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**HYDROGRAPHIC SERVICES REVIEW PANEL**

**PUBLIC MEETING**

DATE: Wednesday, November 19, 2008

TIME: 8:00 a.m. - 5:30 p.m.

PLACE: Westin Harbour Island  
725 South Harbour Island Boulevard  
Tampa, Florida 33602

REPORTED BY: CATHY J. JOHNSON MESSINA, RMR, FPR  
Registered Merit Reporter  
Florida Professional Reporter  
Notary Public, State of Florida  
MEMBER: NCRA, FCRA, STAR

A T T E N D E E S**HSRP PANEL MEMBERS:**

Thomas Skinner, Chair  
Edmund Welch, Vice Chair  
Jonathan Dasler, HSRP  
Elaine Dickinson, HSRP  
Captain Sherri Hickman, HSRP  
Captain Thomas Jacobsen, HSRP  
Dr. Gary Jeffress, HSRP  
Robert McBride, HSRP  
Captain Andy McGovern, HSRP  
Captain Minas Myrtidis, HSRP  
Matthew Wellslager, HSRP  
Rear Admiral Richard West, HSRP  
Larry Whiting, HSRP

**NON-HSRP MEMBERS:**

Andy Armstrong, OCS  
Captain Steven Barnum, OCS  
Jack Dunnigan, NOS  
Michael Szabados, CO-OPS  
Dave Zilkoski, NGS

**REGIONAL STAKEHOLDER PANEL:**

Steve Fidler, Tampa Bay Port Authority  
Tom Watters, Florida Department of Environmental Protection  
Captain Don Lewis, USCG (Ret.) Jacksonville Maritime Exchange  
Captain Cal Hunziker, Council of American Master Mariners  
Mark Luther, USF, College of Marine Science

**CLIMATE STAKEHOLDER PANEL:**

Keelin Kuipers, NOAA Coastal Services Center  
Judy Gray, NOAA Atlantic Oceanographic and Meteorological Lab.  
David Seris, USCG Waterways Management Branch, District 17

**STAFF MEMBERS:**

Kathy Watson, NOAA Office, Co-Survey and CO-OPS  
Ashley Chappell, Co-Survey  
Danielle Stuby, NGS  
Virginia Dentler, CO-OPS

1                   (WHEREUPON, the following Public Meeting  
2                   was had and taken.)

3                   MR. SKINNER: I'm Tom Skinner. I'm Chair of the  
4                   HSRP, and we'll open this meeting with some comments from  
5                   our federal officer, right?

6                   CAPTAIN BARNUM: Yes, sir. Thank you, Tom.

7                   My name is Captain Steve Barnum, and I am the  
8                   designated federal official for this Federal Advisory  
9                   Committee. I have a couple of logistics I want to pass  
10                  out first before we get started.

11                  The evacuation directions in case of emergency is  
12                  exit out to the left and out of the room and walk out the  
13                  side to the outside. The restrooms are located straight  
14                  out of the doors to the ballroom and past the staircase  
15                  to the right. So that's simple.

16                  The meeting protocol of this Federal Advisory  
17                  Committee is to again put input and advice and expertise  
18                  from members of the FACA on NOAA's hydrographic services.  
19                  So I'd like to remind the panel members as well as the  
20                  members of the public the mission goals of this panel.

21                  The HSRP is governed by the Federal Advisory  
22                  Committee Act it has established by the Hydrographic  
23                  Services Improvement Act Amendments of 2002.

24                  The panel is charged with advising the NOAA  
25                  administrators on matters specified in the Hydrographic

1 Services Improvement Act specifically related to  
2 hydrographic services.

3 In a nutshell, hydrographic services are those  
4 services provided by three programmed offices within  
5 NOAA: The National Geodetic Survey; the Center for  
6 Operational Oceanographic Products and Services; and the  
7 Office of <sup>Coast</sup>~~Co~~-Survey.

8 The panel membership consists of 15 voting members.  
9 These are nongovernmental employees appointed based on  
10 their particular expertise.

11 Members of the panels do not represent organizations  
12 or entities of which they are employed, but again they  
13 are empaneled by the mere fact of their particular  
14 expertise. The members are appointed to serve a  
15 four-year term.

16 There are three nongovernmental employee members:  
17 Andy Armstrong, co-director of the Joint Hydrographic  
18 Center; Dave Zilkoski, director of the National Geodetic  
19 Survey; and Mike Szabados, director of the Center for  
20 Operational Products and Services.

21 There is an additional nonvoting member that is  
22 Andy's counterpart from the University New Hampshire, the  
23 other co-director for the Joint Hydrographic Center,  
24 Larry Mayer.

25 Our meetings are scheduled and are required to be

1 held minimally twice a year. I would like to also ask  
2 that any of the members of the public please sign in here  
3 on the public sign-in sheet in the corner. There will be  
4 some public comment period during this FACA meeting.

5 I'd like to also introduce Ms. Cathy Johnson  
6 Messina, our court reporter today. Welcome, Cathy.  
7 Cathy is with Johnson & Associates. She is a native of  
8 Tampa and has 30 years of experience.

9 She's very proud to be from Plant City, which is I  
10 guess debated to be the Strawberry Capital of the World.  
11 I would probably vote for that, being an East Coaster  
12 myself, but I think some others might take a different  
13 opinion.

14 I would also like to say that when you speak please  
15 identify yourself and speak slowly and clearly, because I  
16 know a lot of the discussions we have involve technical  
17 terms, and so be kind to the court reporter.

18 And, Cathy, certainly if it starts getting  
19 overwhelming please raise your hand and use your erasers,  
20 as you talked about earlier, to get people's attention.

21 So with that, I'll turn it back to Tom.

22 MR. SKINNER: Thank you, Steve. We also have Jack  
23 Dunnigan, who's no stranger to this panel. And, once  
24 again, Jack, we really appreciate the amount of time you  
25 put into this. I think we'll all go into shock if you

1 ever don't attend one of our meetings, because we've  
2 gotten so used to it. So that's a dangerous precedent  
3 you've set, but we're, as always, very pleased to have  
4 you here.

5 MR. DUNNIGAN: Well, Tom, thank you very much. And  
6 let me say that I'm always impressed of the amount of  
7 time that you folks put into these meetings and very much  
8 appreciate it.

9 As I looked over and worked with the staff on  
10 getting the agenda ready, one of the impressive things  
11 here is how much of the agenda that you have for today  
12 and tomorrow.

13 Yet you, as members, have contributed to and are  
14 doing work in-between meetings and helping analyze  
15 programs and looking at the national strategy for  
16 maritime transportation and generating -- I know you'll  
17 generate some good discussion on that. So it's always  
18 great to see that you folks are willing to help us out  
19 and put the time in to do that.

20 I'd also like to welcome our Stakeholder Panel.  
21 Thank you, gentlemen, very much. I'm the director of the  
22 National Ocean Service, and this is our National Advisory  
23 Committee.

24 And we get, as I said, enormous benefits from them,  
25 but I can tell you that they have one -- and we in NOAA

1 have learned tremendously from the regional Stakeholder  
2 Panels we've been holding at the last couple of meetings  
3 around the country. So we really appreciate you taking  
4 the time of you coming to talk to us and we're looking  
5 forward to the discussions we can have this morning. So  
6 thank you very much and welcome.

