Carolina.

48 VICE CHAIR MILLER: We're going to

1 have to -- I didn't know if the hydrographic,  
2 because we're the Hydrographic Services Panel, I  
3 mean, I understand that it's a much, much broader  
4 thing than that. And, you know, it may not even  
5 be an ask or a recommendation, just an  
6 informational paper of the --

7 CHAIR HANSON: Why was the port  
8 restricted for three days then? Hydrographic  
9 services, right? Couldn't get the port cleared.

10 MEMBER KELLY: Yes, no, we had the  
11 channels cleared in 48 hours, you know? We can  
12 go into the some of the problems we had and some  
13 of the solutions, and NOAA had played a very  
14 active part in finding some of those solutions.  
15 We didn't know what had washed over and what was  
16 under the water in the channels, if anything,  
17 containers, debris, you know, but there were also  
18 some other pieces that we really kind of weren't  
19 too clear.

20 So I'm thinking maybe we just kind of  
21 sit together and frame what the paper might look  
22 like, and it might be a request for NOAA to  
23 either enumerate or take a lead position on  
24 creating a response template of some sort.

25 VICE CHAIR MILLER: Okay. Let's take  
26 it offline then, but it's one suggestion for a  
27 paper.

28 MEMBER MAUNE: Okay. Are there any  
29 other suggestions for papers? Admiral, did you  
30 have a topic you want to propose?

31 RADM SMITH: Well, I guess I wanted to  
32 raise an issue that's one of, you know, were you  
33 to ask me would I lose sleep over at night, I did  
34 want to raise one issue, and actually, Anne, your  
35 Exhibit A here. If you could bring up one of  
36 those Army Corps surveys in there. Does everyone  
37 remember the Athos?

38 So Ed and I were talking about this  
39 last night. The circuit court ruled on the  
40 liability for the Athos grounding a few years  
41 ago. As you probably remember, it was a, I don't  
42 remember what kind of a ship, but it tore a hole  
43 in the bottom on an anchor, on a disused anchor,  
44 an anchorage in New Jersey, spilled loads and  
45 loads of some sort of, I guess it was fuel oil,  
46 might have been what they were carrying, in the  
47 river, and it was, you know, \$100 million to  
48 clean it up.

1           There's a 193-page ruling on this that  
2 I will not attempt to summarize, I'm not a  
3 lawyer, but in the end, they split the liability  
4 for the spill between the facility --  
5 interestingly, not the ship, but the facility,  
6 which had guaranteed a safe berth to the Athos,  
7 and the Federal Government, for failure to find  
8 the anchor, essentially.

9           But if you look at how the Federal  
10 Government is organized in our hydrographic  
11 services, to find things like anchors and  
12 anchorages, right now, that's nobody's job,  
13 because the Army Corps does sort of volume-type  
14 surveys, primarily for dredging, often sparsely-  
15 spaced single-beam lines, like the ones you see  
16 up here, and because the Army Corps has the  
17 surveying responsibilities in federal projects,  
18 including anchorages and channels, NOAA does not  
19 systematically and regularly survey them with our  
20 object detection standards.

21           So there's no reason to think that  
22 anyone would find those anchors and whenever we  
23 do -- occasionally, we will, NOAA will, survey  
24 straight over an anchorage or channel because  
25 it's easier than stopping while we're doing a  
26 large survey, and almost inevitably, we will find  
27 things in the channel that are dangerous to  
28 navigation.

29           And so there are a lot of things  
30 between those lines on those Army Corps surveys,  
31 and I don't want to say that the Army Corps is  
32 doing it wrong because they're doing it right for  
33 what it is that they're doing, which is, channel  
34 condition surveys in order to determine when to  
35 dredge. They don't consider it a mandate to do  
36 object detection surveys.

37           Which means that, in the end, some of  
38 the most critical waterways in the United States  
39 are surveyed at a lower standard than many of our  
40 coastal areas. So this is out there as an issue  
41 that I have opened conversation with the Army  
42 Corps at a high level on this issue. We do not  
43 yet have a, sort of, way ahead, but, you know,  
44 this was a tragic oil spill and did end up  
45 costing the government a whole lot of money  
46 because of this underlap.

47           So oftentimes, you know, I'll be  
48 testifying in Congress next week, they're going

1 to be trying to quiz all the federal agencies up  
2 there to find out how we're really overlapping  
3 and doing each other's business. This is a case  
4 where there's a serious underlap between the work  
5 of the federal agencies.

6 MEMBER MCINTYRE: I think people may  
7 have read in the press that we had a ship that  
8 hit a charted obstruction. And so here, without  
9 the ENC, you don't see the obstruction. I'll  
10 layer the ENC on there, and there it is, and so  
11 we had a ship tear about a 5-meter hole in the  
12 side of the ship when it hit this due to a  
13 miscommunication in the steering.

14 And it isn't something that shows up  
15 normally on the Army Corps of Engineers'  
16 soundings. That was something that was  
17 identified through the NOAA survey. So again,  
18 you can see the Army Corps survey here, you see  
19 56 feet, you see 32 feet, but this was the  
20 sounding that mattered.

21 MEMBER MAUNE: Lawson?

22 MEMBER BRIGHAM: Yes, Lawson Brigham.  
23 I mean, it may be the topic of NOS and Army  
24 Corps. I mean, every meeting we go to we hear  
25 this overlap and bit of tension, and, you know,  
26 responsibility. I mean, maybe that's a paper to  
27 put on our list. Maybe we don't know enough, but  
28 we've heard a lot, to write a paper, but it is a  
29 topic that comes up every meeting.

30 CHAIR HANSON: Dave, can I swap my  
31 defense paper to work on this one?

32 MEMBER MAUNE: You may, Bill.

33 CHAIR HANSON: Thank you. That's  
34 something I can actually understand.

35 MEMBER MAUNE: Okay. Thank you.  
36 Well, we're out of time. Sir, if you'd like to  
37 take over.

38 CHAIR HANSON: All right. Well, thank  
39 you again. It's a lot of time and effort. I've  
40 been on a couple other FACAs, I don't think I've  
41 been part of one that works as hard as this  
42 panel. In fact, even this morning, looking  
43 around, and I think we had 100 percent  
44 participation by the panel, and great  
45 participation by the audience, and that's really  
46 what these types of discussions are all about, so  
47 appreciate your leadership --

48 MEMBER MAUNE: And I want to thank



1 Joyce and Ed, and Kim, and Gary, and everybody  
2 that -- Lawson, and everybody that provided input  
3 for these papers. We couldn't have done it  
4 without you. They did such a great job. Thank  
5 you very much.

6 CHAIR HANSON: Thank you, sir. Then  
7 we're going to take a short break. We'll be  
8 returning at 9:45 for a panel discussion. We  
9 have Ms. Deb Lee leading the panel and so  
10 appreciate everybody being back promptly at 9:45  
11 and we can participate. Thank you.

12 (Whereupon, the above-entitled matter  
13 went off the record at 9:34 a.m. and resumed at  
14 9:50 a.m.)

15 CHAIR HANSON: Okay. Appreciate  
16 everybody getting back almost promptly, plus or  
17 minus. Being a contractor, that means a lot to  
18 me. So we're going to have our panel discussion  
19 this morning on hydrographic services and this  
20 morning's panel is going to be moderated by Ms.  
21 Deborah Lee, Director of NOAA's Great Lakes  
22 Environmental Research Lab, known affectionately  
23 as GLERL.

24 Ms. Lee, thank you for being with us,  
25 leading your panel, distinguished panel. As  
26 Director of GLERL, Ms. Lee is responsible for  
27 overseeing and leads NOAA-sponsored scientific  
28 research on ecosystems of America's north coast,  
29 the Great Lakes, and the Great Lakes.

30 Before joining NOAA, she also worked  
31 for the Ohio River Division of the Army Corps of  
32 Engineers. So, Deborah, please begin with any  
33 remarks and we look forward to your panel.

34 MS. LEE: All right. Thank you very  
35 much. It's very much a pleasure to be here and  
36 be here with my panel members, John Allis, with  
37 the U.S. Army Corps of Engineers, Jackie Adams,  
38 with Environmental Protection Agency, Great Lakes  
39 National Program Office, and Tom Crane, Deputy  
40 Director of the Great Lakes Commission.

41 So we're all very excited to be here  
42 today to tell you why the Great Lakes are unique  
43 from the coastal areas, the ocean coasts, and why  
44 we need hydrographic services. They are actually  
45 foundational. The data that they provide are  
46 foundational to the management of the Great  
47 Lakes.

48 So the Great Lakes region faces unique

1 challenges in water resources management and  
2 environmental restoration. The dynamic nature of  
3 its climate and of the Earth's crust requires  
4 state of the science hydrographic services to  
5 provide the foundation for lake regulation, water  
6 management, navigation, sediment dredging, and  
7 environmental restoration of the near shore.

8 This panel today will examine these  
9 challenges and will discuss potential measures  
10 for improvement of services. Let me take a few  
11 minutes to give you a little background on the  
12 Great Lakes to help set the stage for our panel's  
13 presentations today. Here we go.

14 Even for residents of the Great Lakes,  
15 it's hard to grasp the magnitude and the  
16 complexity of the lakes. The Great Lakes are the  
17 largest freshwater ecosystem on Earth, they hold  
18 6 quadrillion gallons of freshwater, which is 20  
19 percent of the world's fresh surface water, and  
20 95 percent of North America's surface freshwater.

21 As we look ahead at the next  
22 generation of NOAA's hydrographic services for  
23 the Great Lakes region, we anticipate numerous  
24 challenges, such as a growing population, an  
25 increase in demand for water withdrawal, and the  
26 need to continue to prepare for a changing  
27 climate.

28 One-third of the North American  
29 population lives in the Great Lakes watershed,  
30 and some of the most urbanized regions, like  
31 Cleveland, are in the United States and Canada  
32 can be found around the Great Lakes. The Great  
33 Lakes affect many human lives, they supply  
34 freshwater to more than 40 million people,  
35 they're a source of drinking water and food, as  
36 well as mineral and energy resources.

37 The waters of the Great Lakes also  
38 sustain an incredibly diverse biology of plants,  
39 animals, fish, birds, and even microscopic algae  
40 and crustaceans. The Great Lakes and their  
41 respective watersheds and waterways, and the  
42 ocean, are all connected.

43 Shown here, you can see the system in  
44 profile. Within the Great Lakes system, water  
45 flows from Lake Superior and Lake Michigan to  
46 Lake Huron, through Lake St. Clair into Lake Erie  
47 and over Niagara Falls, and then into Lake  
48 Ontario before flowing through the Saint Lawrence

1 River into the Atlantic Ocean.

2 Lake level is defined as the height of  
3 the Great Lakes relative to sea level. Lake  
4 level changes are caused by variations in  
5 precipitation, evaporation, runoff, and snow  
6 melt, as well as wind and waves. While tides are  
7 typically not discernible in the Great Lakes,  
8 seiches are common in the lakes.

9 A seiche action is similar to that of  
10 water sloshing back and forth in the bathtub,  
11 something many of us might recall from our days  
12 as children, or for those of us who have  
13 children, they like to play in the bathtub in  
14 that way.

15 But on a slower timescale, decadal to  
16 centennial, the Earth's crust under the Great  
17 Lakes is rebounding following the retreat of the  
18 last glacial period. This lifting is not at an  
19 equal rate across the Great Lakes. The northern  
20 and eastern shores of the lakes are rising with  
21 respect to the southern and the western shores.

22 And so in short, by example, water  
23 levels are getting shallower in Georgian Bay, on  
24 northern Lake Huron, and they're getting deeper  
25 in the Chicago area on southern Lake Michigan  
26 shore.

27 Lake Superior and Ontario are  
28 regulated by man-made structures at their  
29 outlets, and the outflow from Lake Erie is split  
30 between hydropower generation and flows over  
31 Niagara Falls. Many people don't realize when  
32 they look at Niagara Falls that they're not  
33 seeing the total amount of water. They're only  
34 seeing, roughly, about half the amount of water  
35 that leaves Lake Erie because the other is being  
36 diverted through hydropower tunnels around the  
37 Falls.

38 Navigation locks allow shipping to  
39 transit to steep changes in elevation in the St.  
40 Lawrence, Niagara, and St. Marys River. So  
41 accurate water levels are critical for managing  
42 and predicting the flow of water through this  
43 complex system.

44 Captured here is a dramatic image.  
45 It's water evaporating from the lakes surfaces.  
46 It's an unusual orientation because you're  
47 actually looking across Lake Superior from the  
48 west to the east, and then you can also see Lake

1 Michigan stretching there across the picture.

2 But the Great Lakes warm by absorbing  
3 solar radiation and they lose heat by evaporation  
4 and by warming the overlying air when the  
5 atmosphere is cool. After water vapor is  
6 released into the atmosphere, it condenses and  
7 form precipitation, some of which falls within  
8 the Great Lakes Basin, and some which is carried  
9 outside of the Great Lakes Basin.

10 The lakes modify the local weather  
11 climate because of this. Water temperatures --  
12 because water temperature changes more slowly  
13 than land temperatures, lake waters gain heat in  
14 the summer and then they release that heat during  
15 the cooler months. This results in cooler  
16 springs and warmer falls, delayed frosts, and  
17 something Cleveland and Buffalo are both well-  
18 known for is lake effect snow.

19 The Great Lakes have a significant  
20 influence on regional climate by absorbing,  
21 storing, and moving heat and water, and lake  
22 effect precipitation can occur downwind when  
23 major weather systems move over the lakes.

24 So the Great Lakes water balance is  
25 complex. No two years are alike when it comes to  
26 Great Lakes evaporation, ice cover, and water  
27 temperature, and long-term changes in the lakes'  
28 water balance are also occurring as a result of  
29 climate change.

30 Continued observations over each of  
31 the Great Lakes is needed to better understand  
32 the seasonal, inter-annual, and long-term  
33 variations. Of critical importance is NOAA's  
34 Great Lakes water level observation network in  
35 determining the Great Lakes' water balance.  
36 Again, it's one of those foundation pieces of  
37 data that we need in order to manage this system.

38 You'll be hearing more about our Great  
39 Lakes water budget from John, who will be our  
40 first panel speaker, and NOAA's hydrographic  
41 services are crucial to the Corps' mission of  
42 regulating Lake Superior and Lake Ontario, and to  
43 the Corps' navigation and harbor maintenance  
44 mission.

45 Over time, use of the Great Lakes  
46 resources has had significant impacts. The  
47 future sustainability of the Great Lakes  
48 resources depends on our understanding of those

1 resources and their potential and their  
2 limitations. Fortunately, our understanding of  
3 the threats and challenges facing the Great  
4 Lakes' ecosystems has grown, and NOAA is working  
5 to provide the information, the services, and the  
6 on-the-ground action needed to address them.

7 One such challenge is managing  
8 sedimentation. Shown here is a color image of  
9 the complex sediment transport in Lake Erie.  
10 You'll hear more about our collaborative efforts  
11 in addressing regional sedimentation management,  
12 and dredging, and near shore restoration  
13 challenges from Tom Crane.

14 The Great Lakes have been dramatically  
15 degraded and challenged by human endeavors since  
16 European settlement. Basic ecosystem processes  
17 have been restored through individual and  
18 collective efforts, but proper foresight and  
19 informed decision making will continue to ensure  
20 that the Great Lakes are a model of environmental  
21 protection, restoration, and innovation.

22 The Great Lakes Restoration  
23 Initiative, begun in 2010, has provided a large  
24 infusion of funding for sustainable Great Lakes  
25 restoration. NOAA is fortunate to be working  
26 with the Environmental Protection Agency, and 15  
27 other additional federal agencies, with funds  
28 provided by the Great Lakes Restoration  
29 Initiative.

30 So the areas that we're targeting  
31 include cleaning up Great Lakes areas of concern,  
32 preventing and controlling invasive species,  
33 reducing nutrient runoff that contributes to  
34 harmful nuisance algal blooms, and restoring  
35 habitat to protect invasive species, and then of  
36 course, also, science-based adaptive management.

37 The Great Lakes Restoration Initiative  
38 projects have already yielded tangible successes  
39 and distinct progress in alleviating some of our  
40 most pronounced threats to the Great Lakes and  
41 the region. You'll hear more about this from  
42 Jackie Adams' presentation and how we, at NOAA,  
43 and our hydrographic services, are supporting  
44 that restoration.

45 So the Great Lakes are affected  
46 directly by the decisions and actions of people  
47 throughout its watershed, which include parts of  
48 states of Illinois, and Indiana, Michigan,

1 Minnesota, Ohio, Pennsylvania, New York, and  
2 Wisconsin, and the Canadian Provinces of Ontario  
3 and Quebec, and also tribal lands.

4 We've had a great long history, a  
5 successful binational stewardship, that's working  
6 to ensure their sustainability now and into the  
7 future, and NOAA's hydrographic services continue  
8 to provide the observations and the services  
9 which serves that foundation for our stewardship.

10 So we hope you'll be able to provide  
11 feedback and input to NOAA's Hydrographic  
12 Services Review Panel via the following, if  
13 you're on our webinar, there's a comments and  
14 questions function where you can submit feedback,  
15 and this will be shared and become part of the  
16 public record. You can also email in advance, or  
17 during, or post the meeting, to  
18 lynne.mersfelder@noaa.gov, the HSRP program  
19 manager, or to hydroservices.panel@noaa.gov.

20 So at this time, what we would like to  
21 do with this panel is pause in-between our  
22 presentations. If you have some questions you  
23 would like for clarification or additional  
24 information, we'd love to take those questions,  
25 but what we'd like to try and do is hold the  
26 discussion until the end of our presentations so  
27 that you get to have a sense of the full aspects  
28 of water management responsibilities and how  
29 hydrographic services support those.

30 So at this time, I'd be happy to take  
31 any questions anyone may have regarding my  
32 introductory remarks. Okay. Have you all had a  
33 chance to play the question trivia, Great Lakes  
34 trivia? Okay. Great. So you've got a good  
35 introduction.

36 So then without further ado, let me  
37 introduce John Allis. He and I had the  
38 opportunity to work together when I was with the  
39 U.S. Army Corps of Engineers. He's in the office  
40 where I first began, in the Detroit district, and  
41 he's responsible for not only overseeing Lake  
42 Superior regulation, he's also the U.S. Chair of  
43 the Coordinating Committee on Great Lakes  
44 Hydraulics and Hydrologic Data.

45 And you'll hear more about the  
46 importance of that interagency committee in  
47 John's talk and in my talk this afternoon at  
48 lunch, so, John?

1 MR. ALLIS: Thanks, Debbie. Can you  
2 guys hear me all right? All right. Maybe just  
3 start on the next slide, please. I got it.  
4 Thank you. So looking around the room there's  
5 probably a bunch of you that may be experts on  
6 the Great Lakes as far as, you know, where water  
7 level regulation control points are, certainly,  
8 Debbie falls into that category, but there may be  
9 others of you that maybe today was the first day  
10 you learned that there are, you know, points  
11 where water levels are controlled.

12 And I certainly fell into that  
13 category until I had this job, so I'll go ahead  
14 and start off with, you know, kind of an overview  
15 of what Debbie just gave, but a little more  
16 detail about where some of those control points  
17 are on the Great Lakes.

18 This slide here, just summarizing some  
19 of the key missions that the Corps has on the  
20 guidelines. I'd really just summarize that all  
21 into saying that the Corps is the U.S. lead for  
22 international water level regulation on the Great  
23 Lakes, supporting the International Joint  
24 Commission, and then, you know, pretty much all  
25 of our other tasks get wrapped up into supporting  
26 that, whether that's forecasting water levels on  
27 the Great Lakes, monitoring conditions,  
28 understanding how the system's changing over  
29 time.

30 Ultimately, that's, you know, kind of  
31 wraps up into our mission to support the IJC.

32 So I'll walk you through this map,  
33 very similar to what Debbie walked through, but  
34 she gave you, kind of, the profile version of it,  
35 but I think this will help highlight where some  
36 of the control points are on the Great Lakes,  
37 where we have control, where we don't have  
38 control.

39 So if you start at the very northern  
40 edge of the basin, you see Long Lac and Ogoki  
41 Diversions, that's really the true inflow to Lake  
42 Superior, you know, if you want to call it that.  
43 Water is diverted into the Great Lakes Basin that  
44 otherwise would have flown northward into the  
45 Hudson Bay.

46 It's one of two points where water is  
47 diverted in and out of the Great Lakes. So those  
48 at the north, I just highlighted, also, the Lake

1 Michigan Diversion in Chicago is the other  
2 diversion point. Their water is actually  
3 diverted out of the Great Lakes Basin, that  
4 wouldn't have otherwise made its way out.

5 One thing I like to highlight in the  
6 table, in the upper right though, are that these  
7 diversions are very small, especially when you  
8 compare it to the other, you know, kind of the  
9 major flows, you know, between the lakes and the  
10 inputs to the lakes, and it's also important to  
11 note there's actually more water diverted into  
12 the basin through the Long Lac and the Ogoki  
13 Diversion than is diverted out through Chicago.

14 So if you kind of work your way  
15 through Lake Superior water, you know, kind of  
16 the key inputs to Lake Superior, really, are just  
17 Mother Nature. You know, the water just comes  
18 from runoff in the lakes or from the basin around  
19 the lake, rain that falls on the lake's surface,  
20 and that evaporation that evaporates off of Lake  
21 Superior, that's really what controls the, you  
22 know, kind of major inflow and outflow to Lake  
23 Superior.

24 But when you work your way eastward  
25 over to where we have the Lake Superior Control  
26 Works called out, that's the true outflow point  
27 then for Lake Superior. That's the Saint Marys  
28 River, that's where the Soo Locks are, so through  
29 a series of the Soo Locks, gated structures,  
30 hydropower plants, we have the ability there to  
31 control the outflow from Lake Superior.

32 And so that's kind of the first true  
33 control point here in the system. There's an  
34 international board established to make decisions  
35 on how much outflow should be released. The  
36 Corps, again, has the U.S. lead role with that  
37 board. I'll talk a little bit more about that on  
38 some of my next slides.

39 But then as you work your way down  
40 through the system, you kind of go down the Saint  
41 Marys River, which eventually dumps into Lake  
42 Huron. You'll hear me talk, as when I'm talking  
43 water levels, about Lakes Michigan and Huron, we  
44 refer to those two lakes as one body when we're  
45 talking about water levels, just because of the  
46 connection between the Straits of Mackinac,  
47 that's the connection between the upper and lower  
48 peninsula of Michigan.



1                   You know, it's a very large connecting  
2 point there, so the two lakes really do rise and  
3 fall, pretty much, as one body of water from a  
4 water level point of view.

5                   So again, that was, you know, the  
6 Saint Marys River is the main inflow to Michigan  
7 and Huron. Again, those lakes are driven by the  
8 same natural components as Lake Superior, and  
9 that Debbie highlighted in, kind of, you know,  
10 the overall water balance.

11                  The main outflow from there is at the  
12 southern edge of Lake Huron, and that's the Saint  
13 Clair River. You can see that there at the  
14 southern edge. Water flows down through the  
15 Saint Clair River into Lake Saint Clair, and  
16 ultimately, down the Detroit River before dumping  
17 into Lake Erie.

18                  It's important to note at that  
19 connecting channel point, there are no control  
20 structures. This is just a free-flowing channel,  
21 so the only influence we have on Michigan and  
22 Huron levels is through our regulation of Lake  
23 Superior and, you know, the inflow there. We  
24 can't control the outflow from those two lakes.

25                  Water then makes its way -- you know,  
26 you work your way eastward across Lake Erie, you  
27 come to the Niagara River, again, Debbie  
28 highlighted Niagara Falls along the Niagara  
29 River. There is an international control board  
30 established for the Niagara River, but this board  
31 doesn't actually make regulation decisions to  
32 control the level of Lake Erie.

33                  Again, as Debbie highlighted, not all  
34 of the water flowing down the Niagara goes over  
35 Niagara Falls. A lot of it goes through the  
36 hydropower facilities, but there's certain treaty  
37 minimums that have to be met for the amount of  
38 water that goes over the Falls, so it's the  
39 board's job to make sure that those flows are  
40 being met, they're being monitored, you know,  
41 decisions are being made about how much water can  
42 be used for hydropower, so that's the role of  
43 that control board.

44                  You then kind of work your way  
45 eastward through Lake Ontario. Lake Ontario is  
46 the other truly, you know, kind of regulated lake  
47 on the system. It's outflow is controlled there  
48 along the Saint Lawrence. You see the Lake

1 Ontario Control Work arrow down by Cornwall.  
2 Again, there are hydropower facilities there.

3 There's an international control board  
4 on Lake Ontario that's making decisions about how  
5 much flow can be allowed to pass through those  
6 structures. So again, that's kind of the  
7 overview of where the control points are.

8 So we certainly have, you know, some  
9 control over Superior water levels, a little bit  
10 over Michigan and Huron, a little bit over  
11 Ontario, but still, you know, when you're dealing  
12 with lakes this large, you know, Mother Nature is  
13 still going to do what Mother Nature does, and  
14 that will ultimately drive the direction of the  
15 water levels for all the Great Lakes.

16 I'll briefly highlight here, the  
17 structure of how this happens. So again, you  
18 know, obviously, the Great Lakes are just one of  
19 many international boundary waters between U.S.  
20 and Canada, so this, you know, again, highlights  
21 that fact here on this map. And it's the  
22 International Joint Commission that's responsible  
23 for managing, you know, those watersheds,  
24 preventing/resolving disputes between the two  
25 countries on those watersheds, but the IJC itself  
26 is relatively small.

27 It's three U.S. Commissioners, three  
28 Canadian Commissioners, a handful of staff in  
29 various offices, but most of the actual work is  
30 done through control boards that represent those  
31 various watersheds that I showed on that map.  
32 And there are three of them on the Great Lakes,  
33 I, you know, briefly discussed them in that last  
34 map.

35 There's the International Lake  
36 Superior Board of Control, the International  
37 Niagara Board of Control, and the Saint Lawrence  
38 River Board of Control, you know, that deals with  
39 Ontario.

40 So I'll give a little bit of the  
41 details of the regulation here. I won't get into  
42 all the nuances of what goes into regulating Lake  
43 Superior, but long story short, there is, you  
44 know, a binational board of control, Environment  
45 and Climate Change Canada leads the Canadian  
46 side, Army Corps of Engineers leads the U.S.  
47 side, and this board is making regulation  
48 decisions every month about what the outflow

1       should be coming out of Lake Superior.

2               You have the image there in the right  
3 side shows all the various, you know, pathways  
4 for flow through -- that's an aerial view of  
5 Sault St. Marie and the Soo Locks there. As you  
6 can see, kind of, the various ways that we allow  
7 outflow to leave Lake Superior.

8               But long story short is, we're trying  
9 to keep Lake Superior's level and Michigan and  
10 Huron's level as close to their long-term average  
11 levels as possible. There's other, you know,  
12 nuances as far as environmental concerns and  
13 certainly, other stakeholder, you know,  
14 hydropower. There's, kind of, nuances that go  
15 into our regulation decisions, but kind of that  
16 guiding principle is, really trying to keep those  
17 two lakes, you know, as close to their long-term  
18 average as we possibly can.

19              I don't know if I need to say much  
20 more about the Niagara Board of Control. You  
21 know, I've kind of highlighted here again that  
22 the level isn't so controlled. You know, they're  
23 not controlling outflows from Lake Erie. It's  
24 really just making sure that the treaty minimums  
25 are being met over the Falls.

26              And I will say, with all these control  
27 boards, you know, the makeup is the same where,  
28 you know, the Army Corps of Engineers is the U.S.  
29 lead and Environment and Climate Change Canada  
30 leads the Canadian side.

31              Saint Lawrence River Board of Control  
32 for Lake Ontario, similar theory as Lake  
33 Superior, that the range of levels are compressed  
34 on Lake Ontario, but there's also downstream  
35 concerns, you know, that factor into the  
36 regulation, especially as you get down the Saint  
37 Lawrence River to the Port of Montreal. And  
38 again, you know, there's a set regulation plan  
39 being implemented, flows are being controlled  
40 through the hydropower facilities down the Saint  
41 Lawrence.

42              So that's the whirlwind overview of  
43 the regulation side of things, but obviously,  
44 there's a lot more that goes into trying to  
45 regulate those lakes than just pushing buttons  
46 on, kind of, the computer-programmed plans. We  
47 need to be able to understand how the basin is  
48 changing over time, we need to be able to

1 forecast what water levels are going to do over  
2 time, and that's kind of the real challenge,  
3 then, that the Corps has in being able to  
4 regulate, you know, in the best way possible.

5 And I guess this was where I'll kind  
6 of start transitioning into the data needs and  
7 data uses here. And one of the key gaps, and  
8 that Debbie kind of hinted at is just, if you're  
9 going to understand the water balance of the  
10 Great Lakes, you know, you need to understand how  
11 much water is falling on top of the lake's  
12 surface.

13 There's ways that you can model that,  
14 but, you know, it's very hard to actually measure  
15 that. We don't have points where we can measure  
16 directly how much water is raining in the middle  
17 of the lake at any given point, and so trying to  
18 do a better job of actually measuring over-the-  
19 lake precipitation, trying to do a better job  
20 measuring evaporation off the lake's surface.

21 That's the other, you know, dominant  
22 hydrologic output of water from the Great Lakes.  
23 You know, NOAA has been taking a good lead on  
24 trying to install eddy covariance meters to help  
25 us actually measure those fluxes and translate  
26 that into evaporation. That's been starting to  
27 fill a major gap of measurements that we didn't  
28 have until recently.

29 But again, it's very important for us  
30 to be able to collect that data, actually  
31 understand how much water is evaporating off the  
32 lake's surface. Also then, runoff into the lakes  
33 from the watershed is another one of those areas  
34 where we have limited data and if we're going to  
35 really be able to study how these different  
36 inputs are changing over time, we need to be able  
37 to measure them accurately enough that we can  
38 make conclusions about, are we going to see --  
39 you know, are we seeing precipitation over the  
40 lake's surface change over time, are we seeing  
41 more evaporation or less evaporation than we  
42 have?

43 So again, that kind of all wraps into  
44 the challenges of understanding how the Great  
45 Lakes are changing and being able to work that  
46 into regulation plans and being able to recognize  
47 some of these trends of climate change, and  
48 again, be able to adapt that through our

1 regulation.

2 As one of the key foundational  
3 datasets, you know, it's kind of an obvious one,  
4 but I just wanted to stress the importance. It's  
5 just understanding the actual levels of the lakes  
6 themselves, so we rely heavily on what we call  
7 lake-wide average levels.

8 So when we say, you know, Lake  
9 Superior's level is X, we're talking about a  
10 lake-wide average, not just a single measure  
11 point value along the lake. And this map that I  
12 have here shows all those gauges that go into our  
13 current networks that we use to determine those  
14 lake-wide average levels. You can see it's a  
15 network of Canadian gauges and U.S. gauges.

16 You know, the U.S. gauges are NOAA  
17 gauges. And again, I just wanted to highlight,  
18 these are extremely important to our ability to  
19 actually perform our regulation. You know,  
20 basically, the current inputs, you know, as we're  
21 kind of feeding inputs into our regulation plan  
22 are, what's the upstream water level, you know,  
23 what's the downstream lake level and what's the  
24 upstream lake level?

25 And without those, we can't perform  
26 our regulation. And the actual network of gauges  
27 to use is kind of the specified consistent  
28 network and it's important -- you know, I've  
29 shown, in the bottom graphic, our current period  
30 of record that we have coordinated, lake-wide  
31 average levels back to 1918, and, you know,  
32 again, I wanted to highlight, you know, we have  
33 this long period of record of levels.

34 And that's really foundational to our  
35 understanding of the Great Lakes. Anything that  
36 we want to do, if we want to understand, do we  
37 see cycles, you know, between highs and lows over  
38 time? Do we see, you know, trends and  
39 differences between one lake versus another? Are  
40 we seeing a net lowering of levels or raising?

41 You know, we can't answer any of that  
42 unless we have this long-term foundational  
43 dataset that we have here. So, you know, I  
44 talked about two of the graphics.

45 The third, I just showed a report that  
46 we generate from my office out of Detroit with  
47 the Army Corps. So, you know, while we're the  
48 agency that'll actually take the individual gauge

1 data, use the gauge pairing logic that we have,  
2 come up with what that average lake level is, and  
3 then report that for use for the boards of  
4 control, you know, and for the public to track.

5 So I also wanted to talk water levels,  
6 not just from the lake point of view, but also  
7 along those connecting channels of the Great  
8 Lakes. So those are extremely important for us  
9 to be monitoring as well. You know, I just  
10 quickly pulled this screenshot from NOAA CO-OPS  
11 website of some of the various gauges along the  
12 connecting channels.

13 And I wanted to highlight over, you  
14 know, on your left side of your screen, you know,  
15 where I have the Detroit/Saint Clair corridor,  
16 you know, that's, again, a naturally-evolving  
17 channel that changes over time, and it's  
18 important for us to understand how that channel's  
19 changing.

20 You know, if we're seeing increased  
21 scouring in that river, we're going to see more  
22 flow over time releasing out of Michigan and  
23 Huron. We'll see in that lowering of those  
24 levels. We need to understand that so that if,  
25 you know, we're going to see lower levels, maybe  
26 we can adapt regulation strategies to account for  
27 that.

28 And one of the key areas for us to  
29 recognize that is just tacking the water levels  
30 at these gauge points along the connecting  
31 channel. This is part of our operational duties.  
32 We monitor for conveyance changes in that  
33 channel, we use NOAA gauges to kind of develop  
34 relationships between various points along the  
35 channel, where if you follow those relationships  
36 and water levels over time, you can tell if maybe  
37 you're starting to see, you know, a divergence in  
38 those relationships, or a change, which would  
39 indicate that there might be, you know, geometry  
40 changes in that reach of the river.

41 So again, that's, you know, kind of  
42 key foundational data to our understanding of  
43 those channels. And then I'd also highlight over  
44 on the Niagara River, again, on that eastern edge  
45 of Lake Erie, the importance of those, you know,  
46 for us to be able to track the flow going over  
47 the Falls and the flow on the river, we've  
48 developed relationships between the stage at

1 those gauge locations with what the outflow would  
2 be, you know, by going out with our boats and  
3 taking repeated discharge measurements.

4 And so we rely heavily on those  
5 gauges, you know, to be able to use, along with  
6 those relationships, to know what the flow is  
7 over the Falls and what the flow is through the  
8 river.

9 So again, water levels, you know, on  
10 the lakes and the connecting channels are  
11 obviously very key foundational datasets for us  
12 to do our mission.

13 As Debbie said, you know, we're  
14 dealing, still, with, you know, glacial isostatic  
15 adjustment. This rebound of the Earth's crust  
16 after the glaciers receded. So that's also very  
17 important to us. You know, here on the lakes,  
18 from a datum point of view, much of the Corps'  
19 mission, you know, whether it's dredging harbors,  
20 designing structures, understanding the water  
21 levels to regulate them, we need to understand  
22 how these levels are changing relative to, you  
23 know, the datum of the lake.

24 And that datum changes, then, over  
25 time as we're seeing this rebound, so tracking  
26 that, understanding -- you know, actually  
27 measuring, you know, the velocities of the  
28 different areas around the Great Lakes, and being  
29 able to translate that data into appropriate  
30 datums is, again, I keep -- I'm overusing the  
31 word foundational, but again, it's one of these  
32 key datasets that lets us then do the rest of our  
33 job, to have, you know, kind of key, appropriate,  
34 well-updated datums on the Great Lakes.

35 So transitioning a little bit here,  
36 you know, so I work for the Corps of Engineers  
37 with my day job, and my other duties as assigned,  
38 I'm the U.S. lead for the coordinating committee.  
39 It's better than saying Coordinating Committee of  
40 Great Lakes Basic Hydraulic and Hydrologic Data.  
41 We struggle with an acronym that actually makes  
42 sense for this group. I'll just keep saying the  
43 coordinating committee.

44 But this group is, it's a group made  
45 up of all the U.S. and Canadian federal agencies  
46 on the Great Lakes that have a role with, you  
47 know, performing the regulation duties, but also,  
48 all the data that goes into managing the water

1 levels, the flows, in the Great Lakes.

2 So, you know, obviously, that's going  
3 to be the Corps, Environment and Climate Change  
4 Canada, the GS, we work closely with GLERL, you  
5 know, NOAA CO-OPS, forecasting centers, you know,  
6 Natural Resources Canada. I don't have all the  
7 logos up here, but it's a comprehensive group.

8 This group was established over 50  
9 years ago, so it's been a longstanding ad hoc  
10 group. You know, it's not like a formalized IJC  
11 board with funding, this is just all the agencies  
12 on the Great Lakes recognizing the importance of  
13 coming together and making sure that we're  
14 coordinating our data.

15 And, you know, obviously you can tell  
16 from the name of the coordinating committee that  
17 that's kind of the key mission, is that we're  
18 coming together and that we're coordinating what  
19 data we're using and the methods we're using for  
20 our water level regulation activity on the Great  
21 Lakes.

22 So you have these, kind of, singular  
23 bodies of water that are split down the middle  
24 with an international boundary, and you don't  
25 want to have one side of the border releasing  
26 their water level forecast that says, we think  
27 it's going to do this, and then the U.S. releases  
28 one that's similar, but it's slightly different,  
29 for the exact same body of water.

30 It just makes more sense for us to  
31 come together and agree on, you know, water level  
32 forecasts, we agree that when we're making  
33 regulation decisions we don't have Canadian staff  
34 using a different network of gauges to develop a  
35 lake-wide average that's slightly different than  
36 the U.S. side, you know, so we come together and  
37 make sure that we're all using those same  
38 datasets.

39 And in the past it's really been  
40 focused on water levels and flows, but as we've  
41 gotten more sophisticated monitoring for some of  
42 the other hydrologic variables, we've come  
43 together to discuss how do we coordinate things  
44 like precipitation, evaporation, certainly, from  
45 a water level point of view, water budget point  
46 of view, how do we come together and coordinate  
47 those values and make sure that we all  
48 understand, you know, again, that we're using



1 consistent data and how that drives, kind of,  
2 this water balance of the Great Lakes.

3 All right. My last couple slides  
4 here, just transitioning a little bit into this  
5 sediment and dredging topic. Josh probably gave  
6 you an overview of this yesterday, but, you know,  
7 the water management, obviously, isn't all the  
8 Corps does. You know, 140-odd federal harbors on  
9 the Great Lakes that we operate and maintain.

10 And again, just highlighting the  
11 importance of datums to that mission. You know,  
12 the Corps is authorized to dredge, you know, a  
13 certain amount beneath low water datum, and, you  
14 know, again, as we see glacial isostatic  
15 adjustment happening, as we see this rebounding  
16 and the datums change, if we aren't updating our  
17 datums, we may or may not be providing, you know,  
18 the depth that we should be providing, you know,  
19 at various harbors around the Great Lakes.

20 So anyway, that's kind of a vital  
21 mission of the Corps. And again, highlighting  
22 the importance of making sure we have good datum  
23 so that the Corps can do that mission as well. I  
24 think with that, that is all I have, so maybe we  
25 have time for a couple of quick questions, like  
26 Debbie said, before we transition?

27 MEMBER KELLY: John, absent control  
28 and regulation, is there a sense overall, if just  
29 left to pure nature, are the Great Lakes rising  
30 or falling, and what's the projection on that?

31 MR. ALLIS: Yes, that's a tough  
32 question. There isn't a clear trend right now of  
33 rising or falling, so the water levels have been  
34 fluctuating between extremes. You know, we're  
35 just coming off record lows from three years ago  
36 on Michigan and Huron. They've rebounded back  
37 above average, but we're still seeing a cycling  
38 of levels between kind of a natural range.

39 Looking forward, the climate change  
40 projections aren't real clear that they would go  
41 one direction or the other, but that we will  
42 continue to see further extremes, you know, that  
43 we'll see more extreme highs and more extreme  
44 lows than we've seen, but maybe not a clear trend  
45 in staying one direction of the other.

46 MEMBER BRIGHAM: Lawson Brigham. It's  
47 just to extend what Mr. Kelly asked about climate  
48 change and is it safe to say that the serving

1 network for the size of the hydrological basin  
2 surrounding the Great Lakes is not up to the task  
3 of giving you the kind of information that's  
4 necessary to trying to correlate in the future,  
5 climate change and warming with freshwater?

6 MR. ALLIS: That's exactly it. I  
7 mean, the modeling that you need to be able to  
8 resolve some of these questions of, will we see  
9 more over-lake precipitation, or less runoff, or  
10 more evaporation, you know, the modeling, I  
11 think, still has a long way to go for us to be  
12 able to answer those kinds of questions.

13 MS. LEE: Joyce?

14 VICE CHAIR MILLER: Yes. Just a  
15 curiosity question, how often do you need to  
16 survey and/or dredge in those connecting  
17 channels?