7 There's a couple of interesting things going on.  
8 Just by way of noting, about two weeks and one day ago we  
9 elected a new president, so we are now well into  
10 transition time. I actually have another agenda. I'll  
11 do it in a minute though. I'll do it right now if I can,  
12 but I'm supposed to report to you on the budget for NOAA.

13 And no news is bad news. We don't have a budget.  
14 We're -- in Ocean Services, we're operating through the  
15 first quarter of the year on ten percent of last year's  
16 allocation. So we're basically, you know, keeping the  
17 lights turned on and paying salaries and not able to do a  
18 whole lot else.

19 Now, we can do that because large parts of our  
20 organization, as you are aware, are focusing on outside  
21 the agency. Coastal management classes is about  
22 12 percent of our budget.

23 We have large research grants and a lot of our  
24 external funding for hydrographic services, our contract  
25 money is money that we forward from previous years'

1 funds, so we're able to operate now. And, you know, as  
2 we get that money in the middle of the year we can, you  
3 know, move forward and finish out the year.

4 So since we have those large pools of contract  
5 funding and external funding, it doesn't dramatically  
6 hurt us to be able to operate in this initial period, but  
7 it's still tough. I mean there's a lot of things that  
8 we're not doing. Positions are going unfilled. Meetings  
9 are being postponed.

10 So until the Congress and the president decide that  
11 we're going to get a budget, that's the situation that  
12 we're in.

13 Now, there was some hope that this week the  
14 Congress would come back after the election and actually  
15 pass a budget for '09. That was one of the things that  
16 was being talked about right around election time. It  
17 turned out over this weekend that that's not going to be  
18 able to happen.

19 The president has indicated that he is, you know, he  
20 is not going to sign something that he doesn't think is  
21 the right thing for the country. And the Congress isn't  
22 going to move something that they don't think is the  
23 right thing for the country. So there's -- it just does  
24 not appear that there's going to be a coming together of  
25 minds in the short-term to get us a budget, which means



1 we'll have to wait for an FY '09 budget until after the  
2 first of the year when the new Congress gets seated and  
3 actually after January 20th when Senator Obama becomes  
4 the president, so we'll have to wait for that.

5 Our current funding carries us through the first  
6 week of February. My guess is that they'll probably do  
7 an '09 budget fairly quickly after the inauguration, but  
8 for the time being we're still in a holding pattern on  
9 the budget.

10 But with that being said, the transition is moving  
11 very, very quickly. So quickly that I found out  
12 yesterday morning at 9:00 o'clock that I have to leave  
13 today, because I have my first meeting with the  
14 transition team tomorrow morning at 10:00.

15 So I will be there and I will be carrying the good  
16 story and the great work that we all do and that NOS does  
17 and the importance of our maritime transportation  
18 mission. And we will, you know, try to get traction.

19 But the people who are working the NOAA transition  
20 are not new faces: One is the former general counsel in  
21 the Clinton Administration. Her name is Monica  
22 Medina; and the other one is Sally Yozell, who was  
23 director of Legislative Affairs and then deputy assistant  
24 secretary in NOAA in the Clinton Administration.

25 And Sally, when she left, went to work for Battelle

1 for four or five years. So she's familiar with sensors  
2 and instruments to get those sensors in the water, and  
3 she's also worked for the last year and-a-half for the  
4 Nature Conservancy. So she stays engaged in the game,  
5 and these are people who know NOAA already. So my guess  
6 is we'll be talking to them mainly about things that have  
7 happened over the last several years that have changed  
8 NOAA and brought new priorities to us and see what their  
9 reaction to that is.

10 So the transition is well underway, and it will be a  
11 fairly busy time, I think, for us for the next couple of  
12 months, but although I would much rather stay here and go  
13 to the Propeller Club tonight, my brother's retirement  
14 party is tomorrow night, which I'm now going to miss.  
15 I'd much rather stay here, but I think my time tomorrow  
16 will be better spent working with the transition team, so  
17 I won't be able to stay.

18 But thank you again. If you have any questions, I'd  
19 be glad to try to answer them as we get started here.  
20 Anything I didn't say that you want to hear about that --  
21 it's great to be able to be here. Gary, you want to go  
22 first?

23 DR. JEFFRESS: Jack, this sounds like an  
24 opportunity to mince our goals with an economic stimulus  
25 package. And I guess the message would be to the

1 transition team that NOAA is well placed to get lots of  
2 funding out to contractors out to the private sector in  
3 order to help stimulate and create jobs.

4 MR. DUNNIGAN: I fully agree. And these were a lot  
5 of ideas that we carried when we were talking stimulus  
6 package last week. We're not really talking stimulus  
7 package this week.

8 It became really clear if anything's going to move  
9 it's going to be a mini-package; that the president was  
10 not going to sign something that the Congress would pass  
11 that would be \$150 or \$250 billion.

12 And so right now the Senate is working, and I didn't  
13 read this morning how much progress they made yesterday,  
14 but the Senate is working on a smaller package and  
15 Speaker Pelosi has said she is not even going to call the  
16 House back into session until she knows that they've got  
17 something that will pass and the president will sign.

18 So I think right now the prospects for a stimulus  
19 package in the next week or two weeks aren't good, but  
20 they will be significantly better after January 20th.  
21 And we are identifying, you know, lots of things where we  
22 know that we can help funnel federal funding that will be  
23 beneficial to the economy as well as beneficial to our  
24 programs in fairly short order.

25 So good point. Thank you.

1 MR. SKINNER: Ed.

2 MR. WELCH: Jack, welcome. Regarding the two  
3 latest -- the transition team, it seems to me that we're  
4 having unusual -- people that are more oriented towards  
5 the ocean part of NOAA than necessarily that of the  
6 atmospheric part, which I would say is somewhat unusual.  
7 Would that lead to your characterization, oceans as  
8 opposed to atmospheric?

9 MR. DUNNIGAN: I don't know that I would say that.  
10 I don't know Monica Medina at all. I was out of NOAA  
11 when she was the general counsel.

12 MR. WELCH: She does a lot of fishery stuff.

13 MR. DUNNIGAN: Yeah, that might be beneficial. And  
14 certainly Sally's experience since she left NOAA would be  
15 oriented towards the wet side, but Sally, you know,  
16 worked on the Hill for a long time. She worked for  
17 Senator Kerry. She's got a lot of breadth, I think, and  
18 so I hadn't thought about that. That is interesting.

19 MR. WELCH: And with regard to Gary's excellent  
20 suggestion, I think perhaps as much a key as getting  
21 stuff into the stimulus bill is not necessarily  
22 communicating with the administration, but it's  
23 communicating directly with senators and congressmen. So  
24 I mean about the private sector, because this stimulus  
25 bill, the one that's going to be done in January, will be

1 written as much or more so by the Congress itself than by  
2 the executive branch.

3 So, Jack, is there any way of the agency sharing  
4 with us either collectively or individually what type of  
5 things you thought you all could use stimulus money for?

6 Some of us might be able to use that information in  
7 a beneficial way.

8 MR. DUNNIGAN: I think we can talk about that.

9 MR. WELCH: Jack, how is NOAA briefing the  
10 transition team? Do you as an AA brief everyone that's  
11 under you, or do they talk to people under you?

12 For example, how does Hydrographic Services get  
13 briefed through; and how do some of the other sub set  
14 sections of NOAA get briefed? Is it all done by AA? Is  
15 there a team, or how is that done?

16 MR. DUNNIGAN: Thank you. Good question. We've  
17 been working on this transition for four or five months  
18 now all throughout NOAA. And we have a very  
19 comprehensive internal briefing package that has been  
20 prepared for the transition team that covers all of the  
21 line offices and all of our goals and goal teams. And  
22 that material has already been given to the transition  
23 team including these two -- these two people plus the  
24 people at the department level who are working on it.

25 The material is also -- we prepared all of that and

1 then we didn't know how they were going to want to get it  
2 besides just handing it to them. So it was yesterday  
3 morning that I found out that they wanted to talk to me.  
4 And the meeting, as I understand it, that I'm having  
5 tomorrow is an introductory meeting. So my sense is it  
6 will probably be the first of many.

7 But, you know, how we brief them is really going to  
8 depend upon how they want to be briefed. So far, they  
9 haven't indicated what their answer to that is. I'll  
10 talk to them as much as they're willing to listen.

11 MR. WELCH: This is a follow-up. That's  
12 interesting, because you'll find out very quickly  
13 tomorrow what's on their mind. They've read all the  
14 material, the topics. When they start talking to you, it  
15 will be interesting to see where they're focusing.

16 MR. DUNNIGAN: Okay. I have just, Mr. Chairman, one  
17 last thing that I want to make sure that I make note of.  
18 This is sort of a sad time and a sad meeting for all of  
19 us, because this is the last time we're going to have  
20 Dave Zilkoski sitting with us around the table.

21 David's retirement will take place at the end of the  
22 year. He will move on to -- he can't move on to greater  
23 and more wonderful things, because he's had one of the  
24 greatest jobs in government for the last four years and  
25 more of the really, you know, great teams for us for the

1 last 34 years. So I would ask you as you're here over  
2 these next couple of days to give him a hard time and  
3 make sure that he knows how much you all have appreciated  
4 the work that he's done.

5 And, Dave, certainly you've been a terrific  
6 colleague and a great guy to be with and a marvelous  
7 contributor to the common good that we all pursue here.

8 So thank you very much. And everybody give him a  
9 hard time.

10 MR. SKINNER: Thanks, Jack. And with all that's  
11 going on, once again, we even more so appreciate the fact  
12 that you're here.

13 I find it somehow ironic that I have to come to  
14 Tampa, Florida, to find out that Sally Yozell, who works  
15 down the street from me, is on the transition team. But  
16 it's interesting to note that we had lunch not too long  
17 ago and we were actually talking about the HSRP. She's  
18 very interested in what's going on in Massachusetts. I  
19 know she's management, a lot of which requires very heavy  
20 on data, and that was her focus. And I think this just  
21 goes to show that I need to get out more and have lunch  
22 more frequently to find this stuff out.

23 But the point of my comments are that I think that's  
24 a very good sign. She's very much plugged into the ocean  
25 side.

1           Also, I want to thank the HSRP staff that's been  
2 working diligently since our meeting in San Francisco  
3 three months from the last meeting to this one. There  
4 was not a lot of time to close out that meeting and put  
5 this one together.

6           So to Kathy, Ashley, Danielle and Virginia, thank  
7 you very much and also to all of the agency staff who  
8 helped put this meeting together. I know it takes a lot  
9 of work to do and there are a lot of people behind the  
10 scenes that organize these meetings. So thank you all  
11 very much.

12           A couple of housekeeping things: Many us have  
13 signed up for dinner tonight. Is it the Beetles format  
14 or is that -- we don't have to have costumes, do we?

15           Okay. We're going to meet at 6:00 p.m. in the  
16 driveway. And those of you who have signed up, you  
17 need to pay Ashley \$60 in order to get your ticket.  
18 And if you did say you're going, you are going, so no  
19 backing out. We've got a very full agenda over the next  
20 couple of days. I want to go over it very briefly.

21           As Jack mentioned, we found that the Stakeholder  
22 Panels that we've had in previous meetings have been  
23 extremely informative and helped provide a perspective we  
24 can't get anywhere else. So we're very happy to have our  
25 panel with us this morning. We'll be hearing from them



1       shortly.

2               After the break, we'll be hearing back from members  
3 of the panel who have looked at various plans and reports  
4 to report back, and we hope to get some recommendations  
5 from those.

6               In the afternoon, we have a panel on climate change.  
7 For those of you who were not at the San Francisco  
8 meeting, this became a very hot topic, so to speak, with  
9 the interest in the Northwest Passage and also the  
10 impacts of climate change. So that we're also looking  
11 forward to. We have some updates as well.

12              And then tomorrow is something different. For most  
13 of the day we will be doing a facilitated discussion on  
14 where the panel goes from here. We have our report.  
15 We've been having excellent meetings with the Stakeholder  
16 Panels and making recommendations, but both Ed and I  
17 thought that it was time to regroup and have some help in  
18 figuring out what our game plan and strategy would be for  
19 the next several years, so we have someone coming in for  
20 most of the day.

21              We also have some updates at the beginning of the  
22 day as well as during lunch a session on contracting, I  
23 think, so lots to do.

24              And with that, are there any questions? Or, Ed,  
25 would you like to make any comments?

1 MR. WELCH: No.

2 MR. SKINNER: Let's launch into our Stakeholder  
3 Panel, and actually look though them as well. And  
4 normally we sort of do a routine introduce all of the  
5 panel members here to no one in particular, but since  
6 you're all sitting up there, why don't we start with the  
7 panel members. If we can go around and tell a little bit  
8 about yourselves so that you all know who it is you're  
9 talking to. Start at Adam.

10 MR. McBRIDE: I'm Adam McBride. I'm with the Port  
11 of Lake Charles, Louisiana.

12 CAPTAIN JACOBSEN: Tom Jacobsen, Long Beach harbor  
13 pilot, California.

14 MS. DICKINSON: I'm Elaine Dickinson, and I'm with  
15 the Boat Harbors Association of the U.S.

16 DR. JEFFRESS: I'm Gary Jeffress. I'm professor of  
17 geographic information science and director of the Texas  
18 Coastal Ocean Observation Network.

19 MR. SZABADOS: Mike Szabados, director of NOAA's  
20 CO-OPS program.

21 CAPTAIN McGOVERN: Andrew McGovern, same here,  
22 Harbor Pilots of New York.

23 REAR ADMIRAL WEST: Dick West, retired Navy  
24 sailor.

25 MR. DASLER: <sup>John</sup> Jake Dasler. I'm with David Evans and

1 Associates, director of Marine Services, and a NOAA  
2 contractor.

3 MR. ARMSTRONG: I'm Andy Armstrong. I'm the NOAA  
4 co-director of the Joint Hydrographic Center at the  
5 University of New Hampshire.