18 MR. ALLIS: That's good question. A  
19 little outside of my world, but I believe  
20 there's, especially on the Saint Clair and  
21 Detroit River, I think there's annual removal  
22 going on, of some sort, of various portions of  
23 the channel. So not to deepen it beyond the  
24 authorized depth, but again, to, you know, deepen  
25 those areas where there's been infill.

26 MS. LEE: If I could comment on that,  
27 if I may, one of the challenges that we had  
28 during the Upper Lakes Study, which was a \$15  
29 million study between Canada and the U.S. to try  
30 to explain why Lake Huron was falling relative to  
31 Lake Erie's water levels, that difference was  
32 changing over time. We did not have complete  
33 hydrographic surveys of the entire river.

34 And so while we recognized that that  
35 channel had changed at some point within, like, a  
36 10 to 15-year timespan, we couldn't tell you  
37 when, we couldn't tell you exactly where, or  
38 exactly why. It was showing up in the lake  
39 levels, but because we did not have detailed  
40 routine hydrographic surveys to monitor that  
41 channel, we haven't been able to answer that  
42 question.

43 MR. ALLIS: Good point.

44 MS. LEE: And, David?

45 MEMBER MAUNE: How do you envision the  
46 international Great Lakes datum being -- I'm  
47 sorry. This didn't turn on. Okay. How do you  
48 envision the international Great Lakes datum

1 being impacted by the new gravimetric datum in  
2 2022?

3 MR. ALLIS: I don't know. I'm not an  
4 expert in datums, so certainly, you know, I guess  
5 I just stress that same point that, we need the  
6 most accurate representation of, you know, the  
7 true datum on the Great Lakes. And certainly,  
8 from our point of view, low water datum, you  
9 know, and making sure that that's accurately  
10 representing, kind of, this lowest water level  
11 that we would expect and that we use to benchmark  
12 our, you know, kind of, operations off of.

13 It's critical to make sure that that  
14 represents reality. How the nuance is going to  
15 change from the old one, it's outside of my  
16 expertise.

17 MS. BROHL: Thank you so much. Just  
18 a quick question. And perhaps this is both for  
19 John and for NOAA, are there other regional  
20 versions of your national hydrologic data groups  
21 elsewhere in the country? How does the  
22 information that you gather feed into a national  
23 observational network or historical data records?

24 MR. ALLIS: Yes, I don't know if  
25 that's more of a -- so from a Corps point of  
26 view, what we do on the Great Lakes is very  
27 regional, and the data we're collecting feeds  
28 more of, you know, our regional mission on the  
29 Great Lakes and doesn't tie-in as well to the,  
30 kind of, national Corps picture, but certainly  
31 from a NOAA point of view, so the things that we  
32 care about and we're trying -- you know, as far  
33 as extending, you know, gridded precipitation  
34 estimates to cover the Great Lakes, you know, we  
35 keep pushing for that to be part of, you know,  
36 NOAA's comprehensive dataset and that these  
37 aren't regional initiatives that, you know, NOAA,  
38 as an agency, is just implementing their  
39 processes, but doing it over the entire Great  
40 Lakes Basin, and not cutting things at the U.S.  
41 and Canadian border.

42 So we do push to have those be, you  
43 know, broader, you know, headquarters-level  
44 products.

45 MS. LEE: Okay. We have time to take  
46 one last question before we'll move on to Tom  
47 Crane.

48 MS. MERSFELDER-LEWIS: So, Deb, I have

1 a comment from a webinar participant who is Robin  
2 Russell-Trinko from the Passenger Vessel  
3 Association and a private owner of a ferry, and  
4 she says, "Does the Corps monitor lake  
5 temperatures and/or invasives? I have heard that  
6 Lake Superior is warming."

7 MR. ALLIS: The Corps doesn't. You  
8 know, I know NOAA/GLERL does a fair amount of  
9 tracking of the temperatures of the Great Lakes.  
10 But, yes, so not the Corps, but there are others  
11 that do.

12 MEMBER SAADE: Ed Saade, I have a  
13 quick easy one for you. If you go back a  
14 century, or two, or three, when you show plus or  
15 minus 1-foot of the lake levels, is that how it's  
16 been for centuries or is that relatively new?

17 MR. ALLIS: So it kind of varies by  
18 lake, but I'll use, maybe, Lakes Michigan and  
19 Huron as an example, so the historical range of  
20 water levels, at least over the last 100 years,  
21 is about a 6-foot range, you know, so that gives  
22 you a sense of scale of, kind of, between the  
23 record low that we've experienced to the record  
24 highs, about a 6-foot range.

25 And if you look back every decade or  
26 so, you know, water levels do tend to fluctuate,  
27 you know, pretty much within that whole range.

28 MEMBER SAADE: So man's intervention  
29 in the last 100 years isn't that much of a  
30 driving force for what the level of the lakes  
31 are.

32 MR. ALLIS: Certainly not Michigan and  
33 Huron. If you look at Lake Superior and Ontario  
34 though, you know, and I don't know the exact  
35 numbers to put it, you know, to give you a sense  
36 of scale, but certainly the range of those  
37 levels. Like, Lake Superior's range, I think, is  
38 maybe about 4-feet, on Ontario, I'm not sure if  
39 it's -- 6 to 8, okay, but certainly on Superior  
40 and Ontario, you know, you're taking feet off of  
41 that range and compressing into a, you know,  
42 levels that stay closer to average.

43 MS. LEE: Okay. One last question  
44 then we'll need to move on in the interest of  
45 time to reserve time for some more discussion.

46 MR. CONNER: Yes, I'm Dave Conner with  
47 NOAA's geodetic survey, and as to the question  
48 about the Great Lakes datum, there will be a new

1 IGLD datum. We plan to call it IGLD 2020 and it  
2 will be developed in concert with the datums that  
3 were talked about earlier.

4 So it will be a new datum, it'll be  
5 related to the overall plan for the North  
6 American datum, but it will be developed in  
7 conjunction with Canada, special for the Great  
8 Lakes once again, and we have not yet determined  
9 exactly what the differences in elevation will  
10 be. That's still in the works.

11 MR. ALLIS: And Dave is one of our  
12 vertical control experts on the coordinating  
13 committee, so thanks for helping out, Dave.

14 MR. CONNER: Thank you.

15 MS. LEE: Okay. Thank you, everybody.  
16 Those were great questions. Let's go next to Tom  
17 Crane from the Great Lakes Commission. And he's  
18 going to talk to us about more on sedimentation  
19 issues and more of the commission's role and how  
20 they've used hydrographic services.

21 MR. CRANE: Thank you. So thank you  
22 for inviting me, Debbie, and Debbie cornered me  
23 at a meeting that we held at GLERL a couple  
24 months ago. We hold an annual Great Lakes  
25 sedimentation workshop. GLERL has hosted it the  
26 last few years and so she asked me if I would  
27 join the panel, and I said yes, and then my  
28 family and I promptly left for a three-and-half-  
29 week trip to Africa.

30 And Lynne was trying to get a hold of  
31 me because there was a series of deadlines for  
32 getting talk titles together, and so I was back  
33 in the office one day and I had to prepare a talk  
34 title. And so I did, but just full disclosure,  
35 my talk is not going to fully address all the  
36 issues in the title here, and I'm specifically  
37 not going to be spending a lot of time on  
38 sedimentation, although I will try to touch on  
39 it.

40 And actually, one of the things I  
41 wanted to mention was this, I found the panels  
42 and the talks to be very supportive and connected  
43 to one another, and I think that's great, and  
44 it's testimony to the work of the organizers who  
45 have put these panels together. Debbie and John  
46 have already given half of my talk, which is why  
47 I can take my time doing this.

48 But also, the maritime navigation

1 panel yesterday was also very connected to what  
2 we're going to do, so I guess I better dive in  
3 here in the interest of time. And what I really  
4 want to talk about, and I have two main thematic  
5 things that I really want to hit home. One is  
6 the importance of partnerships in the Great  
7 Lakes, and I think you've already heard that, but  
8 I really want to stress that because partnerships  
9 is the way that everybody does business in the  
10 Great Lakes and I'm going to point that out  
11 through a series of projects and initiatives  
12 here.

13 The other thing that's really  
14 important is how important NOAA's data and  
15 services are to those partnerships and  
16 collaborative efforts, and so I'm hoping that  
17 I've kind of weaved that into my talk here, but  
18 just -- and also, I really appreciate meeting  
19 many of you over dinner last night.

20 And as I was talking to you, I  
21 realized there's probably a little bit of a need  
22 for a Great Lakes 101, so my first couple of  
23 slides is going to do that. Just to give you a  
24 backdrop for the region, so we have a complex  
25 region and the governing structure is mature, but  
26 there are a lot of different parts to it, so we  
27 have two federal governments, we have eight  
28 states, we have the two provinces of Ontario and  
29 Quebec, we have three commissions, so I work for  
30 the Great Lakes Commission and I will describe  
31 that here on the next slide, John already talked  
32 about the IJC, and so I don't need to do that,  
33 except to say that the IJC has been around for a  
34 long time.

35 The IJC was formed under the Boundary  
36 Waters Treaty of 1909. So in 1909, Canada and  
37 the U.S. entered into the Boundary Waters Treaty,  
38 the IJC was formed, so they have more than 100  
39 years under their belt in terms of managing the  
40 boundary waters of the two countries, and then  
41 there's a third commission, the Great Lakes  
42 Fishery Commission.

43 Great Lakes Fishery Commission and the  
44 Great Lakes Commission were formed in the same  
45 year, although we're different types of  
46 commissions. The Great Lakes Fishery Commission  
47 is also a treaty commission between the U.S. and  
48 Canada, and the Great Lakes Fishery Commission

1 was established to have a commission between the  
2 two countries to manage the fisheries of the  
3 Great Lakes with two things, one, to manage the  
4 native fish stocks.

5 At the time, the whitefish and the  
6 lake trout populations had been declining over a  
7 matter of decades and there was a real concern  
8 about managing those fish stocks, and then also  
9 sea lamprey control. Okay. So sea lamprey is an  
10 invasive species that came into the system, I  
11 think, way back around 1930s or so, which was the  
12 primary reason why the fish stocks were suffering  
13 so much, and so the Great Lakes Fishery  
14 Commission manages the sea lamprey control  
15 program with the two governments.

16 We also have First Nations and Tribal  
17 Organizations and we have numerous binational and  
18 regional non-governmental organizations that  
19 actually have a role in shaping the Great Lakes  
20 region because we have a lot of business and  
21 industry associations, like Lake Carriers  
22 Association, for instance.

23 We have groups like the Council for  
24 Great Lakes Industries, which kind of represents  
25 a lot of the industrial partners in the region,  
26 and we actually have a group that's very active  
27 that represents the cities' -- the regions'  
28 mayors, Great Lakes and Saint Lawrence Cities  
29 Initiative.

30 So the take-home point here is there's  
31 a lot going on in the Great Lakes with regard to  
32 organizational interaction and governance. Okay.  
33 So just real quickly on the Great Lakes  
34 Commission. We are an interstate compact agency,  
35 so we are a commission of the states.

36 We were formed by the eight Great  
37 Lakes states back in 1955. Compact is a  
38 mechanism that allows states to come together on  
39 issues of common interest, so the Great Lakes  
40 states got together back in 1955, established the  
41 compact, the compact was ratified by the United  
42 States Congress in 1968, so we are recognized in  
43 both state and federal law.

44 You can see our members there, all  
45 eight Great Lakes states. We work with Ontario  
46 and Quebec as associate members. In fact, one of  
47 the reasons why the ratification of the compact  
48 took as long as it did was, there was a lot of

1 discussion and debate over whether or not the  
2 Canadian provinces could be full members of a  
3 compact.

4 And the answer at the time was no, and  
5 so they are not full members of the commission,  
6 but we work with them as associate members. So  
7 we represent the interests of the Great Lakes  
8 states and provinces. These are our core service  
9 and program priorities.

10 Okay. So we are currently in the  
11 early stages of updating our strategic plan. So  
12 this is actually our old, and still current,  
13 strategic plan. And the take-home point here is,  
14 one, the outside circle shows some of the issue  
15 areas that we work with on behalf of our members  
16 and the inside circle shows the areas that, we  
17 call them our core service areas.

18 And the two that I think are the ones  
19 that I just want to spend a moment on are  
20 information integration and reporting, so we do  
21 some research. We're not a science organization,  
22 but we research, collect, organize, and make  
23 assessable data and information about the Great  
24 Lakes that is relevant to our members and to  
25 others in the Great Lakes region.

26 And decision makers rely on data, and  
27 the key there is a lot of this data and  
28 information is coming from agencies like NOAA, to  
29 support planning, resource management, and other  
30 activities.

31 And then the facilitation and  
32 consensus building, and someone asked that  
33 question of me over dinner last night in terms of  
34 building consensus between our members. And as  
35 you can imagine, we have eight states that are  
36 all different, they all have their own views of  
37 things, and one of our main roles is to try to  
38 build consensus on issues surrounding the Great  
39 Lakes with our members.

40 So we convene and lead multi-  
41 stakeholder forums, projects and activities on  
42 issues and ideas of importance to our members, we  
43 provide forums on emerging issues and ideas that  
44 are identified where leading research is  
45 presented, in other words, NOAA plays a big role  
46 in that, conflicting views are shared and debated  
47 and consensus built around potential solution.

48 The other take-home point on this



1 diagram here is the fact that if you look at  
2 NOAA's services, they're very consistent with  
3 this. In other words, NOAA does work in almost  
4 all of these outer rings here, and I think that's  
5 one of the things that I wanted to also hit on.

6 So getting back to this importance of  
7 partnerships. The Great Lakes Commission has  
8 what we call an observer program where we have  
9 organizations that are actually appointed to be  
10 part of our commission, they attend meetings,  
11 they provide comments to our commissioners, they  
12 report on things that they're doing, so you can  
13 see that NOAA is represented by both GLERL, the  
14 Office of Coastal Research Management, and Sea  
15 Grant.

16 And I'm not going to go through the  
17 other lists of that, just to show you, though,  
18 that it's a wide range of interest groups. And I  
19 pulled from the website the GLERL partnership  
20 statement, and I read that because you can do  
21 that yourself, but again, the take-home point  
22 here is just to show you that the partnerships  
23 between the two organizations is very similar.

24 So real quickly, I'm going to go  
25 through this, because I know I'm going to run out  
26 of time here shortly, these are some examples of  
27 regional collaboration in the Great Lakes and  
28 Saint Lawrence River Basin.

29 And they were picked, not for any  
30 particular reason, except to showcase and  
31 highlight ways that NOAA interacts with and  
32 supports a lot of these regional working groups.  
33 I'm not going to talk about the GLRI, because  
34 that's Jackie's job here in a couple of minutes,  
35 just to say, however, that the GLRI has been a  
36 tremendous benefit to the region in terms of  
37 bringing resources into the Great Lakes for  
38 restoration activities, but also as an  
39 opportunity to coordinate those activities, what,  
40 I think it's 11 federal agencies, and it's been a  
41 real success story.

42 And Jackie will talk to you about that  
43 here in a moment. Great Lakes Water Quality  
44 Agreement, Debbie mentioned that, so we have a  
45 formal water quality agreement between the U.S.  
46 and Canada, so it was first entered into in 1972  
47 and updated in '78, '87, and most recently in  
48 2012.

1 I'd love to spend 30 minutes talking  
2 about the water quality agreement, but in the  
3 interest of time, all I want to say here is, the  
4 newest agreement formed annex working groups that  
5 are very important, and the take-home point there  
6 is that NOAA is supporting and very involved with  
7 many of those annex working groups, specifically  
8 the Annex 4, nutrients group, and I think Annex  
9 10 is the science group, and I know NOAA's  
10 playing a big role in supporting that effort, and  
11 again, Jackie may hit on some of those as well.

12 Great Lakes Observing System. I think  
13 probably most of you know about the Great Lakes  
14 Observing System, but it's one of 11 regional  
15 associations of the Integrated Ocean Observing  
16 System, and which is a partnership between  
17 federal, regional, academic, and private sector  
18 parties to work and provide data and tools and  
19 forecast to improve safety, enhance the economy,  
20 and protect the environment.

21 And NOAA data services and product  
22 support the GLOS data portal in some very  
23 significant ways in terms of point observations,  
24 like wind, waves, water temperature, water  
25 levels, air temperature, those types of things.  
26 Satellite observations, so including weather,  
27 information on harmful algal blooms, dissolved  
28 organic carbon, suspended minerals, water surface  
29 temperature, those types of things, and then  
30 model forecasting, so currents, ice thickness,  
31 water levels, waves, et cetera.

32 Great Lakes Commission was involved  
33 with GLOS in its early years. We helped kind of  
34 form GLOS and stand it up as its own 501(c)(3).  
35 We're a little less involved with it now. We are  
36 still a member of GLOS, but I just wanted to  
37 point that out as, this is one of the examples  
38 here.

39 This one here is really this, this is  
40 kind of a summary slide and the take-home message  
41 is this, NOAA's research services and products  
42 are really important to the Great Lakes. And I  
43 lifted that statement off of the GLERL website.  
44 And on the right, I just kind of summarize or  
45 highlighted, kind of, main areas where those  
46 services and supports are really influencing, in  
47 a good way, what's going on on the Great Lakes.

48 So the observing system, ecosystem

1 dynamics, and ecological monitoring, and the  
2 water level monitoring network are all really  
3 important to the work that we do.

4 So I'm going to kind of whip through  
5 these real quickly because the shepherd hook will  
6 have to come out here in a minute. These are  
7 just some additional examples of collaboration.  
8 Harmful Algal Blooms Collaborative, and it's  
9 actually a collaboratory, which, I don't even  
10 know is a word, and that's kind of the, maybe,  
11 one of the most overused words in the Great Lakes  
12 now, is collaborative, collaboratory.

13 But in any event, it's a partnership  
14 that involves NOAA, it's co-led by the Great  
15 Lakes Commission and USGS, and it's bringing  
16 science-based information into a very important  
17 issue to our region, so harmful algal blooms is a  
18 huge issue in western Lake Erie, it's a huge  
19 issue in other regions of the basin, including  
20 Saginaw Bay and Green Bay.

21 And this Harmful Algal Blooms  
22 Collaborative is really an opportunity to bring  
23 that scientific expertise into an important  
24 issue. One of the things I'm not sure you're  
25 aware of, and I wish Mike Piskur was still here,  
26 because his organization, Conference of Great  
27 Lakes and Saint Lawrence Governors and Premiers  
28 actually manages this, but we have binding water  
29 management agreements in the Great Lakes.

30 So this is agreements that have been  
31 entered into by the states and provinces to  
32 manage the water resources with regard to new and  
33 increased water withdrawals, diversions, and  
34 consumptive uses. So in other words, it's a  
35 commitment on the states and provinces to develop  
36 better water management programs for supplying  
37 the region's needs for water.

38 And that's public water supply,  
39 industrial supply, power generation, irrigation,  
40 all of those things. These agreements were  
41 worked on for several years, they were finalized  
42 in 2005, and became official in 2008, and there's  
43 a second compact here, so there's a water  
44 resources compact that is also recognizable state  
45 and federal law.

46 And it basically, these agreements  
47 detail how the states and provinces are going to  
48 manage their water. And NOAA's involvement in

1 this, again, is significant, one, in terms of  
2 working with the states and provinces on the  
3 collaborative science strategy, so in other  
4 words, helping the states and provinces better  
5 understand water resources and their need to  
6 manage them more efficiently.

7 And then the assessment of cumulative  
8 impacts. The agreement in the compact call for  
9 periodic assessments of cumulative impacts. And  
10 the last full cumulative impact assessment was,  
11 covered the years 2006 through 2010. I think it  
12 was issued in 2012. The next cumulative impact  
13 assessment is going to start next year after the  
14 release of the 2015 annual water use data, so  
15 it's going to cover the period from 2011 to 2015.

16 And NOAA's information on the water  
17 balance is critical and key to the success of  
18 doing those cumulative impacts assessment.

19 We've talked about dredging and I'm  
20 going to have to go through this real quickly,  
21 but our involvement with dredging, is a  
22 collaborative team effort with regard to the  
23 Great Lakes Dredging Team. It's been around now  
24 for 20 years. It's a partnership between Federal  
25 Government, the states, and private partners. We  
26 have ports and industry partners that work with  
27 us, and the team priorities are sustainable  
28 dredge material management, beneficial use of  
29 dredge material, looking at the science  
30 surrounding open water placement, environmental  
31 windows, which is really important in the Great  
32 Lakes in terms of dredge material management  
33 disposal and when you have active fish spawning.

34 And we're starting, as a priority, to  
35 work on using science to better inform policy and  
36 management with regard to dredge material  
37 management decisions. Take-home point here is  
38 this, NOAA's data and services are important to  
39 this team, but NOAA hasn't been particularly  
40 active with it.

41 And so one of my goals is to try to  
42 get NOAA more engaged as a full member of the  
43 dredging team. All right. So these last few  
44 things here before I wrap up, because I did want  
45 to point out a few areas that are important to  
46 us.

47 We heard in the discussion this  
48 morning, the Office of Preparedness and Response,

1 I don't know if I have the right word there, but  
2 we interact with NOAA, that office, on various  
3 things, and one of the things that really  
4 important for the Great Lakes is the update of  
5 the Environmental Sensitivity Index Maps.

6 They were last updated in the early  
7 '90s. Oftentimes, or at least it appears, that  
8 sometimes these updates are triggered by certain  
9 events, like, that last update followed the  
10 Exxon-Valdez incident in Prince William Sound,  
11 Alaska.

12 We've had two big oil spills in the  
13 Great Lakes over the last five years, the  
14 Enbridge Pipeline spill in Marshall, Michigan in  
15 2010, the Lac-Megantic train derailment and  
16 explosion in Quebec, and the Great Lakes states  
17 and provinces are very interested in all of the  
18 increased movement of crude oil to and through  
19 the Great Lakes region, and so we would love to  
20 see these ESIs updated.

21 The other thing is, we wanted to just  
22 put a plug in for in-basin presence of navigation  
23 team staff in the Great Lakes. You heard a  
24 little bit about this yesterday. There was a nav  
25 team member that was located in the Lake Michigan  
26 field office who retired three years ago. The  
27 navigation program is managed out of Silver  
28 Spring, and from everything that I've heard, that  
29 management is fine and has been going along  
30 great.

31 The encouragement would be this,  
32 however, and I can share this just from personal  
33 experience, oftentimes having an in-basin  
34 presence can be really helpful in terms of  
35 establishing relationships, attending meetings,  
36 getting information out on services and product,  
37 so we would encourage NOAA to consider  
38 reestablishing an in-basin presence for the  
39 navigation team.

40 And then we've heard about the real-  
41 time flow meters. I think it was specifically  
42 for the Maumee, but there are two other flow  
43 meters that are really important, one in the  
44 Cuyahoga River and one in the Saint Clair River.  
45 Funding for those has run out, and I know NOAA is  
46 kind of working to see if there's some  
47 partnership opportunities with local partners,  
48 but the encouragement there is, this is really

1 important to the Great Lakes so we want to see  
2 those current meters -- make sure that funding  
3 for those current meters continues.

4 Just real quickly, a few final  
5 thoughts, one is, the Great Lakes Restoration  
6 Initiative, I think has been a tremendous success  
7 on a lot of different levels, one of which is, I  
8 think it has brought much needed added attention  
9 to the importance of the Great Lakes, but the  
10 encouragement here is, keep up the good work.

11 In other words, sometimes,  
12 historically, the Great Lakes have felt like the  
13 orphan stepchild, and we want to make sure that  
14 the Federal Government and federal agencies, like  
15 NOAA, give the Great Lakes the same attention as  
16 they give the ocean coast. Make sure GLRI  
17 funding does not supplant base funding for  
18 supporting programs.

19 Now, the GLRI funding, when it was  
20 established, it was very clear that those were  
21 funds designed to come in and enhance and  
22 accelerate restoration activities in the Great  
23 Lakes, but we periodically run into problems with  
24 those funds being used to supplant base funding  
25 for other programs, and we just want to say, we  
26 need to make sure that base funding for really  
27 important programs for the Great Lakes are not  
28 supplanted and continue at a level to make sure  
29 all that good work is occurring.

30 Make sure the programs are coordinated  
31 across different branches of NOAA. There's not a  
32 specific recommendation here except as someone  
33 who doesn't work for NOAA, you have a lot of  
34 different offices, programs, and it's hard to  
35 keep all of it clear, and to understand who's  
36 doing what.

37 And the way that I normally do it is,  
38 I meet people and I develop a contact in an  
39 office that I can use to help me navigate through  
40 that maze of different programs and offices, but  
41 I just want to say as an encouragement, make sure  
42 all your programs are connected.

43 And then specifically, and this is  
44 just an observation on my part, I think NOAA  
45 really needs to consider to have a stronger near  
46 shore program in the Great Lakes. I think the  
47 GLRI has accelerated that, so I think you want to  
48 build upon the successes of the GLRI and

1 coordinate near-shore activities with end costs.

2 But my observation is this, that the  
3 near-shore work seems to be project-based, which  
4 is fine, but I think it would be really great if  
5 the near shore program was connected and  
6 strategic. And I'm a little bit over, but I'll  
7 stop, and, Debbie, if there is time and people  
8 have one or two questions, I'd be happy to answer  
9 them.

10 MS. LEE: Yes, we have a few minutes  
11 for questions. So, thank you, Tom. Those were  
12 all great points and it's great to get that  
13 feedback from a partner who can provide an  
14 objective view on the services that we provide.  
15 Yes.

16 MR. ARMSTRONG: A quick question. I  
17 just wonder if you could elaborate a little more  
18 on what you mean by a near shore program, what  
19 kind of things, so we could think about those.

20 MR. CRANE: Jackie said she's going to  
21 get into that, so I will allow her to cover that  
22 on my behalf, just to save time.

23 MR. ASLASKEN: One comment on the ESI  
24 mapping. Mike Aslasken with NGS. So we, through  
25 ARRA funding proposal, we updated all, at least  
26 the border shorelines of the Great Lakes, that  
27 are now available, and that baseline, that lake  
28 level shoreline, is the basis for the ESI maps.

29 So typically, the Office of Response  
30 and Restoration, who's the folks that actually  
31 are responsible for the ESI mapping, will take  
32 the shoreline that we provide and then classify  
33 it to the sensitivity index, which is a much  
34 simpler classification scheme.

35 So the short message is that the  
36 shoreline is there, it just needs to be updated  
37 with that classification type. In addition, I  
38 don't know if you were here yesterday, but we are  
39 flying oblique imagery of the Great Lakes at this  
40 point, which is another basis of them doing the  
41 classification, which will be publicly available  
42 once we're complete.

43 Just to be aware that that data is  
44 coming from NGS.

45 MR. CRANE: One of the things I failed  
46 to mention, because I was kind of whipping  
47 through these things really quickly, is  
48 coordination with Canada. So Canada has been

1 doing some risk assessments and then has been  
2 doing a, kind of an ESI light, if you will. And  
3 we think it's important that we coordinate those  
4 activities so that the approach is consistent and  
5 uniform as much as it's able to be between the  
6 two countries, because there's so much crude oil  
7 moving through the basin, and some of that's  
8 going through Canada, some's coming through the  
9 U.S., and to have that coverage on both sides  
10 would be really great.

11 MR. ASLASKEN: I'll take that back to  
12 those folks. Mr. Holst is a little bit of an  
13 expert there too.

14 RADM SMITH: Shep Smith. Could you  
15 elaborate a little more on the value of the flow,  
16 you called them, sort of, flow meters in the  
17 rivers, which made me think that you were using  
18 them hydrodynamically and not for navigation,  
19 which, people may ask.

20 MR. CRANE: Well, they are obviously  
21 supportive for navigation. We periodically  
22 attach our name to efforts, the commission-named  
23 efforts, to make sure that the stream gauge  
24 network program nationwide is being supported,  
25 that we don't lose stream gauge networks. We  
26 have lost a lot of stream and sediment gauges in  
27 the Great Lakes over the last 20 or 30 years.

28 So it was really a -- I actually  
29 lifted that out of your report, your activities  
30 report, and I just brought it forward as  
31 something to say, these types of things are  
32 really important to support a whole variety of  
33 work, not just navigation, but I think it also  
34 can support some of the near-shore work that  
35 Jackie will be talking about here in a moment.

36 MS. LEE: And if I might expand upon  
37 it, and maybe John would want to mention it, but  
38 for example, the one in the Saint Clair River, it  
39 gives us the only measurement that we have of  
40 real-time flows in that connecting channel. The  
41 only other way we can do it is either model the  
42 flows or calculate them based on longstanding  
43 relationships between the water level gauges, so  
44 it's very unique that it be able to provide us --  
45 it also provides year-round information, which is  
46 very rare in the Great Lakes.

47 Once the ice cover is on, we usually  
48 lose a lot of our observational capacity, yet,



1 ice has a profound effect on the amount of water  
2 that flows through that channel. In the Maumee  
3 River, it is looked at being helpful to look at  
4 the nutrient loading. It's not measuring  
5 nutrients directly, it's measuring the flows, and  
6 those impulse of flows carry the majority of the  
7 nutrients during high flow periods, so it's  
8 giving us a better handle of that flow volume  
9 coming into the lake.

10 And for the Cuyahoga, similar reasons  
11 as well, so looking at nutrient loading, amongst  
12 other things.

13 CHAIR HANSON: Deborah, if I could,  
14 appreciate the endorsement of NOAA's services and  
15 the products we provide, and we feel the same way  
16 and would appreciate also, as you guys have a  
17 chance to articulate your message outside these  
18 walls, but also in your other collaborations,  
19 that you continue to endorse those products  
20 because it doesn't always get the visibility that  
21 it should have. People just think these things  
22 happen.

23 I noticed the Coastal States  
24 Organization on your list of collaborative and  
25 they're meeting in Milwaukee in a couple weeks,  
26 and that's a group that is trying to tackle some  
27 of these coastal issues, on a national basis, not  
28 just regional, so it's good for them to hear that  
29 type of discussion as well.

30 So I just had a -- there was a  
31 comment, but more of a question next is, in a  
32 collaborative, where do you see the academics,  
33 the universities, on the Great Lakes? Who's most  
34 interested in coastal issues?

35 MR. CRANE: We work with so many  
36 universities. And Debbie probably even works  
37 with more universities than I do. I mean,  
38 certainly, the land-grant universities from all  
39 of the states are very heavily involved in this  
40 work. I mean, so we've got the Water Center over  
41 at the University of Michigan, we've got the  
42 Institute for Water Research at Michigan State,  
43 we've got a lot of things going on at the Ohio  
44 State University, University of Wisconsin,  
45 Purdue, and all of those universities are plugged  
46 into these efforts in meaningful ways.

47 I think the non-point harmful algal  
48 blooms issue is a huge issue for us regionally,

1 and a lot of the universities are really playing  
2 a key role in terms of doing research and really  
3 assisting and supporting in those efforts.

4 CHAIR HANSON: Maybe just a final  
5 comment, because we also, I'm with Great Lakes  
6 Dredge and Dock Company, and we participate in  
7 the Great Lakes dredging team as well, and  
8 appreciate your efforts there to look at  
9 beneficial use of dredge materials, and using  
10 science to make decisions, not lawyers.

11 MR. CRANE: Right.

12 CHAIR HANSON: Thank you.

13 MEMBER BRIGHAM: Just a quick comment.  
14 Lawson Brigham. I think there's an underutilized  
15 resource in the wintertime for observations, and  
16 it's the Coast Guard icebreaker fleet. I was  
17 Captain of one of the smaller icebreakers, and  
18 even in the late '70s and early '80s, we took  
19 measurements and it did some thickness  
20 measurements.

21 So I think in the preparation for this  
22 meeting in one of our discussions, the issue came  
23 up about enhancing wintertime observations using  
24 the, maybe the commercial world, but also the  
25 Coast Guard icebreaker fleet.

26 MS. LEE: Not seeing any more  
27 questions, we'll move on to Jackie's  
28 presentation. Jackie plays a very important role  
29 in the Great Lakes National Program Office, as  
30 she helps administer one of the focus areas of  
31 the Great Lakes Restoration Initiative. And so,  
32 Jackie, I'll go ahead and let you tell us more  
33 about that.

34 MR. ALLIS: Sure. So I just want to  
35 thank all of you for inviting us here. Thanks to  
36 Debbie for allowing EPA to come in and kind of  
37 give you our thoughts on the use of NOAA's  
38 hydrographic services and how they play, not only  
39 into EPA data collection and programs, but also,  
40 how they're used by the Great Lakes Restoration  
41 Initiative.

42 So I've broken my presentation up into  
43 three pieces. The first, I thought it would be  
44 great to give you guys an overview of the Great  
45 Lakes Restoration Initiative, not everybody's  
46 familiar with it, so I'll give a little bit of  
47 background on that.

48 And then I'll delve into a little bit

1 of EPA's use of NOAA's hydrographic services and  
2 future data needs. And then I'll closeout more  
3 with this other NOAA data services that support  
4 GLRI implementation, and that'll get more into  
5 the HAB forecasting work and things maybe not  
6 necessarily directly associated with the  
7 hydrographic services.

8 So background on GLRI, Great Lakes  
9 Restoration Initiative is by no doubt, the  
10 largest investment in the Great Lakes in at least  
11 two decades. As of fiscal year 16, approximately  
12 \$2 billion has been allocated to targeting and  
13 addressing the most urgent issues and problems  
14 facing the Great Lakes.

15 In FY15, a task force of 11 federal  
16 agencies, and you can see their logos here, they  
17 released Action Plan II, which, like Action Plan  
18 I, was designed to be results and action-  
19 oriented. It targets the most significant issues  
20 in the Great Lakes and it strives to demonstrate  
21 measurable results.

22 So with that Action Plan II, there  
23 were very specific measures of progress that were  
24 developed to track all the actions that are  
25 implemented under Action Plan II. GLRI has also  
26 been a catalyst for unprecedented federal agency  
27 coordination through both the interagency task  
28 force and the regional working group, which are  
29 led by EPA.

30 Under Action Plan I, resources helped  
31 to fund the cleanup actions required to delist  
32 five Great Lakes areas of concern and to formally  
33 delist the Presque Isle Bay Area of Concern.

34 Resources were also used to double the  
35 acreage of conservation practices in watersheds  
36 where phosphorous runoff is contributing to these  
37 harmful algal blooms. And GLRI has provided  
38 assistance for over 2000 projects to support  
39 Great Lakes restoration.

40 During fiscal years 15 through 19,  
41 these federal agencies are continuing to  
42 accelerate --- to use GLRI resources to  
43 strategically target the biggest threats to the  
44 Great Lakes and to accelerate the progress  
45 towards addressing these threats. And how is  
46 that done? Well, it's by combining the GLRI  
47 resources with agency-based budgets, and by using  
48 these resources to implement protection and

1 restoration.

2 As Tom pointed out, I think it's  
3 important to note, I know that yesterday there  
4 were some funding discussions, it's really  
5 important to note that GLRI funds are  
6 specifically meant to supplement agency-based  
7 budgets and not to supplant them, so we don't  
8 want to lose programs thinking that the funding  
9 may come in from another area.

10 So as you can see here, GLRI was  
11 funded at the \$300 million level in both FY15 and  
12 16, and the president's FY17 budget has it set  
13 for \$250 million. Discussions, since we're about  
14 halfway through Action Plan II, are now underway  
15 for the development and drafting of Action Plan  
16 III.

17 So as you can see here, there are five  
18 focus areas that are addressed in Action Plan II.  
19 As I mentioned, it summarizes the actions that  
20 federal agencies plan to implement during the  
21 FY15 through 19 time period. Many of these  
22 issues that will be taken up will take decades to  
23 resolve. It's not instantaneous results.

24 The actions will build on restoration  
25 and protection work that was carried out in  
26 Action Plan I, with a major focus on cleaning up  
27 Great Lakes areas of concern, preventing and  
28 controlling invasive species, reducing nutrient  
29 runoff that contributes to harmful and nuisance  
30 algal blooms, restoring habitat to protect native  
31 species, and in Action Plan II, we've also  
32 incorporated a science-based adaptive management  
33 framework.

34 That's being used to prioritize  
35 problems and then select projects to address  
36 these problems. It also is meant to assess the  
37 effectiveness of some of the GLRI projects. So  
38 not everything that we're implementing may have  
39 the results that we were hoping to achieve, so  
40 this adaptive management is helping us to  
41 refocus. If we notice something isn't working  
42 well, we're refocusing and readdressing.

43 Since its creation GLRI has helped to  
44 supplement some of NOAA's hydrographic services  
45 work, which has led to getting these projects and  
46 products operationalized much quicker than had  
47 the funding not been available.

48 So to address the question of what

1 NOAA products, data, and services are valued by  
2 EPA and how are they beneficial, you'll hear me  
3 talk about bathymetry a lot. EPA and other  
4 federal agencies use NOAA's bathymetry data for  
5 countless efforts. We use the data for not only  
6 for navigational information and for charting  
7 courses, but it's used for determining specific  
8 sampling depths and determining sample locations.

9 So in the Great Lakes, different  
10 depths have different environmental components.  
11 I'll use the diporeia Ring of Fire in Lake  
12 Superior for an example for you. So diporeia, if  
13 you're not aware, is an anthropod, it's a major  
14 food source in the Great Lakes for lake whitefish  
15 and many prey species.

16 We know from several research studies  
17 that there are elevated diporeia densities within  
18 the 30 to 125-meter range within Lake Superior.  
19 So that habitat, which is named the Ring of Fire,  
20 it occurs as a band around the lake in that depth  
21 frame.

22 Now, that depth frame covers only a  
23 quarter of the bottom of Lake Superior, but it,  
24 in fact, encompasses 2/3 of the population of  
25 diporeia within Lake Superior, so small area,  
26 huge fish spawning habitat, fish, you know,  
27 anything that has to deal with the food web are  
28 migrating to that area.

29 So knowing this type of information  
30 and having the bathymetry data available helps us  
31 to monitor within specific environments. So the  
32 National Coastal Condition Assessment, which is a  
33 national coastal monitoring program, recently  
34 conducted a survey in the Great Lakes.

35 They used NOAA bathymetry data to  
36 follow the 30-meter contour and to select the  
37 near-shore frame that they wanted to focus on, so  
38 their station requirements were that it couldn't  
39 be more than 30 meters deep and 5 kilometers from  
40 the shoreline, so using that data, they were able  
41 to draw stations randomly.

42 You'll see here, that blue line  
43 represents the near-shore area of Lake Erie, but  
44 that was done for all five lakes to select the  
45 225 base sampling stations that were assessed.

46 So moving on to address the question  
47 of what other products and data would we like  
48 NOAA to approve and/or offer. This is just a

1 list of needs that have been identified by EPA  
2 and some of the other GLRI collaborators. I'll  
3 go into each of these pieces in the following  
4 slides, but in general, the list included up-to-  
5 date bathymetry data, or at the very least, for  
6 Lake Superior, which hasn't been updated for  
7 several decades, and bottom mapping for both the  
8 near-shore and open waters.

9 And getting to your question, that  
10 bottom mapping is going to help with habitat  
11 classification, and I'll get more into that  
12 later.

13 So getting into the bathymetry data  
14 needs, more up-to-date information is needed, and  
15 as is always the case when you're collecting new  
16 data, if a study is done, getting those results  
17 out quickly would be most beneficial, though we  
18 realize that's not always the case.

19 The bathymetry data that comes out  
20 should be available to the public or at the very  
21 least, to other agencies, and it should be  
22 available in a variety of formats, whether it's  
23 ArcMap layers, Google Earth layers, something  
24 that can be pulled into mapping on mobile  
25 devices, just various formats for download.

26 And as Debbie and John mentioned,  
27 there should also be -- there's also a need to  
28 account for lake level fluctuations. The Great  
29 Lakes are impacted by lake level changes, whether  
30 they're seasonal changes, or crustal movement,  
31 you know, the data would be beneficial, not only  
32 for the commercial and recreational boaters, but  
33 for the environmental research community as well.

34 It was mentioned yesterday that GLRI  
35 resources were allocated to assist in updating  
36 the Great Lakes datums, and we're looking forward  
37 to seeing that data come out in the future and  
38 help to support it in the future.

39 Having up-to-date bathymetric  
40 information would also feed into helping with the  
41 Annex 2 of the Great Lakes Water Quality  
42 Agreement. So this annex specifically focuses on  
43 the near shore, and in particular, the Nearshore  
44 Framework, so updated bathymetry would aide in  
45 sample design, and ultimately, lead into habitat  
46 classification for this framework.