6 MR. WELCH: I'm Ed Welch of Alexander, Virginia. I  
7 do representational work for maritime organizations such  
8 as the Union of Greek Shipowners and U.S. Passenger  
9 Vessels Association.

10 MR. SKINNER: I'm Tom Skinner. I'm with Durand and  
11 Anastas Environmental Strategies in Boston,  
12 Massachusetts.

13 MR. DUNNIGAN: I'm Jack Dunnigan with NOAA.

14 CAPTAIN BARNUM: Steve Barnum, director of  
15 Co-Survey.

16 MR. WHITING: Yeah, Larry Whiting. Excuse me.  
17 Larry Whiting, retired Hydrographic Survey.

18 MS. WATSON: Kathy Watson, NOAA office, Co-Survey  
19 and CO-OPS.

20 CAPTAIN HICKMAN: Sherri Hickman, Houston pilot,  
21 14 years.

22 CAPTAIN MYRTIDIS: Minas Myrtidis, vice-president  
23 for the three original cruise lines and still America.

24 MR. WELLSLAGER: Matt Wellslager -- program manager.

25 MR. ZILKOSKI: Dave Zilkoski, Director of National

1 Oceanic Geodetic Survey; soon-to-be retired, as Jack  
2 said. And I wouldn't call myself a sailor, but I do have  
3 a place on the lake and I will be boating, I guess is  
4 what it would be, and I enjoyed my time in.

5 MR. DUNNIGAN: Do we chart the lake?

6 MR. ZILKOSKI: Well, I could chart the lake, that's  
7 right, it needs some.

8 MS. CHAPPELL: Ashley Chappell, Co-Survey.

9 MR. STUBY: Danielle Stuby, NGS.

10 MS. DENTLER: Virginia Dentler, CO-OPS.

11 MR. SKINNER: Thank you all. And if we could have  
12 just each of you introduce yourselves and then start with  
13 the presentation, that would be great.

14 MR. FIDLER: I'm Steve Fidler, the senior director  
15 of operations, Tampa Port Authority.

16 MR. WATTERS: I'm Tom Watters with the Florida  
17 Department of Environmental Protection, Bureau of Beaches  
18 and Coastal Systems program administrator.

19 CAPTAIN LEWIS: I'm Don Lewis, the director of  
20 Jacksonville Marine Transportation Exchange.

21 CAPTAIN HUNZIKER: I'm Cal Hunziker, Council of  
22 American Master Mariners.

23 MR. LUTHER: I'm Mark Luther. I'm a professor at  
24 the University of South Florida College of Marine Science  
25 and the local operator for the NOAA physical

1 oceanographic realtime system.

2 MR. SKINNER: Thank you all for being here.

3 Again, we found that the Stakeholder Panels we've  
4 had in the past very informative talking about what seems  
5 to work in terms of hydrographic services. We also  
6 appreciate knowing what doesn't seem to work or areas  
7 where there could be improvement. So we're very much  
8 looking forward to your advise today.

9 Is there a certain order in terms of presentation?

10 MS. DENTLER: Yes, sir.

11 MR. SKINNER: Let me know if they're loaded in a  
12 certain way.

13 MS. DENTLER: I can go ahead and load it.

14 MR. FIDLER: I'll go ahead and start.

15 Welcome to sunny but not warm Tampa. I'm glad that  
16 y'all picked this site for your meeting, and it's been an  
17 interesting few days. I've read some of the information  
18 that this panel has been working on over the last several  
19 years and the report that you did last year.

20 I also would like to welcome a few people on your  
21 panel who I recognize, Mike Szbados and Captain Barnum.  
22 It was a pleasure to host together a couple of days ago.

23 We like to have those ships come in port because  
24 there's a couple of reasons: One, it's a good break for  
25 them, but we can also share some information directly

1 with them that we don't normally get otherwise.

2 I'd like to just give you -- I have to give you the  
3 commercial the Board of Directors always wants us to do.  
4 We're the largest port in Florida, as you probably  
5 already know. We do approximately 48 to 50 million tons  
6 of cargo a year, which combined with all the other  
7 Florida ports they basically almost get to that figure.

8 We have a \$9 million economic impact and there's  
9 95,000 maritime jobs directly related to the port. We  
10 serve the largest consumer market in Florida. We just  
11 found out that little plum last year. This area -- this  
12 region is growing, but our reach is actually extending a  
13 little further than we had anticipated.

14 Of course, we have the longest set of channels in  
15 the state. If you combine all of the other Florida ports  
16 and overlay them in our harbor, we still have a few feet  
17 of depth. And our pilots are always aware of those  
18 problems.

19 We follow the natural deep water, if there is such a  
20 description, but that's what we've always been told how  
21 the channel in Tampa Bay works.

22 The critical thing that we seem to always have  
23 worked on -- let me back up. I just completed my 30th  
24 year of service here on the Port Authority, and I was  
25 unfortunate enough to start and then have a couple of

1 years under my belt and then 1980 occurred. And as you  
2 know, 1980 was two of the three worst maritime disasters  
3 that we suffered here in Tampa Bay: One was the  
4 Blackthorn-Capricorn collision of January of '89, which  
5 was unfortunately the Coast Guard's peace-time accident,  
6 and that was quite an eye opener for several things;  
7 basically just navigational rules, not so much the  
8 structure of the channel with the markings or anything  
9 else, but just internal workings that we need to focus on  
10 with vessel traffic-related issues.

11 And then that was almost a dry run for the worst  
12 case next which happened in May of that year of the  
13 Summit Venture in a really very abrupt thunderstorm that  
14 crossed its bow and took out all of its visibility and  
15 ultimately -- it was in the channel but it was a little  
16 to the south and ended up hitting the Skyway Bridge and  
17 that fell.

18 The activity around that, it was remarkable. We  
19 were unfortunate that between the Corp of Engineers and  
20 NOAA's Survey Team we identified an alternate channel  
21 through the bridge around the casualty and were able to  
22 continue operations a few days shortly after that.

23 In fact, during that period of time there was a  
24 six-week period of time that we had very limited vessel  
25 movement and everything was actually programmed.

1           We had an inbound parade basically and an outbound  
2 parade, and we actually moved more ships during that six  
3 weeks than we have ever moved since. So it kind of  
4 validates the use of proper vessel management.

5           In 1990, the best thing that ever happened to  
6 Tampa, as far as navigation as far as I know, there's a  
7 pilot sitting in the audience and maybe he can verify  
8 that, but in 1990 it was a combination of things.

9           I know that NOAA, after the Skyway adventure, was  
10 looking at other technology that might help in  
11 navigation.

12           At the same time, the pilots were very frustrated  
13 because the data that we had for tides and currents  
14 wasn't published yet, and it was based on approximately  
15 30-year-old data. So we were finding that the current  
16 speed was off a knot and-a-half, maybe two knots. The  
17 timing was off by in some cases hours.

18           We were having groundings because there's two  
19 specific locations in the Tampa harbor where you do a  
20 90-degree against the current, and it's important to know  
21 where the slack water was.

22           The request was made to NOAA and NOAA's response was  
23 extremely encouraging because they said, Wow, we have  
24 just been working on some technology with looking at  
25 realtime current and tide information and we need



1 someplace to see where to test it out. So they came to  
2 Tampa, did a study for a year, identified the best  
3 locations for the acoustic doppler current profilers and  
4 some of the type of level gauges and some of the other  
5 meteorological data.

6 And ultimately in '91 they successfully completed  
7 that project and turned it over to the State of Florida,  
8 which unfortunately wasn't in the room that day, and they  
9 had made a promise that they would embrace this, and  
10 those of us in the Port community were rather shocked to  
11 see what would happen.

12 We have a very proactive port community here and  
13 they stepped up. The Tampa Port Authority, Manatee Port  
14 Authority and St. Pete Port Authority, Pilots Association  
15 and about seven or eight other specific maritime parties  
16 came forward and provided the seed money actually to  
17 maintain the O&M for the PORTS system that was coming on  
18 line.

19 We have been fortunate in Tampa Bay as opposed to  
20 some of the other ports that I read about. Our PORTS  
21 system was critically important to us. When it first  
22 came on line and we started using it, the groundings over  
23 the next year or two reduced over 50 percent. Some  
24 statistics say closer to 70 percent. That's an amazing  
25 improvement on things, and it was kind of surrealistic to

1 realize that simple data that gives you realtime  
2 information could be so critical in how things are  
3 performed.

4 The other side of that, and we were very cautious on  
5 how we discussed this, was it was always a secondary  
6 benefit that if you knew just how deep the water was  
7 going to be at a certain time, could a terminal take  
8 advantage of that and load more. It took us several  
9 years to really realize that, yes, that was a possibility  
10 and a reality.

11 The benefit of that was identified later in a  
12 study that we just recently did a few years ago and  
13 proved to be -- we realized on a conservative basis about  
14 a \$7 million benefit directly from that, from the PORTS  
15 system.

16 The critical thing with PORTS is having it work and  
17 having it working all the time. Dr. Luther, over here to  
18 my left, is heavily involved. He's our operations  
19 manager for that. The key thing to the PORTS system too  
20 is having the funding.

21 Like I mentioned earlier, Tampa was able to secure  
22 funding first through private donations and then through  
23 a state grant, which had too many hurdles, and there were  
24 several of us on the working group of Tampa Bay Ports  
25 that said let's not go that route because there were too

1 many conditions attached to it.

2 We successfully appealed to the environmental side  
3 of our Hillsborough County Commission who also sits as  
4 the Environmental Protection Commission for Hillsborough  
5 County.

6 And in the State of Florida there's approximately a  
7 severance tax that's applied to all of the mining that's  
8 done in the state, and then portions of that is  
9 reallocated back to the home county.

10 The County Commission realized there was a direct  
11 economic benefit to prevent oil spills from groundings  
12 and collisions. And so they were able to every year so  
13 far allocate enough funding that we've been able to  
14 leverage in a full O&M budget.

15 We see that continuing for quite a few years,  
16 because there's still active mining that's out there that  
17 we're told that will last at least four years. So that's  
18 a positive.

19 What we don't have with the PORTS that we would like  
20 to see in Tampa is a visible factor. There's been some  
21 work done, some study done, but our friends, Mike and  
22 others, are just not satisfied. They're not -- they  
23 don't have the confidence in the visibility  
24 instrumentation, I guess.

25 And the reason we want to have visibility is the

1 Tampa harbor, with 44 miles from the sea way up to the  
2 upper harbor, we can have sea fog that fogs out and it  
3 will hold up traffic, but we have open water up in the  
4 upper harbor. We'd like to confirm just where the  
5 location is that it's still foggy and where it's not  
6 going to be foggy.

7 One accolade I can pass along, and I know you don't  
8 want the bad things, the suggestions, but the good thing  
9 is the National Weather Service here in Florida.

10 Several years ago we had a fog season that was  
11 extremely bad. We were having pretty much fog everyday,  
12 and it was starting to clog the traffic.

13 And in frustration, I made a phone call to one of  
14 the meteorologists over there and I just said, "Okay,  
15 what's your best guess today when it could burn off?"

16 And he just said, "Hum, 12:05."

17 And at 12:05 the fog burned away. So we called him  
18 and told him, "I don't know what magic you have, but keep  
19 it up." We would though like to see something  
20 applicable with the visibility indication of that.

21 One of the other things with PORTS, and there's --  
22 you probably have heard other discussion on it, I think  
23 it's on your agenda, the AIS and PORTS integration.  
24 We've been doing a test study here in Tampa, and it's  
25 been very successful so far. The pilots are using it and

1 two of our inner harbor towing companies are going to  
2 sign on, if they haven't already. They're looking at  
3 that. The PORTS data integrated with the AIS is working  
4 extremely work. We'd like to see other pieces put into  
5 that and in some way have a data flow text data that may  
6 be able to flow on that.

7 Let me talk briefly about another thing I think  
8 that's near and dear to the hearts of those in Florida,  
9 is hurricanes, and, of course, the NOAA navigational  
10 response teams.

11 We have one available in the Gulf, and that's one,  
12 as you all know. If it were ever needed that we had a  
13 season that -- of course, this past season was pretty  
14 brutal for the Texas coast and others, but if there were  
15 multiple storm hits and we had a need for rapid response,  
16 it's a shame that one team is here and then you have to  
17 cannibalize it from the rest of the country, but that's,  
18 I guess, the norm of everything. We know that you can't  
19 have teams standing by in every region, multiple teams.

20 And from the conversation you had earlier, hopefully  
21 with the change of the administration the Congress gets  
22 smart enough that -- it always amazes us here in Tampa  
23 when NOAA seems to get what's left over in funding. It's  
24 just perplexing.

25 We had a storm this season, in fact. It was named

1       Fay, and it was extremely unusual. It started in the  
2       Caribbean and went across the Island doing its damage and  
3       destruction. And as it approached Florida, we were in a  
4       predicament because there was not a good path. The  
5       spaghetti models were everywhere.

6               The indication was we were going to have an impact  
7       on -- the indication was that whatever we had to  
8       determined to do -- and our decision in Tampa on how to  
9       respond to a storm is when it gets south of Cuba and it's  
10      tracking in a certain direction. Fay actually impacted  
11      the entire State of Florida in every port in Florida as  
12      it came through. It came down through south Florida and  
13      then it did a left hook and managed to take out  
14      everything. That was a very unusual circumstance.

15             The NOAA information that we had, the weather  
16      forecasting is excellent, and the improvements that  
17      they've done over the several years has been extremely  
18      helpful in our decision to figure out how we're going to  
19      respond to those things. So we need to keep those  
20      enhancements going.

21             One other thing, I was reading in a report of the  
22      mapping of navigational waters. It's just incredible how  
23      much is still needed to survey and to map and to know  
24      what's there. We've been lucky in some sense. NOAA has  
25      been in this port twice in the past ten years, that I

1 know of, mapping Tampa Bay. The improvements every time  
2 has been extremely helpful. And as far as obstructions  
3 and other things, we'd like to know where they are so we  
4 can remove them rather than just mark them.

5 And finally, we're also very fortunate to have an  
6 excellent regional navigational manager, Michael  
7 Henderson. He has served this port region extremely well  
8 and always ends up -- during hurricane season he's  
9 shipped up to Tallahassee and operates up there and  
10 operates out of the EOC and keeps the coordination going  
11 for us.