47 So while bathymetry is important, you  
48 know, there's a widely acknowledged need for

1 information about the lake bottom. This data  
2 would provide information on fish spawning,  
3 feeding and habitat selection, as well as  
4 information on invasive species and where they  
5 are, invasive species such as Dreissenid mussels  
6 and other mussel types.

7 The Great Lakes Water Quality  
8 Agreement and the Great Lakes Fishery Convention  
9 of 1955 are two international agreements that  
10 highlight the needs for bottom mapping. And then  
11 we get into Annex 7 of the Water Quality  
12 Agreement, which is the Habitat and Species  
13 Annex.

14 They have a goal to -- or they have a  
15 need to jointly support an integrated remote  
16 sensing delivery system, and this system would  
17 help to address the habitat assessment over the  
18 entire basin. You know, it's been recognized  
19 that the current approach that all of us have  
20 been using of, you know, certain projects funded  
21 here and there, sporadic projects, or inadequate  
22 projects, they've led to an incomplete  
23 understanding of the drivers that are degrading  
24 the lake bottom and the habitat systems within  
25 it.

26 So things like sonar for deepwater  
27 habitats, and getting into Admiral Smith's thing  
28 of seamless topography and LIDAR for coastal  
29 areas and wetland environments would be most  
30 beneficial. And I guess I should say that I was  
31 surprised during your presentation yesterday,  
32 there was a map that showed all of the coastal  
33 work that had been done, and it was like 1200  
34 miles, nautical miles, or something, but there  
35 were no dots within the Great Lakes Basin, so I  
36 think that's important to note.

37 So what are we doing to address these?  
38 To address the needs, NOAA and USGS have  
39 developed a Great Lakes Bottom Mapping Workgroup.  
40 And their aim is to harmonize the collection, and  
41 processing, and sharing of all of the data. The  
42 workgroup currently has 70 registered  
43 participants from both sides of the border, and  
44 they're currently undertaking a data and  
45 technology inventory, and basically, developing a  
46 needs assessment, a prioritized list of needs,  
47 and they hope to have that needs list available  
48 in the spring of 2017 as a white paper.

1                   So this bottom mapping workgroup is  
2 also identifying and addressing some of the  
3 challenges that scientists faced in generating  
4 maps of bottom substrate. For example, if you  
5 can't collect it via the air, it's probably  
6 because it's too turbid, but if it's too turbid,  
7 then the chances are it's probably too shallow to  
8 get a ship in there.

9                   So other options would be these  
10 smaller boats that can use single-beam systems to  
11 sweep the near shore, or maybe utilizing that ice  
12 cover that you mentioned. If the ice cover is  
13 thick enough, maybe we can use some type of  
14 ground penetrating LIDAR.

15                  And then there's a different method,  
16 this TDEM method, which is time domain  
17 electromagnetic method, and this can be used for  
18 bathymetry and substrate classification. So it's  
19 being used for mapping coastline and near-shore  
20 waters, and it's especially useful in mapping  
21 those areas where they're extremely turbid  
22 environments, where some of those conventional  
23 methods may not provide very meaningful data.

24                  And since it's an airborne method,  
25 it's a little bit quicker than if you were to use  
26 a ship to get in and out.

27                  So how will we get all of this done?  
28 Obviously, if we decide to go this route, there's  
29 a diversity of vessels that are needed to  
30 generate the necessary data. The NOAA GLERL  
31 fleet can be much more adept at doing Great Lakes  
32 work, especially if they're going to be the ones  
33 that are looked to to generate the data.

34                  And if, in fact, they choose to go  
35 that route, an investment in the regional fleet  
36 may be needed. And also, we should be looking at  
37 the roles, the complementary roles, of AUVs when  
38 putting these plans together. As of right now,  
39 they're really only used to groundtruth remote  
40 sensing platforms.

41                  And I'll finish up by just talking  
42 about the other part of my presentation, and  
43 other being the other types of data services that  
44 support GLRI implementation. It was mentioned  
45 yesterday that GLRI funds help to supplement some  
46 of the HAB forecasting work.

47                  This forecasting will continue to be  
48 crucial because non-point source pollution and



1 runoff is not going away anytime soon, so keeping  
2 that system up and running is crucial. NOAA's  
3 also worked with the National Weather Service to  
4 develop a runoff risk advisory tool.

5 So this tool, it works to track storm  
6 systems and farmers can then go into it and it  
7 will advise them on when they should and  
8 shouldn't apply fertilizers to their lands based  
9 on the runoff risks.

10 And NOAA's playing a central role in  
11 Annex 4, which is the nutrients annex of the  
12 Water Quality Agreement, so this annex is looking  
13 particularly at harmful algal blooms. They're  
14 providing estimates on HAB biomass as well as  
15 toxin levels and triggers for toxin production  
16 within those cyanobacteria blooms.

17 So these triggers will be critical  
18 when we start to develop the phosphorous targets  
19 for the Great Lakes moving forward, and I think  
20 Debbie will touch a little bit more on that in  
21 her afternoon speech.

22 So underlying all of these are the  
23 circulation models. These models give us  
24 information on where the HABs are going to move  
25 once they're formed and where they're ultimately  
26 going to end up. And, you know, then we can  
27 plan, you know, town of so-and-so, don't draw in  
28 your water on these days, using that forecasting  
29 system and the circulation models, because the  
30 HAB is going to be present near your water intake  
31 and it can contaminate your drinking water.

32 So all of these things provide  
33 additional planning efforts and prevention  
34 efforts.

35 And with that, I will close. I have  
36 some people to thank. Brandon is in the back,  
37 back there, he really helped out with some of the  
38 information for the bottom mapping. I think he's  
39 one of the co-leads on the workgroup. And I can  
40 leave my contact information up. And with that,  
41 I'll take questions.

42 MS. LEE: All right. Thank you,  
43 Jackie. So I think you can see a lot of the  
44 complexity in the Great Lakes, both from a  
45 physical and an ecosystem perspective. So,  
46 Joyce, did you have a question?

47 VICE CHAIR MILLER: Yes, I wanted to  
48 know, is there a, and this is either to NOAA or

1 to you, is the Navigation Manager or an other OCS  
2 person a part of this bottom mapping group?

3 MS. ADAMS: I will turn to Brandon.  
4 Sorry. Putting you on the spot.

5 MR. KRUMWIEDE: So just for a little  
6 clarification on the Great Lakes Bottom Mapping  
7 Workgroup, it actually spawned out of work within  
8 Annex 7, habitat and species. Pete Esselman from  
9 USGS and myself, we keep hearing the need, we  
10 need more data on the bottom, we need more data.

11 And what's interesting is, with my  
12 line of work, you know, I get to talk to Tom and  
13 hear what the needs are, or I get to hear from  
14 other parts of NOAA, this workgroup is actually  
15 completely ad hoc, organic in nature, completely  
16 volunteer-based in that regard, but what's  
17 interesting is, so as Jackie pointed to, we're  
18 looking at the technology and standards.

19 This is binational in nature, so the  
20 Canadians, of course, have their standards that  
21 they look at with different mapping aspects.  
22 We're also looking at the data holdings.  
23 Canadians are obviously very interested in what  
24 we have as far as JALBTCX, and they're looking to  
25 do that on their side of the border, getting  
26 calls from that.

27 So really, this is kind of open to  
28 anybody and everybody that has an interest, and  
29 so actually, we're getting ready to send out a  
30 list to see who's interested in these different  
31 subgroups. So technology and standards, data  
32 holdings, and then the data user needs as well,  
33 so hopefully that answered the question there.

34 MS. LEE: All right. Thank you. I  
35 see another question over here.

36 MEMBER SAADE: So I was going to  
37 mention that there has been hydrographic LIDAR  
38 data collected on the Canadian side for the CHC.  
39 I'm not sure if, from listening to all of you  
40 talk, it doesn't sound like you're aware of that  
41 or you've been shared with that data. I was  
42 curious how that sharing process goes and then I  
43 was thinking, with Ashley Chappell's big map of,  
44 certainly, of North America and Alaska included,  
45 it might be a nice way to show where the data has  
46 been collected as a cooperative nature between  
47 the two countries.

48 MS. LEE: Yes, I think that's a very

1 good point. That's one of the things we do  
2 struggle with in the Great Lakes is, how do we  
3 integrate all of the data that is available; how  
4 do we make everyone aware of that data? It seems  
5 to be one of the challenges that perennially  
6 comes up because we have so many agencies and so  
7 many different jurisdictions involved in the data  
8 collection. It's a big challenge for us.  
9 Brandon?

10 MR. KRUMWIEDE: I just wanted to thank  
11 you very much, Ashley. With this workgroup, we  
12 are actually coordinating with Ashley quite a  
13 bit. I think I've been on more emails and phone  
14 calls with Ashley in the last year based on this  
15 interest in the workgroup. So actually, what  
16 we're using is the needs that we hear, that's  
17 going to get fed into SeaSketch and the IOCM,  
18 IWG-OCM as well.

19 We've got interests from USGS with the  
20 CoNED development to the point where we're  
21 looking at potentially having a summit here in  
22 the Great Lakes with John Brock and Jeffrey  
23 Danielson with that effort as well.

24 MS. LEE: Well, if there aren't any  
25 more -- are there more questions specific for  
26 Jackie? Oh, okay, I see another over here.

27 MEMBER BRIGHAM: Not necessarily for  
28 Jackie, but just for the, maybe, our letter, just  
29 a recommendation that, from what I heard, and  
30 everyone, that more observations for modeling for  
31 climate change, and when I hear 6-foot is the  
32 range for the lakes, I mean, that directly  
33 impacts on navigation services and navigation  
34 itself, so maybe we can work something into our  
35 letter about observations.

36 I'm sure a point about that would get  
37 great attention by our administrator.

38 MS. LEE: Okay. Well, we still have  
39 15 minutes remaining in this session to have a  
40 general discussion, so if anybody would like to  
41 initiate that discussion, I guess, to start that  
42 off, I would say, I think it's really important  
43 to recognize that NOAA's data is foundational to  
44 supporting two, at least two, major agreements  
45 between Canada and the United States, that being  
46 the 1909 Boundary Waters Treaty, and then also  
47 the Great Lakes Water Quality Agreement.

48 Those two ensure that we have

1 peaceable relations with Canada, that we share  
2 the resources equitably between the two  
3 countries, and so I really can't understate, I  
4 think, the value of the data that NOAA provides  
5 to ensuring that we care for this binational  
6 resource. And so if we can help focus, if this  
7 committee can help focus on that, we would be  
8 very appreciative of it in this region.

9 RADM SMITH: I just wanted to follow-  
10 up on the bathymetry. You made a great case for  
11 a bunch of different applications for bathymetry  
12 and then threw out a bunch of different  
13 technologies that could potentially be useful for  
14 them. And one of the key things to match the  
15 technology against the requirement is  
16 understanding what the resolution requirement is  
17 for the bathymetry and the accuracy.

18 And so I don't know whether you have  
19 -- before we get into the weeds on the different  
20 technologies, can you give us any better sort of  
21 flavor for what types of resolutions?

22 MS. ADAMS: So I think this is getting  
23 into habitat and substrate mapping, so I would  
24 say that the finer resolution, the better. I'm  
25 not the bathymetry expert. I just know that the  
26 people that I had spoken to said it was like  
27 fine-scale high-resolution bathymetry, is the  
28 terms that they used.

29 Now, realizing that, when you get into  
30 those shallow environments, you may not  
31 necessarily get extremely high resolution,  
32 especially if you're using something like a  
33 single-beam versus multi-beam, but we don't have  
34 anything to work off of right now, so I think,  
35 going forward, any additional information or data  
36 that can be provided would be useful.

37 MEMBER PERKINS: Scott Perkins. So  
38 Jackie, I think the slide showed FY17 has \$250  
39 million for the GLRI. So is there a spending  
40 plan? Is there a public-facing spending plan of  
41 how those funds get allocated out in what  
42 services?

43 MS. ADAMS: Yes. So our budgeting  
44 process is a two-year process. So we've already  
45 budgeted, or planned, for fiscal year 19. So  
46 what happens is, we go through this budgeting  
47 process with the regional working group members,  
48 so all those agencies meet at a table, talk about

1 the different measures for the different focus  
2 areas, so there's a set budget for each focus  
3 area already, so it's not like it's a flexible --

4 MEMBER PERKINS: Yes, I'm just --  
5 could any of that funding be used to fund NOAA  
6 performing those hydrographic surveys of the  
7 requested resolution?

8 MS. ADAMS: Not to fund -- so we have  
9 to remember that it's meant to supplement and not  
10 supplant, so it would have to be combined with  
11 NOAA funding, not replacing the NOAA-based  
12 funding that would normally go into funding a  
13 NOAA hydrographic service program.

14 MS. LEE: And one of the key things  
15 is, the money has to be tied to a restoration  
16 initiative. So we did recently have some funding  
17 that we were able to get to support the IGLD  
18 update, but the money that we got for the summer  
19 gauges had to be co-located with areas of  
20 concern, because Lee made the case that it was  
21 important to have accurate shoreline -- sorry,  
22 accurate shoreline information to be able to plan  
23 a sustainable restoration for an area of concern.

24 MEMBER PERKINS: Yes, I'm just  
25 looking, it sounds like there's an opportunity  
26 for coordination and cooperation with the work  
27 that Mr. Aslasken's group is doing on the  
28 shoreline in Michigan, with the oblique imagery,  
29 with the aerial imagery, you know, how would we  
30 liaise, how would we orchestrate that?

31 MS. ADAMS: So we'd have to tie it  
32 back to, I touched on those measures of progress,  
33 so there are targets that are set for specific  
34 focus areas. Like, for example, I lead the Focus  
35 Area 3, which is the near-shore focus area, and I  
36 do a lot of work with nutrients and harmful algal  
37 blooms.

38 Now, funding the HAB forecast system  
39 didn't necessarily meet one of our numerical  
40 targets of pounds of phosphorous reduced or  
41 gallons of water that were removed, but we  
42 realized that the HAB forecasting system is  
43 feeding us information on nutrients, so we were  
44 able to tie it into that focus area using that  
45 information.

46 So it's all about how you craft the  
47 wording, I guess. We would have to make sure  
48 that we could tie it directly to a measure.

1 MEMBER PERKINS: So I think this  
2 circles back to the comment we heard earlier  
3 about not having a NOAA person in the basin, I  
4 believe was the terminology. Is it the opinion  
5 of the panel, invited panel speakers, not this  
6 panel, that that is limiting this cooperation and  
7 collaboration opportunity?

8 MS. LEE: Well, let me explain just a  
9 little bit more about how NOAA manages the  
10 competition for funding for GLRI money. I sit as  
11 NOAA's representative on the regional working  
12 group and we have a Great Lakes collaboration  
13 team that has representatives on it from all of  
14 the line offices. And Jennifer Day, who's here  
15 in the back of our room, is our regional  
16 coordinator, and so she acts as the program  
17 manager.

18 And so when EPA commences planning for  
19 a particular fiscal year, we, at NOAA, put out a  
20 call to our collaboration team, to  
21 representatives at NOAA, and ask for proposals,  
22 and those proposals come back into the team, and  
23 they have to be related to a particular focus  
24 area, and we then rack and stack those proposals,  
25 and we put them forward to the focus areas where  
26 they then get discussed and decided whether  
27 they're going to be funded or not within the  
28 context of that focus area.

29 So in that sense, we do have  
30 representation of all elements at the table. The  
31 question is, is, are we really seeing the whole  
32 universe of projects that we could possibly put  
33 forward, and then, are those projects also  
34 considered competitive from EPA's perspective in  
35 terms of the action plan and the measures in the  
36 action plan?

37 So for example, it took us quite some  
38 time to get everybody to understand the  
39 importance of the IGLD update and why it mattered  
40 to restoration, and that took about a two-year,  
41 three-year, process for us to socialize that and  
42 get it to move up into the competitive realm.

43 And I do believe we have Heather  
44 Stewart, Brandon, do you know, she put in a near-  
45 shore mapping proposal for FY18. Yes, do you  
46 want to talk about that one?

47 MR. KRUMWIEDE: So, yes, for FY18, we  
48 did put forward a topobathy LIDAR -- well,

1 actually, I take that back, a bathymetric data  
2 collection in shallow water environments. The  
3 two environments were the St. Louis River Estuary  
4 and Chequamegon Bay. These two areas, on  
5 previous topobathy LIDAR collects, failed to  
6 provide any returns because of the turbidity and  
7 tannin staining within the water in these  
8 environments.

9 The reason we actually put forward the  
10 St. Louis River, a couple reasons, one, it's a  
11 NOAA Habitat Blueprint Area, and two, the  
12 previous hydrographic survey was completed, I  
13 believe, in 1942, in the upper part of the  
14 estuary. The only parts that have been updated  
15 with hydrographic information are Army Corps of  
16 Engineers dredge surveys within the channels.

17 Interesting thing though, is, there  
18 have been two large floods, 1976, I believe, and  
19 the largest one, of course, that made news was  
20 2012, the Duluth floods there, and it completely  
21 changed the upper part of that estuary, to the  
22 point now where we've got, of course, as  
23 mentioned, the Lake Superior near is up there as  
24 well, they run around in a flat-bottom boat,  
25 because they're fear is hitting deadheads,  
26 sediment bars, things like that, and it's a  
27 continuously shifting environment as well.

28 Live coastal bluff erosion, so you  
29 have sediment entering into the system, so we  
30 have put forward a proposal in FY18. I will say  
31 that Jackie pointed out, there's two different  
32 action plans, Action Plan I and Action Plan II.  
33 Under Action Plan I, we did receive funding for a  
34 2010 topobathy LIDAR collect that actually  
35 completed a lot of the north shore of Minnesota  
36 and parts of Wisconsin that filled in a gap that  
37 was not previously covered under the JALBTCX  
38 missions.

39 The other thing, for folks to be  
40 aware, talking with JALBTCX, they are planning to  
41 come back in FY18 and 19 to do recollects up here  
42 for the NCMP, the National Coastal Mapping  
43 Program. So our office does put forward  
44 proposals, but as Debbie has stated, you know, it  
45 has to meet those measures of progress under the  
46 Action Plan II, and that can be kind of  
47 challenging to get pushed forward through there.

48 MS. LEE: Right. And so that

1 particular FY18 project didn't make the cut line  
2 for funding at the \$250 million mark, but if a  
3 similar trend happens and Congress appropriates  
4 more than what the president's budget provides,  
5 so last year they did a \$50-million plus-up, then  
6 we can bring these other projects to the table  
7 that didn't make the cut to be reconsidered.  
8 It's still not a guarantee they'll be funded, but  
9 they can come forward for reconsideration.

10 So this really prompted a thought on  
11 my part and I guess a question I'd like to put to  
12 all of you, if I may, and that is, how, as a  
13 region, can we better communicate our needs to  
14 you? Because it occurs to me that we are not  
15 formally communicating our needs and maybe on an  
16 annual, or a semi-annual, or a five-year basis,  
17 to help inform needs across agencies.

18 And so I'd just be curious, your  
19 thoughts, on how we might do that better as  
20 agencies within the Great Lakes.

21 CHAIR HANSON: Well, I can speak a  
22 little bit from the navigation side because I  
23 think you've got some really good advocates  
24 who've made some progress. I work closely with  
25 them on issues like Harbor Maintenance Trust Fund  
26 and federal funding, so I think you're getting  
27 some visibility there.

28 I think the RSM component of what the  
29 Corps is doing around the country is probably the  
30 best thing they're doing, combining  
31 authorizations and taking advantage of the money  
32 that's available, overcoming hurdles and  
33 boundaries of agencies in local levels. We don't  
34 need to go into the federal standard discussion  
35 here in Cleveland, but that's not the only port  
36 in the country that that's an issue.

37 And when you start talking about  
38 beneficial use of dredge material and regional  
39 sediment management, we find you don't address  
40 many dredging issues. You're addressing  
41 regulatory issues, you're addressing efficiency  
42 issues, scattered funding, again, the  
43 authorization hurdles, and you're looking to get  
44 efficiency over the overall program.

45 So I think the more you connect as a  
46 system, we talked about that a lot yesterday with  
47 Mike's group, that's where your strength is.  
48 It's also a weakness in other parts of the



1 country when governors look at things regionally,  
2 agencies look at things regionally, you have a  
3 lot more stroke than you do looking at it  
4 individually.

5 MR. ASLASKN: I would also recommend  
6 that, you know, with our state advisors from the  
7 geodetic side and our Navigation Managers on the  
8 coast survey that, engaging them more regularly.  
9 Sorry I had to step out. We got a little bit of  
10 a storm in Tampa and we got one of LIDARs and  
11 that one LIDAR was sitting on minus a foot  
12 elevation, so we need to get that to higher  
13 ground.

14 Anyway, but a lot of what I've heard,  
15 or what I've heard in the hallway from Admiral  
16 Debow is that, you know, the foundation data you  
17 guys rely on. So, you know, I heard about ESI  
18 maps, I heard about imagery and shoreline, you  
19 know, I think that's maybe engaging more  
20 regularly with us because that foundation data is  
21 used in lots of different applications beyond  
22 charting.

23 And that might be more telling as far  
24 as how you engage and give us requirements of  
25 when and where we need to be doing surveying,  
26 because a lot of what we rely on, what I rely on  
27 as far as when we task our contractors, or when  
28 we task our aircraft, or people to do mapping in  
29 the Great Lakes, are feedbacks we get from a  
30 charting interest.

31 We'll fly the sanctuaries, we'll fly  
32 the nears as partners of organizations, but, you  
33 know, these other applications are sometimes we  
34 don't hear about, so I think engaging directly  
35 with the navigation community from your part  
36 would be helpful.

37 MR. BOLEDOVICH: I know some of your  
38 organizations, you know, make annual, or more  
39 than that, pilgrimages to the D.C. area as well,  
40 and of course, their offices are welcome to meet  
41 and catch up on some things if we can setup a  
42 side meeting with some of the folks. I know the  
43 Great Lakes has a big initiative every spring  
44 that they come in and we'd be happy to help  
45 coordinate across the ocean service and in NOAA,  
46 for that matter, just for a check-in meeting of  
47 what's up. What are your hot topics for the year  
48 and that kind of thing, just to touch base.

1                   That's a good time of year to maybe do  
2 that on an annual basis as a check-in. But of  
3 course, Heather is our contact. She works for  
4 the ocean service, for OCM, and as Mike  
5 mentioned, the geodetic advisors, and Tom, the  
6 Nav Manager, point taken, a permanent Nav Manager  
7 in the region. We heard that message.

8                   But I think we have some opportunities  
9 in the region already, and then through the  
10 regional coordinator, through Jen as well, it's  
11 an opportunity, I think, but just to check-in and  
12 say hello, not a big conference or anything, but  
13 when you come to town, make a point to reach out.  
14 You can start at Russell's office, where I work,  
15 in the AA, we can kind of filter it down with as  
16 much notice as you provide, the more notice, the  
17 better, that you're coming, would be great.

18                  MR. CRANE: So that was a great  
19 comment. So we come to Washington for a week, or  
20 four days, every late February, early March, we  
21 often set up agency visits, we do a lot of  
22 Congressional office visits also, and we often  
23 invite agency administrators to come in and talk  
24 to our commissioners, and that sort of thing.

25                  But I think that's a great comment.  
26 It doesn't have to be super formal, but just to  
27 make that connection. Like, for instance, every  
28 March, I'm always in Silver Spring meeting with  
29 Sea Grant director because we have a partnership  
30 with Sea Grant where we have a fellowship  
31 program, and so I'm always there for a couple  
32 hours, and it would be an easy thing to do to  
33 kind of arrange some additional visits and to  
34 check in and talk about priorities for the  
35 region, and that sort of thing.

36                  MR. BOLEDOVICH: Yes, just to  
37 emphasize, I know the commissioners are kind of  
38 in another -- it doesn't have to be with the --  
39 it can be with staff, just to check-in if there's  
40 some issues, so we don't have to get -- I know  
41 their schedules when they come to town are pretty  
42 jammed up.

43                  MR. CRANE: Right.

44                  MR. BOLEDOVICH: Happy to meet, even  
45 meet for coffee or something in the morning.

46                  MR. CRANE: Yes, that'd be great.

47                  MR. BOLEDOVICH: All right. Awesome.

48                  MEMBER HALL: One of the requests

1       though, if I heard it right from Deborah, was how  
2       to better interact with HSRP. We obviously will  
3       not be at headquarters in February or March for  
4       your conference. And so I think that, I don't  
5       know how that would work, but I know that we only  
6       get to certain regions every few years. And I  
7       don't know if there would be some way for  
8       headquarters to help us get inputs from them  
9       every year so that we're not just thinking about  
10      Great Lakes in 2016 and not in 2017, or 2018, or  
11      2019.

12               And so I don't know if that's  
13      something that we can start asking for, where we  
14      just have a one-pager on each of the regions and  
15      where things stand hydrographics services-wise,  
16      or, you know, I don't want to give a complete  
17      answer to it, but I think that that's kind of  
18      what I was hearing, how do you interact with HSRP  
19      where we can be providing, you know,  
20      recommendations that aren't, every year, just  
21      towards that one area that we were in and revisit  
22      some of these things, help influence our issue  
23      papers as we move forward and continue that  
24      process.

25               So I just wanted to put that out  
26      there. Thanks.

27               VICE CHAIR MILLER: I think, as we've  
28      said before, a lot of these issues, we see  
29      repeatedly in other areas, you know, the Army  
30      Corps/NOAA interdata compatibility, and so forth,  
31      is something that we see in almost every region,  
32      every time, and we report back on it, so it may  
33      not be specific to your region, but we are trying  
34      to improve the overall service to the communities  
35      by our letters and our one-page reports.

36               MS. LEE: Thank you very much. Okay.  
37      I think, Lynne, we are at the end of our time, is  
38      that correct? And everybody's probably getting  
39      hungry and ready for lunch, so, Admiral, I'll  
40      turn the floor back over to you and thank you  
41      very much for allowing us to come before you and  
42      for the attention you've given us for two solid  
43      hours, so thank you.

44               CHAIR HANSON: Thank you, and to the  
45      panelists for engaging as well. It's nice to be  
46      allowed the dialog and not just presentations, so  
47      thanks for giving us the time to do that. Also  
48      on our agenda now we have our opportunity for

1 public comment to the HSRP. I know we have at  
2 least two comments and although I'm not sure the  
3 first is really public comment. Helen Brohl, are  
4 you considered the public?

5 MS. BROHL: Thank you very much. If  
6 it's okay, I wanted to just take a moment and  
7 provide a little bit of my past experience when I  
8 spent ten years as the executive director of the  
9 Great Lakes Shipping Association. And just  
10 wanted to, really, just provide an observation  
11 from that experience, given your conversation  
12 about PORTS systems in the Great Lakes, and also,  
13 really, Tom Crane's timely mention of water level  
14 observations.

15 So in the late 1990s, there was  
16 extreme low water in the Great Lakes. We heard,  
17 you know, that there's a historical trend, but  
18 water goes up and water goes down in the Great  
19 Lakes, and representing vessel operators in the  
20 Great Lakes, this is a concern, obviously. You  
21 can't always wait for the water to rise because  
22 of the wind in order to address your loading  
23 capabilities.

24 And in my particular case, I  
25 represented the international vessel operators.  
26 Those were those vessels that actually left the  
27 Great Lakes through the Saint Lawrence seaway  
28 system, which had very restrictive, both draft  
29 and dimensional lock restrictions.

30 So at that moment, in the late '90s,  
31 when we had this unusual water level challenge,  
32 it was when we recognized that the suite of water  
33 level gauges that were managed by NOAA in the  
34 Great Lakes had gone under disrepair. It just  
35 was the nature of funding and attention to the  
36 Great Lakes at that time.

37 And thanks to the Great Lakes  
38 Commission, who came in, remember, there were  
39 earmarks back then, something I think some of us  
40 may miss, I don't know, but back then there were  
41 earmarks. Great Lakes Commission came in with  
42 about \$250,000, I think you were able to get,  
43 secured, I can't remember the fiscal year, to  
44 help do some quick repair on major water level  
45 gauges.

46 This was hugely important because in  
47 the Great Lakes, and I think you probably got the  
48 gist of this, most of all of the river systems

1 provide in-transit capability for vessels. There  
2 is not necessarily a local sponsor.

3 So even though you have the Port of  
4 Detroit, most of those vessels are actually going  
5 past the Port of Detroit into the Detroit River,  
6 into the Saint Clair, the Saint Marys, it's not  
7 as if there is some local sponsor that is taking  
8 care of water level observations on the Saint  
9 Marys River. It's really an in-transit  
10 navigation channel.

11 So as the representative from the  
12 Great Lakes Shipping Association, I took it upon  
13 myself to coordinate Great Lakes representatives,  
14 including the Great Lakes Commission, to build on  
15 what the Great Lakes Commission had done.

16 So fortunately, because of Senator  
17 DeWine, at the time, from Ohio, we got, five  
18 years in a row, \$2 million, under earmarks,  
19 again, that was then, not now, to specifically  
20 upgrade those water level gauges. That was how  
21 the Great Lakes Water Level Observation System  
22 was born. Didn't really exist in that name then.

23 So we also knew that PORTS systems  
24 wasn't really practical. At that time, there was  
25 only one PORTS system, it was up at the Soo, we  
26 called it PORTS light, I believe, the Great Lakes  
27 Commission provided money to the Army Corps of  
28 Engineers, or through the Army Corps of  
29 Engineers, by which then they helped to co-fund  
30 that, because again, there was no really local  
31 group at the Soo who could do that.

32 But I honestly say, we kind of thought  
33 amongst ourselves in the shipping association,  
34 PORTS was not how we wanted to go in the Great  
35 Lakes, because of that lack of local sponsorship,  
36 so we really, truly, took the time to invest in a  
37 Great Lakes water level observation network.  
38 It's not a coincidence that those gauges are  
39 updated in almost real time, in six minutes, I  
40 guess, which was a huge change from what we had  
41 before, which was basically a system in  
42 disrepair.

43 So I'm raising this because I wanted  
44 to share with you the history of how that was  
45 thought about in terms of vessel operations. So  
46 I know you talked a lot about PORTS systems in  
47 the Great Lakes, but it was at that time, the  
48 shipping industry's interest to really invest in

1 a Great Lakes Water Level Observation Network at  
2 large, rather than to go specifically.

3 And I will commend NOAA, who, at that  
4 time, did extraordinary work with us to put  
5 current meters in very critical locations in the  
6 Great Lakes, in Toledo, in the Cuyahoga River, to  
7 address the mariners' interests for certain spots  
8 that were very challenging, vessel operation-  
9 wise.

10 So really, my goal here was just to  
11 share a little bit of the history. It peaked my  
12 interest in listening to you talk about PORTS in  
13 the Great Lakes and also Tom's timely mention of  
14 water level observation networks, but just to  
15 emphasize what he did, that, at the time, when I  
16 was with the shipping association, and I imagine  
17 it's still the case, was really a priority  
18 interest in the Great Lakes. Thank you very  
19 much.

20 CHAIR HANSON: Thank you. And we're  
21 going to hear from you later as well, right? All  
22 right. Lynne, you said you had another comment  
23 from --

24 MS. MERSFELDER-LEWIS: So the NOAA  
25 liaison to the Office of the Oceanographer of the  
26 Navy was in touch with me before his wife had a  
27 baby and said that the NOAA and Navy partnership  
28 has recently taken steps to become stronger and  
29 more efficient. One of the five working group  
30 focuses on survey requirements. Both departments  
31 are in the process of identifying hydrographic  
32 strengths, weaknesses, and opportunities for  
33 additional collaboration.

34 The HSRP will serve as a terrific  
35 venue for this exact purpose, with both NOAA and  
36 USN representation. Captain Rick Brennan and the  
37 Office of Coast Survey will be the POC. Very  
38 respectfully, LCDR Jason Mansour, NOAA liaison to  
39 the Oceanographer of the Navy.

40 So you can expect a little bit more  
41 Navy participation.

42 CHAIR HANSON: Okay. Well, I guess we  
43 can get a copy of that?

44 MS. MERSFELDER-LEWIS: Yes. And that  
45 will go into the record.

46 CHAIR HANSON: All right. Thank you.  
47 Almost like a hydrographer of the nation, right?  
48 Yes, sir.

1                   MEMBER BRIGHAM: Lawson Brigham. I  
2 think that this cooperative venture with the Navy  
3 came out of our discussions of the Arctic and  
4 databases that might be there or not there that  
5 could be merged in some sense. I'm sure that's  
6 where some of that discussion came from.

7                   CHAIR HANSON: Well, good.

8                   VICE CHAIR MILLER: We've got a few  
9 minutes. Do we want to read out the letter?

10                  CHAIR HANSON: Sure. Just as a quick  
11 update as well, while we have a couple minutes  
12 here, we mentioned the letter of recommendation  
13 earlier this morning and a response from the  
14 Undersecretary, and we actually did receive that  
15 this morning, so we thought it would be fair that  
16 we -- do you want to go ahead and read it, Joyce?

17                  VICE CHAIR MILLER: I can.

18                  CHAIR HANSON: Okay. And Joyce will  
19 read it out and say thank you.

20                  VICE CHAIR MILLER: "Dear, Mr. Hanson,  
21 thank you for your letter providing the  
22 Hydrographic Services Review Panel  
23 recommendations from the Galveston public meeting  
24 and for sending the issue papers that provided  
25 further insight into the meeting. The panel  
26 clearly invested a great deal of time and thought  
27 into its advice on NOAA navigation services  
28 programs."

29                         "I congratulate you", this is Bill,  
30 "in your new role as Chair, Joyce Miller as her  
31 new role as Vice Chair, and the five new members  
32 of the HSRP. I rely on NOAA's federal advisory  
33 committees to provide forward-looking strategic  
34 advice on issues of science and technology. Your  
35 leaders in your areas of expertise in collecting  
36 offer advise to NOAA that will ensure our  
37 navigation data services and products effectively  
38 meet the needs of our citizenry."

39                         "In response to the HSRP  
40 recommendation on re-capitalizing hydrographic  
41 capacity in the NOAA fleet, while we may not  
42 directly replace hydrographic vessels one-for-  
43 one, your emphasis on maintaining survey capacity  
44 is noted. As part of the ongoing fleet re-  
45 capitalization efforts, NOAA has initiated an  
46 independent review team, IRT, to examine current  
47 and future fleet composition."

48                         "The IRT analysis final report is

1 expected in September of 2016. I will share  
2 their recommendations following reviews. You may  
3 consider reviewing this analysis at a future HSRP  
4 meeting. While the president's current budget  
5 does not include any new initiatives for charting  
6 geodesy, or related ocean observations, these  
7 activities in the U.S. Arctic will continue to be  
8 a NOAA priority as we make progress using  
9 existing resources."

10 "I would hope you will take advantage  
11 of the opportunity to communicate HSRP priorities  
12 to the incoming NOAA leadership team in the  
13 coming year, as you will provide valuable  
14 continuity between this administration and the  
15 next. Sincerely, Kathryn D. Sullivan, PhD."

16 CHAIR HANSON: All right. Well, thank  
17 you, Joyce. Any quick comments on the letter?  
18 Obviously, we'll have some time to discuss it  
19 later. Okay. Well, again, thank you for that.  
20 Before we break for lunch, let me go ahead and  
21 repeat that HSRP has a working lunch, so you're  
22 not off-duty yet. For all others, it's lunch on  
23 your own.

24 We're going to reconvene at 1:30 back  
25 here in this room. And before we go, Gary, go  
26 ahead.

27 (Off the record comment)

28 CHAIR HANSON: Well, let's take a  
29 pause and we'll see you back here at 1:30. Thank  
30 you.

31 (Whereupon, the above-entitled matter  
32 went off the record at 12:00 p.m. and resumed at  
33 1:33 p.m.)

34 CHAIR HANSON: All right. As we  
35 adjourn, we would like to -- reconvene, rather,  
36 like to just get any thoughts on the last panel  
37 discussion, and see if we have any outstanding  
38 thoughts that we didn't get on the table before.

39 I think we've been pretty engaged, so  
40 I don't know if there's anything new, but after  
41 you've had a chance to think about it over lunch.  
42 And while you're thinking, I want to take the  
43 opportunity to say thank you to an old friend  
44 who's -- going to be his last meeting.

45 Mr. Magnuson, it's been a pleasure  
46 working with you. And I know we'll see each  
47 other around at all these things. So I  
48 appreciate all your friendship, and help over the



1 years, and congratulations.

2 MR. MAGNUSON: Thank you.

3 CHAIR HANSON: Okay. With that,  
4 anybody have any new thoughts on the last panel?

5 VICE CHAIR MILLER: Well, I would  
6 definitely say that bathymetry is an oft  
7 expressed need for -- up here, for many, many  
8 reasons, not -- probably charting not being the  
9 most important of them, but bathymetry is a  
10 definite need.

11 CHAIR HANSON: So if there is another  
12 thing that's consistent from all these meetings,  
13 besides PORTS, it's that very comment. It's  
14 identifying the needs of the nation in terms of  
15 bathymetry, and not just having the comments that  
16 we need more.

17 It's actually, for our purposes,  
18 talking about how we plan to accomplish those,  
19 with the assets available to us, so something  
20 we'll be talking about consistently. But I  
21 think, at some point, we would like to get where  
22 we have some ideas to kick around, and some  
23 solutions.

24 And I've got my back to Larry, so he's  
25 over here --

26 DR. MAYER: It's the story of my life.  
27 Yes, bathymetry came up, but as I listened to the  
28 presentations, I also heard a great need for  
29 backscatter, for bottom mapping, in terms of  
30 bottom type. And that goes way beyond  
31 bathymetry, but yet goes hand in hand with the  
32 systems that we typically deploy.

33 So I just don't think that should be  
34 forgotten. The call for sea floor  
35 characterization, or bottom characterization was  
36 quite pervasive.

37 CHAIR HANSON: Lawson, and then Susan,  
38 just a heads up, because I'm going to ask you the  
39 recreational side of this.

40 MEMBER BRIGHAM: Small thing. It  
41 wasn't -- it was -- and I still didn't  
42 understand. The dredging team, the regional  
43 dredging team, there was not someone NOAA on that  
44 team, or from NOS or the need for someone to be  
45 on that dredging team? There was a question  
46 about it.

47 CHAIR HANSON: Sir, do you recall the  
48 -- you tried to respond to that one about having

1 a NOAA person on the Great Lakes dredging team?

2 MR. LOEPER: Yeah. I'll be getting in  
3 touch with them to get on that team, so we've  
4 discussed it in the past, but --

5 CHAIR HANSON: Yeah. I think it's one  
6 of those things that when all's they were doing,  
7 and I was one of them, whining about lack of  
8 money. It was just kind of the same meeting,  
9 same conversation, time after time.

10 But now that they've actually,  
11 successfully have started to get more money for  
12 dredging in the lakes, they're starting to  
13 realize the disposal rate management issues are  
14 critical and need to be addressed. And so the  
15 team becomes more relevant, more timely, so  
16 encourage that participation.

17 Okay, the recreational boaters have  
18 been kind of quiet lately.

19 MEMBER SHINGLEDECKER: I thought I was  
20 -- I spoke up yesterday. I mean, I thought that,  
21 to me, it was interesting, this panel was one of  
22 the first times that we've had a crossover  
23 presentation from EPA, and how they're using some  
24 of the services. That's kind of what stood out  
25 for me.

26 And, I mean, obviously it's the  
27 connection, first and foremost, I think, with  
28 drinking water supplies, where their jurisdiction  
29 comes in, and how that is overlapping with the  
30 harmful algal bloom modeling.

31 Certainly, harmful algal blooms impact  
32 recreational boating a lot. We're hearing it  
33 more from stakeholders in Florida right now than  
34 in the Great Lakes. I think Lake Erie, they've  
35 come to accept it, more or less.

36 But for me, that was the biggest issue  
37 that came up, in terms of that. I mean,  
38 certainly the gaps in funding for the dredging of  
39 shallow water harbors, which was mentioned  
40 yesterday, is a concern to recreational boating.  
41 So that, probably and, you know, the importance  
42 of understanding harmful algal blooms certainly  
43 impacts recreational boaters.

44 MEMBER HALL: We've acquired a phone  
45 somehow, up here at the table, if -- okay. I've  
46 charged a couple of things on Amazon. They'll be  
47 arriving at my house, not yours.

48 (Pause.)

1 CHAIR HANSON: All right. I'll  
2 introduce you, Helen, so -- and that's -- what?  
3 Well, thanks for joining us this afternoon. And  
4 I saw your names on the agenda. We actually  
5 fought for some extra time for you. So thanks.  
6 Thanks for being here, and we know you'll have --  
7 you'll generate some conversation. So thanks.

8 Our first speaker, for those of you  
9 who don't know, is Ms. Helen Brohl, executive  
10 director, U.S. Committee on the Maritime  
11 Transportation, otherwise known as CMTS, and also  
12 a former vice chair of the HSRP.