12 But I'd like to just briefly finish with PORTS,  
13 extremely important. I know I'm singing to the choir on  
14 this. And it's interesting that we were going to have  
15 some discussion locally that we could leverage possibly  
16 Homeland Security grants in the arena of a PORTS  
17 assembly. We're not so sure that's going to be  
18 well-received, but there's some national security  
19 implications.

20 If you can provide great information for navigation  
21 in and out of the harbor and prevent a grounding or  
22 collision or any other casualty, it seems like there's  
23 some merit to that.

24 Keep funding and keep the navigational response  
25 teams there. Those are critically important. I'm just

1 glad we haven't had to call for one, but the day that we  
2 do it's going to be extremely important to have it.

3 And the AIS data integration concept, I'd like to  
4 see a little bit more and see what the other  
5 possibilities are for things like that.

6 So thank you.

7 MR. SKINNER: And thank you. I think we will just  
8 go right through the presentation. We do have two hours  
9 for this panel. We'd like to certainly have sufficient  
10 time at the end for some interaction between the HSRP and  
11 the Stakeholders Panel, so if we could move to Tom.

12 MR. WATTERS: My name's Tom Watters. I'm with the  
13 Florida Department of Environmental Protection. I'm in  
14 the Bureau of Beaches and Coastal Systems. And I'm the  
15 program administrator for the coastal data acquisition  
16 section.

17 We have several groups in our bureau. In our  
18 coastal systems section, our prime responsibility is to  
19 identify the critically eroding beaches in Florida and  
20 collect the data that's necessary to do that and monitor  
21 those beaches.

22 Once we identify the beaches, the State legislature  
23 provides funding for the repair of those beach -- through  
24 beach projects through project management and cooperation  
25 with local government and local sponsors.



1           You know, we also have two permitting groups. The  
2 Coastal Construction Control Line Permitting Group that  
3 permits structures that are seaward of a line that  
4 represents the 100-year storm effects line on the  
5 shoreline called the Coastal Construction Control Line,  
6 And they permit any structures seaward of that.

7           We also have a group that permits structures  
8 landward and seaward at the high water line, and which is  
9 any activity that takes place during the marine  
10 nourishment projects.

11           For the coastal data, what I wanted to talk about  
12 was just how we go about collecting our data in hopes it  
13 would provide you all with the information that would let  
14 you know what we're trying to do and how we're using your  
15 information, which we're extremely grateful to have.

16           Okay. What we do, what we attempt to do, is  
17 through our project, projects where nourishments are  
18 occurring, an example would be in northwest Florida right  
19 now. We have projects in Perdido Key, Pensacola Beach,  
20 Navarre Beach, Destin proper; in Dade County on Panama  
21 City Beach; in Gulf County on Cape San Blas. All of the  
22 remainder of the area is my section's responsibility to  
23 collect the data.

24           In the project areas we use the private sector and  
25 the local sponsors to collect data over a region of the

1 state each year.

2 So we go on a four-year cycle and we move through  
3 the four quadrants of the State of Florida collecting our  
4 data and using that to interpret the shoreline and to  
5 collect monitoring data for the long-term. Okay. And  
6 it's pretty much why we do it.

7 This is the region that we're working on this year  
8 presently. These are the things that we typically  
9 collect, you know, during any of our regional monitoring  
10 activities, the geodetic control surveys, beach and  
11 offshore profiling and topographic data. We take aerial  
12 photography. We take aerial videography. We're about to  
13 explore taking aerial oblique photography. We use  
14 topographic lidar. We use bathymetric lidar and we have  
15 a wave program.

16 In our geodetic control surveys, we began to see  
17 the importance of data program very early on. And  
18 starting in 2003 when Opus came on-line we were able to  
19 use it.

20 We have a cooperative agreement with NOAA through  
21 our state wetlands program that provides a means for  
22 maintaining tidal benchmarks that are around the  
23 perimeter of the State of Florida.

24 What my group did was we coupled onto that program  
25 and began to identify the tidal bench stations around the

1 perimeter of the state that were GPS'able that were in  
2 the coastal strand.

3 So at that point we started collecting long-term  
4 observation on those recurring tidal benchmarks. At any  
5 given location we'll have as much as eight four-hour  
6 sessions with GPS versus antennas.

7 We have up until recently we put on the new preview  
8 portion on the Opus side to let us data base this data.  
9 We accumulated our results from that in an Excel spread  
10 sheet that produced a way of the average solutions based  
11 on the care reciprocal, but this gave us a really good  
12 baseline and benchmark heights around the perimeter of  
13 Florida and a mechanism to tie to the tidal data around  
14 the perimeter of Florida.

15 You know, we would really like to see on Opus even  
16 beyond what you presently have there the ability to get a  
17 network solution from these long line baselines and to  
18 even evolve that to where we have our second tier of  
19 control benchmarks that we place a network into those  
20 stations.

21 When we do set between these monuments, we set a  
22 monument and we maintain a control network at two-mile  
23 intervals. It's used to control the projects on the  
24 project monitoring and the coastal monitoring.

25 In support of the monitoring effort, we use these

1 control stations to monitor. We'll perform surveys that  
2 are at 1,000-foot intervals around the State of Florida.  
3 They go from 300 feet inward to the vegetation line to  
4 approximately 3,500 foot offshore.

5 So it's a relatively crude hydrographic survey of  
6 the usual environment to use in the models that will  
7 allow us to relate the shore at different year intervals.

8 And we use RTK for the open topography. We take the  
9 RTK into the open water as far as we can. We bring our  
10 hydrographic vessel in as close as possible. And that's  
11 a challenge sometimes.

12 We take aerial photography. The aerial photography  
13 is relatively high resolution. We have this aerial  
14 photography dating back to 1970. Probably in every  
15 county we have six versions of the aerial photography.  
16 We have placed them all in a constant datum so that  
17 they'll work very well in a GIS environment.

18 We take these on a recurring cycle around the  
19 perimeter. The altitude of the flight is 3,000 feet and  
20 the resolution is about .4 pixels per foot.

21 We use the aerial photography to generate a set of  
22 plan sheets that are used by everyone in our control line  
23 program and our project monitoring program.

24 We also have collected laser data, you know, over  
25 this area. Both topographic and bathymetric and

1 topographic lasers has been collected by the University  
2 of Florida for us using their out tech laser. It's been  
3 very useful to us and enabled us to cut the open  
4 topography and generate contour maps from that data set.

5 We also have -- this is the University of Florida's  
6 out tech laser and their platform.

7 We have also used the shore's laser on occasion, but  
8 what we found is that -- what we found is that -- it's  
9 very useful, but it's moving on an eight-year cycle  
10 around the perimeter of the state. We need a more  
11 frequent near-shore model, and we could certainly use one  
12 at every major storm impact.

13 You know, it would be very nice if there would be a  
14 mechanism of placing one of the Shell's laser system in  
15 the gulf states and creating a circumstance where we  
16 could have the data more appropriately collected.

17 The problem that we have working with the Shell  
18 system was that it was pretty much on a -- when they were  
19 working with us, we weren't able to share the laser by  
20 providing funding to keep the laser turned on between  
21 port and navigational projects. And what it did was we  
22 had a very short time for collecting data. And when  
23 you're trying to collect data near shore, it's almost  
24 imperative that you have ideal conditions for getting  
25 data onto the shoreline. And that's why I say the very

1 best solution I can see is put a chart system in the gulf  
2 states that we could use that would be for our use and we  
3 would be able to have them on demand on conditions on the  
4 appropriate survey.

5 I know the closest that we've been able to get to  
6 that at present is the University has the potential, has  
7 a little bit of extra money to provide a laser to their  
8 out tech system, which would get us at least into about a  
9 25-foot depth. That seems like the most cost-effective  
10 way for me to see it to get the job done.

11 The old chart side has been phenomenal to us and in  
12 providing us with the laser data that is collected and  
13 archived. I can't say enough about the NOAA Advisory  
14 Program and how it is really the lifeline and life  
15 communication line to state and local surveyors in  
16 providing us access to the information that you all  
17 produce.

18 This is some of our contour maps from our data set.  
19 That's pretty much all I have to say.

20 Thank you, and thanks for your service.

21 MR. SKINNER: Mr. Lewis.

22 CAPTAIN LEWIS: On a lighter note, I'm Don Lewis  
23 from the Jacksonville Marine Transportation Exchange in  
24 Jacksonville, Florida.

25 The Marine Exchange in Jacksonville is a

1 not-for-profit maritime trade organization, and it was  
2 founded in 2000. And if you'll allow me to back up just  
3 a little bit, let me kind of tell you why the exchange  
4 was founded in the Port of Jacksonville.

5 There were three primary elements and two of them  
6 belong to a national ocean service that caused us to form  
7 our exchange.

8 One that was not directly related to the ocean  
9 service was the marine transportation system initiatives  
10 of the Department of Transportation at the time.

11 A big push toward integrating marine transportation  
12 systems or getting some of the people on shore to talk to  
13 some of the people on the water connecting the inner  
14 mobile lakes was coming up as a significant issue well  
15 within our port and among our port stakeholders.

16 The second thing we had was the offshore sport  
17 fishermen decided to create some more sport fishing reefs  
18 off the Port of Jacksonville. It really was -- they had  
19 lots of debris to dump in the ocean and went to the Army  
20 Corps with their permit application. The Army Corps  
21 said, Sure, no problem. They said we'll give you a  
22 one-mile radius around each one of these particular  
23 reefs. So they were moving kind of ahead with that  
24 particular project.

25 I happened to be the Coast Guard captain of the port

1 in the Port of Jacksonville at the time and our  
2 navigation manager came down from Charleston and says,  
3 Excuse me, Captain, did you realize we were permitting  
4 these reefs offshore and that once NOAA plots these on  
5 your chart it will be a big, giant blue blob off the  
6 coast of Jacksonville that will have artificial reefs?  
7 We think there's 50 feet of water there.

8 Needless to say, our stakeholders were not too  
9 impressed with that concept. And so because of the  
10 action of our navigation manager, we go back to the Army  
11 Corps, back to the Offshore Sports Fishermen Club and  
12 redo that whole permit process.

13 We had some special surveys conducted so we could  
14 decide we are going to have some de facto lanes coming  
15 out of Jacksonville. You'll be able to get out of the  
16 port without having to cross any of these artificial  
17 reefs sites, and we basically laid those in place.

18 At the time after the Corps kind of backpedaled,  
19 who do we give this to when we're all done, who do we  
20 hand these documents to, is that something we have got to  
21 give to the Port Authority, and there were a lot of  
22 people around the table that said, Port Authority, this  
23 is not their responsibility.

24 And then we kind of looked around at our port and we  
25 didn't really have anybody who kind of held that overall



1 port coordination responsibility.

2 The Port Authority for Jacksonville is primarily our  
3 sponsor, our port sponsor for a lot of navigational  
4 things. But as far as infrastructure coordination, that  
5 wasn't really their role.

6 The second thing was a PORTS system. In the  
7 late '90s we became very interested in the PORTS system  
8 in order to put it in place here in Tampa.

9 At the time, the program managers came down and took  
10 a look at Jacksonville and talked to us and we got pretty  
11 darn excited right up to the point where the price tag  
12 came out, but one of the issues that we faced again was,  
13 okay, who is going to own it now.

14 You've heard from Steve and I know you're going to  
15 hear from Mark how they've arranged that here in Tampa,  
16 but we did not have a structure. We did not have a  
17 corporation. We did not have an entity that was prepared  
18 to take on the role of custodian, if you will, of that  
19 type of a system within the Port of Jacksonville.

20 So basically those three things together really kind  
21 of pushed us into taking a look at what had been  
22 traditionally been our Harbor Safety Committee ad hoc as  
23 whoever shows up as part of the community this week, take  
24 that group and basically formulate the organization,  
25 formulize the organization, and then basically

1 incorporated that organization into our Marine  
2 Transportation Exchange to the Port of Jacksonville.

3 A lot of other great exchange -- I think last year  
4 when you were in San Francisco you heard from Lynn  
5 Korwatch, (sic) who is my counterpart. They have been in  
6 business for a hundred years or something like that.  
7 Ours was just started in 2000.

8 So it was a big push to try to get people to  
9 consider the fact that an exchange could provide that  
10 coordinating infrastructure within the port.

11 We have not gone to the PORTS yet, but there has --  
12 I mean primarily because of the price tag and  
13 specifically the O&M price tag on it and to provide  
14 revenues to back something like that up, but it's kind of  
15 resurfacing now. We see deeper and deeper draft ships,  
16 less and less dredging money.

17 The Panama Canal expansion, we're going to be  
18 needing more specific information all the way along the  
19 line as far as navigating and restricting waterways; and,  
20 obviously, the PORTS is what makes that possible.

21 I was talking to the president of our Pilot  
22 Association yesterday, and we were talking about we do  
23 have a number of draft-restricted vessel movements that  
24 take place within the Port of Jacksonville.

25 And although, depending on the particular power of

1 the vessel or the handling characteristics, we have  
2 adjusted those restrictions to allow a little bit of  
3 leeway as far as the ability to move a vessel.

4 If we did have that realtime oceanographic  
5 information for our port, we think we could adjust it  
6 more. I don't know what the cost or the number would end  
7 up being, but it is something our port has become more  
8 aggressive in. Again, the money is always the issue.

9 I know Steve mentioned the idea of possibly looking  
10 at Homeland Security money. Our little exchange, we  
11 started out as a Harbor Safety Committee. After 911, we  
12 also became the umbrella organization for the Port  
13 Security Committee, and we are now the fiduciary agent  
14 for the Port Security grants for the Port of  
15 Jacksonville.

16 And we are looking into, we have not gotten very  
17 far, but the possibility of whether or not something like  
18 PORTS might fall under the umbrella of the Homeland  
19 Security, especially when you throw the word "main  
20 awareness" into it, because that seems to be the standard  
21 buzz word for port security grants.