13 For the benefit of the new members,  
14 the CMTS is a cabinet level, interagency  
15 committee, chartered and authorized in law, to  
16 provide a federal forum to develop plans and  
17 strategies to improve the U.S. Marine  
18 Transportation System.

19 Helen, all yours.

20 MS. BROHL: Thank you so much, Mr.  
21 Chairman, Madam Vice Chair, and members of the  
22 HSRP. It's a pleasure to be here today. Thank  
23 you for the shout-out of having been a vice  
24 deputy chair of HSRP. You all hold a place in my  
25 heart.

26 I'm going to brag for one moment, and  
27 say that I am the proud co-author of the  
28 legislation, back in 2002, with Mary Beth Long  
29 from the American Association of Port  
30 Authorities, and John Rayfield, who is currently  
31 now the majority staff lead for the Coast Guard  
32 Subcommittee on the House side.

33 So -- and that was when John was still  
34 in the House Resources Committee, so we've come a  
35 long way together. So I'm very proud to have  
36 been part of that.

37 We were very much engaged with a group  
38 called the National Maritime Marine Navigation  
39 Safety Coalition, and that was how we brought 60  
40 different organizations together to talk about,  
41 in many cases, really, NOAA's coastal and mapping  
42 programs. So we have a long history with NOAA,  
43 and a proud member of the CMTS.

44 So if I may ask, just by a show of  
45 hands, how many members of the committee have  
46 actually heard of the Committee on the Marine  
47 Transportation System? Oh that's actually pretty  
48 great. Okay.

1                   So because there's a couple, and I  
2 know Ed doesn't know anything about it, but I'm  
3 teasing, Ed and I go back -- know anything about  
4 it, I'll just go over it quickly, because I don't  
5 know we have a lot of time. I'm going to assume  
6 this will put it forward. Hot dog.

7                   Okay, so this is stuff you already  
8 know about our coastlines. A lot of navigable  
9 waterways in the United States, over 25,000  
10 miles. So those would be waterways that are,  
11 include all major federal channels, that are  
12 mostly maintained by the Army Corps of Engineers.

13                  This is a number that I see that -- I  
14 repeat a number that I talked about earlier. We  
15 have the citations for these, in case you want to  
16 use them. Lots of passengers, lots of  
17 recreational boaters, lots of cruise ship  
18 passengers, and as I mentioned earlier, if you  
19 look at the international trade in U.S. only,  
20 almost 72 percent by weight of trade, and 44.2  
21 percent by value.

22                  And I did forward that citation over,  
23 if you'd like to take a look at it. The reason I  
24 mention that is that when we, in the past, as a  
25 interagency committee, had tried to track that 95  
26 percent number, we could not find an original  
27 citation. It was a citation from a citation from  
28 a citation.

29                  So on our website, I'll show you the  
30 link later, it's really [cmts.gov](http://cmts.gov), we have a  
31 Marine Transportation System fact sheet. That  
32 fact sheet are those facts that we could, through  
33 interagency agreements, basically agree upon.

34                  And one of the things we could not  
35 agree upon was the number of ports in the United  
36 States. So you won't see how many ports we have  
37 in the United States. The Coast Guard says  
38 there's 300, the Army Corps says there's over  
39 500. Actually, the Corps has a couple of  
40 different definitions just within the Army Corps  
41 of Engineers.

42                  MARAD has different ones. So that's  
43 actually a number. It's all about definition.  
44 And fortunately, we anticipate the new Bureau of  
45 Transportation Statistics Working Group on port  
46 freight statistics should come up with a  
47 definition. The question is, can we all agree to  
48 it, interagency-wise?

1                   So for those of you who deal in  
2 transportation, one of the ways in which we  
3 describe the Committee on the Marine  
4 Transportation would be the obvious. If you  
5 wanted to know, in the federal government, who  
6 handled aviation, we'd send you to the Federal  
7 Aviation Administration, you know, highways,  
8 Highway Administration, rail, Railway  
9 Administration.

10                  But if you were to ask me, who in the  
11 federal government handles something in --  
12 handles maritime, I'd have to say, well what's  
13 your question? Depending on your question is  
14 where I'm going to send you.

15                  If you want to know the number of U.S.  
16 flights in international trade, I'd send you to  
17 the Maritime Administration. If you wanted to  
18 know who did charting and mapping, your  
19 coastlines, I'd send you to NOAA. If you want to  
20 know who regulates the waterways, I'd send you to  
21 the Coast Guard. If you want to know who handles  
22 dredging, I'd send you to the Army Corps of  
23 Engineers.

24                  All of those four agencies are in  
25 different departments. When you add to that, all  
26 of the other agencies that are engaged in  
27 maritime transportation, it looks like this, in a  
28 very simple form.

29                  We actually -- when the -- and I'll  
30 talk about the committee more specifically in a  
31 minute, but one of the things that we did when  
32 the committee was put together, was to get a  
33 sense of who did what and where in the federal  
34 government.

35                  How do you know what you need to do if  
36 you're not really sure who does what and where?  
37 And this is the simplest version of this matrix  
38 that we have. This is more of an educational  
39 matrix, because it's divided by departments, not  
40 by agencies.

41                  We can get more complex by then  
42 subdividing those departments into agencies.  
43 That gets you up to about 30 agencies. If you  
44 add independent offices and bureaus and White  
45 House offices, and interagency committees, like  
46 the National Ocean Council, it gets bigger and  
47 bigger and bigger.

48                  And if we expand on the programmatic

1 categories, which is down the left hand column,  
2 it gets to be really -- if you want to print it  
3 out, it's about this big.

4 The interesting thing is, each one of  
5 those Xs tells you basically the ways in which  
6 those agencies are engaged in the Marine  
7 Transportation System. It would appear,  
8 visually, that there's overlap, but in fact,  
9 virtually every one of those Xs is a defined  
10 specific role for specific reasons.

11 So why those agencies may be engaged  
12 in that issue area, for the most part, there is  
13 very little overlap. And in fact, there's  
14 actually a lot of gaps.

15 The Committee on the Marine  
16 Transportation System was created by presidential  
17 directive, really to kind of herd all of those  
18 federal agencies under an umbrella, so there  
19 could be a common vision, and a way to  
20 communicate regularly about the Marine  
21 Transportation System, because it's complex.

22 And the -- it started with the --  
23 under President Bush, the U.S. Ocean Action Plan,  
24 probably even hard to find online anymore, though  
25 I think you can find it via our website, and that  
26 was in response to the National Ocean Commissions  
27 Report.

28 In there, it established an inter --  
29 cabinet level interagency committee,  
30 interdepartmental committee, for the MTS. That  
31 was really the brain child of Secretary Norm  
32 Mineta.

33 For those of you who remember Norm  
34 Mineta, he was also a previous Secretary of  
35 Commerce, and then Secretary of Transportation.  
36 And in 2003, if you've ever heard him speak --  
37 first of all, he's charming. He's 84 years old.  
38 He's rocking and rolling it. He's such a great  
39 guy.

40 But he will tell you, if you want to  
41 talk about maritime transportation, he will tell  
42 you the exact date and time and moment that was,  
43 to him, one of the biggest losses of his life,  
44 and that was when Coast Guard left the Department  
45 of Transportation for a new DHS.

46 And when Coastguard left DOT, they  
47 took a chunk of maritime oversight with them.  
48 Because collectively -- and this is not a

1 pejorative comment in any way, shape or form, but  
2 technically speaking, if you take away the DOD  
3 money that goes to Department of Transportation,  
4 their maritime equities are about a \$400 million  
5 line item, for a couple of agencies.

6 Now, certainly they get more than  
7 that, to handle a ready reserve fleet that comes  
8 from DOD. So I don't want to minimize the value.  
9 But DOT, as the agent, the department that is  
10 supposed to express and implement a vision for a  
11 national transportation system, has very little  
12 maritime equities.

13 So that's why this committee, to  
14 Secretary Mineta, was very important. He  
15 understood the value of having some oversight.  
16 So by charter, back in 2005, and 2004, the Ocean  
17 Action Plan, 2005, quickly a charter, signed by  
18 cabinet members, and -- which set off the CMTS.

19 A staff office was set up one year  
20 later, in 2006, at the Department of  
21 Transportation. That staff office was first  
22 staffed by me and Gary Magnuson, who came over  
23 from NOAA, and Ms. Pat Mutschler, who was with  
24 the Army Corps of Engineers.

25 Now Gary, unfortunately, as you know,  
26 left us to go back to NOAA. And NOAA's very  
27 generously replaced him with a woman by the name  
28 of Heather Gilbert, who knows the programs, and  
29 we're very grateful for that.

30 And then we're supplemented, as a  
31 staff office, with contractors and a NOAA Sea  
32 Grant Knauss fellow -- go Sea Grant, and so we do  
33 quite well. And I'll explain a little bit more.

34 But by 2012, John Rayfield and Dave  
35 Jansen, over in Coast Guard Subcommittee, said  
36 perhaps it was time to establish the CMTS in  
37 authorization.

38 So through a Coast Guard Authorization  
39 Act in 2012, the CMTS was established, and  
40 basically to do three things, to assess the  
41 adequacy of the Marine Transportation System, in  
42 a reporting structure.

43 The first report was due two years  
44 ago, where I'm actually in the background trying  
45 to finish -- do we need comments from you,  
46 Ashley? Do I need to nudge you for that?  
47 Probably.

48 Anyway, trying to finish that MTS

1 report to Congress, our job is to integrate the  
2 different modes of transportation, environmental  
3 side, with the Marine Transportation System, and  
4 I kind of think, most importantly, to coordinate  
5 maritime transportation policy in the federal  
6 government.

7 I didn't say create policy, but  
8 coordinate policy, because those policies are  
9 supposed to be decided upon the individual agents  
10 -- agencies, and then brought together under the  
11 umbrella of the CMTS.

12 Whoops. Wrong way. Okay. Very  
13 quickly, by charter, but not by statute, the  
14 Secretary of Transportation is the chair, the  
15 cabinet-level chair. That's currently Anthony  
16 Foxx.

17 And then we work at a sub-cabinet  
18 level more day to day, a coordinating board  
19 provides that day to day guidance to the staff  
20 office and the interagency teams, for work plans  
21 and how we're going to move forward on a vision  
22 for the Marine Transportation System.

23 By statute, the coordinating board  
24 rotates yearly, between the Secretaries of  
25 Transportation, Homeland Security, Defense, and  
26 Commerce. Currently, it is with the Department  
27 of Homeland Security, and Secretary Johnson  
28 appointed Rear Admiral Paul Thomas, who is  
29 Scott's boss, who is the head of prevention  
30 policy. Correct? Thank you. I always get it  
31 backwards, one or the other.

32 Anyway, he is currently my board  
33 chair, and in many respects, my boss at this  
34 time, so I kind of get a new boss every year.  
35 However, just previously, he took the place of  
36 Department of Commerce's representative to the  
37 board, who was chair, Vice Admiral Manson Brown.

38 And Manson Brown did an  
39 extraordinarily great job. And I have to shout  
40 out to NOAA, because at very critical times in  
41 the origins and establishment of the CMTS, to  
42 really truly establish it as a working functional  
43 partnership, NOAA stepped up.

44 Vice Admiral Lautenbacher, in 2007, as  
45 our chair, really rallied the forces in an  
46 extraordinary way. And then Margaret Spring, who  
47 was chief of staff in the first four years of  
48 this administration, she spearheaded the



1 legislation in Congress.

2 So thank you to NOAA for that, and  
3 NOAA's continuing engagement. We really  
4 appreciate it.

5 So we have a staff office at DOT. The  
6 Maritime Administration was voluntold to house  
7 us, but they've been very gracious hosts. All of  
8 the work is really done through staff-level  
9 folks, through the agencies. It's not really  
10 intended that I am the CMTS and we are the brain  
11 child. We really look to this as an agency-led  
12 organization.

13 Just because Congress says, you're all  
14 members of this group, doesn't mean anything.  
15 You know, benign neglect, you can do a lot of  
16 little with benign neglect. And yet, I think  
17 it's one of the most high functioning interagency  
18 partnerships in the federal government.

19 I'm clearly prejudiced on that, but as  
20 politicals come and go, who say you'll never be  
21 able to get anything done with 30 agencies,  
22 always leave saying, it's amazing what this  
23 committee does.

24 But it could not be done, frankly,  
25 with the incredible talent, folks like Ashley  
26 Chappell, and Russ Proctor in the back, and Scott  
27 Smith. It just could not be done without that  
28 talent. So everything's done through interagency  
29 subcommittees.

30 Whoops. Sorry. Doing it again.  
31 Okay. So I'm going to show you the priorities  
32 for the last previous year, because we're not  
33 going to approve the new work plan until  
34 September 21st. But basically, some of these  
35 things have stayed the same.

36 Oh, before I go on, I heard last night  
37 -- I think it's kind of cute, and unfortunately,  
38 Gary's not here to back me up on this, but last  
39 night I understood that trying to make a  
40 correlation to the Hall -- Rock and Roll Hall of  
41 Fame.

42 So I will tell you that building a  
43 coalition within the CMTS has not been easy. As  
44 a matter of fact, it's been challenging. I would  
45 say, as we started this, my job really felt like  
46 the Almond Brothers song, "Tied to the Whipping  
47 Post." I was tied to the whipping post.

48 However, ten years later, I celebrate

1 -- there you go, tied to the whipping post. Ten  
2 years later, ten years later, I just celebrated  
3 ten years -- there you go, in July. That's  
4 right. In July, and now I have to say, after all  
5 that, it really just feels like a current pop  
6 song by Meghan Trainor -- she's not in the hall  
7 of fame yet.

8 But she had a song that was called,  
9 "If I was you, I would want to be me too." If I  
10 was you, I'd want to be me too. So it tells you,  
11 I've got a hell of a good job now. All right.  
12 That's the end of my pop references.

13 Okay. It seemed funnier earlier. All  
14 right. Our priorities have been pretty much in  
15 these issue areas. We have the monkey on our  
16 back that's assessment report to Congress. So if  
17 you want more citations on things about the MTS,  
18 please just let us know. We're filled with  
19 looking at that kind of stuff right now.

20 The status of that report is that it's  
21 in final draft. It should go back out for  
22 interagency review. The fact of the matter is,  
23 any report to Congress must be approved by O&B  
24 through interdepartmental reviews.

25 Getting interdepartmental reviews is  
26 the easy part. It's getting something out of  
27 O&B. Whether we'll get it out before the end of  
28 the administration, who knows, but we're going to  
29 be close. It is a huge priority of Admiral  
30 Thomas to get that done.

31 Secondly, the last strategy of the  
32 Marine Transportation System was in 2008,  
33 approved by the cabinet-level board. We are  
34 certainly overdue to revise it. It was updated  
35 in 2013.

36 At the time, our current chair, in  
37 2013, asked that we table it until the assessment  
38 was done, kind of a Catch 22. But we're very  
39 close to getting back to it.

40 So I want to put a point in. To the  
41 extent that there are things that are huge  
42 priorities out of this federal advisory  
43 committee, and there are a lot of other MTS-  
44 related federal advisory committees in the  
45 federal government.

46 As a matter of fact, there's 36 of  
47 them. That list, we have on our website. We can  
48 go down the list. But to the extent that you

1 have recommendations to your federal sponsor,  
2 NOAA, and to the extent that NOAA is comfortable  
3 forwarding those for consideration, or thinking  
4 about those recommendations when that strategy  
5 goes through our interagency reviews, you may  
6 want to do that.

7 We will work through your federal  
8 sponsor, of course, but please keep in mind, the  
9 timing is very good for some of these things.  
10 And I'm sure NOAA listens as they go along, and  
11 will look out for your interests. But please  
12 keep in mind that we are getting ready to update  
13 a national strategy for the Marine Transportation  
14 System.

15 So these are kind of obvious areas in  
16 which the CMTS is engaged, because they're  
17 important to all you guys. You talked about it  
18 already. MTS infrastructure investment, and for  
19 us, infrastructure means both hard  
20 infrastructure, and informational infrastructure.

21 That has always been a priority,  
22 certainly something that NOAA reminds us about,  
23 but across the federal agencies, it is both  
24 informational and like hard concrete.

25 Arctic marine transportation  
26 navigation services and technologies, I'm going  
27 to talk about that a little bit more, especially  
28 because of what you do here. Maritime data, huge  
29 issues, our research and development, resilience,  
30 energy, veteran's hiring, and really, promoting  
31 the value of the Marine Transportation System.

32 And if I could, I want to say that  
33 when we talk about promoting the value of the  
34 MTS, cannot tell you enough, right now, in a  
35 change of administration, you guys are hugely  
36 important. You are a connection between the  
37 federal government and the powers that be.

38 And the next administration, whomever  
39 that may be, it's up to all of us to educate and  
40 inform those folks on the value of the Marine  
41 Transportation System. Don't presume it's an  
42 obvious, because it is not.

43 As a matter of fact, one of the  
44 stories that Admiral Thomas told me was when he  
45 was briefing Secretary Napolitano about how ports  
46 are very different than airports. You know,  
47 maritime ports aren't confined, like in an  
48 airport.

1           They're not? No. People can almost  
2 come and go through them. They can? It's not  
3 like it -- the perception and understanding of  
4 how ports work wasn't just something we think  
5 they understand.

6           So we cannot presume those people  
7 understand just what that's about. So please  
8 keep that in mind as we move forward. We're all  
9 in the business of educating and informing on the  
10 value of the MTS.

11           One of the ways that we do that  
12 outreach is through federal advisory committees,  
13 so thank you for letting me be here today. It's  
14 hugely important. It is part of our outreach  
15 plan. And as I said, there are 35 other federal  
16 advisory committees that deal with maritime  
17 transportation.

18           The closest one to you would be the  
19 Navigation Safety, the NAVSAC Committee out of  
20 Coast Guard. And in the past, there has been  
21 some appropriate communications, because there  
22 are FACA rules that you have to go by, so you  
23 want to work through your federal sponsor.

24           But there has been communication to  
25 make sure that the things that you're putting  
26 forth are really complimentary to the Navigation  
27 Safety Committee.

28           So I just want to mention that because  
29 back in the old days, when I was on here, there  
30 was that list of most wanted that you put out,  
31 which was a really great piece. It was like,  
32 here are the top things that are most important  
33 to us, boom, boom, boom, boom, boom.

34           And not only was that shared with  
35 NAVSAC, Admiral Lautenbacher brought it to the  
36 CMTS and shared that with us, and said, these are  
37 things that are important to the HSRP. We'd like  
38 to bring them to the attention of our federal  
39 partners.

40           Okay. So very quickly -- and I'm not  
41 going to go over all these detailed. I want to  
42 spend a little more time on the navigation  
43 technology work. Infrastructure investment, want  
44 to emphasize that investment, how do we address  
45 infrastructure challenges?

46           People often talk about public/private  
47 partnerships as some magic bullet. It is not  
48 free money. It is just a financing mechanism.

1 What we under -- I think you'll kind of  
2 understand that, as we try to investigate what  
3 the federal government does or doesn't know.

4 They actually don't know a lot about  
5 public/private partnerships. There's a lot of  
6 budget people, but not a lot of finance people in  
7 the federal government.

8 Also, we did a legal analysis of  
9 public/private partnerships in a handful of  
10 maritime agencies, and found that the way in  
11 which they are directed, either through  
12 regulation or statute, was all different. They  
13 all had very different ways in which they can  
14 engage in P3s.

15 So as we talk about learning that  
16 process, recognize that every agency does it  
17 differently, a little complicating factor.

18 Also did some investment priority, how  
19 do we rank how we would -- if politics wasn't a  
20 consideration, and you truly wanted to create a  
21 maritime transportation system that really  
22 addressed your supply chain challenges and things  
23 that you need, how would you do it? Where would  
24 you put your money first?

25 So there has been some interagency  
26 consideration on that. What would the tiers be  
27 in which you engage, excluding the politics of  
28 things, which changes it altogether.

29 So some of the things that we did, for  
30 -- you may find this of interest. It's a very --  
31 so our most popular document. We put together a  
32 handbook of federal funding to the MTS.

33 Now keep in mind, some of that funding  
34 wasn't intended for maritime transportation, but  
35 it could be used for maritime transportation.  
36 Some things like DOT, the TIFIA grants were never  
37 thought of for maritime, and there's now -- now  
38 there's some of that money going.

39 It was always a highway-centric. Now  
40 it's broader. So there are over 80 programs,  
41 federal programs, for those of you who are just  
42 amused to run through stuff like. It can be a  
43 great idea for ways in which the government has  
44 funds, or doesn't have funds.

45 I did some like, some analysis of  
46 benefit/cost ratios, P3 work, and -- so our  
47 infrastructure investment map, I'm afraid I've  
48 got to take that off. It was on our website. We

1 were having so many glitches with it, we took it  
2 off.

3 What that was is, was on -- you could  
4 toggle through and see what the sources were for  
5 funding in the Marine Transportation System. But  
6 I'm sorry. We've had a failure on it, and it's  
7 not on there right now.

8 Arctic Marine Transportation System,  
9 2010, Congress directed the CMTS to coordinate  
10 transportation policy in the U.S. Arctic for  
11 safety and security. We issued, in 2013, an  
12 over-arching report on an Arctic MTS.

13 So if you're not familiar with  
14 maritime transportation in the U.S. Arctic, it's  
15 kind of a good primer, I think, on how it works,  
16 who are the components. Ashley Chappell is a co-  
17 lead on that team.

18 I got to say, a 2013 report did a lot  
19 of it, and knocked it out of the park. But it's  
20 a great, general, broad way in which we talk  
21 about the priority needs to create a very  
22 vibrant, safe, secure, maritime -- or MTS in the  
23 Arctic.

24 Also, Congress -- not Congress, sorry.  
25 The White House, through the national strategy in  
26 the Arctic region, directed DOT, and DOT directed  
27 the CMTS, to do three reports in the Arctic.  
28 First was a ten-year projection of maritime  
29 activity in the U.S. Arctic, available on our  
30 website.

31 The second one was priority  
32 investments in the U.S. Arctic, and that is  
33 completed, based upon the needs. And the third  
34 one we're working on now is the use of P3s in the  
35 Arctic, which is challenging, because we're  
36 asking Arctic specialists to talk about P3  
37 funding.

38 But -- so we have people from Treasury  
39 who have helped write it. So please don't take  
40 this as an offense. But as you can imagine,  
41 here's the challenge for finding people who  
42 understand finance in the federal government.  
43 It's just not innately something we talk about.

44 Okay. Maritime safety, we have a  
45 Future of Navigation Integrated Action Team.  
46 It's co-led by Coast Guard, NOAA and the, and  
47 Army Corps. Those are three major agencies that  
48 provide navigation services for the federal

1 government. Certainly, National Geospatial  
2 Intelligence Agency does some of that, but that's  
3 primarily for Navy, for military purposes.

4 And this is a team that is probably  
5 one of our most high-functioning teams. It's the  
6 one I brag on the most. It's one of the first  
7 ones we started in 2006 when I came on board,  
8 with NOAA's leadership, again, and can't thank  
9 NOAA again enough for that.

10 Russ Proctor's co-lead on that, John  
11 Stone from Coast Guard, and Brian Tetreault from  
12 the U.S. Army Corps of Engineers. I'm going to  
13 talk about these at the end a little bit more,  
14 about the waterways harmonization, the enhanced  
15 marine safety information, the S100 architecture.

16 And I know I'm talking quickly, but  
17 there's so much to go through, so please forgive  
18 me if I'm just too fast. And -- but we'll have  
19 time for questions. And -- but again, I'm going  
20 to talk about that more fully in a little bit.

21 Maritime data, I think you can  
22 appreciate, there's lots of data out there. We  
23 talk about that. Lots and lots of data. The  
24 question is, do you have the right data? And in  
25 the federal government, can we share that data in  
26 a way that's meaningful?

27 Again, agencies have very clear  
28 directives, both in regulation and in statute,  
29 that says they are to collect and use data in  
30 certain ways. That doesn't mean that that data  
31 has to be shared.

32 And in fact, the CIOs, or cyber-  
33 security folks in our agencies and departments  
34 are working very, very, very hard to keep you  
35 from sharing that data. So how do we get apples  
36 and apples together?

37 And this is a team that has an  
38 unenviable job of trying to make that information  
39 more sharable, interoperable.

40 If any of you have gone on data.gov,  
41 it's a pretty complex site that the White House  
42 initiated. There was never a maritime tab on  
43 there, so it could take you hours and hours to  
44 find some specific data points in maritime.

45 This group put it together. You'd  
46 think it was simple. It was not. Again, we had  
47 to go through departmental CIOs to make that  
48 happen, very challenging. It is now completed,

1 and the question now is to go find all of that  
2 maritime data that was kind of mixed in there and  
3 actually bring it to the surface and put it under  
4 a tab.

5 And again, harmonizing, you know, data  
6 points and information, we're supporting the new  
7 Bureau of Transportation Statistics Ports -- Port  
8 Freight Statistics Working Group.

9 If you've heard about that, and  
10 they've already met and are having a lot of  
11 challenge trying to do port -- freight  
12 statistics, when virtually every piece of data  
13 Congress wants is proprietary, and is not owned  
14 by the federal government. So those are just  
15 some of the challenges.

16 Big in R&D. We have a national  
17 strategy on research and development, and the MTS  
18 just hit a five-year mark. And frankly, all of  
19 the big points of things we were going to do in  
20 there, such as work on performance measures in  
21 the MTS, and resilience, those things were  
22 developed in the R&D and then sent out into other  
23 teams to implement.

24 We just had a research and development  
25 conference with the Transportation Research  
26 Board. We do it every two years in June.  
27 Grateful to Manson Brown for opening and  
28 keynoting. We also had, oh the four-star from  
29 TRANSCOM, General McDew, who showed up and talked  
30 a little bit about TRANSCOM's logistics  
31 capability.

32 So it was probably one of our best,  
33 and from that, we'll build and revise the R&D  
34 strategy, which there it is. So in two more  
35 years, if you're engaged in innovative solutions  
36 for MTS, we hope you'll join us then.

37 Resilience, systems resilience,  
38 something that weaves itself through all parts of  
39 the Marine Transportation System. We have a team  
40 co-led by NOAA and the Army Corps of Engineers,  
41 and they have really tried to get to the bottom  
42 of what are the different factors in the way we  
43 look at resilience of a system.

44 So just first, even within the federal  
45 family, they did an analysis and have a report on  
46 our website, both on the environmental side of  
47 resilience, and things like market trends, the  
48 non-environmental sides, market or workplace



1 things.

2 And you can kind of divide the camps  
3 in federal government on those two sides. The  
4 environmental side, coastal inundation side, and  
5 marketplace trends. What happens if you have  
6 labor challenges? What happens at the Panama  
7 Canal? And is it going to affect the way in  
8 which we have supply chain movements?

9 So that's a team that is also really  
10 moving ahead quickly. We are not engaged in  
11 environmental stewardship in the big picture,  
12 because it's such a big picture. Kind of hard to  
13 focus in on just -- you know, on, as a whole.

14 But we do have a Maritime Energy and  
15 Area Missions Group co-led by Department of  
16 Energy and the Maritime Administration. They are  
17 currently working on a work plan. It's a fairly  
18 new group. Working on a work plan to be very  
19 dynamic about, ultimately, are there ways to  
20 support and enhance the environmental stewardship  
21 of the Marine Transportation System.

22 Military to Mariner, veterans hiring  
23 is hugely important. Going to be a shortage of  
24 U.S. mariners at any one time. If there were a  
25 major sealift capability, they would run out of  
26 mariners in about four months.

27 And so with the White House  
28 initiatives and DOT initiatives for veteran's  
29 hiring, we are engaged in pulling those federal  
30 partners together, about how we could help to  
31 transition those shipboard experienced veterans  
32 to merchant mariner credentials.

33 That has been a very interesting  
34 process, because in some respects, you're acting  
35 some -- asking some of these maritime military  
36 agencies for a whole paradigm shift in how they  
37 view that.

38 You know, how do you help them help  
39 that individual get a handle on their training of  
40 their -- lifetime of their career, especially if  
41 they're only thinking about it at the end of that  
42 career? But we've had some huge successes, and  
43 certainly thanks to Coast Guard's taking a lead  
44 on many of that.

45 Okay. So I'm going to, to the best of  
46 my ability -- and thankfully, we have NOAA folks  
47 in here and Coast Guard folks in here, who can  
48 help correct me when I'm wrong. So with our --

1 well let me -- wait a sec. Were there any  
2 questions about that data dump I just gave you?

3 Yes, ma'am. Okay.

4 MEMBER MCINTYRE: So I've been around  
5 the maritime for quite some time, and a lot of  
6 things that we see up there seem to be  
7 duplication of effort in certain things.

8 MS. BROHL: Okay.

9 MEMBER MCINTYRE: So relation to your  
10 maritime data piece, you know, are you working  
11 with NMIO and other organizations out there that  
12 are trying to integrate, not just in federally,  
13 information and data sharing, but also with  
14 private partners and industry, because it's hard  
15 for me, as I'm with CLIA, Cruise Lines  
16 International Association, so I speak for myself,  
17 not the rest of the group, to understand who I'm  
18 supposed to be playing with.

19 I hear MARAD's out there about cyber-  
20 security, because that's a huge issue, and  
21 sharing information on cyber, because that can  
22 have a safety impact, obviously.

23 MS. BROHL: Yeah.

24 MEMBER MCINTYRE: We're trying to do  
25 that as an industry, but we also have the Coast  
26 Guard as the regulators. We also have IMO. We  
27 have all these other different things. There  
28 seems to be some concern, or at least from myself  
29 and my members, about the unity of effort that we  
30 see.

31 So understanding how you all play into  
32 the bigger picture --

33 MS. BROHL: Okay.

34 MEMBER MCINTYRE: -- is kind of  
35 interesting.

36 MS. BROHL: It's a great question.  
37 NMIO is the National Maritime Intelligence  
38 Integration Office. So NMIO is a member of the  
39 CMTS, and we're a member of NIAC. So we work  
40 quite throughout.

41 Now, so NMIO is intelligence  
42 integration. That would be more of a maritime  
43 security thing. We have not been that much  
44 engaged, collectively. And keeping in mind,  
45 first, the CMTS is not a separate agency. It is  
46 a collection of maritime agencies and  
47 organizations that come together.

48 All right, so presumably there is no

1 duplication, but each agency often has their own  
2 things that they have to deal with themselves.

3 So on the maritime security side,  
4 maritime administration has certainly taken the  
5 lead on some of the alerts and warnings, kind of,  
6 you know, send the word out to U.S. flag vessel  
7 operators, in particular, not necessarily on the  
8 international side. It's really for them to  
9 engage the U.S. side.

10 And the work that NMIO has done, in  
11 terms of intelligence integration, is truly on  
12 that intelligence side, specifically. That is  
13 not a duplication of what we do. We're not the -  
14 - CMTS -- we, I'm saying the agencies as a whole,  
15 including NMIO, are not that engaged at this time  
16 in maritime security.

17 I will say this. Primarily because  
18 there's been so many elbows in that kitchen,  
19 there's a lot of yours, mine and ours, so the  
20 appearance of duplication could be there. And I  
21 cannot -- it's too soon for me to say whether  
22 there is real duplication.

23 But to your point -- and I appreciate  
24 it, there is, in the work plan, yet to approved,  
25 but for approved by -- for conversation, by  
26 Admiral Thomas, on the 21st, to talk about the  
27 role, is there a role for this CMTS partnership  
28 to start looking at maritime security  
29 holistically, who's doing what and where?

30 What is initially being proposed would  
31 be that we actually do an org chart in the  
32 federal government. If you work on -- there is  
33 the Maritime Security Working Group in the White  
34 House, that works under the National Security  
35 Council, and it goes all the way through. So I  
36 guess I -- my point, I know that I bring that up  
37 because security is my background, is it's just,  
38 that was a general example that I was giving with  
39 the NMIO.

40 So when you talk about, like maritime  
41 safety, that's very, that's a very broad -- it  
42 seemed to be more safety of navigation than  
43 maritime safety. For me, maritime safety is  
44 shipboard things, what else is going on, not just  
45 the Marine Transportation System itself, the  
46 actual vessels and what's going on.

47 So my real point here is that there --  
48 it's hard for industry and those of us in the --

1 who are industry, to understand who is our, for  
2 lack of a better term, bellybutton.

3 MEMBER MCINTYRE: The CMTS.

4 MS. BROHL: Right. And that's new.  
5 That -- and -- but we're not U.S. flagged, or  
6 we're not U.S. crewed.

7 MEMBER MCINTYRE: It does not matter.  
8 It does not matter. I'll only say this, if you  
9 do not know where to call, call us up, because  
10 we're a clearinghouse, all right. One of our  
11 jobs is to make sure that you know who, what,  
12 when and where.

13 If you're not sure, it's not our job  
14 to know the answer, but it's our job to know who  
15 you should talk to, who is the subject matter  
16 expert in the federal government, and who is that  
17 bellybutton.

18 You don't have to use us. Go right to  
19 your, you know, your agency partners, of course.  
20 Our job's not to get in the way of our agency  
21 members and you. However, please do not hesitate  
22 to call us, and I'll have the contact information  
23 at the end. We're more than happy to make sure  
24 that we get that right name and contact to you.

25 And depending on the question, there  
26 may be one or more contacts. But in many cases,  
27 it's actually a very discreet person, individual  
28 or agency. Thank you.

29 MS. BROHL: Anything else before I try  
30 to get through the harder part for me?

31 So the technical side, while I  
32 consider this navigation services work some of my  
33 favorite work, and I think some of the great  
34 successes, frankly, I am not the techie on this,  
35 and so I'll do my best.

36 The S100 framework is a charting  
37 framework, and it was NOAA that came to the CMTS  
38 agencies and said, you know, I think it's time  
39 for us to truly embrace the S100 in the --  
40 complementary, parallel with the IMO.

41 And so a resolution, the board passed  
42 a resolution, whereby the agency agreed that they  
43 would use this S100 framework as a way to  
44 transfer data. Now, it's much more -- you guys  
45 know it actually far better than I.

46 And if you've had a chance to kind of  
47 read this resolution, it really is -- you would  
48 think this common sense and that the agencies

1 normally adopt this. It has not been the case.  
2 And in fact, Army Corps was a little concerned  
3 about this framework, because they use an  
4 engineering framework, and they didn't want to  
5 change.

6 So this, it wasn't meant to change how  
7 we do everything outright, but it was to be very  
8 clear that the federal agencies will embrace S100  
9 to be aligned with the geospatial standards.

10 Now the standards being the  
11 challenging part of this, which led us to -- this  
12 conversation led the group to say, well if we're  
13 truly going to engage S100, get that framework,  
14 then we'd better kind of get a sense of the  
15 geospatial sense of our waterways in order to do  
16 that.

17 So saying that we're going to do this  
18 just means more work. It's starting the domino.  
19 But before you can do that, you have to really  
20 understand the way in which our waterway -- we  
21 have to be able to talk to each other in a  
22 geospatial way on our waterways.

23 So I'm going to read some of the  
24 wording on this so I say it correctly. I  
25 actually got this wording from the Army Corps of  
26 Engineers, and I'm hoping that my friends at  
27 Coast Guard and NOAA will correct me.

28 But you all know that a nautical chart  
29 is really the graphic representation of a spot in  
30 maritime, right? So in the modern ENC's is simply  
31 a data set. I'm going to tell you what you know  
32 a little bit, and then expand, of marine  
33 information and it's this team, our Future of  
34 Navigation team, that felt it was time to  
35 harmonize all the maritime information using ENC's  
36 as the base data set.

37 Now, harmonizing sounds good, but  
38 there's a lot of waterways in the United States,  
39 and I say, 25,000 miles of waterways. That's a  
40 lot of charts. That's a lot of authorized  
41 channels.

42 So to harmonize that, so we're all  
43 talking about the same geospatial reference  
44 between agencies. Now remember, we're not even  
45 still sure how we can talk to one another between  
46 agencies, in a digital way, or we can have  
47 machine to machine talking to one another. So we  
48 need a common georeferenced point of interest for

1 the ENC, and we need that between each of the  
2 federal agencies.

3 So primarily Coast Guard, Army Corps,  
4 and NOAA, are working together to agree to  
5 support an effort, which we call this Waterways  
6 Harmonization Project.

7 The idea is to start with a pilot  
8 study, which is being led by Coast Guard. Thanks  
9 to Coast Guard, it's being financed by Coast  
10 Guard, but jointly managed by those three  
11 agencies.

12 The goal of that is to ultimately be  
13 able to have alignment between agencies within  
14 the federal government, of the digital  
15 identification and geospatial definition of  
16 waterways within the navigation system.

17 So the only way to do it, though, is  
18 to do it. And it really is kind of one data  
19 point at a time. And the challenge, there's a  
20 lot of data points to try to change.

21 So right now, there is a contract that  
22 just let, was let by Coast Guard on behalf of the  
23 team, to begin this process. It is a matter of  
24 time and money. So when we say that we truly  
25 want to have a e-navigation system aligned with  
26 IMO, that talks a good game, but it is truly a  
27 huge bite of an elephant.

28 So I'm going to ask Scott if there's  
29 things that you can clarify in that, that I mis-  
30 said, or Russ? Shep?

31 Okay, so my point is, is that this is  
32 not a glamorous piece of work. This is the kind  
33 of stuff that you tell a politician and they go,  
34 I don't see a sound bite in that, where is my  
35 press release?

36 And you say, but sir, or ma'am, this  
37 is how we're going to make the system safer, all  
38 the way across the board. We have to be able to  
39 do this. And they go, well that doesn't sound  
40 very sexy.

41 But this is exactly the kind of work  
42 that the agencies should be doing together. And  
43 while you don't hear much about it on the  
44 outside, I'm hoping that I can assure you that  
45 this is of a priority interest within the federal  
46 government.

47 RADM SMITH: Well maybe I could just  
48 put a find point on it, because this has come up

1 multiple times.

2 MS. BROHL: Thank you.

3 RADM SMITH: I mean, you mentioned  
4 that the Army Corps works in engineering land.

5 MS. BROHL: Yes.

6 RADM SMITH: And we work in navigation  
7 information land. And this is the fundamental  
8 reason that these systems are not compatible is  
9 this, right here. And so agreeing on standards  
10 of interoperability is really, really, really  
11 important.

12 It takes something -- you know, it  
13 could fundamentally change the way we do  
14 business, so.

15 MS. BROHL: Scott?

16 CAPT SMITH: Yes. For us, really what  
17 this does is it allows us -- it's the ground work  
18 that's going to be laid to allow us to do that  
19 marine safety information digitally.

20 And until we get our houses in order,  
21 like the admiral said, you know, understanding  
22 and being able to speak to each other in a common  
23 language, we can't build that EMSI that we want  
24 to push out to the mariners to get that  
25 information in your hands.

26 So that's really the foundation. It's  
27 -- Helen said, well it's not sexy, but it's work  
28 that's got to get done. And thank God there's  
29 General Smart Dot post on Dahlgren, who got the  
30 contract, that are going to do this for us. So  
31 thanks.

32 MS. BROHL: And thanks to Coast Guard  
33 for that. Because they had to commit some  
34 finances to get this started. I don't know how  
35 we're going to deal with it afterwards, but at  
36 least we'll have a pilot study to get a sense of  
37 how to do it right.

38 Yes, sir?

39 MR. LOEPER: Tom Loeper here. I just  
40 wanted to put a plug in for my other job, but the  
41 other part of this is nautical publications. So  
42 we're also working with this, and it's a real  
43 bear trying to get our material in here too. So  
44 that's something there's, we have international  
45 working groups on that, too.

46 MS. BROHL: You know, if -- this leads  
47 me back to, one of the first members of HSRP was  
48 a guy named John Gray. John Gray worked for

1 INTERTANKO and wrote the first report in 1996,  
2 which created the term marine -- maritime Marine  
3 Transportation System, MTS, where he complained  
4 that the left hand and the right hand of  
5 government weren't talking to one another.

6 We don't need to go in waters where  
7 you have yours, mine and ours buoys. We don't  
8 need to have agencies putting regulations  
9 together that are in conflict with another  
10 agency. Who are we supposed to follow?

11 And that led to Congress directing  
12 DOT, along with their federal agencies, to do an  
13 assessment of the Marine Transportation System in  
14 1999, which led to what we have now as the CMTS.  
15 It was about that.

16 So really, to me, this work on  
17 maritime navigation safety gets to the root of  
18 what that initial effort was all about. So here  
19 we are in 2016, all these years later, really  
20 trying to get to the meat of what INTERTANKO was  
21 trying to express back in 1996.

22 So Scott mentioned EMSI, which is  
23 Enhanced Marine Safety Information. That is the  
24 other part of this. It gets a little bit, really  
25 to that how we are going to communicate that  
26 joint information to the outside stakeholders.

27 So this is a -- if the harmonization  
28 is kind of led by Coast Guard through interagency  
29 team, EMSI is led by Army Corps, and their list  
30 of engineers with the interagency team.

31 The point is to kind of address those  
32 different formats, but the way in which we  
33 disseminate that information to you in the pilot  
34 house, for interested stakeholders.

35 So this is where, if you're trying to  
36 get a sense of Notice to Mariners -- although  
37 there are just more than Coast Guard Notice to  
38 Mariners, and chart updates and all those things,  
39 how do we get that information out to you?

40 So for the last couple of years there  
41 has been a lot of work. It's kind of that basic  
42 engineering, how do we talk to one another in  
43 meaningful way? How do we harmonize the  
44 information that we share, collect, and then  
45 share and disseminate to you?

46 So really, the goal, ultimately, is to  
47 provide an integrated information bulletin. Now  
48 our pie-in-the-sky idea of this would be that you



1 would get it through an entire voyage.

2 As you were in transit on that vessel,  
3 this information would come to you automatically,  
4 that you wouldn't have to look up that Notice to  
5 Mariners, and all of this would be self-  
6 correcting in your chart as you go along, no  
7 matter who put that information out, federally  
8 put that out.

9 That is our goal. Right now, we're  
10 actually at a pretty interesting place with it,  
11 because Army Corps has created a beta site for us  
12 that's web-based at this time, website. I will  
13 tell you, I've looked at it. It's still  
14 internal. For me, it's kind of gobbledy-gook.

15 All of -- you guys would probably look  
16 at it and go, oh, that's really kind of cool.  
17 But so I got to say, it's, to me it doesn't, it's  
18 not as word-based as someone like me would need.  
19 It's a little more digitally based.

20 But the goal is, we're trying to get  
21 to that machine-to-machine communication between  
22 agencies, such that you bring all those machines  
23 together into one, and push it out to you.

24 So some of the things you talked  
25 about, that's what these teams are doing  
26 internally right now. I say that kind of close?  
27 Okay.

28 So again, we think the Marine  
29 Transportation System is super important. And I  
30 know you do too, so we're here really to support  
31 the federal agencies, support you guys. We have  
32 lots of more information on our website at  
33 [www.cmts.gov](http://www.cmts.gov).

34 Please feel free to check it. Let us  
35 know if there's stuff in there that you kind of  
36 feel is missing, stuff that would help you get a  
37 grasp on the whole of government work in support  
38 of the MTS.

39 Here's the context. I'm the director,  
40 but we've got our NOAA liaison, our Army Corps  
41 liaison, we've got a Coast Guard liaison and the  
42 secretary of the office. And, you know, Facebook  
43 us, like us on Facebook, Twitter, all those  
44 things that someone else younger than me takes  
45 care of.

46 But thank you for the time. I hope  
47 that was helpful. And really, our goal is, you  
48 know, to hear you and to bring that word back to

1 the agencies in an appropriate way. Thank you.

2 (Applause.)

3 CHAIR HANSON: Thanks, Helen. As  
4 always, a lot to digest. There have got -- we  
5 ran a little bit long here, but we have to take  
6 some questions here, because there's a lot there  
7 for if anybody has anything, off the top.

8 Lawson?

9 MEMBER BRIGHAM: Okay, I get to the  
10 Arctic chase here. I mean, already some of the  
11 information --

12 CHAIR HANSON: I know. It was Number  
13 4 on the list, you know, and you might want to  
14 move on.

15 MEMBER BRIGHAM: Yes, yes. No, I  
16 actually probably should be lower, because, I  
17 mean, there isn't any offshore development now in  
18 the United States Maritime Arctic, so the  
19 hundreds of transits that were going to be there,  
20 are not going to be there at least for the  
21 foreseeable future.

22 And it does point -- there have been  
23 many studies done on Arctic transportation, and  
24 we've heard a lot about it, that the future of  
25 the Arctic Marine Transportation is related to  
26 the commodities markets, Arctic natural resource  
27 development. It's not necessarily directly  
28 related to sea ice retreat, or air missions from  
29 ships transiting.

30 So tremendous misinformation. There's  
31 a lot of hype, maybe a little less hype now that  
32 Shell has moved. So it's a complex, it's a  
33 complex subject to study. And it does involve  
34 climate change. But in the bottom line, as we've  
35 heard in several meetings, all about the  
36 economics of the global shipping enterprise, and  
37 it's about Arctic natural resource development,  
38 whether it's high or low.

39 So it's a sub-subject, but our working  
40 group has to keep on it, so we can cut through  
41 some of the misinformation.

42 CHAIR HANSON: Agreed. I had one for  
43 you, and you tell me if there's a short answer,  
44 long answer. If it's long, we'll take it off  
45 line, but PORTS. I know that you were -- you  
46 talked about --

47 MS. BROHL: As in Physical  
48 Oceanographic Real-Time Systems?

1 CHAIR HANSON: Thank you. I know you  
2 were part of an effort, both in the formation of  
3 it, but also in 2007 time frame, I believe, there  
4 was an effort to get it fully funded on the  
5 federal side. Can you tell us a little bit about  
6 that effort, and what we might redo? Obviously  
7 we can't talk about lobbying here, but just kind  
8 of, from a -- what message does Congress need to  
9 hear?

10 MS. BROHL: Well, honestly, I hesitate  
11 to speak for NOAA, because it's NOAA's program.  
12 When I testified, when I was with the Great Lakes  
13 Shipping Association, on behalf of the National  
14 Maritime -- National Marine Safety Coalition, I  
15 testified, one of the very first hearings. I  
16 talked about real-time systems. It was really an  
17 IOOS hearing.

18 And it was my statement back then that  
19 the federal government already had their -- that  
20 IOOS and -- please apologize if I say this,  
21 because I don't mean it as, in any negative way  
22 at all, but for academia to take over real-time  
23 observation, environmental observations for ship  
24 operations, is probably inappropriate, because of  
25 the operational nature of the business, and that  
26 the federal -- and that the Congress should look  
27 to PORTS for that.

28 What we always found is that not  
29 unlike funding from the Harbor Safety Trust --  
30 excuse me, Harbor Tax Fund. I'm sorry. My  
31 brain's a little scrambled.

32 (Off microphone remarks.)

33 MS. BROHL: Thank you. That one.  
34 HTMF. That -- okay. That's like CTMS. I know.  
35 That Congress talks big, but they don't actually  
36 do what has to be done to make it happen.

37 And as long as PORTS continues to have  
38 the appearance of being the perfect  
39 public/private partnership, they don't need to.  
40 As long as the local sponsors continue to fund  
41 it, you know, why would Congress have to do it?

42 Now I'm not proposing anybody turn it  
43 off, because you absolutely need it, and pilotage  
44 organizations need it, number one. And how do  
45 you charge, you know, sailboarders to use the  
46 information they get from PORTS programs?

47 The challenge is, I don't think they  
48 truly under -- only a couple of people in

1 Congress understand it. That's the challenge.

2 CHAIR HANSON: Okay. All right.  
3 Thank you. And I appreciate the time again,  
4 Helen. No, no.

5 (Off microphone remarks.)

6 CHAIR HANSON: Okay. All right  
7 Ashley, thanks for hanging in there. Our final  
8 guest speaker for the afternoon is Ms. Ashley  
9 Chappell, with the office of Coast Survey, and  
10 national coordinator for the Integrated Ocean and  
11 Coastal Mapping Program.

12 As you will hear from Ashley, also not  
13 a stranger to the HSRP, the IOCM Program delivers  
14 a forum for interagency coordination to integrate  
15 and disseminate ocean and coastal geospatial data  
16 and related products.

17 Ashley, all yours.

18 MS. CHAPPELL: Okay, thank you. So  
19 would -- I figured I would have about ten  
20 minutes. That's okay. What -- do you think I  
21 could have 15? Okay.

22 So I don't know if you looked at my  
23 slides --

24 CHAIR HANSON: You have to tell a rock  
25 and roll story, though.

26 MS. CHAPPELL: Oh dear. I'm all  
27 classical music.

28 CHAIR HANSON: Just teasing.

29 MS. CHAPPELL: I talked to you in  
30 Galveston without slides. So I don't know if you  
31 had a chance to look at my slide deck, but in the  
32 background, I just have a quick summary of what  
33 IOCM is.

34 And I actually thought, you know,  
35 given Mike has alluded to IOCM, Ed, Brandon, I  
36 thought if you would indulge me, we could just  
37 jump to the background and quickly flip through  
38 those, if you don't mind, especially for anybody  
39 who's new to the panel, so can you just do that?

40 Background. So just a very quick  
41 summary of what IOCM is. Planning, acquiring,  
42 integrating, managing all kinds of data in the  
43 ocean and coastal realm. It's not just  
44 hydrographic, bathymetric. It's all kinds of  
45 things, and for many, many different purposes,  
46 not just nautical charting, habitat mapping,  
47 virtually any activity, in a way, is mapping.

48 And so we've divided what IOCM is in

1 order to get our arms around what IOCM is,  
2 because you could pretty much kind of tag  
3 anything with the IOCM label.

4 The way we think about it in our  
5 program, is in three ways. So we divide it into  
6 data acquisition, end-to-end data management, and  
7 then maximum use and reuse of that data.

8 Why -- for data acquisition, why would  
9 you do that? Obviously, you want to be smart  
10 with federal dollars, taxpayer dollars. You want  
11 to coordinate. You don't want to have duplicate  
12 collections, all of those good things. So  
13 acquisition is pretty much, actually the easiest,  
14 easiest thing. When we talk about IOCM, people  
15 really get the acquisition piece.

16 Managing data. This is another  
17 important piece. It's a little more esoteric.  
18 It's a lot about metadata and, you know, things  
19 that our National Centers for Environmental  
20 Intelligence do, NCEI, formerly NGDC.

21 So there's a lot of interaction there,  
22 on stewarding data, but making sure that that  
23 data is well stewarded, and so that it can be  
24 used and reused in the future.

25 And then, of course, the third piece  
26 is teeing that data up to be used. And we kind  
27 of, we kind of put a hard stop on what IOCM is  
28 right there. It's getting the data to the place  
29 where somebody wants to, and can use it.

30 And then the uses of that data, we let  
31 others worry about. We let the Brandons and the  
32 Office for Coastal Management and the ship  
33 operators and everyone else worry about how that  
34 data gets used. So that's just how we've kind of  
35 bracketed who we are.

36 And then just a short slide on, my  
37 little IOCM program is four people, three or four  
38 or five people in the office in Silver Spring,  
39 the IOCM Center at UNH, 21 NOAA programs. We  
40 have a NOAA IOCM program, and then we have  
41 virtually the same thing at the interagency  
42 level, so 11 federal agencies.

43 And then I always put you, because  
44 it's not just you, the HSRP, but it's usually  
45 everybody that I'm talking to, as part of IOCM.  
46 So where am I pointing? Oh, that's the last  
47 slide, probably.

48 So let me jump back. And what I'm

1 here to do today is update you on the coastal  
2 mapping strategy, where that stands, and then  
3 just a few other things that we're doing in IOCM.

4 So you were very kind to look at the  
5 National Coastal Mapping Strategy. We talked  
6 about it in Galveston. You've looked at it  
7 since. I think you're going to discuss it right  
8 after I finish, and provide us your comments,  
9 which we've been waiting for. Glad to have  
10 those.

11 The public comment period is over.  
12 We're going to take your comments and fold them  
13 in to that feedback, and how we're managing the  
14 comments. Excuse me. And we're also actually  
15 implementing things that are in the strategy  
16 already.

17 The four components of that strategy,  
18 just a quick refresh, were annual coastal mapping  
19 summits, which we have since sort of adjusted to  
20 be more regional in focus, so we could have, you  
21 know, seven different coastal mapping summits.

22 We really felt like the one annual  
23 summit was too big, or not enough time to really  
24 afford any particular region some good attention.  
25 So we're trying now to break it up into regions.

26 Common standards, we've talked about  
27 standards a bit here today, but this is a common  
28 approach to, in this case, for Version 1, is  
29 topobathy LIDAR. When we get into Version 2, it  
30 will be for other things, and I'll speak to that  
31 in a minute.

32 That whole life cycle approach to  
33 data, getting back to one of our tenets of IOCM,  
34 which is that data stewardship component, and  
35 then R&D on new tools and techniques.

36 Where we're heading next, after we  
37 fold in all of your comments and others, and come  
38 out with a final draft for Version 1, again, just  
39 on LIDAR, on LIDAR elevation. We are moving on  
40 to Version 2. We've sort of had some lessons  
41 learned on how to do this kind of report.

42 We based it on topobathy LIDAR because  
43 we had the sort of hanging fruit of the JALBTCX  
44 partnership with NOAA and Army Corps, NAVO and  
45 USGS, and it was a good place to start, to get  
46 our -- get a handle on what a coastal mapping  
47 strategy could be.

48 But that left a lot of the ocean

1 untouched, so we need to expand, move out  
2 offshore more, into other technologies, other  
3 acquisition technologies.

4 And we're going to build from agency  
5 inputs like the NOAA Hydro Survey Priorities  
6 effort, other partner agency priorities, like  
7 BOEM, just folding a lot of that in together to  
8 come up with a strategy for 2.0.

9 One of the things we had had in our  
10 first, in 1.0, in the topobathy piece, was that  
11 we should look at kind of doing the same thing  
12 for ocean and coastal that USGS and the 3-D  
13 Elevation Program did for topo LIDAR. And we  
14 wanted basically to do a NEEA follow-on.

15 And we've already, thanks to Coast  
16 Survey for the funding, and to NGS for the  
17 contract mechanism, and to USGS for contributing  
18 their insights on how we might frame a task,  
19 we've actually put out a contract to do just the  
20 scoping study for what a NEEA follow-on might  
21 look like.

22 And that will be to update NEEA  
23 itself, and then add on the ocean and coastal  
24 components, so I'm really excited to get that  
25 moving. Looking forward to that.

26 Another aspect of our coastal mapping  
27 strategy, of course, is the coordination piece.  
28 We looked at SeaSketch in Galveston. I don't  
29 know if anybody of you have gotten on. Ed's  
30 talked about it already a couple of times.

31 But this is our coordination site that  
32 we're using to collect mapping data needs,  
33 mapping data plans, and of course, the goal is to  
34 put the two together, in order to maximize the  
35 dollars that are spent, the resources that are  
36 spent on data acquisition, and of course,  
37 avoiding duplicative efforts.

38 And it's actually going really well.  
39 This will be the second year that the 3-D  
40 Elevation Program will use it for their Broad  
41 Area Announcement to their matching grant program  
42 for topo LIDAR. And of course, we have the  
43 coastal component, through the Interagency  
44 Working Group on Ocean and Coastal Mapping.

45 And this is -- we take in anything  
46 from anyone who is acquiring data or has a data  
47 need. So just put it on there.

48 One thing that happened when I was

1 developing this little slide presentation, I got  
2 confirmation that our agreement with Quintillion,  
3 which is a fiber-optic cable laying company, who  
4 is working on a big project in the Arctic, has  
5 agreed to share their data with us.

6 This is something that has been sort  
7 of in the mix, I think, for three years now, from  
8 when they first proposed, you know, that they  
9 were putting this cable in.

10 And we saw it as an opportunity for,  
11 you know, for them to share data, if they were  
12 willing, right about the same time that we were  
13 doing the agreement with Shell and ConocoPhillips  
14 and Statoil, back, you know, certainly when  
15 things were really heating up on Arctic  
16 exploration.

17 But this agreement has actually come  
18 to fruition, I'm excited to say, and they will  
19 start sharing the data that they've acquired to -  
20 - that as you can see on the map, comes into  
21 these communities. And we're really excited  
22 about it.

23 The specs they used to survey meet our  
24 NOAA hydro specs, which is absolutely terrific.  
25 But what I'm really excited about is, it's a good  
26 example of, you know, a private sector entity  
27 sharing their data with NOAA, and not -- there's  
28 really no expectation of anything in return.

29 But this -- having this data, I think,  
30 will be terrific in getting into those  
31 communities, and matching up with the data that  
32 we've been acquiring for the last few years that  
33 we've been working in the Arctic. So it's a good  
34 example of the kind of partnership we can  
35 develop.

36 Okay. So this is, figuring I only had  
37 those ten minutes, kind of the laundry list of  
38 the things that we're working on this year. It's  
39 in really small print because there's so much on  
40 our plates, but I'll just hit the highlights of  
41 things I wanted to share with you.

42 I talked about the strategy already,  
43 and the NEEA follow-on. Regional coastal  
44 summits, actually Brandon was alluding to this  
45 earlier, with the Great Lakes, one we're planning  
46 for the Great Lakes this spring. We're just  
47 getting started on that.

48 And that is to bring in as many folks



1 as we can to talk about data needs, data plans,  
2 what their requirements are, why they need the  
3 data, where they need it, you know, just getting  
4 people together around the table.

5 We did this in Alaska in June. It  
6 went really well. Ed was there in the room. I  
7 think Dave, you were on the phone, which was a  
8 little bit of a struggle, but it worked really  
9 well.

10 I think, almost simultaneously that we  
11 were doing Alaska, or maybe right before, USGS  
12 was hosting one in Lacey, Washington. So we  
13 were, hit the northwest. We have plans for the  
14 southeast, with our NOAA National Centers for  
15 Coastal Ocean Science, and the Pacific Islands.  
16 That one will be done in conjunction with USGS.

17 So these summits, these regional  
18 summits that I've been talking about, that's, you  
19 know, how we put those into action.

20 Other things we, we're working on,  
21 let's see. Oh, the one thing I did want to  
22 highlight for the rest of this list is Ocean and  
23 Coastal Mapping Integration Act re-authorization.

24 The Act that authorizes IOCM is  
25 actually up for re-authorization. And if it's  
26 something that you wanted to look at, I'd welcome  
27 your input on that. I have some ideas about what  
28 a new authorization could say. But if it's  
29 something that you wanted to put on your plates,  
30 too, to look at, I'd welcome the input.

31 And I -- yes. That is my quick tour  
32 of IOCM.

33 MEMBER SAADE: I'll go first. I have  
34 to go first. Because when we were working on the  
35 Quintillion -- this is Ed Saade. When we were  
36 working on the Quintillion project, we actually  
37 recommended that they donate the data, as when we  
38 work with everybody else in the Arctic.

39 So it's great hear to that somebody  
40 actually did that. And I'll vouch for the data  
41 when you get it, so.

42 (Laughter.)

43 MEMBER SAADE: But I'd also like to  
44 just point out that the SeaSketch database or  
45 mapping aid is really useful. We've been  
46 actually using it for commercial purposes around  
47 the New England area, to take a look at where  
48 data already exists.

1           There's a whole lot of wind farm  
2 activity going on there, and there's lots of  
3 tenders coming out, and having that database  
4 there to see whether there's already data that  
5 exists, or give you a better idea on what the  
6 geology is like, or the seabed conditions are  
7 like.

8           So there's a lot of applications  
9 beyond just additional government mapping that  
10 those, that product can be used for. So I wanted  
11 to make sure you got some credit for that, and  
12 say thanks.

13           VICE CHAIR MILLER: Just an interest  
14 question for myself. When do you anticipate the  
15 Pacific summit?

16           MS. CHAPPELL: I don't have a date for  
17 you, Joyce. Sorry. I have to talk with Jeff  
18 Danielson at USGS. I think he's thinking late,  
19 late spring.

20           VICE CHAIR MILLER: Next year?

21           MS. CHAPPELL: Yes.

22           VICE CHAIR MILLER: Okay. Keep us  
23 involved, because I'm still, I'm still actively  
24 mapping --

25           MS. CHAPPELL: Okay.

26           VICE CHAIR MILLER: -- you know. Do  
27 you -- is there, is there any sense that there  
28 will be any additional mapping done with  
29 President Obama's announcement last week of --

30           MS. CHAPPELL: Of the --

31           VICE CHAIR MILLER: -- 500,000 more --

32           MS. CHAPPELL: Adding to the monument?

33           VICE CHAIR MILLER: Yes.

34           MS. CHAPPELL: I don't know. I  
35 haven't had time to look at that.

36           VICE CHAIR MILLER: I mean, we haven't  
37 gotten the original one done yet.

38           MS. CHAPPELL: I know. There's a lot  
39 to do over there already, so.

40           VICE CHAIR MILLER: Yes. Thank you.

41           MEMBER THOMPSON: I just wanted to  
42 echo Ed about SeaSketch. In the state  
43 government, we use that tool. It's a very  
44 helpful tool to help partner, because of funding  
45 that was always an issue.

46           So I'm glad you're joining that,  
47 because that allows us, the state government, to  
48 go to one source, see who has needs there, and

1 then we can work on the partner to collect at one  
2 time for multiple use.

3 MS. CHAPPELL: Yes.

4 RADM SMITH: Yes, actually I think  
5 this Quintillion thing is awesome, and we, you  
6 know, we should definitely make a huge fuss, not  
7 only over them, but over -- it was Fugro, you  
8 were involved in as well. So fuss over them not  
9 only because they deserve it, but to encourage  
10 others --

11 MS. CHAPPELL: Exactly.

12 RADM SMITH: -- who might want to be  
13 fussed over in a similar way, so --

14 (Laughter.)

15 RADM SMITH: So let's brainstorm some  
16 ideas on how to make a big deal out of it.

17 MS. CHAPPELL: Yes. Actually, one  
18 thing that Ed and I are sort of working on is  
19 figuring out -- because the, when you give this  
20 data, you can call it a charitable donation to  
21 the government, and therefore a company, a  
22 business, or even an individual could claim it as  
23 a charitable donation on their taxes.

24 But it's that nuance of what they get  
25 to claim. You know, is it the acquisition cost,  
26 is it the market value? So we have a little work  
27 ahead of us to figure out, you know, how we might  
28 properly guide people if they chose to take that  
29 option.

30 DR. MAYER: If I may make a  
31 suggestion, it turns out one of those Quintillion  
32 lines is exactly a line we were going to run this  
33 summer on the Healy. And having known about  
34 this, we've shifted the line as soon as we  
35 learned that, indeed, the data would become  
36 available, which is just fantastic.

37 But it did start up a long-term  
38 discussion with the ICPP, I think, it's the  
39 International Cable Protection Panel, or  
40 something which is, the organization that  
41 represents all of the cable folks.

42 And they are having their annual  
43 meeting of their executive in Portsmouth in a  
44 couple of weeks. And if it's possible for you to  
45 attend, I could try to arrange that, because one  
46 of the topics of discussion there is going to be  
47 this broader issue of making the data available.

48 It's something I just haven't done in

1 the past. And I think this is a great start. So  
2 I'll -- if it's --

3 MS. CHAPPELL: Larry, that would be  
4 great, if you would make that happen.

5 DR. MAYER: If it's okay, I'll try to  
6 make that arrangement for you.

7 MR. DEBOW: Especially -- has anybody,  
8 you know, having a concerted effort to reach out  
9 to other organizations like the oil patch  
10 industry, et cetera, to get data sets?

11 MS. CHAPPELL: Well, I've had some  
12 help in trying to reach out to the oil companies,  
13 but once you get into them, it's been a little,  
14 kind of, just directing all over the place. I  
15 haven't quite found the perfect solution to  
16 finding the right person, the bellybutton, so to  
17 speak. But --

18 (Off microphone remarks.)

19 MS. CHAPPELL: Yes.

20 MEMBER SAADE: So if I could add to  
21 that, there's a lot of issues with proprietary  
22 data, whether it's an exploration company working  
23 for the oil companies, or the oil companies  
24 themselves. So they're really slow to move on it.  
25 They say all the right things.

26 We haven't had much luck in Alaska,  
27 getting them to donate data, but we're working  
28 with Ashley on finding ways to sort of dumb down  
29 the data, to decimate it, so we, if we have a  
30 huge area that's all multibeam, nice data  
31 density, maybe we can take that down by two  
32 orders of magnitude, or three orders of  
33 magnitude, and make that useful to NOAA and make  
34 that acceptable to the oil companies, but we're  
35 just starting to have that conversation.

36 And there is, there is precedent for  
37 donating data that we did back in the California  
38 mapping program, where we donated a lot of data  
39 around the Farallon Islands, or we got the owner  
40 of the data to donate it, and worked out the tax  
41 issues on all that.

42 So we've got a precedent there. We  
43 just need to be able to do it with some other  
44 owners of data.

45 MS. BROHL: May I ask Ashley a  
46 question? Are there other agencies that practice  
47 that, where something like data is donated to  
48 them? Are there other practices, and are the

1 challenges with just that you -- the legal  
2 challenges NOAA related, or do you think more  
3 federal government related?

4 MS. CHAPPELL: Well there are no  
5 mapping agencies. None of my interagency working  
6 group partners have done that, or advertised it.  
7 I mean, it's not something that has to happen. I  
8 mean, certainly we can accept data without  
9 worrying about what the owner of it does, so.

10 It's just, I've been thinking it's, it  
11 might be something nice to maybe sweeten the pot,  
12 so to speak, or share.

13 MR. ASLASKEN: Yes. So I just think  
14 that's -- we ought to pursue, especially with  
15 the, not only in the sonar world, but the remote  
16 sensing. A lot of that data is licensed, and I  
17 don't think there's an awareness that these folks  
18 could actually maybe donate those data and get  
19 tax benefits from it.

20 So I think this is something we ought  
21 to pursue, broadly.

22 CHAIR HANSON: Well again, thank you  
23 very much. We knew this was going to be an  
24 interesting panel, so well done. Thank you.

25 (Applause.)

26 (Off microphone discussion.)

27 CHAIR HANSON: All right, let's go.  
28 We'll move on to the next part of our agenda.  
29 This is the final session of the second day. And  
30 this is where we roll up our sleeves and get our  
31 report outs from our working groups, and have  
32 some pretty healthy discussion. These seem to  
33 always generate that.

34 And I know we've had some updates on  
35 the papers, that you guys have been working hard  
36 with both ears and both hands. So very good.  
37 And so let's go ahead and start off with Gary  
38 Thompson, your working group.

39 MEMBER THOMPSON: Right. So we just  
40 heard Ashley give an overview of the paper that  
41 we've been reviewing. I have to compliment, and  
42 one of the things I was originally concerned with  
43 was perception of the USGS 3DEP, and this being a  
44 3-D nation.

45 But when you read through the paper,  
46 you see that they've done a great job of  
47 coordinating with USGS. SeaSketch is another  
48 great way, so I don't have those concerns

1 anymore.

2 So the paper is very well developed,  
3 I think. One of the things I like about it is  
4 the common standards they have in there. In  
5 North Carolina, and in the other states, we  
6 always, we have the collect it once, use multiple  
7 times, and I think this project is headed in that  
8 direction, so.

9 So we put it out for comments, and I  
10 think we've had a few. And Joyce, you want to go  
11 over what comments you provided?

12 VICE CHAIR MILLER: Okay. There were  
13 some -- Ashley? Is Ashley there? There were  
14 some pretty much editing comments, except for  
15 one. And on Page 12, you put up a IHO data  
16 bathymetry quality equation. And there's some  
17 factors, the A and B on the -- that aren't  
18 explained what those are, or how they should be.

19 So we may have told you, we may have  
20 said something about that in a phone con or  
21 something, but I just wanted to make sure it was  
22 noted.

23 And one question. You said, object  
24 detection criteria were not considered. Why not?

25 MEMBER THOMPSON: Because it's  
26 Pandora's box, depending on who you talk to. The  
27 idea behind the Coastal Administrator was to get  
28 to a standard, and the application of using it  
29 for obstacle detection is dependent on the agency  
30 and/or the user perspective.

31 And what we were more concerned about  
32 is getting an agreement to standards that we all  
33 could collect and disseminate data by, and the  
34 interpretation of that data by a hydrographic  
35 office or a non-hydrographic office, whatever the  
36 application, and we'd leave that up to the user.

37 And it's something that we understand  
38 and know the importance of object detection with  
39 LIDAR technology. It is very different  
40 perspectives, whether that's the Navy, NOAA, Army  
41 Corps.

42 And when you talk, when you're mixing  
43 hydrographers in with the use of LIDAR data, it  
44 gets even more complicated with those standards,  
45 mixing those standards.

46 So we thought we'd leave that alone,  
47 and let, you know, let that be a, maybe part two,  
48 and just move on as to the collection of the data

1 being the important thing.

2 VICE CHAIR MILLER: I once wrote a  
3 paper with an Australian guy. It was on the IHO  
4 standards. And they were all over target  
5 detection, you know, and there was a lot of  
6 discussion of, you know, what should be included  
7 in it. So I was just curious what happened.

8 My most substantive comment is, there  
9 is a place in the -- on Page 14, your report, or  
10 your document states, Agency B and Agency --  
11 Agency A and B have plans to collect data in the  
12 same region, but one agency requires different  
13 quality levels.

14 The current -- this report goes on,  
15 through subsequent discussion, Agency B agrees to  
16 acquire data to meet quality level 3B, which is  
17 Agency A's requirement. From direct experience,  
18 there is real, serious cost in collecting to a  
19 different standard.

20 And I would note that on the NEE, or  
21 what -- the National Elevation Enhancement  
22 report, there was a really excellent table, or  
23 series of tables, that clearly outlined the  
24 different costs in the quality levels for LIDAR.

25 And I'm assuming that if there is a  
26 follow-on report, hopefully that would be done.  
27 But I wondered what, to what extent IOCM should  
28 be working on mechanisms to make that -- and the  
29 entire issue that we ran into when collecting  
30 data out in the Pacific, was it was almost  
31 impossible to get money in from other agencies.  
32 It is not easy.

33 And it's not easy for NOAA to pass  
34 data out. And I know there have been agreements.  
35 Actually, that's one question I wanted to ask to  
36 Admiral Smith.

37 Has the Army Corps agreement actually  
38 been put into place yet?

39 RADM SMITH: Yes. It was signed a  
40 couple of weeks ago.

41 VICE CHAIR MILLER: Hurray.  
42 (Applause.)

43 VICE CHAIR MILLER: We made that  
44 recommendation, what, three years ago?  
45 Charleston. Yes.

46 (Off microphone remarks.)

47 VICE CHAIR MILLER: Yes. So can you  
48 -- I would have liked to have seen a little less,

1 oh this is easy to do, statement in there, and  
2 have IOCM consider some of these ways to  
3 facilitate this kind of -- I mean, I think it  
4 should be done. Map once, use many times, is  
5 certainly what I believe in. But, I mean, it's  
6 just sometimes impossible to pass money between  
7 agencies.

8 MS. CHAPPELL: It is difficult, and we  
9 actually are working on an agreement, kind of  
10 like the Army Corps one, that just sort of sets  
11 up partnerships among all the IWG-OCM agencies,  
12 most of, if not all of the federal mapping  
13 agencies in the ocean and coastal mapping realm.

14 We're working on one that everybody  
15 could sign, or sign up to. And with that --  
16 excuse me. Let me just check on that. I don't  
17 know how to work my phone.

18 The format that I'm hoping everyone  
19 agrees to use is a format that you get the  
20 initial agreement set, and then there's just a  
21 funding transfer document, which would speed the  
22 process along. So hopefully we can get everyone  
23 to agree to that.

24 One thing that I think has been a  
25 great start at the Federal Geographic Data  
26 Commission level, Committee level, is they are  
27 collecting all of the different contract vehicles  
28 that agencies have, and posting them in one  
29 location, so that we can be better informed about  
30 who has a contract for what.

31 And then, you know, that would  
32 facilitate using that contract, with an  
33 agreement. But then having this agreement, as  
34 I'm envisioning it, you know, that transfer would  
35 be quick and easy with the secondary transfer  
36 form, of a Form 7600. I don't know if anybody's  
37 familiar with that. You probably aren't.

38 But I'm hoping just to make it as easy  
39 as possible. NOAA, fortunately, has an authority  
40 that allows us to receive funds. So usually  
41 there's no problem legally taking the funds.  
42 It's just getting them in time, efficiently, and  
43 to the right office, that's supporting the work.

44 (Off microphone remarks.)

45 VICE CHAIR MILLER: Sorry. The last  
46 comment I had was on the same page, 14, you talk  
47 about joint data management. And I thought it  
48 would be -- it would improve the document if you



1 address common data formats.

2 MS. CHAPPELL: Okay. I'll take a look  
3 at that. I think we did get a, sort of a pre-  
4 look at your comments, which was helpful. And  
5 we'll be factoring them into our, you know,  
6 longer list of comments. And then we'll show you  
7 how we've addressed each one, and how we've  
8 incorporated those thoughts into the document.  
9 So thank you.

10 VICE CHAIR MILLER: You're welcome.

11 MEMBER THOMPSON: So Bill, that's the  
12 all, all the comments we received. So unless we  
13 have more comments, we can finalize the document,  
14 and make it final.

15 CHAIR HANSON: Sounds good.

16 MEMBER THOMPSON: All right.

17 CHAIR HANSON: Ready to rock and roll.

18 MEMBER THOMPSON: We're ready to rock  
19 and roll. Long live rock and roll.

20 CHAIR HANSON: All right, so you think  
21 you're done, huh?

22 MEMBER THOMPSON: Unless someone else  
23 has some comments.

24 CHAIR HANSON: Well, thank you very  
25 much, Gary. I appreciate it. Well done.

26 Next is our Planning Engagement  
27 Working Group. And -- I'm sorry. I've been  
28 reminded. We're going to take a break. Ten  
29 minutes. No more than ten minutes, okay?

30 (Whereupon, the above entitled matter  
31 went off the record at 3:00 p.m. and resumed at  
32 3:16 p.m.)

33 CHAIR HANSON: All right. If we can  
34 get back in action here. Punch the time clock.  
35 You ready to go?

36 I truly appreciate everyone speaking  
37 into microphones, and it has never been a problem  
38 with this group being, speaking clearly, or loud  
39 enough. So I appreciate that, for the  
40 transcriber.

41 Of course, this being a public  
42 meeting, it is recorded, and we do get minutes  
43 distributed timely, in a timely manner after the  
44 meeting, for us to review and to approve. And  
45 for the record, I'm required to mention that the  
46 -- repeat that the Galveston minutes were  
47 completed, reviewed and approved, so. That was  
48 for that. Okay.

1                   So let's move on to the next one.  
2       We're going to talk about issue papers. I think  
3       we also have site selection on the discussion  
4       menu as well.

5                   VICE CHAIR MILLER: Yes. Let's wait  
6       until Shep and -- anyway, we could -- we --

7                   CHAIR HANSON: You want to talk about  
8       issue papers?

9                   VICE CHAIR MILLER: Yes. Let's start  
10      with the two easy ones.

11                  The good news is, all three papers  
12      have been either just tweaked, or to some extent  
13      rewritten. I'll start with Hydrography, a Core  
14      NOAA Mandate. I had basically three suggestions.  
15      I changed the percentage, as Helen requested, to  
16      72 percent of the United States overseas trade by  
17      weight.

18                  Rich Edwing suggested, and I put this  
19      under the sidebar in the hydrography paper, a  
20      sentence that this document focuses on the  
21      bathymetric data and charting aspects of  
22      hydrography. He thought it would be a little bit  
23      clearer.

24                  And then finally, the last  
25      recommendation, and this was, this was a  
26      recommendation from Larry and Andy, because of  
27      the wording of the -- well, because of the need,  
28      as much as anything. Instead of saying, support  
29      appropriations for additional hydrographic  
30      training centers, they suggested I use ocean and  
31      coastal mapping training centers, and omit the  
32      reference to the IOCM, which I did.

33                  And those are the only minor changes  
34      that were suggested in that, to me.

35                  MR. EDWING: Joyce?

36                  VICE CHAIR MILLER: Yes?

37                  MR. EDWING: I had sent you some actual  
38      language to put in there.

39                  VICE CHAIR MILLER: Oh, okay. I'll  
40      take -- I didn't --

41                  (Simultaneous speaking.)

42                  MR. EDWING: -- lunch or an hour ago,  
43      so.

44                  VICE CHAIR MILLER: Okay. Can you  
45      read the language you said to request, and we can  
46      review it?

47                  MR. EDWING: Sure. Let me get that  
48      book down.

1                   So my concern, what I was trying to  
2 clarify was, we use the term -- oh, I'm sorry.  
3 We use the term, hydrographic services, in there,  
4 which really refers to all three programs that  
5 you have purview over, but the rest of the paper  
6 is really on hydrography, which is the more, you  
7 know, narrow activity under the services.

8                   So I just, in the, I guess it's the  
9 third paragraph, which starts off, hydrographic  
10 services, I just put in parenthesis after that,  
11 mapping and charting, oceanographic observations  
12 and positioning, in parenthesis, and then  
13 continued the rest of that sentence as was  
14 written, are essential to the nation's economic  
15 health.

16                   And then I added a short sentence,  
17 hydrography is a key activity under this suite of  
18 essential core services. So it just makes that  
19 transition from the broader hydrographic services  
20 to the activity you're focusing on under this  
21 paper, so.

22                   VICE CHAIR MILLER: That's fine with  
23 me. Does anybody have any other comments? I  
24 think nobody wants to say --

25                   MR. BOLEDOVICH: I'll choke on my  
26 broccoli, as I'm going to do here in a second.  
27 Yes, it's important to be clear, because both the  
28 term, hydrographic data, and hydrographic  
29 services, are defined in the HSIA, and they  
30 include everything that we do here.

31                   VICE CHAIR MILLER: Yes.

32                   MR. BOLEDOVICH: Which obviously that,  
33 it's not a very good definition in some ways,  
34 because it has confusion, since you'd have to  
35 clarify, like you're stating, Joyce, about how  
36 this paper focuses on the bathymetry part of  
37 hydrography, so -- because it's become a term of  
38 art in the Statute that a normal person wouldn't  
39 associate with hydrography.

40                   VICE CHAIR MILLER: Okay.

41                   MR. BOLEDOVICH: A hydrographer  
42 wouldn't associate with hydrography.

43                   VICE CHAIR MILLER: So you suggest I  
44 leave the sentence that I wrote in, in the text  
45 box? Okay. All right. And I will, I'll have to  
46 check how the two go together.

47                   Perhaps let's move to the sentence  
48 that you crafted, and I'll try to get this

1 together.

2 MEMBER THOMPSON: Okay. So then, for  
3 Reference Frame 2022, you asked for a motto of  
4 what the future looks like.

5 Sorry about that. So for the  
6 Reference Frame 2022, you asked for a one-liner  
7 we'll put at the very top. So here's the  
8 proposed wording. The replacement of NAD 83 and  
9 NAVD 88 would impact everyone in the U.S., from  
10 professional applications and services to  
11 recreational users who use maps, charts and  
12 satellite positioning systems such as GPS.

13 CHAIR HANSON: Can I make one  
14 suggestion?

15 MEMBER THOMPSON: Yes.

16 CHAIR HANSON: Or recommendation. Can  
17 we add, dramatically impact?

18 MEMBER THOMPSON: Yes.

19 CHAIR HANSON: I mean, some --

20 MEMBER THOMPSON: Yes, so just say,  
21 will dramatically impact?

22 CHAIR HANSON: Yes.

23 MEMBER THOMPSON: Okay. Okay. And  
24 that will be the first sentence in, right under  
25 the title.

26 MEMBER HALL: Gary did that by, all by  
27 himself. So thank you, Gary.

28 MEMBER THOMPSON: Not bad from a guy  
29 from North Carolina. So that's good.

30 VICE CHAIR MILLER: Okay. And I --  
31 the PORTS paper has been rewritten enough, and  
32 I'd like for Ed and Kim to take lead on this, to  
33 review it. Let's put it up on the screen. We  
34 don't have printed copies of it yet.

35 MEMBER HALL: We do have a printed  
36 copy.

37 VICE CHAIR MILLER: Oh, do we?

38 MEMBER HALL: Yes. They were passed  
39 out during the break.

40 VICE CHAIR MILLER: Okay. We do have  
41 a printed copy. All right.

42 MEMBER HALL: So with our new mandate  
43 to look at this from where is the system actually  
44 vulnerable, and that has always been the funding  
45 source, the -- is it multiple sources? Is it  
46 federal? What does it look like?

47 And Glenn provided us with some great  
48 background information related to the HSIA, the

1 actual legislation, as well as the appropriations  
2 report language and a couple of other things that  
3 support that. NOAA's been told and authorized;  
4 just haven't been given the money to do so.

5 So what we did to redo this a little  
6 bit was we took out some of the, kind of the,  
7 what we thought was the compelling argument  
8 before for why PORTS needs to exist, and instead  
9 inserted the information about, you know, there's  
10 a myriad of users, there's a lot of reasons why  
11 it should, but by the way, funding is where it's  
12 vulnerable.

13 We heard today from the folks in the  
14 Great Lakes that are a couple of the, which one  
15 was it, current?

16 MEMBER KELLY: Current meters.

17 MEMBER HALL: Current meters were  
18 being turned off because there was no funding to  
19 have those. And that's problematic. We want the  
20 PORTS systems, and we want it up and operational,  
21 not just expanded.

22 So I don't know if we need to go  
23 paragraph by paragraph. It is almost a complete  
24 rewrite. We've used some of the language from  
25 the previous one, stolen from some wonderful  
26 documents from an unnamed source, and ended up at  
27 this final version.

28 It still needs to be polished. My big  
29 question for the group -- I know you've just  
30 gotten it, is does this seem to answer the mail?  
31 Does it seem to be the way forward that we wanted  
32 to take? Because there's been a couple of  
33 different iterations, and what we were actual  
34 concentrating on.

35 And then I can polish it. But as a  
36 previous military admiral I worked for, I do not  
37 want to be polishing a turd. So I would  
38 appreciate any feedback at this point. I'm not  
39 sure if it's going to be ready for prime time at  
40 the end of today, but maybe tomorrow we can agree  
41 on it. Thanks.

42 MEMBER KELLY: No, yes. As Kim said,  
43 I think we're ready for this. It's just a matter  
44 of a tweak or a word here or there, if that's the  
45 case. I think it does present the case that  
46 PORTS is an essential, valuable asset to the  
47 nation.

48 And it also keys out the diverse

1 multiple user issue. And it keys back to the  
2 fact that NOAA actually has been charged, in the  
3 HSIA and subsequent Senate issues, to fully do  
4 this. It's been a question of money.

5 And, you know, we go back to NOAA at  
6 some point in time. It's really incumbent on  
7 NOAA to find some place within your budget where,  
8 that pays for this. You've been instructed by  
9 Congress to do it. So there it is.

10 MEMBER MAUNE: Ed, is this now fitting  
11 on one and three-quarter pages?

12 MEMBER KELLY: It's printed on one and  
13 three-quarter. We may or may not have to put a  
14 reference as, if people want, where the  
15 statistics --

16 MEMBER MAUNE: Okay.

17 MEMBER KELLY: -- came from.

18 MEMBER MAUNE: Somebody suggested this  
19 morning, wouldn't it be nice if we had a graphic  
20 that showed where we have PORTS and where we need  
21 PORTS, with two different colors, or something  
22 like that. And I wonder if we have such a  
23 graphic and would there be room for it. And --

24 MEMBER KELLY: Damn. People just keep  
25 making this thing more and more complicated.

26 MEMBER MAUNE: I know. We keep ---

27 MEMBER KELLY: You know.

28 MEMBER MAUNE: We keep wanting to add  
29 to it. We keep wanting you to go over two pages.

30 MEMBER HALL: If you go to 6-point  
31 font, you could probably do it.

32 (Laughter.)

33 MEMBER MAUNE: No, just a thought.

34 MEMBER HALL: If you get rid of 1-inch  
35 margins, go back on 6 point, less than a single  
36 space, I can make that happen. Rich did offer up  
37 a, a least an updated version of the current,  
38 current graphic we had. I'm not sure that  
39 graphic actually makes sense for what we're  
40 trying to do now.

41 I think the one, Dave, that you  
42 mentioned, if that does exist, makes more sense  
43 as a visual aid to what we're talking about than  
44 a pretty picture of a system. So I think we  
45 could replace it, if we had that. If not, the  
46 pretty picture, you know, gets somebody  
47 interested, I think.

48 MEMBER MAUNE: Rich, does that graphic

1 exist? Where we have PORTS and where need them.  
2 MR. EDWING: Yes, it does. And we can  
3 provide that.  
4 MEMBER MAUNE: Does that sound good to  
5 you guys?  
6 MR. BOLEDOVICH: I guess, it's going  
7 to be a map of the U.S. If you make it this big,  
8 you won't be able to --  
9 MEMBER MAUNE: Yes. It's --  
10 MR. BOLEDOVICH: -- see it, so just be  
11 open to other options.  
12 MEMBER MAUNE: Depends on how big you  
13 make your red/green dots, I guess.  
14 MR. EDWING: Yes.  
15 MEMBER HALL: Thanks. I think we can  
16 maybe do a highlight of a certain region, or we  
17 can do something where we do, here, this is ---  
18 (Off microphone remarks.)  
19 MEMBER HALL: Well, we've also -- yes,  
20 here's where PORTS is, and maybe that is too ---  
21 (Off microphone remarks.)  
22 MEMBER HALL: Yes. So I think there's  
23 some options that we can look at, but that makes  
24 --  
25 (Off microphone remarks.)  
26 MEMBER HALL: Yes. And maybe we do a  
27 concentration on a certain area, just say hey,  
28 that this is one example of a place where we see  
29 there's a couple of place on that graphic that  
30 are highly concentrated, and that might be a good  
31 example. This is just a visual aid. It doesn't  
32 have to be the complete story for that graphic.  
33 CHAIR HANSON: I think one of the  
34 concerns will be, as we take this the next step,  
35 people that we meet from around the country will  
36 want to know what's relevant to them.  
37 And so, whether we have a map, or we  
38 have a list of places that it's installed, people  
39 will see that it's actually relative in New York,  
40 it's relative around the country. So somehow we  
41 have to make that tie, that it's relevant to  
42 region or to a port.  
43 So whether you have a map or list,  
44 just something along those lines. Another --  
45 MEMBER HALL: We can change it per  
46 person, and where, say where is Dr. Sullivan  
47 from, and we can get her area of the --  
48 CHAIR HANSON: There you go. There

1 you go.

2 MEMBER HALL: -- country.

3 CHAIR HANSON: Well, can you put outer  
4 space on there?

5 MEMBER HALL: Whoa. Whoa.

6 (Laughter.)

7 MEMBER HALL: That's on the record,  
8 Bill.

9 CHAIR HANSON: Well, but I was  
10 compliment -- it's a compliment.

11 MEMBER HALL: Okay. I wasn't sure if  
12 you were telling me that Dr. Sullivan is from  
13 outer space. So I apologize. Misconstrued. I  
14 correct the record.

15 CHAIR HANSON: No. The latest former  
16 chairman. The only thing I would like to see is  
17 maybe a greater tie between the issue and status  
18 and the PORTS as to how the PORTS solves the  
19 issue in the first paragraph.

20 I mean, you talk about the navaid  
21 safety in the first sentence, but if there's a  
22 way to tie that a little more dramatically  
23 together, not just --

24 MEMBER HALL: We have something there  
25 that we can expand on, with that last sentence on  
26 the first paragraph under, PORTS, a vulnerable  
27 system. I think we can probably make that a  
28 little stronger. Yes.

29 CHAIR HANSON: Thanks.

30 MEMBER MAUNE: How long will it take  
31 to make these changes? Is this something that's  
32 going to take another week or something to get  
33 the graphics?

34 MEMBER HALL: Who's buying me the  
35 beer, the \$8 beer at the ballpark, and then I can  
36 tell you a time frame.

37 (Laughter.)

38 VICE CHAIR MILLER: It may be that we  
39 would have enough time. We have two more hours,  
40 and the papers are largely -- so we have two  
41 committee reports left after the, after we get  
42 done with the issue of the next meetings.

43 So maybe we can allow a half hour for  
44 a final polish. I mean, NOAA does the final  
45 formatting and everything, and that may get --  
46 and we send them with the letter. So we would  
47 have approximately a month to get a graphic in  
48 there.



1                   You know, we -- you know, our goal is  
2 to have the letter out to the Administrator one  
3 month after the meeting. That's what's in our  
4 standard operating procedure.

5                   MEMBER MAUNE: I was thinking that  
6 NOAA's current graphic is probably a big graphic  
7 with small dots, and we probably need a smaller  
8 graphic with bigger dots.

9                   VICE CHAIR MILLER: Bigger dots.

10                  MEMBER MAUNE: And that will take some  
11 time to prepare.

12                  VICE CHAIR MILLER: Yes. But I think  
13 we -- I don't think that's a big issue.

14                  MR. BOLEDOVICH: There's been so many  
15 graphics of where PORTS are. Excuse me. I'll  
16 defer to Rich, but that should be pretty easy to  
17 put together.

18                  VICE CHAIR MILLER: Yes.

19                  (Off microphone remarks.)

20                  VICE CHAIR MILLER: Yes. Yes. So we  
21 have a --

22                  MEMBER KELLY: That -- this is the  
23 graphic, I mean, and it just has to shrink down  
24 to size. It might get lost a little bit. But I  
25 think if we can agree on the format of the paper,  
26 with the best picture available to put into that  
27 graphic slot, I think, you know, can we move that  
28 way? Then this paper goes to bed, and we get  
29 whatever does turn out to be the best graphic  
30 that fits in there.

31                  MEMBER HALL: Right now, the copy that  
32 I have on my computer, it does have a -- that,  
33 the current graphic, based on what Rich had given  
34 me earlier, we needed to update it. So there's a  
35 -- just, this is just a placeholder graphic.  
36 This is not the final graphic, whatever way we  
37 decide to go.

38                  MEMBER KELLY: And even if we inserted  
39 a slightly larger graphic, we still do have a  
40 little bit of room on the bottom of the second  
41 page. So we certainly can accommodate a suitable  
42 graphic. And I think if we can agree on the  
43 verbiage, we're pretty much done with this.

44                  VICE CHAIR MILLER: I would agree.

45                  MEMBER KELLY: Which, you know, if  
46 anybody has comments, substantial comments on  
47 this, there's one or two words, you know, that we  
48 might just smith to make it read smoother. But I

1 -- as far as I'm concerned, and I think pretty  
2 much, we think this is a pretty good product  
3 right now.

4 MEMBER MAUNE: I don't know what color  
5 coding you have. Do you have green for where we  
6 have them already in good shape, and red where we  
7 need them, or something like that?

8 MEMBER KELLY: Well red is every  
9 place, every other port. And, you know, even on  
10 Coast Guard definition, or MARAD definition, you  
11 know, I think our Corps of Engineers says there's  
12 362 significant ports in the United States.

13 You know, I would think they're  
14 stretching the parameter a bit, but I think it  
15 could be very feasible there could be at least  
16 100 locations that would benefit from a PORTS  
17 style array.

18 And whether or not it justifies the  
19 money to put it in there but, you know, we could  
20 cover the whole rest of the United States, river  
21 entrances and everything else, with wannabes. So  
22 I don't know if that would be good to do or not.

23 MEMBER MAUNE: For me, that graphic  
24 could be the most important part of this paper.

25 MEMBER HALL: Thanks, Dave.

26 MEMBER MAUNE: After all your hard  
27 work. But I like a picture that says a thousand  
28 words.

29 VICE CHAIR MILLER: Okay. Should we  
30 go to, then go to the -- and what I was going to  
31 say is, I'm hoping that -- we right now, have two  
32 hours left in this session. I don't think the  
33 location discussion, or the next upcoming meeting  
34 discussion will take very long.

35 And then we have, essentially, the  
36 Planning and Engagement Working Group, we don't  
37 really have anything else to report out, besides  
38 the three papers. So that would leave the  
39 Technology Working Group and the Arctic Working  
40 Group.

41 Ed and Lawson, how long do you think  
42 you're going to need?

43 MEMBER SAADE: I need 15, 20 minutes.

44 VICE CHAIR MILLER: Okay. Lawson?

45 MEMBER BRIGHAM: I'll probably need 5  
46 or 6 minutes.

47 VICE CHAIR MILLER: Okay. So we might  
48 have some time ---

1 MEMBER SAADE: Joyce, Joyce. We're  
2 hoping that Lindsay can link in and --

3 MEMBER BRIGHAM: He should be linked  
4 in.

5 MEMBER SAADE: And that'll be another  
6 15, 20 minutes. I mean, he's got some  
7 interesting stuff he wants to show.

8 VICE CHAIR MILLER: Okay.

9 MEMBER SAADE: On the ship.

10 VICE CHAIR MILLER: I think that's  
11 good. That would give us, you guys an hour, and  
12 then we'd have a, maybe a half hour to rework,  
13 and then a final, you know, look at that paper.

14 MEMBER SAADE: Okay.

15 VICE CHAIR MILLER: So the Planning  
16 and Engagement working group was asked to come up  
17 with a list of future meeting places, and I  
18 pretty much looked at where we have been, and the  
19 upcoming schedule for the transition, and my  
20 recommendation was Seattle, because we haven't  
21 been on the West Coast in a fairly long time and,  
22 I mean, we've been on the East Coast, I think, 14  
23 times at this point.

24 We have been once in Portland, and  
25 once in L.A., several times in the Gulf, this is  
26 our second time in, here, in the Great Lakes,  
27 once in Hawaii and twice in Alaska.

28 So my recommendation, and I passed  
29 this by the Planning and Engagement Working Group  
30 was, the next place we should go was Seattle,  
31 because we have, the West Coast has really been  
32 kind of not looked at.

33 And then that, I thought it would be  
34 very interesting for many members of the working  
35 group to go to UNH, and that coast, because UNH  
36 is doing such interesting things that are  
37 pertinent to our panel. And then of course, we  
38 need to go back to Silver Springs, whenever  
39 there's a new administration, type of thing.

40 And so we were discussing it this  
41 morning, and we don't have a clear idea why  
42 suddenly Fort Lauderdale or Florida hopped in  
43 there. And so I'd like to ask, why did we put  
44 Fort Lauderdale in there when we've been down,  
45 when we've been on that coast so many times?

46 MR. PROCTOR: Okay. So the main  
47 purpose of preparing this straw man proposed list  
48 of venues is exactly for this purpose, to spark

1 some discussion and some deliberate planning.

2 As many of you who have been involved  
3 in meeting planning and logistics preparation,  
4 you can well appreciate the myriad details that  
5 go into pulling something like this together.  
6 And I think we all applaud the tireless efforts  
7 that Lynne Mersfelder champions to do this.

8 Moments after we wrap up Thursday  
9 afternoon, all of the planning effort begins for  
10 our next meeting. What we wanted to do was  
11 develop a standing list, as a standing agenda  
12 point of order for each meeting, to review the  
13 running list of upcoming venue selection, and  
14 discuss the site selection and the key objectives  
15 and desired outcomes for the next few sessions.

16 So Jacksonville percolated up in  
17 discussion as a result of many considerations  
18 that floated around, one of which was a  
19 presentation that the -- I'm sorry, Fort  
20 Lauderdale percolated in discussion, in part, as  
21 a result of a presentation that the port CEO made  
22 at the American Association of Port Authorities'  
23 annual meeting, that highlighted that particular  
24 port's multi-year expansion effort and the  
25 planning that they are undertaking to gain  
26 greater intermodal efficiencies as a result of  
27 their port expansion.

28 And that presentation, as I heard it,  
29 seemed to square very well with the general  
30 interests that abound in this forum, as we talk  
31 about precision navigation.

32 Russ Proctor is not particularly  
33 wedded to Fort Lauderdale as being the next venue  
34 for HSRP. What we are trying to promote is this  
35 standing agenda item, so that we can be a bit  
36 more decisive and deliberate about where this  
37 panel wants to go and why, taking into  
38 consideration where we've been, and the many  
39 other factors.

40 The reason we chose, or the reason we  
41 proposed Florida in the springtime over Seattle  
42 in February was largely because of the, for  
43 climatic reasons. We felt that Seattle in the  
44 fall might be a more appropriate time of year,  
45 for travel logistics as well as for some of our  
46 after-hours field trip excursions that we all  
47 seem to enjoy so much.

48 So that's really the only reason that

1 that was proposed the way that it is. But it is  
2 in no way cast in stone, no way determined at  
3 this point. It's really as a point of discussion  
4 for your consideration, and for your  
5 deliberation.

6 MEMBER BRIGHAM: Yes. Lawson Brigham.  
7 When we deal with Seattle, you deal with Tacoma.  
8 So if you go to Seattle, you're not going to make  
9 the folks in Tacoma happy, and vice versa. So if  
10 we go there, we really should try to do both. It  
11 is possible. They're not physically far apart.

12 And, you know, there's a large  
13 container port in Tacoma, leading port in the  
14 country, one of the leading container ports,  
15 among. And Seattle is emerging with lots of  
16 cruise ships.

17 So there are two places, two major  
18 ports. I don't think February or March is, you  
19 know, relevant for weather. And I would think we  
20 should give some -- having not been to either of  
21 those places, ever, in the history of the HSRP, I  
22 think -- and there is, you know, I can't dismiss  
23 it, a connection to the Arctic through trade and  
24 Foss and tugs and barges and all that, and the  
25 trade relationship to Alaska is also there.

26 So I think it's an important place to  
27 go, if not this time, soon.

28 MEMBER SAADE: So I wanted to add  
29 that, as a West Coast guy, I'm acutely aware of  
30 East Coast bias, and I think it's really  
31 important -- I think it's terrible to hear that  
32 it's been 14 times on the East Coast and once or  
33 twice on the West Coast. It's illogical to me,  
34 so Seattle, or anything on the West Coast.

35 VICE CHAIR MILLER: Well, let me tell  
36 you, Hawaii is even more, or the Pacific. I  
37 believe the Nav Manager wanted to say -- or the  
38 Navigation Services manager.

39 MS. MEDLEY: Hi. Rachel Medley. I  
40 just wanted to -- Lawson, thank you for pointing  
41 that out about Port of Seattle and Port of  
42 Tacoma. Actually, this past year they entered  
43 into a partnership with one another, so it  
44 wouldn't be in -- I don't think you would find  
45 that there would be a conflict.

46 I think they would actually welcome  
47 having the HSRP, and also exploring the  
48 possibilities of what that means when two

1 separate ports sort of merge together. So I just  
2 wanted to convey that.

3 And then, I did have all the Nav  
4 Managers put together, at sort of a short list of  
5 topics, and that's how some of these different  
6 ports came into fruition, and if anybody is  
7 wondering what those different topics are, and in  
8 those different ports, I think we're happy to  
9 share that as well.

10 And Joyce, I think that's probably  
11 what you looked at, initially. And hopefully the  
12 rest of the membership has looked through those  
13 talking points of what would be possible  
14 discussion in those areas.

15 VICE CHAIR MILLER: Kim?

16 MEMBER HALL: Hi. So thank you for  
17 the explanation. I think we all are very  
18 understanding that there needs to be kind of a  
19 long thought process to where we go next. I will  
20 say, Seattle in February sucks, but Florida in  
21 July is worse. And Zika in July in Florida is  
22 really not good.

23 So I just thought I'd put that out  
24 there as somebody who gets to go to Florida all  
25 the time. It's something I think about. But I  
26 think the big piece here is having a discussion.

27 If Florida is where we're going next  
28 -- I don't -- I know that's not been decided,  
29 there's been a lot of inputs as to what next  
30 should be.

31 I understand where Lawson's coming  
32 from about going to Seattle, understand that with  
33 the West Coast thing, if it's a timing and  
34 weather, and a seasonal thing, I would say  
35 Florida's better in the winter.

36 But I would really like to have a  
37 conversation on why the three -- you know, I can  
38 appreciate that AAPA had a presentation. As I  
39 look at it -- and Sal and I have had a  
40 discussion, obviously we would love anything that  
41 highlights the cruise industry. That's our  
42 personal and job interest.

43 However, for the good of the panel, we  
44 don't believe that's actually the best end for us  
45 and where our concerns really are. The St. James  
46 River has a myriad of issues. There's air gap  
47 issues under the bridge there. Sorry, St. Johns,  
48 yes.

1 And a lot of issues that have come up  
2 for our industry where it would make more sense,  
3 from the Hydrographic Navigation Services, and  
4 what our remit, as a team, is, it'd be really  
5 interesting to hear about Port Everglades  
6 expansion. I just don't know if there's a need  
7 or a tie as directly to navigational services as  
8 Jacksonville might.

9 So I just wanted to -- you know, when  
10 we've started going back and forth, the group has  
11 been emailing today, explaining where Sal and I  
12 were coming from on it, that hey, sure, you want  
13 to go highlight the cruise industry in Port  
14 Everglades. Sure. I just don't know if there's  
15 a direct connect there for us when it comes to  
16 HSRP.

17 VICE CHAIR MILLER: Well, and we just  
18 saw cruise industry in Galveston --

19 MEMBER HALL: And no doubt. And Sal  
20 and I mentioned that as well.

21 VICE CHAIR MILLER: But the other  
22 thing I would say is, Seattle in April is  
23 absolutely beautiful. I mean, why do we need to  
24 talk February?

25 MEMBER HALL: That's -- it works for  
26 me, too.

27 MEMBER KELLY: Ed Kelly here. I'm not  
28 concerned about the weather, but if we're going  
29 to Florida, I would also chime in, Jacksonville  
30 is a more diverse port. It's more of a multi-  
31 carrier or multi-operational port.

32 It handles a lot of refrigerated ships  
33 and cargos. It's a big car carrier port.  
34 Handles containerization currently, not a dream,  
35 like Everglades might have. They handle cars.  
36 They handle very diverse cargos. It's a very  
37 diverse labor force.

38 The navigation of the St. Johns River  
39 is a little bit tricky, and there's a lot of  
40 opportunities for HSRP input regarding aids to  
41 navigation-type things. So, you know, this --  
42 if we're going to Florida, I would also throw my  
43 hat into the Jacksonville box.

44 And we certainly are overdue, it would  
45 seem, for the West Coast. And if we have not  
46 been to Seattle, I would say, go up to Seattle.  
47 You know, I used to have a lot of operations in  
48 Seattle.

1           It's a very big, it's a very vital  
2 port. It has some very critical issues regarding  
3 restricted navigation from protected mammals and  
4 everything else out there, weather issues,  
5 military operations, extensive intermodal rail  
6 connections.

7           And, you know, Lawson, I heard what  
8 you said about Tacoma, but the people in Tacoma  
9 are used to coming to Seattle for meetings.

10          VICE CHAIR MILLER: Yes. And I think  
11 the Nav Manager out there, Rachel is -- I spoke  
12 with her, oh, a couple of years ago and she was,  
13 she was saying, oh please come to Seattle. And  
14 there are facilities there that I believe we  
15 could use. Is that not correct?

16          MS. MEDLEY: Yes, completely.

17          VICE CHAIR MILLER: So --

18          MS. MEDLEY: Yes.

19          VICE CHAIR MILLER: Lawson?

20          MEMBER BRIGHAM: I mean, I was aware  
21 of the potential merger. Now it's merged. But  
22 even physically, if we did execute going there,  
23 you could take a field trip to Tacoma, or you  
24 could do something else.

25          You can go -- actually, a Coast Guard  
26 icebreaker's sitting there, too, just as another  
27 thing to do, to keep Arctic in a visible, you  
28 know, visibility of the HSRP. But I think it's  
29 time to go to Seattle, actually.

30          VICE CHAIR MILLER: Is that the  
31 consensus of the group?

32          MEMBER LOCKHART: Yes. I agree with  
33 that.

34          MEMBER SHINGLEDECKER: Yes. I was  
35 going to -- I know there was some concern that we  
36 didn't get the recreational speaker we were  
37 hoping for here. We do have strong contacts in  
38 the Seattle area. The state is very engaged in  
39 boating education and boating, so I'm pretty  
40 confident we could get some good recreational  
41 representation there.

42          MEMBER HALL: The cruise industry's  
43 there, too.

44          MS. MERSFELDER-LEWIS: You will get  
45 eventually to Seattle, but whether it's February  
46 in Seattle, which is your best date right now.  
47 I'm still missing four members' schedules, so if  
48 you could please send those.



1           It probably will not be February, if  
2           that's the best date. It probably will not be  
3           February in Seattle. It will probably be  
4           February wherever else, and it will probably be  
5           August or September in Seattle.

6           VICE CHAIR MILLER: No. I don't think  
7           that should drive our -- I don't think that -- I  
8           don't think the weather should drive our --

9           MEMBER HALL: No. The weather's not  
10          driving it. It's our responses to her Doodle  
11          Poll that we all came back and said when we are,  
12          or are not available.

13          MS. MERSFELDER-LEWIS: But the weather  
14          will drive it a little bit. I'm not going to put  
15          you in a winter storm in February in Seattle  
16          where I have to worry about, you know, that kind  
17          of stuff. Nor am I going to put you in a  
18          hurricane in Florida. So yes, so it will drive  
19          it a little.

20          VICE CHAIR MILLER: Well then, maybe  
21          we should go to -- well, Durham's --

22          MEMBER KELLY: We can go to Durham any time.

23          VICE CHAIR MILLER: We can go to  
24          Durham anytime. And it would be worse --

25          (Simultaneous speaking.)

26          VICE CHAIR MILLER: It would be worse  
27          in Durham than in --

28          MEMBER KELLY: February in Durham --

29          (Simultaneous speaking.)

30          VICE CHAIR MILLER: But I just feel  
31          like we --

32          MEMBER KELLY: Very frankly, the  
33          weather issue has very little to do with our  
34          destination. It has with our origins. I mean,  
35          they don't get much snow in Seattle, but I'm  
36          concerned about -- or in Miami, or Florida  
37          certainly, but I could be concerned that there  
38          could be a major storm, snow storm arise in New  
39          York.

40          So any number of members in the  
41          northeast or in other northern climes might not  
42          be able to do it. That's a typical business  
43          thing. You know, you schedule a big meeting.  
44          The weather can be perfect at destination, but if  
45          you're trying to fly in February, you can't get  
46          out of town to get to the meeting. So February  
47          is always a concern.

48          MEMBER HALL: As I think Lynne's

1 talking about that Doodle Poll, so how we  
2 answered back about our availability, is  
3 dictating.

4 MEMBER PERKINS: Lynne, for the sake  
5 of clarity, can you say who hasn't done it?  
6 Because I've got like 30, I've got 30 emails in  
7 my inbox with your name on it, so --

8 MS. MERSFELDER-LEWIS: Two, three,  
9 four.

10 VICE CHAIR MILLER: And the port of  
11 origin, it doesn't matter whether it's Florida or  
12 Seattle, the port of origin is going to be the  
13 same anyway, in February, so I just don't -- you  
14 know, I -- there's --

15 MS. MERSFELDER-LEWIS: We're way in  
16 the weeds. Let's just talk about potential  
17 places and just leave it at that. The dates are  
18 going to come up by themselves.

19 RADM SMITH: I heard a pretty clear  
20 consensus for Seattle, and we'll figure out how  
21 to make that happen, for the spring meeting, and  
22 then we'll take it from there. I think we've got  
23 a Doodle Poll, so we can, we can work that, and  
24 taking into account that we have some  
25 transportation risk, I think we can live with  
26 that.

27 VICE CHAIR MILLER: Okay. Thank you,  
28 Admiral.

29 MR. BOLEDOVICH: Can I clarify that  
30 the meeting after that would be in Silver Spring,  
31 in the interest of meeting in D.C. soon after the  
32 new administration's on board?

33 VICE CHAIR MILLER: Well that was my  
34 original plan, but I was advised that, you know,  
35 there might not be anybody there yet. I mean --  
36 but if we had Durham as the next one, if we had  
37 Durham as the next one, we could swap those two,  
38 if there wasn't an administration in place.

39 I mean, it's a question of whether, in  
40 the fall, there would be a new administration in  
41 place.

42 MR. BOLEDOVICH: Good point. I mean,  
43 by the fall of next year, I would sure hope we  
44 would have people, but if not, with Durham, you  
45 have a facility at the University, right? So we  
46 don't have to worry. Some of the logistics are  
47 not so severe, so it might be more flexible. So  
48 Durham and/or Silver Spring in the fall.

1 VICE CHAIR MILLER: In the fall,  
2 and/or Silver Spring next. And then if  
3 Jacksonville -- and then back to Jacksonville as  
4 -- if we want to go four out, I would say  
5 Seattle, and then Durham, Silver Spring  
6 interchangeably, and then Florida, Jacksonville,  
7 since it's a port of interest.

8 MEMBER BRIGHAM: Yes, if we go to  
9 Durham, I mean, I still like going to a port, and  
10 Durham is a university campus. So Portsmouth is  
11 not so far away --

12 VICE CHAIR MILLER: Yes.

13 MEMBER BRIGHAM: Could we -- and  
14 there's a naval base there. I mean, maybe we  
15 should do the port thing for one day, and have  
16 that public meeting there in Portsmouth, to give  
17 them their time. And that's doable, right?

18 (Simultaneous speaking)

19 VICE CHAIR MILLER: I mean, I was  
20 assuming we would do something with one of the  
21 ports up there. It was just that, I think,  
22 particularly for some of the newer members who  
23 have never been to Durham, there's a lot of  
24 interesting stuff up there.

25 So we have a consensus?

26 RADM SMITH: Yes. I see some  
27 conferring over here. We'd -- you know, I guess,  
28 do we think we can't decide now between Durham  
29 and Silver Spring, or D.C., because we don't know  
30 who's in town yet? Or do you think we can --

31 MR. BOLEDOVICH: Outside of the burden  
32 of the logistics of it, I think, you know, Silver  
33 Spring, optimally would follow Seattle, over  
34 Durham as an option if we'll know -- we'll know  
35 long before the spring meeting. We'll know,  
36 maybe by January, so it's tough to get a sense of  
37 how quickly this is going to happen.

38 Because there's a lot of talk that  
39 people are lining up their nominees. We're  
40 really ahead of the game this time around. So I  
41 think we might -- you know, I'm not -- I'm  
42 sensing it's creating a burden in the planners,  
43 and the logistics folks, but I think ideally,  
44 yes, Seattle, and then ideally, Silver Spring in  
45 the fall.

46 You want to be there the first  
47 opportunity, and six month is a long time in a  
48 four-year term, right? That's, you know, one-

1 eighth of your time, and you only get so many  
2 bites.

3 So from that kind of an angle, you're  
4 here to advise this administration, and as soon  
5 as they're on board, well the sooner you want to  
6 meet them. Recognizing the chair, of course,  
7 could meet informally with folks before the panel  
8 engages.

9 RADM SMITH: So I guess I'm hearing  
10 that D.C. would be the preferred next one, right?

11 VICE CHAIR MILLER: Yes. I think so.

12 RADM SMITH: And we could pull the  
13 plug on that a few months in advance, if  
14 necessary, if we thought it wasn't going to work  
15 out for some reason.

16 VICE CHAIR MILLER: Well, and since --

17 RADM SMITH: And go to Durham.

18 VICE CHAIR MILLER: Since UNH has  
19 facilities that we know we can use, and we know  
20 the logistics up there pretty well. I mean,  
21 that's one of the less complicated, probably,  
22 places to go that we would have, I would think.

23 DR. MAYER: You just have to reserve  
24 parking right now.

25 (Laughter.)

26 VICE CHAIR MILLER: We'll reserve it  
27 for both times then.

28 (Laughter.)

29 VICE CHAIR MILLER: So I think that's  
30 it. Dave, anything else on the P&E?

31 MEMBER MAUNE: Nothing else. We have  
32 our next three or four papers lined up for the  
33 issue papers for next spring, so glad for all the  
34 volunteers.

35 CHAIR HANSON: Well done.

36 MR. EDWING: So just quickly going  
37 back to the PORTS paper, we were able to locate  
38 the graphic that, I think, meets what you're  
39 asking for. First thing I'm going to say is, you  
40 know, right now, while the PORTS system has  
41 continued to expand, it's doing so in a non-  
42 strategic fashion.

43 It's whoever has money, whether it's  
44 a small port or big port, comes up, gets in line,  
45 and gets a PORT established. So this, what this  
46 graphic does is it kind of, it has three dots, by  
47 size of PORTS.

48 The smaller dot -- and one, another

1 thing, too, is a capital PORTS can service more  
2 than one seaport, okay. So the smaller dots,  
3 which are -- and you can't see the -- you know,  
4 smaller dots service one to two seaports, the  
5 medium sized dots, two to four, larger dots, four  
6 plus.

7 If it's a green dot, as far as we  
8 know, that PORT has pretty much all the sensors  
9 it needs. If it's yellow, it means that we know  
10 -- and this is mainly through Darren talking with  
11 the customers, that they want more sensors, but  
12 they don't have the funding, or whatever reason  
13 that, you know, those -- they want more sensors  
14 but don't have them.

15 And if it's a red dot, it means  
16 there's no PORTS established. And the red dots  
17 are really based upon our internal strategic  
18 planning of -- for a fully-funded federal system.  
19 And we based that upon the top 175 seaports by  
20 tonnage, with some other factor thrown in there.

21 That's our internal definition.  
22 People can quibble with that, that's fine. But  
23 we had, you know, we had to do something to try  
24 to come up with the cost estimates.

25 So that's what this graphic was put  
26 together to illustrate. And you can't see all of  
27 it, because the screen's not allowing it. Kind  
28 of in the left hand corner is Alaska, so Lawson  
29 doesn't feel left out, and just to make sure --  
30 and yes. And -- yes.

31 So I think this probably is very close  
32 to what you're looking for, but I will say,  
33 you're not -- you know, if you shrink this down  
34 to try and fit on a -- this is really a full-page  
35 sort of graphic. Now maybe it's an attachment to  
36 that, you know --

37 (Off microphone comment)

38 MR. EDWING: Screen it in the  
39 background? We could try that.

40 MEMBER KELLY: Let us play with this  
41 graphic, and we can -- we have space in there  
42 already for an existing graphic.

43 MR. EDWING: Right.

44 MEMBER KELLY: And maybe we just blow  
45 that out, push some of the text down a little  
46 bit. We do have a little bit of flex room in the  
47 bottom. Let us try this out. This is kind of  
48 the graph that says what we want it to say.

1 MR. EDWING: Right. Right.

2 MEMBER KELLY: And again, we have to  
3 look at the audience we're sending it to.

4 MR. EDWING: Right.

5 MEMBER KELLY: We would trust that the  
6 administrator would also have the NOAA document,  
7 and have a --

8 MR. EDWING: Right.

9 MEMBER KELLY: -- bigger picture, if  
10 they wanted that, or wanted a bigger graphic, we  
11 could supply that.

12 MR. EDWING: Right.

13 MEMBER KELLY: But to fit on the two-  
14 page, I think it's important we try to get this  
15 graphic into the format of the letter itself.

16 MR. EDWING: Okay. Okay. This is --

17 MEMBER KELLY: We'll try it. I mean,  
18 you know --

19 MR. EDWING: This is a PDF. I'll get  
20 you the PowerPoint version, which will probably  
21 be easier, or some other format easier to work  
22 with.

23 MEMBER KELLY: If this blows out a  
24 little more, we can --

25 MEMBER HALL: We'll just buy a, you  
26 know, get a microphone, or a magnifying glass to  
27 go along with this one for the -- sure, yes.

28 MEMBER HALL: I'm sure there's some  
29 money for that, right Lynne? We can do that?

30 MR. BOLEDOVICH: One other question  
31 is, if you're going to shrink it down, this is  
32 trying to convey about four or five messages.  
33 Maybe dumb it down a little; where do we have  
34 PORTS, where do we still need them? Instead of,  
35 this is getting pretty complicated in terms of  
36 all the different things you're trying to  
37 communicate.

38 (Simultaneous speaking.)

39 MEMBER HALL: Well I think you still  
40 can do a regional area and just say, this is one  
41 example. We're not favoring any one or the  
42 other, but here's one where there's a high  
43 concentration of what already exists but even a  
44 high concentration of what is needed.

45 So that might be the northeast, and a  
46 star on the East Coast here is proving that we  
47 need more. But that might be just for the --  
48 again, it's a visual aid. Again, it's not the

1 whole story. This is supposed to lead to more  
2 thinking on this, and more action.

3 MEMBER MAUNE: I think we should do  
4 what Ed's trying to do, see if he can get that to  
5 fit. I'd rather try to get as many congressmen  
6 involved as possible, to see what they don't have  
7 in their territory that they need.

8 MS. MERSFELDER-LEWIS: I think if you  
9 guys just put where there's not a PORT, that  
10 catches people.

11 MEMBER HALL: No, because we still  
12 have problems with where PORTS actually is, as  
13 part of this paper, that it's not being funded  
14 where it actually already exists. So I think  
15 we'd be remiss to do just that. But thanks,  
16 Lynne, for that feedback.

17 MEMBER KELLY: I think this is the  
18 graphic we want. It just is how it will display  
19 in the small amount of space we'll be able to  
20 give it. So we'll try it. We'll see how it  
21 looks. We'll pass it around, if you can get us  
22 anything with this, and we'll see what it looks  
23 like.

24 VICE CHAIR MILLER: Actually, I heard  
25 somebody, maybe it was Ed, say perhaps, you know,  
26 sometimes it's very effective to fade in the big  
27 figure you need in, in the background, and put  
28 your text over that. But that takes somebody  
29 who's much better at graphics than I am.

30 MEMBER KELLY: The layout's wrong,  
31 too.

32 VICE CHAIR MILLER: Yes. I think  
33 we're ready for -- it's 4 o'clock, and so we have  
34 an hour and a half.

35 Lawson?

36 MEMBER BRIGHAM: Mine's a little  
37 shorter. I think Ed deferred to me to go first.  
38 Is that okay? And he's got --

39 VICE CHAIR MILLER: Works for me.

40 MEMBER BRIGHAM: -- the rest of the  
41 rest of the time in technology. Okay, great.

42 It's Lawson Brigham, "Report on the  
43 Arctic Emerging -- Emerging Arctic Priorities  
44 Working Group" is the formal title.

45 Just to recap a little bit for the  
46 audience, we -- in L.A., in April of 2015, NOS  
47 staff provided us six major and difficult  
48 questions to answer, and to assist them in, about

1 priorities of charting hydrography in the United  
2 States Maritime Arctic and a series of issues.

3 So we answered the mail all summer.  
4 We worked on it, the working group. And I  
5 reported out on behalf of the working group to  
6 the HSRP last September. And we reached  
7 consensus, I think, among the HSRP members, to  
8 send this report, the Report of the HSRP Emerging  
9 Arctic Priorities Working Group. And we sent it  
10 up to the Administrator.

11 The intent was just to make sure she  
12 saw that there was output from a working group.  
13 And our letter came back from the Administrator,  
14 and of course, it didn't address these issues,  
15 and we didn't intend that she would address each  
16 individual issue.

17 So there still is a little gap here,  
18 on having engagement with the NOAA staff or the  
19 NOS staff. And so what I would propose is that  
20 we actually have a Arctic working group meeting.  
21 I'll draft up with the working group members the  
22 issues to discuss that relate to the report we  
23 had. And then we'll have a teleconference and a  
24 discussion about those issues.

25 One issue is this, is the 500 square  
26 kilometer, or nautical mile, annual output in the  
27 Arctic. Is that real or useful? Or is it too  
28 low, or could it be higher? We just made a  
29 judgment call on that. So we could discuss that  
30 more.

31 Another issue that certainly we should  
32 talk about is the changing U.S. Maritime Arctic.  
33 There isn't offshore development, but there is  
34 emerging corridor exercise. The Coast Guard  
35 calls it PARS. But it's not necessarily port  
36 access, because there aren't any ports. It's a  
37 fairway kind of roads through the U.S. Maritime  
38 Arctic.

39 But they're going to continue it  
40 around the Chukchi Sea and the Beaufort Sea. And  
41 really, we have minimal reference points there,  
42 and no tied, combined Corps sites. So yet we're  
43 going to put a highway around there, in some  
44 sense. And so that's another issue to discuss.

45 And so I think a teleconference of  
46 working group, and selected members of the NOS  
47 staff, that we could discuss follow-up of this  
48 report. We could do it with the whole HSRP, but



1 maybe we just have a meeting, and then report out  
2 to the next HSRP meeting.

3 The second action might be, once Ed,  
4 you get your technology group geared up, maybe we  
5 could have a joint working group meeting on  
6 technology, and how it might impact future of  
7 surveying, you know, in the Arctic. Are there  
8 new and novel tools there?

9 And then the third action might be to  
10 provide some input to the IHO, through the Arctic  
11 Regional Hydrographic Commission. There are some  
12 issues, I think, that some of us know about, that  
13 maybe we could provide you, Admiral, when you go  
14 to IHO, to -- for the commission.

15 I'll just report that I think the fact  
16 sheet that we have is very useful. I've sent it  
17 out to hundreds of people. I get some feedback  
18 that it's easily read, it's useful. I've  
19 blanketed my network in the Arctic community, and  
20 a lot of researchers, of course.

21 And they like it too, because -- and  
22 a lot of people do focus on the 4.7 percent  
23 charted, is a number that we, that Admiral Glang  
24 and the team put together for us, that is the,  
25 how much of the U.S. Arctic is charted to modern  
26 and international standards, which, of course,  
27 the place is maybe half charted or more, but  
28 maybe not to international standards.

29 But so, but yesterday, of course, you  
30 saw that we were discussing 1 percent. But I  
31 think it's -- there's some inconsistency in the  
32 numbers. But the fact sheet is very useful for  
33 my community.

34 And just one more item to report. On  
35 the 1st of January of 2017, this new IMO Polar  
36 Code for ships operating in polar waters, Arctic  
37 and Antarctic, goes into force. It's a seminal  
38 new regime for the Arctic. It's designed to  
39 enhance safety and protection.

40 And it does have some relevance, of  
41 course, to hydrography and charting, because it  
42 has boundaries. And so, I think, the challenge  
43 is for the United States Coast Guard to implement  
44 this, because there are no special -- today,  
45 there are no special Arctic rules and regulations  
46 for ships in the United States Maritime market.

47 There are in the Canadian Arctic, the  
48 Russian Arctic. But no -- other than SOLAS and

1 the MARPOL, for the global ocean. So that's a  
2 new and novel -- and being on the U.S. delegation  
3 to the IMO for negotiating this code, I think  
4 there were some unintended consequences that  
5 relate to hydrography that haven't sorted yet,  
6 but we'll probably hear about them after the  
7 Polar Code is in effect.

8 What it will impact -- although  
9 government ships, of course, are not under the  
10 IMO regulations, surely new Coast Guard ice  
11 breakers and new hydrographic ships will have to  
12 be -- that they're operating in Arctic waters,  
13 will have to be built to Polar Code standards,  
14 which will be, probably increase the cost of the  
15 ships, et cetera.

16 But for the government not to adhere  
17 to pollution regulations and discharge and  
18 emission regulations that come with the Polar  
19 Code, would probably not be appropriate.

20 But anyway, we have a fair amount  
21 going on. I think we'll gear up to have a  
22 teleconference with some of your staff, Admiral,  
23 and review this, and maybe update this report we  
24 had.

25 RADM SMITH: Yes. I just wanted to  
26 clarify. I mean, I think we all know, but just  
27 to keep our language straight, that it's 100  
28 percent charted, right. There's a piece of paper  
29 that covers that area. It's the survey that  
30 we're talking about.

31 But it's very easy to slip that  
32 language in just to be clear when we talk to the  
33 stakeholders and decision makers and stuff.

34 (Laughter.)

35 CHAIR HANSON: All right. Thanks,  
36 Lawson, as always. Appreciate it.

37 Yes sir?

38 MEMBER SAADE: Do I just push it up?  
39 So we're just getting started, so we're going to  
40 walk you through what we've been able to do since  
41 we all got together back in March, as a  
42 background. And then, well a couple of ideas  
43 that we've come up with, and how we've narrowed  
44 down the focus, because it was a pretty big focus  
45 when we got started.

46 So I think Lindsay's listening in from  
47 the vessel, but we'll find out in a little bit.  
48 At the tail end of this, we're going to try and

1 do a technology demonstration from Lindsay on the  
2 vessel.

3 So April through August, we took some  
4 time to look at all the options. It was, for me,  
5 personally like, it was like a kid in a candy  
6 store, because there were so many different types  
7 of things that we could do with technology.

8 We -- I personally got carried away  
9 with this big long list of really cool things  
10 that the folks at UNH were doing in the -- and  
11 NOAA itself had a very well thought out,  
12 extensive, detailed list of a variety of  
13 technologies, ranging anywhere from data  
14 acquisition to data processing, and ping to  
15 chart, everything along the way that makes for  
16 what we're trying to do here with getting a  
17 sounding on a chart.

18 And that, we took a little bit of time  
19 to look into all that, and decide, how do we weed  
20 through this, and how do we select which ones are  
21 worth advocating for, or what can HSRP do to add  
22 to that.

23 So we went through the matrix list  
24 that was available, made available to us from  
25 Neil, and tried to do our own questions,  
26 internally, in terms of what's a priority, what  
27 should we chase after.

28 And then we kind of realized that we  
29 were getting too far down into the weeds. We  
30 were -- as far as what the panel can actually  
31 influence, what the panel can recommend, we were  
32 looking too -- we felt we were looking too  
33 specific for a bunch of different technologies.

34 So that led us to back away and start  
35 to think about the bigger picture ideas, and what  
36 can we do relative to technology as HSRP in a  
37 much bigger picture.

38 So we then started to focus on some  
39 significant R&D programs that are both for NOAA  
40 and also that what we think is in the broader  
41 industry. So that put us on a different track.

42 So I'll give you a couple of examples  
43 of what came up. We talked about a couple of  
44 ideas. We did a round table discussion. We were  
45 up at, in, at the UNH, about a month ago, with a  
46 couple of big-picture ideas.

47 One of the ideas that came up was,  
48 during the discussion was, how do we take all

1 this data from, that NOAA has, and present it out  
2 there that people care about, something like what  
3 the Weather Channel is able to do?

4 So we haven't done much of that, but  
5 that was one idea of where we should go with  
6 this, as a big picture idea. How do we advocate  
7 for something that we can take the data, and make  
8 it very accessible to the masses?

9 Another idea that came up is what's up  
10 on the screen there, is types of things that were  
11 developed under the NOAA charting activity, and  
12 specifically at the UNH. And that one in  
13 particular was the whole idea of bathymetry  
14 combined with backscatter, and now combined with  
15 water column detection, or water column seeps.

16 And that, for everybody's benefit,  
17 that's really taking off in industry. There's a  
18 huge surge of applications of the type of things  
19 that were invented within this group, or within  
20 this broader NOAA group, that have now been  
21 applied to deep water mapping for hydrocarbon  
22 seeps throughout the world, but particularly here  
23 in the Americas and particularly in the Gulf of  
24 Mexico right now.

25 So that led to trying to get a handle  
26 on, maybe we should talk about cost benefit  
27 analysis on how these types of things, these  
28 inventions, these technologies are really  
29 benefitting the greater industry, and that leads  
30 to a discussion on advocating for technology  
31 advances, and a means to go back to advocating  
32 for NOAA hydrographic charting in general,  
33 because it's not just about pings on a chart,  
34 it's about this technology transfer that really  
35 benefits the, a number of industries, and  
36 benefits greatly a number of industries when  
37 you're, when you start to talk about \$70 million  
38 a year, or \$100 million a year.

39 And it's growing right now. And that  
40 doesn't even include the impact of whether these  
41 things really lead to oil discoveries, which can  
42 be in the billions of dollars a year.

43 So those type of technologies, we  
44 felt, might be really a better focus for us to  
45 write white papers on, to try and advocate for.

46 And then there's other possibilities  
47 with, just with this data set, that, you know,  
48 it's not all just about the oil and gas industry.

1 There's all types of other impacts from studying  
2 this or using this massive database to  
3 investigate what maybe it has to deal with  
4 methane release into the water column on a  
5 massive scale that nobody realized, or we don't  
6 believe that scientists yet realize that there's  
7 that amount of material naturally going into the  
8 water.

9           Geohazards, environmental baseline  
10 studies, habitat studies, habitat studies for  
11 fisheries, again, all on a grand scale, and all  
12 because of the roots of what has been developed  
13 within, originally within NOAA and the R&D  
14 projects over at New Hampshire.

15           So we kept on our information  
16 gathering missions. We set up a couple of  
17 webinars during the monthly meetings. We had a  
18 variety of different topics on the issue papers,  
19 to try to continue to see what was going to  
20 stick, or what really resonated with everybody.

21           We had the requested briefs on the  
22 Port of Long Beach prototype project, as you can  
23 see there. There was a really interesting  
24 discussion on the next generation vessel design  
25 for NOAA, and should you have regular old  
26 launches or should you have launches of the  
27 future that might be all autonomous in nature?

28           I thought that was a really, a good  
29 challenge to the group, to decide what is the  
30 next generation NOAA vessel, as far as the way  
31 it's going to collect data.

32           We had a couple of other ideas for  
33 proposed future briefs with data management, and  
34 again, that idea of a web-based system that  
35 resonates with the public as, on the same level  
36 that the Weather Channel is. Chart production  
37 overview and plans, other ideas that maybe will  
38 come up here.

39           And that also, that with the point on  
40 the back there, another item that came up with  
41 internal discussions that I was having with  
42 people, was -- well let's do this one first.

43           The outputs -- issue papers on values  
44 of transfers, so we're going to always try and do  
45 a cost benefit analysis on this, either with the  
46 facts that we have in hand, or do the best we can  
47 to project that, to have a better justification  
48 on what kind of types of technologies we want to

1 advocate for.

2 And then we recommend further analysis  
3 of, to complete the work flow, metrics to better  
4 identify issues to prioritize it. And again,  
5 that's a lot -- we bit off a lot more than we can  
6 chew, to say. And we're still trying to get a  
7 handle on all that.

8 The third bullet there is something  
9 that came up, that I haven't even presented  
10 previous to this meeting, and that was the idea  
11 that we're talking about, the Maritime Transport  
12 System, and it was mentioned a little bit  
13 earlier, and comparing that to civil aviation  
14 types of funding and civil aviation types of  
15 strategy on how we approach that.

16 So I have another presentation that  
17 I'll distribute later on, but this is an  
18 interesting graphic to show you, to show everyone  
19 how complex it can be, relative to what we all  
20 know is up in the air, flying around, going in  
21 and out of JFK.

22 And the image on the left is the  
23 height of all the vessels that were involved in  
24 the Macondo oil spill, in trying to manage all of  
25 the activity there.

26 In line with the admiral's pyramid of  
27 SOLAS and non-SOLAS and recreational vessels, and  
28 the constantly growing number of vessels, you can  
29 compare that, maybe, to the aviation industry,  
30 where you have, oh, say ten A-380 landings and  
31 departures at JFK, and 20 general landing  
32 aviations and departures, and helicopters  
33 landing, and 150,000 passengers, and 90  
34 individual airlines.

35 The point being, the aviation  
36 business, or the aviation industry, whatever you  
37 want to call it, who gets \$15 billion a year, has  
38 a very accepted methodology about how they manage  
39 all these aircraft and all these different sizes  
40 of aircraft.

41 And we're starting to talk about, how  
42 do you manage these super ships and smaller  
43 ships, and the ins and out of PORTS. It seems  
44 like there's a lot of parallels on the way the  
45 ports are, might be looked at, similar to the way  
46 the aviation business is looked at, in the  
47 management and the control and that sort of  
48 thing, and again, leading towards funding.

1                   So that's just, again, something to  
2                   throw out there to get people to think. But that  
3                   kind of summarizes where we're at right now. And  
4                   again, we haven't latched on to any one single  
5                   topic that we want to advocate for yet, but there  
6                   is a big, wonderful bunch of ideas and activity  
7                   there.

8                   VICE CHAIR MILLER: I like the idea of  
9                   the launches, or looking at the launch. You  
10                  know, I've been thinking of things like, well  
11                  could you provide us sort of davits or launching  
12                  system, I won't say davit system, that could  
13                  launch either a launch or --

14                 MEMBER SAADE: An ASV.

15                 VICE CHAIR MILLER: -- an ASV of some  
16                 sort. Or, you know, do you need a launch to tend  
17                 an ASV, or whatever. But, you know, some sort of  
18                 modularized launching system that you could, you  
19                 know, that you could implement, that you'd have  
20                 flexibility. Because we don't know what's  
21                 coming.

22                 MR. DEBOW: That does exist already.

23                 VICE CHAIR MILLER: Does it?

24                 MR. DEBOW: Vest has a system like  
25                 that already.

26                 RADM SMITH: I would love to have an  
27                 opportunity to brief you all on, not only on our  
28                 unmanned systems activities, but on our thinking  
29                 as well, so that we can --

30                 MEMBER SAADE: And maybe that it's,  
31                 ties it all together.

32                 RADM SMITH: At least baseline, where  
33                 we think we are, and where we think we're going,  
34                 and what kind of irons we have in the fire, so  
35                 that we don't march off in two different  
36                 directions on this one.

37                 MEMBER SAADE: I think that's a great  
38                 idea.

39                 VICE CHAIR MILLER: Yes. I would  
40                 agree. The other thing, Ed, that I had been --  
41                 the other thing I had been hoping maybe that the  
42                 Technology Working Group could give us is, you  
43                 know, I'm not very much in touch with the state  
44                 of the art in LIDAR or, you know, or many of the  
45                 more modern, you know, the -- and I just thought  
46                 maybe the technology group could provide some  
47                 internal information for, particularly for those  
48                 of us who have either been out, or like, I don't

1 know that much about LIDAR.

2 And Dave and Gary were talking, and  
3 said, oh it changes every week. Well, you know,  
4 I think it would be useful for us to have a, at  
5 least a broad understanding of what those  
6 technologies are. And that's not necessarily a  
7 paper, but maybe you guys could provide --

8 MEMBER SAADE: Well, if you're leaning  
9 towards, we should have some technology briefings  
10 at every meeting, I think that'd be great.  
11 That'd be relatively easy to set up. It'd be  
12 very informative. We can keep it on the leading  
13 edge at all times.

14 Amongst the group that's in this room,  
15 there's plenty of really qualified people, you  
16 know, and Carol and the others, that are even on  
17 our little working group.

18 If we want to start to begin to do  
19 that, I'd rather do it in this kind of a forum  
20 than on the webinar, to be honest with you,  
21 because I think the interaction and the quality  
22 of the images and all that are a lot -- people  
23 get a lot more out of it.

24 VICE CHAIR MILLER: Well, and it also  
25 provides information to our stakeholders who  
26 attend meetings --

27 MEMBER SAADE: Good point, yes.

28 VICE CHAIR MILLER: -- who might not  
29 be up. So --

30 MEMBER SAADE: Yes.

31 VICE CHAIR MILLER: So, I mean, and  
32 that would be -- I mean, you don't have to focus  
33 on what huge topic are we going to undertake.  
34 You could say well, you know, we're going to give  
35 a seminar on this.

36 And because you guys are the ones that  
37 are in touch with the modern tech, or you know,  
38 the most modern technology -- and it, you know,  
39 it would give you guys kind of a product that  
40 helps us all, and without, you know, a huge  
41 amount of effort. So --

42 MEMBER SAADE: Yes.

43 VICE CHAIR MILLER: -- that would just  
44 be my request.

45 MEMBER LOCKHART: I think it was the  
46 last meeting or the meeting before, Scott asked  
47 if, at some point, I would give a presentation on  
48 LIDAR. And so I'm going to volunteer to do that



1 at our next meeting, if you're interested.  
2 MEMBER SAADE: Let's start with LIDAR,  
3 you know, at the -- in Seattle.  
4 MEMBER LOCKHART: Exactly. I have a  
5 data set from there we can use.  
6 MEMBER MAUNE: Somebody this morning  
7 mentioned ground-penetrating LIDAR. I've never  
8 heard of that.  
9 MEMBER SAADE: No, no. That's a --  
10 MEMBER MAUNE: We use ground-  
11 penetrating RADAR, but I've never heard of  
12 ground-penetrating LIDAR.  
13 MEMBER SAADE: That's how fast the  
14 technology's changing, right, and right in front  
15 of us.  
16 VICE CHAIR MILLER: So is Lindsay on,  
17 do we know?  
18 MEMBER SAADE: Do we know if Lindsay's  
19 on, Larry?  
20 MEMBER GEE: Thanks, Joyce. Yes.  
21 MEMBER SAADE: Oh.  
22 VICE CHAIR MILLER: Oh.  
23 MEMBER GEE: Yes. I'm on the line, if  
24 you can hear me.  
25 MEMBER SAADE: There's a voice. Go  
26 ahead.  
27 MEMBER GEE: Yes, hi. This is Lindsay  
28 Gee, an almost member of the HSRP. Maybe I'll  
29 eventually get to a meeting where I get sworn in.  
30 So can you hear me all right, okay?  
31 MEMBER SAADE: We hear you well, and  
32 we can see the screen.  
33 MEMBER GEE: Okay. So there's a, is  
34 there a Nautilus Live quad screen up, with four  
35 separate images?  
36 MEMBER SAADE: Yes.  
37 MEMBER GEE: Okay. Thanks very much,  
38 just for the time. And really to follow on from  
39 what Ed said, I thought I'd take the opportunity.  
40 We do get down to the weeds sometime, and I  
41 thought it'd be an opportunity to show maybe some  
42 of the other members that haven't had a chance to  
43 see what some of us do.  
44 And also, as kind of exposing a couple  
45 of pieces of technology that we've already  
46 discussed, one in particular with the seeps that  
47 Ed talked about, and the other is just, is a  
48 telepresence.

1                   Where I'm calling from is the  
2 exploration vessel, the Nautilus. This is Dr.  
3 Bob Ballard's vessel in the, part of the Ocean  
4 Exploration Trust, and that Larry can give you  
5 more briefings on that, out of this session, but  
6 I had the opportunity to come onboard and be part  
7 of this expedition.

8                   And we're off -- if you see the map  
9 that's then up in the, I don't know, the top  
10 left, I think. This is off the Cascadia, it's on  
11 the Cascadia margin, off the Oregon coast. And  
12 the lines you're seeing are the areas we're going  
13 to be surveying.

14                  So this area in the middle that's  
15 colored by the depth is one that was done  
16 earlier, in an earlier expedition. And the black  
17 lines are what we're currently surveying. We're  
18 actually up in the northwest, I think, on the --  
19 yes, on the bottom left screen is a navigation  
20 screen. They're on this line coming down here.

21                  One of the points to make now is the  
22 way we're doing this, and what you're seeing is  
23 on the web page, is a reduced set of four screens  
24 that -- and one thing that Dr. Ballard sort of, I  
25 guess, was a pioneer of in the research community  
26 is what he calls telepresence, which is being  
27 able to, you know, broadcast.

28                  But it's not just broadcast ashore and  
29 both ways for, as opposed to research and  
30 outreach. But the whole thing really, is to be  
31 able to engage more people, whether that's other  
32 scientists or even just general public, for the  
33 outreach.

34                  And so you're seeing a lot of  
35 resolution in our web page, where you're seeing  
36 each screen. But if, in other centers, like his  
37 operations center and, at the Inner Space Center  
38 at the University of Rhode Island, all right.

39                  And Larry and Andy up at CCOM/JHC at  
40 UNH, they have another van that looks -- oh,  
41 you're not seeing the control van, but those  
42 monitors reach a high resolution screen, so they  
43 can see what we're seeing now.

44                  Or if they are then exploring with an  
45 ROV, you can see the actual ROV dive. So this  
46 allows a much bigger science team that you can  
47 get on the vessel to be involved in the  
48 expedition.

1                   How does that relate to the HSRP, and  
2 the technology group? I think this is one area  
3 where we hear continually, I think, from NOAA,  
4 that they have trouble with resources and people,  
5 whether that's even getting them in the first  
6 place, or having the right level of expertise out  
7 on the ships and in different areas.

8                   And telepresence, people would say, oh  
9 communications is difficult and it costs a lot of  
10 money. But in the scheme of things, it's a cost  
11 benefit analysis of that, it's not an expensive  
12 way to get really powerful and extensive  
13 expertise into the areas you need it onto a ship.

14                  So after I've done this, I'll probably  
15 have Larry telling me what I'm doing wrong on the  
16 sonar or something like that. But what -- oh  
17 sorry, what I didn't describe, apart from that  
18 map on the left, on the top right, what you're  
19 seeing, is the Kongsberg sonar, and this is the  
20 sonar that's laying control.

21                  So as we're mapping, we're in like  
22 1,270 meters, and we're on a survey that's again,  
23 looking -- it's primary on the Cascadia margin,  
24 which they've found many seeps.

25                  And so in the, earlier in the year,  
26 they were expecting to come up and find a few,  
27 maybe 10 or 20, something like that. And then  
28 they've found over 500, so what Ed was talking  
29 about earlier with the seep and the research  
30 that's happening, it's kind of continuing to grow  
31 as we go.

32                  So going back to the telepresence, it  
33 allows you to get the researchers off shore, or  
34 even take some of them maybe off the ship. And  
35 as an example of that, a NOAA ship, Okeanos  
36 Explorer, is also currently doing a survey right  
37 now with telepresence.

38                  And the lead mapper on that is sitting  
39 in the lab at UNH, controlling that survey. So  
40 she has a team onboard the ship, but they're  
41 using the telepresence. Even in that role now,  
42 it's being done.

43                  And I think, with communications, as  
44 it improves, there's -- let's see, we're going to  
45 see it as part of the general use offshore. I  
46 think it's going to become more and more, and  
47 that's something I would, just wanted to  
48 demonstrate. But when we talk about telepresence

1 or what it is, from the technology group, you'll  
2 know what that is.

3 It's also related -- I think you were  
4 just discussing briefly about unmanned and USVs,  
5 and how you get things off into remote areas, and  
6 particularly, the Arctic. I think that's an area  
7 where, if you are going to put up unmanned, you  
8 know, vessels and all those things, not only can  
9 you telepresence into something that has people  
10 on board, but you could set it up so you could  
11 telepresence and control remotely without.

12 So it's unmanned, mostly autonomous,  
13 but if you need to, you can get onboard and look  
14 like we're looking at these screens now, to see  
15 progress on the survey.

16 The second thing, really, was seeps,  
17 and I was just going to -- maybe we'll see one  
18 pop up on the sonar as it comes to you. But I  
19 was going to just talk in, the seeps in a couple  
20 of things, and how it's, went very quickly, in  
21 fact, from research through operations, and  
22 really to a value-add that Ed's talked about.

23 And I think this really, to try and  
24 strengthen the support that's provided to the  
25 research institutions like CCOM and others, it's  
26 important but to have in mind, not just a  
27 research, and not just solving NOAA's problems of  
28 being able to, whatever that is, and when they  
29 define their priorities, but I think we've always  
30 got to consider more than the potential that's a  
31 value-add, that -- and have a -- we don't know  
32 what that's going to be, when it's researcher-  
33 started, but I think we have to have a process  
34 that allows that to be done easily.

35 So let me just change screens here a  
36 bit. So last night, in fact -- and I'll stop  
37 there, last night we were up in -- let me just  
38 show you where that was again, if I zoom in a  
39 bit.

40 We were up, coming up in an area that  
41 had been mapped previously with, NOAA PMEL was on  
42 board, on the expedition earlier in the year.  
43 And they mapped this area, and the black dots are  
44 where they found areas of seeps.

45 Well last night, we came along this  
46 line here, and then this morning, we just got up  
47 and said, oh well, let's have a look at it. And  
48 they didn't see anything online when they were

1 doing the survey, when they were on watch.

2 So we had a look at that line, and you  
3 see this little curve here, and let's have a look  
4 what we found there. And so this is just the  
5 normal -- turn that off for a sec, this is the  
6 normal bathymetry that you would see, after you  
7 mapped it, similar to the one on the main screen.

8 We also do map the backscatter, which  
9 is the intensity from the sonar, to try and  
10 determine the type of seabed, or the changes in  
11 the seabed down there. And we can turn that on.

12 And you'll see the grayscale is  
13 indicating the different variations in the  
14 seabed, so a stronger return from the lighter  
15 areas and then less in the dark. So we can  
16 review that area. We'll drape that over the  
17 bathymetry so it's still evident from that.

18 So if you then also see the fan that's  
19 in the bottom of the other display, that's all  
20 that the user normally has to look at, so that's  
21 really complicated. Now if you miss it, when the  
22 sonar pings, and you don't miss, get the seep,  
23 it's gone by the time you come back.

24 So this was some development that was  
25 done a number of years ago in collaboration with,  
26 I think it's CCOM and JHC. And now you can put  
27 this into the -- out of the analysis software,  
28 and we can bring it into the scene.

29 And now this is replaying some of  
30 that, and you can see the variations in the, some  
31 things in the water column. But you see all the  
32 noise.

33 And so, years and -- for years and  
34 years, we all mapped the seabed and weren't  
35 interested in the noise, but then there was a  
36 while ago where someone got interested in the  
37 noise. And so it's the story about, you know,  
38 one man's noise is another man's signal. And so  
39 we came, and then this has been a real focus.

40 So getting rid of all that noise and  
41 actually extracting something was some of the  
42 research, and it's still ongoing at CCOM. And  
43 from that, what we're able to do is then extract  
44 areas where there are actually seeps.

45 And this is one that was -- if I  
46 scroll along to that. Let me just do that. I'll  
47 tell you exactly when that was done last night.  
48 So if you scroll along here, turn that on. So

1 that was about, yes. So that was last night.  
2 This is GMT time, so it's 15:30 today, GMT, that  
3 that was, that seep was found.

4 So this was -- again, if you take it  
5 back to telepresence, it's not where we end our  
6 15-day cruise and then we come back and process,  
7 the data gets processed our way, traditionally.

8 Either Nicole Reynolds has already  
9 sent this back to the scientists ashore. And so  
10 they're seeing this, you know, almost  
11 immediately, or within the hour of it being  
12 found.

13 So I think this came -- and it's  
14 interesting, I think, in the room there, and with  
15 Nautilus calling in, everybody that's been  
16 involved with this development is kind of, you  
17 know, in some way, is -- it came out of CCOM and  
18 JHC.

19 I was involved in some of the -- with  
20 the company I was at previously, in developing  
21 the software, that in the commercial tools, and  
22 Nautilus was certainly involved very early on in  
23 all the research cruisers that use the software.

24 And then it's gone through into that  
25 as Ed talks about his company, that's been using  
26 this in a true commercial role that I'm sure the  
27 researchers eventually never thought of.

28 And this happened in less than ten  
29 years. So I think -- and it was, part of it was  
30 the Naval, so that we could do it within -- Larry  
31 and the center there had set up an industrial  
32 partnership that allowed the technology to be  
33 transferred to operations and spun out. And I  
34 think there's more to be done on that.

35 And back to my view, I guess I've  
36 expressed and you're probably sick of hearing it,  
37 in some of the other papers and meetings, when I  
38 send email. My view is, I think we -- you know,  
39 that we advocate for federal money for different  
40 things, and that will solve a problem. You know,  
41 it -- industry gets involved in that.

42 But I think we've also got to be very  
43 cognizant now. It's always value-add. And I  
44 think that's important, to make sure that when  
45 that federal money gets, you know, used for  
46 whether it's research or surveys or those sort of  
47 things, it's got to be mechanisms that you can  
48 provide a value-add.

1 Ed is talking about, for this initial  
2 research, whatever until Larry could, in the time  
3 that's sent, could let you know that, this is,  
4 has potential in, right now, in his industry is  
5 saying that, I think, Ed has said \$7,500 million,  
6 and potentially, if it assists in finding, you  
7 know, oil and gas, it can be a huge amount.

8 So I just wanted to just summarize a  
9 couple of things, the telepresence, I think, and  
10 the big development, so you've seen that. And  
11 also see how that -- and also how that's gone out  
12 into industry, and actually added value to what  
13 we can do, and add value to the nation, really.

14 So that's short, and hopefully that  
15 was interesting.

16 MEMBER SAADE: That was great. Thanks  
17 a lot.

18 MEMBER GEE: And any questions, do  
19 please.

20 MEMBER SAADE: Any questions anywhere?  
21 Well I think you wowed them, and I think we just  
22 demonstrated our first technical presentation at  
23 -- we don't have to wait till the next one. So  
24 we've kicked it off in a really strong way.

25 So thanks a lot, Lindsay. And I guess  
26 we'll move on to whatever's next, if there's no  
27 more questions.

28 MEMBER GEE: Okay. Thanks Ed, and  
29 I'll sign off and stop using the Nautilus  
30 satellite. Thanks very much, everyone.

31 MEMBER SAADE: Hey wait, wait. Wait,  
32 we got one question.

33 MEMBER GEE: Great. Okay.

34 MEMBER SAADE: Oh well, never mind.  
35 You're free to go. You're free to go. Thanks a  
36 lot, Lindsay.

37 MEMBER GEE: Okay. Thanks very much.  
38 Bye.

39 MEMBER LOCKHART: I guess I just  
40 wanted to make the comment that in these  
41 Technology Working Group meetings we've been  
42 having, we've been having some pretty robust  
43 discussions, and asking some pretty hard  
44 questions, I think, of some of the folks that  
45 have been giving those presentations.

46 And I wanted to highlight, again, I  
47 know you had kind of three main items that came  
48 out of that, but the thing that kept occurring to

1 me throughout all of those presentations we were  
2 getting is the second item you had there, which  
3 is -- you know, it -- we're a technology working  
4 group, and technology's important if it fixes a  
5 problem, but we don't want to be using technology  
6 for technology's sake.

7 And the only way we can figure out if  
8 we're applying the correct technology is to know  
9 if it's actually going to improve something or  
10 not. And the only way we know if we improve it  
11 is if we know what we're already doing now.

12 And so I think, you already  
13 highlighted that doing some kind of baseline  
14 analysis on your current workflow process, and  
15 getting those metrics, so you know where the  
16 problems really are, I think, is really  
17 important.

18 I know it sounds like that's kind of  
19 being sort of done in some places, kind of not  
20 done in other places. But I think having an end-  
21 to-end better idea of what's going on there is  
22 important.

23 Because having done this on multiple  
24 different work flows before, some that I've been  
25 really in-depth involved with, others that were  
26 completely fresh to me when I went to do the  
27 analysis, you may think you're spending a lot of  
28 time in one area, and it turns out that the  
29 problem is actually completely somewhere else.

30 So I think doing that analysis, and  
31 then being able to drive if it's a software  
32 problem, or a hardware problem, or a user  
33 problem, I think, is good. And I think  
34 processing, a lot of times, gets forgotten, but I  
35 think there's a lot of bang for the buck to be  
36 had there.

37 MEMBER SAADE: And I would add that  
38 we've -- you're right that we've had some really  
39 good discussions. And I don't think we do a good  
40 job of capturing and recording all that was  
41 discussed, and what was concluded.

42 RADM SMITH: Yes, I'd -- since we've  
43 decided to go to Seattle, that's where, that is  
44 where one of our processing centers is. And so  
45 this might be a good topic for us to take on for  
46 next time.

47 And the other thing I wanted to  
48 reflect back on one of the things that Ed said,



1 so that it doesn't get lost, is that, is really  
2 about making good use of the data that we have.

3 And there's not very much we can do in  
4 the government to change the amount of money we  
5 get. It, you know, doesn't change that much,  
6 year to year. What we can do, and really, I  
7 think it's, you know, what I consider one of  
8 biggest duties, is to increase the value of the  
9 investment that the public has made in our  
10 programs.

11 And so, you know, going all the way to  
12 the end to the societal value, so you know, if  
13 we're all, you know, buns up, working on some  
14 little widget down in the works, you know, maybe  
15 that's not the best value, the best effort.

16 And this is not something, I think,  
17 that we in Coast Survey do well, or in NOAA,  
18 frankly, to, you know, take it all the way to  
19 delivering the best societal value.

20 I come back to the models, which is,  
21 you know, we have these great operational  
22 forecast models, most of which go to other  
23 modelers. And we saw the very first example I've  
24 ever seen of somebody using it in any  
25 navigational context, and yet that is why we say  
26 -- that's what we say we do them for, right.

27 And so there's a -- you know, I think  
28 there's -- and the same is true for, you know,  
29 boy these bags we've been making now for 15  
30 years, surely somebody's going to love those.  
31 Surely they're going to make it into the  
32 navigation systems that all the fishermen are  
33 using. Surely -- and they're not.

34 And maybe it's because there isn't an  
35 application there, and maybe it's because they  
36 don't know, or because it's too complicated,  
37 because it's really a lot of data.

38 But so anyway, I would, I guess I  
39 would challenge the technology group not to stop  
40 at, you know -- not to focus solely on doing  
41 hydro better, because I think that's sole --  
42 that's squarely in the space that most of us are  
43 very comfortable operating, but to go all the way  
44 to that societal benefit. And there's technology  
45 out there, too.

46 VICE CHAIR MILLER: Okay. I'm aware  
47 that -- how many are leaving tomorrow morning?  
48 So, okay. It's not on the schedule, but because

1 these guys are leaving tomorrow morning, I think  
2 we should have a recap of what we've heard, and  
3 what our major issues might be for our  
4 recommendation letter.

5 And I've been taking notes and kind of  
6 trying to summarize. And I just sent Lynne -- or  
7 I just -- yes, I just sent Lynne, a one -- it's a  
8 little over a page, with -- and what I tried to  
9 do, so that we have some general topics, is to  
10 put all the comments we've heard up, or any  
11 issues we've had come up, and add the comments.

12 This isn't necessarily what we're  
13 going to say in the letter, but it's what we've  
14 heard this time. And Lynne, whenever we can get  
15 that up, it would be good.

16 (Pause.)

17 And I have to say, thank you very  
18 much, Lynne, for coordinating all the files that  
19 are flying back and forth.

20 PARTICIPANT: How quickly are we going  
21 to get the letter out?

22 VICE CHAIR MILLER: What?

23 PARTICIPANT: How quickly are we going  
24 to get the letter out?

25 VICE CHAIR MILLER: ASAP. Well, I'm  
26 going to be, I'm going to be at my sister's  
27 house, but I can work there. That's obvious.

28 Okay. So I've -- what I do is I just  
29 take all the comments we've gotten and pile them  
30 under -- yes. So there's four or five basic  
31 topics that I've heard. So there were some Great  
32 Lakes specific recommendations, like they should  
33 receive the same attention as other coasts.

34 And I'd like to say to those of you in  
35 the audience, if you think you're neglected, come  
36 visit Hawaii.

37 (Laughter.)

38 RADM SMITH: Somehow it's hard to have  
39 sympathy. It just doesn't work.

40 (Laughter.)

41 VICE CHAIR MILLER: Make sure that  
42 the funding does not --

43 (Laughter.)

44 VICE CHAIR MILLER: I think the  
45 Admiral said something about a pity party.

46 (Laughter.)

47 VICE CHAIR MILLER: And that NOAA  
48 should have a stronger Near Shore program in the

1 Great Lakes.

2 Let's take a quick look through. So  
3 communications, we've heard a number of comments  
4 about communications. Just page down to the  
5 major topics, and then we'll come back and  
6 discuss each one of them.

7 So partnerships, heard a lot about  
8 that. PORTS and water level sensors, mapping  
9 needs, and then some miscellaneous other comments  
10 that I didn't think fit anywhere else. And these  
11 are mostly the people, the asks we've heard, you  
12 know, what can NOAA do better.

13 We generally try to have three major  
14 topics for the recommendation letter. Four is  
15 not unknown, but more than that -- and some of  
16 this information, we can put in the text as a  
17 comment or, you know, an observation, and not a  
18 recommendation.

19 So on the high level, communications,  
20 partnerships, PORTS and bathymetry are the four  
21 areas I saw. And so I'd like to stop there for a  
22 minute, and see if there's agreement there or  
23 not.

24 MEMBER SHINGLEDECKER: I would say  
25 it's a good start. There was one thing that I  
26 heard that I haven't really heard anybody  
27 discussing much on the sidelines, and I'm not  
28 sure if it's really our jurisdiction or not, so  
29 feel free to dismiss it.

30 But I was hearing, definitely, from  
31 the Army Corps, of infrastructure needs, and the  
32 aging breakwaters and the discussion of the  
33 situation with the locks. And while those  
34 certainly seem like Army Corps matters to me,  
35 they certainly seem to be imperative to the  
36 successful navigation and commerce of the Great  
37 Lakes.

38 So I didn't know if we wanted to  
39 include that anywhere in there. But I just  
40 thought I'd throw it out for discussion.

41 VICE CHAIR MILLER: Anyone from ex-  
42 Army Corps, or --

43 MEMBER MAUNE: Well the gentleman that  
44 briefed us as we entered the boat yesterday  
45 afternoon, he gave us quite a briefing on what  
46 would happen if some of these locks -- he said  
47 they'd been working on repairing that one lock  
48 since 1986, and it keeps getting worse and worse,

1 and all this horrible stuff that would happen.

2 I don't know if, who else heard that,  
3 or listened to him, but he gave us an earful on  
4 that.

5 VICE CHAIR MILLER: Yes. I'm not sure  
6 -- I agree with you. It's an important issue,  
7 but it's not really NOAA-specific at all, I don't  
8 think.

9 Brigham, or Lawson?

10 MEMBER BRIGHAM: Lawson Brigham.  
11 Somewhere on your list -- I stepped out for a  
12 second. Is observing and observations on there  
13 somewhere?

14 VICE CHAIR MILLER: Oh yes. Yes.

15 MEMBER BRIGHAM: Okay. So later on?

16 VICE CHAIR MILLER: Yes. I -- we're  
17 just discussing sort of the broad issues. So why  
18 don't we go to -- in the Great Lakes  
19 recommendations, I think we can discuss, this is  
20 what we heard from the Great Lakes. They would  
21 like -- you know, that doesn't have to be a  
22 strong formal recommendation from us.

23 Let's go down and just look at  
24 communications, just start there, because -- so,  
25 different things we heard from the Coast Guard,  
26 better ability to track chart recommendations.

27 MEMBER HALL: Just real quick on that  
28 one, it's not just Coast Guard recommendations,  
29 it's the ones that get referred to them as well.  
30 So people in the community, it sounded like, from  
31 the Coast Guard --

32 VICE CHAIR MILLER: Yes.

33 MEMBER HALL: -- were not also getting  
34 the feedback, so they went to the Coast Guard.  
35 It just got all around.

36 VICE CHAIR MILLER: But it was the  
37 Coast Guard that was feeding the recommendations  
38 to NOAA. And we had had some discussion  
39 yesterday afternoon, and then got a  
40 recommendation this morning, which is the next  
41 one, which was maintain an in-basin presence of  
42 navigations team staff in the Great Lakes.

43 Now that's not such a -- that's more,  
44 I guess, a recommendation to Coast Survey, and  
45 the Navigation Managers. Whether it's a high-  
46 level recommendation that we want to include, I'm  
47 not sure.

48 Make sure programs are coordinated

1 across different branches of NOAA is higher  
2 level. The -- putting water level, wind speed  
3 and direction on VHF or AIS, is that across NOAA?

4 Yes. It's Coast Guard, yes. And this  
5 issue we keep on bumping up against, a data  
6 interchange between Army Corps and NOAA, I think  
7 we're going to have an issue paper on that the  
8 next time, it sounded like.

9 And then --

10 (Off microphone remarks.)

11 VICE CHAIR MILLER: Yes. Yes. So out  
12 of this, any suggestions what a high-level  
13 communications recommendation might be? We try  
14 not to make them too piecemeal, I guess I would  
15 say. Any thoughts on that?

16 MEMBER HALL: I do think that the  
17 Navigation Manager, in-basin, whether it is a  
18 general recommendation that we have, that each of  
19 the regions have their person in-house, I think  
20 that's really important, because we heard that  
21 over and over and over again, that that was a  
22 disconnect, and how do they coordinate certain  
23 things.

24 I know Glenn offered, hey, anybody who  
25 wants to come to D.C., or if you're in D.C.,  
26 we'll work with you. But it sounds like there is  
27 a missing link there. And I don't know if that  
28 could be a broader version, or if there's issues  
29 elsewhere.

30 Obviously, we only heard about the  
31 Great Lakes problem. But with that, a very  
32 general overview, or general recommendation to  
33 have your Nav Manager actually in the region for  
34 which they're the Nav Manager for.

35 VICE CHAIR MILLER: Yes. And Rachel  
36 can confirm this or not. I believe every other  
37 region has a full-time Nav Manager at this  
38 point. Is that not true, in-country, as you  
39 would --

40 MS. MEDLEY: Thank you. Hi. Thanks,  
41 Joyce. Actually, we just had a Nav Manager  
42 retire, Michael Henderson, so the  
43 Florida/Puerto/U.S. Virgin Islands billet is yet  
44 to be filled. So that's a vacancy. So we have  
45 people covering that, but they're covering their  
46 own AORs as well as that one.

47 Tom has done a great job, but he's,  
48 you know, got another job. So he's doing double

1 duty. And then we used to have a Hawaii billet,  
2 and we closed that. So Crescent, the Pacific  
3 Northwest Nav Manager is covering that one.

4 So I would say, in general, yes, we do  
5 have coverage, it's just people might not be in  
6 situ, which is, I think, what Kim is speaking to,  
7 is that that's where you really get your max  
8 value, in having someone in-house. Okay.

9 VICE CHAIR MILLER: Yes. Lawson?

10 MEMBER BRIGHAM: But in view of all  
11 the numbers we hear, and the economic reality of  
12 the relationship of this basin to the rest of the  
13 country, I mean, this one might be number --  
14 well, top one. I don't know.

15 CHAIR HANSON: Of the unfilled?

16 MEMBER BRIGHAM: Well, of the  
17 unfilled, but however you look at it, I guess.

18 VICE CHAIR MILLER: And then, so the  
19 last two are -- and I think we probably should  
20 say something about, you know, we mentioned it  
21 before, but data coordination between Army Corps  
22 and NOAA continues to be a -- we continue to hear  
23 it at almost every meeting.

24 Okay. Let's go down to the next one.  
25 I mean, this was just across the board. There  
26 were -- and there were a couple places where we  
27 heard that -- well, the Bottom Mapping Working  
28 Group, and it appears that IOCM has part of that  
29 working group.

30 I guess, I would think that the Nav  
31 Manager would be -- if -- should be within that.

32 Are you in that group?

33 PARTICIPANT: Which group is this?

34 VICE CHAIR MILLER: The Bottom Mapping  
35 Working Group. You are? Okay. All right, so  
36 that's a null point.

37 But -- and perhaps -- this probably  
38 isn't a recommendation, but it should be part of  
39 the letter. We heard how important the  
40 partnerships are throughout the Great Lake --  
41 yes.

42 MEMBER HALL: Just as you related it  
43 back to PORTS, we have to think about our issue  
44 paper. And what we're seeing is, that's the  
45 current workaround. It's not the most effective,  
46 efficient, fair -- you know, it's great that Lake  
47 Erie Association stepped up and took part in  
48 that, but that's not what we think is a

1 recommendation from this panel, going forward,  
2 how it should be addressed.

3 So I just wanted to see how we were,  
4 your thoughts on how that was going to be. Is it  
5 a statement that that's what we've heard or, and  
6 that's kind of your stopgap measure until such  
7 time as federal funding is provided?

8 Because I think we need to be really  
9 clear on that. If we have a paper that says,  
10 federal funding now, all the time, versus  
11 highlighting, this has been a great place where  
12 that's helped, but that shouldn't be the answer.

13 VICE CHAIR MILLER: And that's one  
14 current meter. I mean, it's not a PORTS -- I  
15 mean, they're calling it a PORTS system, but I  
16 mean, it's not all the air gap sensors and  
17 everything.

18 MEMBER HALL: Right. And I just  
19 wanted to understand what you were -- because  
20 your comment there, it almost puts it into a  
21 positive, and when I had --

22 VICE CHAIR MILLER: It's just a  
23 comment. I --

24 MEMBER HALL: Okay.

25 VICE CHAIR MILLER: It was just a note  
26 I had made, because of the presentation. And  
27 it's just an example of the partnerships here in  
28 the Great Lakes, as far as I can tell.

29 So is there any recommendation we want  
30 to make here? Or is this just a, you know, a  
31 paragraph in the -- I think this is more, you  
32 know, saying how good the partnerships are, and -  
33 -

34 MEMBER KELLY: It just, I think that's  
35 just a good comment, that we heard there were  
36 very active and well-coordinated partnerships  
37 here in this Great Lakes area. I don't know if  
38 we need to really say anything more than that.

39 VICE CHAIR MILLER: Okay.

40 MEMBER SHINGLEDECKER: You might also  
41 highlight the unique international nature of some  
42 of those partnerships as well.

43 VICE CHAIR MILLER: Okay. Good.  
44 Okay. Let me stick that in real quick. Where is  
45 my document?

46 RADM SMITH: Yes. And I think the  
47 states are unusually heavily involved. I don't  
48 remember hearing from states quite as much, in

1 the PORTS, otherwise.

2 CHAIR HANSON: We didn't tap into them  
3 in these other places. We can -- Northwest  
4 actually has a -- West Coast actually has a very  
5 active governor's situation. They've been  
6 tackling water issues for years. So we should  
7 tap into them, as well.

8 VICE CHAIR MILLER: Okay. Yes,  
9 international and state partnerships. Okay.  
10 Now, this is probably a recommendation,  
11 especially since we're sending in a PORTS paper.  
12 I just, I had noted that Cape Cod, any system  
13 must be a PORT system.

14 MEMBER HALL: Lynne, can you scroll  
15 down for us? Lynne. Thank you.

16 VICE CHAIR MILLER: Yes. Back up.  
17 Yes. So I think we want to make a general  
18 statement about, we hear this everywhere we go,  
19 and we once again recommend and, you know, make  
20 the recommendation that's in your paper, the, you  
21 know, the high level, bottom line, up front  
22 recommendation that's in your paper.

23 Does that make sense? And we can add  
24 a, we can put a little bit in there about what we  
25 heard here, and make that. So that would be a  
26 recommendation, or maybe two, on communications,  
27 one on PORTS and water level sensors, and then  
28 come on down to mapping needs.

29 MEMBER KELLY: Joyce, just to  
30 interject, I think it's rather hard-hitting that  
31 we mention that the very crucial current meters  
32 in those areas are not functional because of lack  
33 of local funding.

34 VICE CHAIR MILLER: What, which  
35 current meter was that?

36 MEMBER KELLY: Can we roll back to  
37 that?

38 VICE CHAIR MILLER: I thought those  
39 were functional, but they just were saying --

40 MEMBER KELLY: I heard that they were  
41 there. They were necessary, but they were not  
42 functional at this time because of a lack of  
43 funding.

44 MR. EDWING: Right. So let me  
45 clarify.

46 (Simultaneous speaking.)

47 MR. EDWING: So I've been coming up  
48 here for a number of years, and just kind of



1 saying, okay the day's coming when these are  
2 going to start breaking down, and I don't have  
3 the funds to fix it.

4 Well that started happening with  
5 Cuyahoga.

6 VICE CHAIR MILLER: Okay.

7 MR. EDWING: And that's really what  
8 kind of motivated the carriers to step up and get  
9 it back on a sustainable path. The Maumee  
10 River's been going fine, but why? We may have to  
11 wait for it to start having real issues before  
12 someone steps forward and funds it.

13 Or if we get the House mark next year,  
14 it's going to get shut down. You know.

15 VICE CHAIR MILLER: And what about the  
16 St. Clair?

17 MR. EDWING: The same thing. Yes.  
18 Now, when those three meters were installed, two  
19 of them were installed for the navigation  
20 community. We are well aware of those needs. I  
21 actually have a list of 12 other locations from  
22 the Lake Carrier Association, where they would  
23 like for our meters.

24 The St. Clair was really established  
25 more for the IJC and to kind of help with the  
26 water management, the flow measurements they need  
27 for their models and so forth. So we're actually  
28 trying to -- we're looking to the IJC possibly to  
29 provide funding for that, so.

30 VICE CHAIR MILLER: And what would  
31 people would say? I believe it was Helen and her  
32 -- when she gave her comment that she said  
33 earlier groups decided that PORTS was not the  
34 best model for the Great Lakes?

35 MR. EDWING: Well, I think what she  
36 was saying is they didn't want to pay for the  
37 services. You know, they said they went for  
38 earmark and got all the -- the tide gauges up  
39 here were the first ones to go real-time, through  
40 the modernization.

41 VICE CHAIR MILLER: Oh, okay.

42 MR. EDWING: I forget, it was funded  
43 through the earmark.

44 MEMBER HALL: Yes. It's the funding  
45 approach, not the actual system itself --

46 MR. EDWING: Right.

47 MEMBER HALL: -- that was the problem.

48 MR. EDWING: Right. Right.

1                   RADM SMITH: What I heard was that the  
2 partnership works well when you have a facility  
3 or a port or something to partner with. When you  
4 have a through --

5                   MEMBER HALL: The in-transit problem  
6 is nobody owns it.

7                   RADM SMITH: The in-transit, that who  
8 --

9                   MEMBER HALL: Yes.

10                  RADM SMITH: Right. Who's your  
11 partner? And I will just note a -- I guess, can,  
12 maybe can I interject here for just a second?

13                  VICE CHAIR MILLER: Sure. Of course.

14                  RADM SMITH: One is that there's a,  
15 there's been a theme, and a great deal of  
16 sensitivity in the downtown NOAA folks, about  
17 federal advisory committees giving personnel  
18 recommendations. And it plays very, very poorly.

19                  And so -- and this has happened in a  
20 number of panels. And so there's a great deal of  
21 sensitivity to that. So in our discussion, or  
22 your discussion -- this is your letter, you write  
23 it however you want.

24                  In your discussion about the Nav  
25 Manager, I would put it, you know, in terms of  
26 supporting the Nav Manager program, the absence  
27 of one, in-basin, was noted, and you know, but  
28 that, you know, that we --

29                  VICE CHAIR MILLER: And a full-time  
30 Nav Manager was requested by the stakeholders.

31                  RADM SMITH: Was requested by the  
32 stakeholders. And the HSRP thinks it's one of  
33 the -- with -- this is a valuable program that  
34 Coast Survey runs, something along those lines.

35                  VICE CHAIR MILLER: Sure.

36                  RADM SMITH: Rather than --

37                  VICE CHAIR MILLER: We can do that.

38                  RADM SMITH: Rather than being too  
39 pointed about --

40                  VICE CHAIR MILLER: Yes.

41                  RADM SMITH: -- the specific absence,  
42 or --

43                  VICE CHAIR MILLER: Yes.

44                  RADM SMITH: -- making a specific  
45 recommendation.

46                  VICE CHAIR MILLER: Yes. We can, Dave  
47 writes very good nice words.

48                  RADM SMITH: I guess the other comment

1 I would make is that the full federal funding for  
2 PORTS, they've heard it a lot of times.

3 VICE CHAIR MILLER: We know.

4 RADM SMITH: There's going to be  
5 probably negative value to mentioning it again,  
6 because it's going to look like we're stuck on  
7 it, rather than, rather than -- it's not that we  
8 --

9 CHAIR HANSON: The way the letter's  
10 written, we don't necessarily even make it one of  
11 our three major themes. We -- because we're also  
12 going to talk about the issue paper.

13 VICE CHAIR MILLER: Right.

14 CHAIR HANSON: And the issue will  
15 paper will repeat it, as a -- but not as one of  
16 the three main recommendations.

17 RADM SMITH: Yes.

18 VICE CHAIR MILLER: Yes.

19 CHAIR HANSON: It'll be a  
20 recommendation. It will be embedded.

21 RADM SMITH: Right. And the one other  
22 observation I have is that when, you know, you  
23 talk to the Army Corps, for instance, about a  
24 public/private partnership, you are talking about  
25 something that is very much like the PORTS  
26 system, which is cost-sharing among the federal  
27 government and the some local interested parties.

28 So we can't, out of the one side of  
29 our mouth say, we think that private/public  
30 partnerships are great, except we can't expect  
31 private to pay anything. Right. That's not the  
32 way it works. We've got to -- so I think we just  
33 need to finesse that, finesse that, the way that  
34 that gets phrased.

35 VICE CHAIR MILLER: Well it's not just  
36 private/public partnerships, it's partnerships  
37 with other governmental agencies, both state and  
38 federal, too. You know.

39 RADM SMITH: Sure. But that's sort  
40 of, the three-P buzzword means private  
41 investment, or toll roads that are run by a  
42 private company, or something along those lines,  
43 right, that are -- and it's not, PORTS could be a  
44 poster child for that approach.

45 VICE CHAIR MILLER: Well, I guess  
46 before --

47 RADM SMITH: So if we don't like it,  
48 we just --

1 VICE CHAIR MILLER: Yes.

2 RADM SMITH: -- shouldn't probably  
3 bring up that we like public/private partnerships  
4 and then except the one that we have to --

5 MEMBER HALL: Which was my point.

6 VICE CHAIR MILLER: Is there a  
7 difference between saying, NOAA should fully fund  
8 PORTS, and the federal government should fully  
9 fund PORTS?

10 RADM SMITH: Are you asking me? I  
11 don't see a difference.

12 VICE CHAIR MILLER: Yes, Rich?

13 MR. EDWING: Is there a difference  
14 between NOAA funding and the federal government  
15 funding?

16 CHAIR HANSON: In the letter.

17 MR. EDWING: Oh, putting that in the  
18 letter.

19 CHAIR HANSON: Yes. If we say, NOAA  
20 should fully fund it, or should we say federal  
21 government should fully fund it?

22 MR. EDWING: I think you have to say  
23 NOAA. I mean, it's the mandate, the statutory  
24 mandate. It's our responsibility, so.

25 VICE CHAIR MILLER: In HSIA.

26 MR. EDWING: Yes, in HSIA. I mean,  
27 Glenn, do you disagree, or?

28 MR. BOLEDOVICH: Well, I thought we  
29 just agreed that the -- because you had the issue  
30 paper, you're not going to mention the issue of  
31 funding of PORTS in the letter. You're going to  
32 leave that for the issue paper.

33 VICE CHAIR MILLER: Not as one of our  
34 three main recommendations.

35 MR. BOLEDOVICH: I think what you say  
36 in the letter, or in the issue paper is, once  
37 again, we visited the region, and one of their  
38 highest recommendations we heard about again and  
39 again and again, is PORTS. And therefore we feel  
40 compelled to make this recommendation to fund  
41 this thing.

42 (Simultaneous speaking.)

43 MR. BOLEDOVICH: Because that's what  
44 you're hearing. That's really the fact,  
45 everywhere you go.

46 MR. EDWING: Yes.

47 MR. BOLEDOVICH: It's again, and  
48 again, and again, the number one thing you hear

1 about is PORTS and its value to the nation, to  
2 that facility. And then that's kind of driving  
3 you to your recommendation in the paper.

4 Because the admiral is quite correct.  
5 The issue of full funding for PORTS has arisen  
6 and fallen several times, right. And so -- and  
7 I'm not saying the panel shouldn't write a paper  
8 about full federal funding, at all, against it,  
9 or should stop -- not true. I'm one for it.

10 But it is an argument that's been  
11 heard again. These papers are going to a new  
12 administration, and the panel is certainly, I  
13 think their paper is pretty persuasive, so. Your  
14 paper is, so.

15 CHAIR HANSON: I think in -- we're  
16 going to mention Cuyahoga. Right. That's an  
17 attaboy for everybody involved. A local actually  
18 is making an investment. So we'll mention that  
19 briefly in the letter, and not overplay our hand.  
20 That'll be the key part.

21 VICE CHAIR MILLER: Go to your mic.

22 CHAIR HANSON: I know. I thought it  
23 got booted off for a second. Well I'm done now.

24 VICE CHAIR MILLER: Okay. And so the  
25 last -- so we'd have probably a communications  
26 recommendation, but not specifically on the Nav  
27 Manager, just that we -- you know, this was an  
28 issue brought up by a stakeholder, and then we'd  
29 have -- what was the second one? My brain is  
30 dead.

31 Partnerships, talking about  
32 partnerships. And then we also heard clearly  
33 that there are a lot of needs for surveys here,  
34 lake level needs, navigation. It's not just  
35 bathymetry, as Larry said, it's also bathymetry  
36 and bottom characterization and so forth.

37 And I guess the recommendation that I  
38 would think, would be that in prioritizing  
39 surveys, that it's clear that NOAA/Coast Survey  
40 needs to include these, which we already have  
41 said. And we need to include these priorities  
42 for the region, for the Great Lakes, and for a  
43 different -- for a variety of needs in their  
44 prioritization process.

45 RADM SMITH: I would love to see a  
46 recommendation along those lines, that we don't  
47 have to think of our survey needs narrowly, in  
48 terms of large ships going into major ports. I

1 think that would be very important.

2 VICE CHAIR MILLER: Yes. Especially  
3 since you can -- well we also heard a request for  
4 possibly having more of a presence of a survey  
5 team up here. I don't know if that's, you know -  
6 - and then we heard about the Quintillion cable  
7 data becoming -- I mean that was sort of off the  
8 direct Great Lakes thing, but the data being made  
9 publicly available and so forth. I don't know.

10 MEMBER SAADE: Being provided to NOAA.

11 VICE CHAIR MILLER: Being provided to  
12 NOAA. Let's see. So what was that last one?  
13 Okay. And then let's go down to other. Lynne,  
14 can you go down?

15 We heard that they needed an  
16 icebreaker, updates of environmental sensitivity  
17 index maps, that these might be things we can  
18 just pass along to other groups. What about the  
19 clutter on the charts? How big of an issue is  
20 that?

21 RADM SMITH: Well, I guess I would  
22 say, I mean, there's about a thousand submerged  
23 piles at the west end of -- charted submerged  
24 piles, on the west end of Lake Erie. How many of  
25 them do you think are there? Some, right. But  
26 the users are completely ignoring all of them.

27 So either we care about showing  
28 obstructions and hazards to navigation or we  
29 don't. But we can't chart all this crap, and  
30 then have everybody ignore it, right? That's why  
31 the Athos wasn't charted. But, you know, these  
32 are potentially important, so.

33 I mean, we can just scrub them off of  
34 there and pretend they weren't there, but I don't  
35 -- that's not our normal process, and I don't  
36 think that that would be responsible. So in  
37 order to get things like that off the chart, you  
38 have to do an object detection survey to show  
39 that that piling's not there.

40 VICE CHAIR MILLER: So what would  
41 solutions be? Do the survey?

42 MR. ARMSTRONG: Well, potentially some  
43 of the solutions would -- or one of the solutions  
44 might include, you know, a better display system,  
45 a different approach to display. So there's  
46 potentially things that can be done to improve  
47 the display.

48 I think the admiral's absolutely

1 right. We can't just remove dangers from the  
2 chart because they're inconvenient.

3 RADM SMITH: Photographically  
4 inconvenient, no. But there was another context  
5 of the clutter, and I think this probably goes to  
6 Captain McIntyre's point a little bit, is that  
7 there's been a big effort to put it on the chart,  
8 right, including now a new -- and I'll pick on my  
9 friend Scott here a little bit, if he's still  
10 here.

11 You know, when AIS virtual aids  
12 starting coming out, or synthetic aids, well  
13 there already is a Navaid there, right? So how  
14 do you show, on the chart, that there may or may  
15 not be an AIS target there? Well you put another  
16 little magenta thing around it, right.

17 And then when you actually get the  
18 AIS, you have another thing. So now we have  
19 three representations of the same buoy. And some  
20 of it covers over the label and, you know, and  
21 then if you, and if the AIS thing actually has  
22 another label, you have a second label.

23 So now we have two labels and three  
24 representations of one Navaid, none of which is  
25 providing any more information than if we just  
26 put it on the chart itself. And that, I think, I  
27 -- you know, we heard that in the context of the  
28 virtual aids.

29 MEMBER HALL: And I don't think it's  
30 an AIS chart. It's AIS information on the ENC,  
31 or on the -- showing up, right? It's -- I've  
32 never heard of an AIS chart as written up here on  
33 the screen. It's AIS data on the chart, right?

34 VICE CHAIR MILLER: Oh. Clutter on --  
35 yes.

36 MEMBER HALL: Sorry, I just --

37 RADM SMITH: I could show you an  
38 example, but --

39 MEMBER HALL: No, no. I'm just saying  
40 --

41 RADM SMITH: The way it's --

42 MEMBER HALL: -- from her wording up  
43 there, it says --

44 VICE CHAIR MILLER: Yes.

45 MEMBER HALL: -- clutter on AIS  
46 charts. I just was questioning what an AIS chart  
47 --

48 VICE CHAIR MILLER: How about AIS

1 clutter on charts?

2 MEMBER HALL: Yes. That's -- yes.

3 Thanks.

4 MEMBER MCINTYRE: Yes. Because there  
5 are two issues. I mean, what you're talking  
6 about with the obstruction isn't an AIS generated  
7 problem. It's just a charting problem.

8 RADM SMITH: Yes.

9 MEMBER MCINTYRE: And then you also  
10 have the problem with AIS clutter when you have a  
11 lot of targets. But with the electronic charts,  
12 and the AIS information, it's layered.

13 And you can -- you know, when you  
14 know, and you're trained how use the equipment,  
15 you can turn those layers off, and you can scale  
16 in, and there's like all kinds of things that you  
17 can do to responsibly navigate, you know, when  
18 those kinds of conditions exist. But it can be  
19 overwhelming when you turn it on and you see a  
20 lot of stuff.

21 VICE CHAIR MILLER: So something like  
22 look for solutions to problems with AIS clutter  
23 on charts, or --

24 MEMBER MCINTYRE: No. I wouldn't even  
25 -- maybe I would just say, clutter on electronic  
26 charts.

27 VICE CHAIR MILLER: Okay.

28 MEMBER MCINTYRE: Maybe, it's --

29 MEMBER KELLY: And this kind of ties  
30 into an issue which the admiral had brought up in  
31 a kind of unique turn, where there's an underlap  
32 between what the Corps does and what NOAA  
33 capability is, to detect smaller objects that may  
34 pose a hazard to navigation, and how to ensure  
35 that that is done, and how it appears on the  
36 chart.

37 Because I think that's the more  
38 critical issue. How do we actually find that  
39 there is stuff that could be a problem, to how we  
40 display it is the secondary step. And right now  
41 there seems to be a gap between the Corps and  
42 between the -- between NOAA and the Army Corps.

43 VICE CHAIR MILLER: So that should  
44 probably go up with the discussion on Army Corps  
45 -- in the discussion about communications, where  
46 we talk --

47 RADM SMITH: I think of it as sort of  
48 a separate issue.



1           MEMBER KELLY: Yes. I think it's  
2 separate. I don't think it's communications as  
3 much. It's more a structural type approach.

4           VICE CHAIR MILLER: Is it worth  
5 talking about in the letter?

6           MEMBER KELLY: I think it's kind of an  
7 important issue. Exactly how we phrase it or  
8 where we put it, but I think we need to somehow  
9 pass that -- sorry, pass that along.

10          MEMBER MCINTYRE: You know, with the  
11 electronic charts, they're held to so many  
12 international standards in what must be  
13 displayed, what can be added and everything like  
14 that. It doesn't seem to me that it's going to  
15 be possible to really change the formatting of  
16 how it's done.

17           It seems that it's more of an issue of  
18 what you said, as far as procedurally, what's the  
19 approach going to be on things that haven't been  
20 verified for a long time. It's more, not so much  
21 an issue with the chart, but with the process of  
22 how the information is put on the chart.

23          RADM SMITH: If you'll permit me to  
24 dive into the weeds here for just a second,  
25 there's a notion in the ENC, it's called CATZOC,  
26 right, which describes the quality of the  
27 underlying data.

28           Army Corps surveys, in general, fall  
29 in that lower category of surveys, because they  
30 do -- not that each individual sounding is not  
31 accurate, it's that the density of it is not  
32 adequate to show that there's nothing, no hazards  
33 between the lines.

34           And so right now, we're not charting  
35 it in that low -- we're not essentially  
36 advertising and outing our partner, that their  
37 surveys are inadequate for that purpose, but  
38 following the rules, we should be.

39           And I think we're going to be at the  
40 point here real soon where we need to do that.  
41 So now, it's -- now this issue is out. So I  
42 guess we're sort of giving you a preview here of  
43 perhaps the, you know, the problem to come, once  
44 we start to unpack this.

45           And it probably is premature for the  
46 panel to weigh in on it now, but I circulated the  
47 Athos legal document, which I don't expect you  
48 all to read. I didn't read the whole thing. But

1 you can skim the table of contents, and go to the  
2 juicy bits.

3 And there's, you know, the upshot is  
4 there's an expectation that we find these little  
5 things. And yet we are documenting, you know,  
6 we're essentially about to document that we're  
7 not doing that.

8 MEMBER HALL: So is this a point where  
9 we can just mention that it's something that's  
10 brought up, it's something that the, that we're  
11 now, as a panel, understanding and looking to  
12 learn more in our next few sessions, rather than  
13 make any recommendations at this point, but  
14 recognize it as a problem?

15 And then hopefully it's something  
16 that, over time, we can resolve it. We don't  
17 always have to resolve it now, right.

18 CHAIR HANSON: I guess the only  
19 thoughts, and we'll obviously talk some more  
20 about these details as we engage more in the  
21 Corps/NOAA discussion. We do multibeam surveys,  
22 of course, after every project, and so I think  
23 there's a lot to work with there.

24 The problem is, that's only good for  
25 a short time. So but there may be some things to  
26 talk to the Corps about as well, with their  
27 eHydro and their plans and goals for that as  
28 well.

29 RADM SMITH: Well, I think that  
30 there's the survey, and then there's the  
31 interpretation of the survey, right. As the  
32 multibeam survey was done simply to do a delta  
33 against another multibeam survey, to get the  
34 volume. That still doesn't net you the  
35 recognition of the small features, right.

36 CHAIR HANSON: Well, particularly in  
37 even a port like Miami, it's obstructions. I  
38 mean, they want to make sure they got it clear,  
39 cleared out. So it's as much for paying us, it's  
40 as much to make sure they turn it over to the  
41 port that it's, they got the depth they --  
42 particularly in rock.

43 Again, the softer material, that's a  
44 little different discussion.

45 VICE CHAIR MILLER: And then the last  
46 item I had, we heard about the lack of funds for  
47 the smaller harbors. But that's dredging, and I  
48 don't -- you know, it's --

1               RADM SMITH: It's just dredging.

2               VICE CHAIR MILLER: It's just  
3 dredging, yes.

4               (Laughter.)

5               MEMBER HALL: And just to clarify,  
6 that's the same reaction to icebreakers, right,  
7 when it's not really us?

8               VICE CHAIR MILLER: Yes.

9               MEMBER HALL: Okay. I just want to  
10 make sure I'm tracking.

11              VICE CHAIR MILLER: I was just, you  
12 know, tracking asks, basically, you know. But,  
13 you know, these don't all need to be in there.  
14 And what I want from you guys now is, have I  
15 missed anything? Or do you think there's, you  
16 know, it'll take a bit to -- also, we have all  
17 morning tomorrow to dwell on NOAA issues.

18              And he's gone. Do we have other  
19 things that we want to discuss tomorrow morning?

20              MR. EDWING: I just want to go back to  
21 the last bullet there, recreational harbors. And  
22 actually, not exactly this, but I talked about  
23 the lack of funding for seasonal gauging for the  
24 IGLD update, which it's really the smaller  
25 recreational harbors that are going to suffer,  
26 you know, if that gauging doesn't get done.

27              So you may want to say something about  
28 that in there. We're trying to do partnerships  
29 to attack a lot of that, and so it kind of really  
30 ties into that partnership effort, but that's not  
31 going to get us all the way there.

32              VICE CHAIR MILLER: What was the item  
33 name? What was the --

34              MR. EDWING: It was underneath the  
35 International Great Lakes Datums Update.

36              VICE CHAIR MILLER: Okay.

37              MR. EDWING: And I talked about, you  
38 know, we're only funded to do a bare bones  
39 update, which is using the existing NWLON  
40 network. But by the protocols, there should be  
41 seasonal gauging done at all of the other smaller  
42 ports and harbors that aren't, you know, under  
43 the federal, federally maintained provisions.

44              And we're -- because they don't have  
45 the funding for that, we're attacking that  
46 through a series of partnerships. You heard  
47 about the Coastal Storms Program funding, GLRI  
48 funding.

1                   We are going to be, you know, kind of  
2 leveraging some of our VDatum funding to get some  
3 of that done. But it's not going to get us --  
4 that's maybe going to get us a third to a half of  
5 the way there.

6                   VICE CHAIR MILLER: So it is -- I  
7 mean, we can say, for things such as datum  
8 updates and dredging, it means the that smaller  
9 recreational boat harbors -- and how many are  
10 there? There were a lot.

11                  MR. EDWING: Yes. There's like 140 or  
12 something like that, yes, which we know we're not  
13 going to -- and we know we don't -- you know, not  
14 all of them probably would need it, but.

15                  VICE CHAIR MILLER: So --

16                  MR. EDWING: I'm just throwing it out  
17 there as a suggestion, since -- just to get a  
18 little recreational harbor support in here, for  
19 Susan, you know.

20                  MEMBER HALL: Admiral, just a quick  
21 question for you, on your -- this came over here.  
22 Kim? Yes. Want -- yes. Hi. The end, little --  
23 yes. These seats. I got to talk to you guys  
24 about that.

25                  What about the concept that you had  
26 brought up, you know, kind of the level of care  
27 can't quite be equitable across all forms of sea,  
28 looking for -- this is maybe where the, for  
29 communications, your public/private partnership,  
30 maybe we don't relate it to PORTS at all.

31                  But it seems like your crowd sourced  
32 bathymetry, you know, in the IHO project they're  
33 doing there, and a couple of things, we start  
34 recognizing where there is really value-added  
35 from those public/private partnerships, or where  
36 we can recommend that there be kind of, thinking  
37 more about that, how do you get industry  
38 involved, how to, how can HSRP help make that  
39 recommendation?

40                  Because I know you guys are already  
41 trying to do it. But we're constantly pushing on  
42 you all, but we don't always kind of -- and I  
43 know we're not advocacy group, and we're not  
44 lobbyists, but how do we get that message out and  
45 help you all get a message out?

46                  RADM SMITH: One of the values of the  
47 letter is because frankly, it goes to the  
48 Administrator, but it pretty soon ends up back on

1 our desks, right --

2 VICE CHAIR MILLER: Yes.

3 RADM SMITH: -- for to be answered,  
4 and then it gets, and then the answer gets re-  
5 sanitized on the way back out. So the letter  
6 that we saw was as much of a surprise to you as  
7 it was to us.

8 But it -- but that chop chain, as it  
9 goes up and down, provides an opportunity for a  
10 conversation within NOAA. So if there are things  
11 that you -- one thing that could be useful  
12 without causing anybody a lot of work, would be  
13 to take note of it in the letter, and say that  
14 you look forward to hearing more about it, and  
15 over the course of the coming meetings, or  
16 something like that.

17 And that doesn't cause anybody any  
18 work. But it still calls attention to the fact  
19 that we might be doing something that pleases  
20 you, and that that makes us look good with our  
21 bosses.

22 VICE CHAIR MILLER: Okay.

23 MR. BOLEDOVICH: Yes. I just had kind  
24 of a thought. In terms of the information that  
25 you get from these regional folks at these  
26 regional meetings, the notion that you're going  
27 to turn one of, something you heard into a  
28 recommendation from that meeting of the panel's,  
29 is almost premature.

30 I mean, you can't vet what they're  
31 really saying. You've got three issue papers  
32 coming out of this meeting. You're making great  
33 recommendations. You have strong ones. But I  
34 think that maybe your papers say, this is what we  
35 heard. We recommend that Coast Survey or CO-OPS  
36 look at this and maybe report back to us.

37 That what you're getting as input from  
38 these folks shouldn't be turned into a  
39 recommendation from the panel at that meeting,  
40 except in some rare circumstance. That that  
41 should be, wow, this is cool, we've learned a lot  
42 of new stuff. Maybe we should vet it. Could you  
43 do that, Coast Survey? That should be your  
44 letter, right?

45 And then you're going to be hearing  
46 stuff, well oh wow, this might be something we  
47 need to take on for future consideration. That  
48 might turn into a recommendation later.

1 Even if the chance that some of the  
2 stuff you're hearing might, you know, just be a  
3 complaint, that might not even be well-vetted,  
4 you know, and you want to save yourself that, you  
5 know, risk.

6 But something along those lines. I'm  
7 just, it's just a thought that maybe we should --  
8 your recommendations coming from me shouldn't be  
9 the regional folks' recommendations. As I said,  
10 you should put those forward. This is what we  
11 heard. This is what they want. And that's their  
12 summary, and that -- and --

13 VICE CHAIR MILLER: Well, I mean --

14 MR. BOLEDOVICH: -- it gives us food  
15 for thought, all of us, the panel --

16 VICE CHAIR MILLER: Yes.

17 MR. BOLEDOVICH: -- and the agency,  
18 for future consideration.

19 VICE CHAIR MILLER: Well, especially  
20 if it's a recommendation we've already made, or  
21 we've heard over and over and over again, and so  
22 forth. You know, that -- then it's not just a  
23 Great Lakes Region problem. Then it's a broader  
24 scale problem.

25 Lawson?

26 MEMBER BRIGHAM: I didn't see the  
27 observing network in its robustness on your list.

28 VICE CHAIR MILLER: Well, I --

29 MEMBER BRIGHAM: Both Larry Atkison  
30 and I are on a campaign to make sure, at every  
31 one of these meetings, we bring up the broad and  
32 complex topic of climate change. And what I  
33 heard here was not a lot about climate change.

34 And yet, I heard that the network, the  
35 observer network's not robust enough to give us,  
36 in the end, navigational information, water  
37 levels or whatever, but also to tease out natural  
38 variability and anthropogenic change.

39 And so I heard that, and that relates  
40 to the winter time, and year round observing  
41 network, whatever it is, I mean, satellites and  
42 lake ice and water levels and gauges and the  
43 whole mix.

44 And so I really think that if that  
45 message is accurate from our panel, and I think  
46 it is, we should put it in there.

47 VICE CHAIR MILLER: You want to write  
48 up a bullet for it, for tomorrow?

1 MEMBER BRIGHAM: Sure.

2 VICE CHAIR MILLER: Oh, you're gone.

3 MEMBER BRIGHAM: No. I can write  
4 something up. I don't know if I'll do it by  
5 tomorrow, but it could come in an email to you.

6 Yes. No, I -- let me just make my  
7 point again. Prior to this meeting, I wanted to  
8 have some briefings on Arctic climate change that  
9 relate to this. I mean, not Arctic climate  
10 change, climate change in the Great Lakes.

11 And it looks like that maybe we don't  
12 have a good handle on those issues. But because  
13 the whole place is a navigational basin, I think  
14 you can intuitively say that climate change will  
15 have long-term impacts, decades out, or through  
16 the century, that might maybe enhance the  
17 navigation, or limit the navigation.

18 And I don't think the environmental  
19 intelligence and the stuff that Administrator  
20 talks about, that here, regionally, the  
21 observation network is adequate to the task.

22 VICE CHAIR MILLER: Well, under PORTS  
23 and water level systems, I kind of think that is  
24 the, as the observational system, the sensors  
25 involved with it and so forth. And we clearly  
26 heard that it's not adequate, so we could say  
27 that the observation systems that lead to, that  
28 provide information needed to monitor the --

29 MEMBER BRIGHAM: Well, yes. And also,  
30 of course, the observations are related to the  
31 modeling efforts. And you need good input data  
32 to make the models work. I mean, we had a couple  
33 good examples, but more data and more input to  
34 the modeling efforts would enhance the  
35 performance of their prediction capability.

36 MR. EDWING: So this is Rich Edwing.  
37 So we have a wish list from the Lake Carriers and  
38 others up here, of additional water level  
39 stations they want, and current meters, that  
40 we've really said, if you want those, those need  
41 to get new PORTS system, because, you know, I'm  
42 meeting my NWLON requirements up here, for the  
43 most part.

44 However, we also heard from Debbie Lee  
45 that I think, from a climate change perspective,  
46 some of the really big gaps are evaporation and  
47 precipitation, and those are kind of the missing  
48 pieces that will lead to a better understanding

1 of the hydrologic cycles in the area, so.

2 VICE CHAIR MILLER: So Great Lakes  
3 conditions such as evaporation?

4 MR. EDWING: Evaporation and  
5 precipitation, which are things that NOAA's  
6 working on, just not the, you know, the  
7 hydrographic services.

8 VICE CHAIR MILLER: So they're  
9 inadequate to do what?

10 MR. EDWING: I guess, get a full  
11 understanding of the hydrologic cycle up here,  
12 and then for climate predictions.

13 MR. BOLEDOVICH: Yes, to -- an  
14 accurate, for accurate and reliable future  
15 climate predictions.

16 MR. EDWING: Right. Right. Right.

17 MR. BOLEDOVICH: But that's true  
18 everywhere. But in the northwest, you know,  
19 whether it's forest fires or whatever, they need  
20 more data, need more observations. Everybody  
21 does. Just they're unique needs here, but --

22 MEMBER BRIGHAM: I think it's minimal  
23 in the winter here. And we do have a seasonally  
24 ice-covered oceans here. And I don't think the  
25 data is robust to capture a good part of the  
26 year.

27 VICE CHAIR MILLER: So how's this?  
28 Seasonal observation systems that provide  
29 information needed to monitor and model the Great  
30 Lakes conditions, such as evaporation and  
31 precipitation, are inadequate for reliable  
32 climate and climate change predictions.

33 MR. EDWING: I don't think it's  
34 seasonal observances.

35 VICE CHAIR MILLER: Oh, okay.

36 MR. ARMSTRONG: Maybe insufficient's  
37 a better word there.

38 VICE CHAIR MILLER: Insufficient?  
39 Okay. So I get the sense that, yes, this is a  
40 laundry list. And we're trying to relate it to  
41 other things we've heard, you know, previously.

42 And, I mean, we could almost use our  
43 papers as the recommendations from this, you  
44 know, the three papers as the recommendations, if  
45 we wanted to.

46 Are you think -- do the -- does the  
47 panel think that there's anything that stands out  
48 strongly enough here that we should make a, you



1 know, a strong recommendation on it?

2 So it's observation systems, we just  
3 talked about. And that could be -- that's sort  
4 of inclusive of PORTS. Communications,  
5 partnerships, and mapping needs. I would say  
6 mapping needs are probably strong enough for a  
7 recommendation, but then I'm a mapper, so.

8 Any strong feelings about it, one way  
9 or the other?

10 CHAIR HANSON: You wore them out.

11 MR. ARMSTRONG: Well, I think there's  
12 always Glenn's approach to saying that we've  
13 heard this, and we asked Coast Survey to evaluate  
14 the issue of, you know, issue of near shore  
15 bathymetry, or you know, near shore bathymetry in  
16 the Great Lakes, or near shore observation  
17 program and bathymetry.

18 VICE CHAIR MILLER: And maybe we couch  
19 it in terms of, these are broad issues we heard  
20 and, you know, we need to study this more. I  
21 mean, if it's not a strong recommendation, and --

22 MR. ARMSTRONG: Well I thought it was  
23 compelling, but it was one person saying one  
24 thing, right? That --

25 CHAIR HANSON: And so without a little  
26 more discussion it, that for all of us just to  
27 embrace it as a recommendation is a little --

28 VICE CHAIR MILLER: Yes. Okay.

29 CHAIR HANSON: -- premature.

30 VICE CHAIR MILLER: What did we hear  
31 repeatedly, from multiple people?

32 CHAIR HANSON: Mapping.

33 MR. ARMSTRONG: Well I think we've  
34 heard that the services are important. We heard  
35 that over and over again.

36 VICE CHAIR MILLER: Yes. And  
37 partnerships are important.

38 MR. ARMSTRONG: Right.

39 VICE CHAIR MILLER: So is the sense  
40 this should be a, this is what we heard letter,  
41 rather than a strong recommendation letter?

42 MR. ARMSTRONG: Well I think a  
43 recommendation to, for Coast Survey to --

44 VICE CHAIR MILLER: Yes, but this is  
45 a recommendation letter to the Administrator.

46 MR. ARMSTRONG: Right. The  
47 Administrator can turn around and call Shep, and  
48 say, get on this.

1 VICE CHAIR MILLER: New admiral.  
2 CHAIR HANSON: I think this, in  
3 combination with the issue papers, is quite a lot  
4 to chew on. You know.  
5 MEMBER KELLY: And our recommendations  
6 aren't necessarily limited to what we heard  
7 because of geography, we happened to meet here,  
8 so.  
9 VICE CHAIR MILLER: Okay. Well when  
10 I'm awake at 3 o'clock this morning, I'll --  
11 (Laughter.)  
12 VICE CHAIR MILLER: I'll say -- I'll  
13 come here. What's your room number, Glenn? I'll  
14 call you and say, hey, what do you think?  
15 (Simultaneous speaking.)  
16 MR. MAGNUSON: -- natural Midwest  
17 person.  
18 MEMBER MAUNE: Your husband will call  
19 you to tell you, your husband will call you in  
20 the middle of the night to tell you they're  
21 having a hurricane out there.  
22 VICE CHAIR MILLER: Yes. That's  
23 right. I think the -- as usual, the Big Island's  
24 going to veer it off, and it's gone, so.  
25 CHAIR HANSON: You got an  
26 infrastructure?  
27 VICE CHAIR MILLER: Yes. Okay. So  
28 it's 33 minutes late, but.  
29 CHAIR HANSON: All right. Before  
30 adjourning for the day, once again, time has been  
31 set aside to provide an opportunity to present  
32 public comment to the HSRP. Is there anyone  
33 signed in and ready to present public comment?  
34 MEMBER HALL: Why don't you ask your  
35 audience first. I mean, I don't -- I haven't  
36 seen anybody's name.  
37 CHAIR HANSON: And I did see Jon  
38 Dasler last week, and I asked if he was going to  
39 call in.  
40 (Laughter.)  
41 VICE CHAIR MILLER: For those of you  
42 that don't know Jon, he's our groupie.  
43 MEMBER HALL: He was there in  
44 Galveston, and I had a meeting with him and  
45 invited him to D.C. So yes, he made himself very  
46 well known.  
47 CHAIR HANSON: Drum roll?  
48 VICE CHAIR MILLER: Does our

1 Navigation Manager want to say -- do you have a  
2 comment?

3 CHAIR HANSON: All right, stretching.

4 VICE CHAIR MILLER: Stretching. Okay.

5 CHAIR HANSON: Highly recommend it.

6 All right. Stand by. All right.

7 Hearing no comments, having no one on the line,  
8 we will adjourn for the evening.

9 (Whereupon, the above entitled matter  
10 went off the record at 5:35 p.m.)  
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Before: NOAA

Date: 08-31-16

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