22 So I looked at the top five, you know,  
23 what-do-you-want lists from last year and we went through  
24 that at our board meeting yesterday afternoon. And they  
25 all kind of agreed that's still a pretty good list, but I

1 think that from our perspective and from the  
2 perspective of a lot of marine exchanges around the  
3 country that PORTS system maintenance money and to be  
4 able to have the federal government fund that O&M or at  
5 least share with the ports is probably a very worthwhile  
6 goal for a lot of ports, because it's going to become  
7 nothing but more and more important.

8 And also meeting with our City Council yesterday  
9 where they were taking a shot at our Port Authority who  
10 wants to expand something someplace in -- there was some  
11 people that pooh-poohed that a lot, what do we need this  
12 for. And it dawned on me that the commercial maritime  
13 industry is one of the few industries within, at least in  
14 our area, that is still booming. All right.

15 Our maritime industry is doing very well right now  
16 and construction is not doing so hot and a lot of other  
17 people aren't. And the idea they might do something that  
18 kind of dampers down is kind of ludicrous to me.

19 So I think what we really need to do is doing things  
20 that will support that and allow that to happen more  
21 efficiently and more effectively.

22 The next thing I wanted to mention is, parting from  
23 that City Council meeting, is that NOS does some  
24 absolutely amazing things. And from a port and mariner  
25 stakeholder perspective, the agency is absolutely

1 critical. I don't think we do a very good job of making  
2 our citizens and our public aware of how critical that  
3 information is in those things.

4 I know that sometimes when I go talk to a Kiwanis  
5 Club or Committee of City Council or even sometimes a  
6 Board of Directors of the Port Authority, when I explain  
7 to them why a ship has to be delayed offshore before it  
8 comes in, what the problem is as far as making this  
9 particular turn at this juncture of the intercoastal  
10 waterway, why it's critically important that we get the  
11 rock out of the inside of a turn in Jacksonville, they're  
12 all kind of going -- they think that cargo -- a boat  
13 drives to the docks and somebody throws it on the dock  
14 and they leave.

15 There's so many people that just do not understand  
16 what we do. And you guys have got the best, gee whiz,  
17 stuff as far as I've ever seen as far as graphics and  
18 that kind of stuff, and I would suggest that it might be  
19 worthwhile to develop somehow materials that you can  
20 distribute to not only your navigational managers, but to  
21 port stakeholders around the country so they can include  
22 that when they're making their presentations.

23 It's got a graphic. I've even seen the pictures of  
24 the ship with the -- you know, how much the ship is under  
25 water, you know, some of those graphics and make those

*attach*

1 available in easily presentable packages or integration  
2 packages to other stakeholders that may want to talk to  
3 groups about the critical elements of navigation and why  
4 your PORTS works, so that would be one suggestion.

5 I'm a little leery to bring this one up, but one of  
6 my other jobs is I am under contract to NOAA Fisheries as  
7 the right whale shipping liaison.

8 So those of you who live on the East Coast anywhere  
9 north of the Port of Jacksonville or to Boston probably  
10 have things to throw there, but I am -- I can claim I am  
11 the messenger.

12 Effective the 9th of December, all of those ports  
13 will face a 10-knot speed restriction for at least  
14 20 miles outside of the headings of their ports to  
15 protect right whale lands.

16 You guys have got to help us out here. I mean  
17 this -- you know, I've got an awful lot of questions from  
18 mariners, why can't you tag these little suckers and put  
19 an AIG stake and show where they are and we'll just go  
20 around them, we promise.

21 I work with a lot of incredibly intelligent people  
22 and very smart people that know fisheries, but their  
23 background is fish. I mean they are biologists. Their  
24 background is not navigation.

25 And when I talk to some of the people I've worked

1 with in the Fisheries Department, I say what about the  
2 guys over at, you know, over at survey or the navigation  
3 guys. They say, Well, we don't know those people, you  
4 know.

5 And I think there's sometimes disconnects between  
6 the segments of the agencies. And it would really be  
7 nice if you could figure out a way that you can display  
8 where the whales are all of the times and we can kind of  
9 adjust those speeds at some point.

10 I would like to thank you making sure everything  
11 gets on the chart so well. I mean the board at  
12 Jacksonville, it's sort of hard to read the charts  
13 because we have the critical habitat area noted in our  
14 charts, we have got the mandatory ship reporting boundary  
15 to note in our charts, we now have the recommended lanes  
16 for vessels denoted on our charts, and now we're going to  
17 want to put the speed restriction areas on all of our  
18 charts.

19 So there is about nine lines on every chart for the  
20 East Coast that particularly apply to North Atlantic  
21 right whales. I think the mayor is interested in  
22 protecting them, but I think they're a little concerned  
23 we come up with a solution, because we need a solution;  
24 and I'm probably in big trouble for that one. That's all  
25 I've got. Thank you very much.

1           MR. HUNZIKER:   Thank you.   Good morning.   I'm  
2 Calvin Hunziker.   Presently, the hat I have on today is  
3 I'm the navigational president of the Council of Master  
4 Mariners; the other hat, I'm a PD zone pilot.

5           I'd like to comment on one thing that Captain Lewis  
6 said, and that's the education part of it.   I believe Tom  
7 Jacobsen and Sherri Hickman could probably answer the  
8 question where they're on the flight for.   I know I've  
9 been asked many times when I say that I'm a pilot, and I  
10 think that that goes with anywhere in the coastal areas  
11 of the United States.

12           Education of the general public is sorely lacking as  
13 far as anything maritime is concerned in today's marine  
14 environment, the electronic navigation.

15           We've come a long way in the last century.   Not  
16 really that long ago if you stop and think about it.   If  
17 I had made that statement ten years ago, I'd been talking  
18 about almost a hundred years.   But today it's even less  
19 than a decade.   I can remember attending a conference in  
20 San Francisco back in 1993 in the early days of  
21 electronic navigation, discussing AIS and how it could be  
22 utilized on merchant ships.

23           Today, we're talking about AIS, ENC, ECDIS, GPS,  
24 WAAS, GMDSS, the Internet and E-mail on ships sailing in  
25 the North Pacific and the Atlantic oceans.



1 I was going to give a big picture overview on how  
2 we're doing. I'll start off saying technologically we're  
3 doing great and improving daily. Unfortunately, on  
4 interface and human factors we've got a long way to go.

5 Manufacturers have given us a plethora of displays.  
6 The vessel owner can purchase plain vanilla electronic  
7 chart Displays in two flavors, in Raster and ENC which is  
8 nothing more than a moving map, keeping track of the  
9 vessel's position. Or, they can raise the bar and go to  
10 ECDIS display again and Raster or ENC, but more likely in  
11 ENC format, that can be over or overlaid with radar and  
12 AIS information; the all-in-one almost heads-up display.

13 And I say "almost heads-up display" because one of  
14 the toughest things that I've got going in training new  
15 pilots today is getting them to look out the window, they  
16 get fascinated with the display in front of them and they  
17 can't get their head up and look to see what's in front  
18 of them.

19 Today's watch officer and captain can at a glance  
20 deduce where they are, what traffic is near, which  
21 presents a potential danger. And in some cases, the  
22 device will even tell them what course to steer to avoid  
23 the traffic.

24 The view on the left is an interesting one for me.  
25 It must have been taken from the Point Defiance Tillaquah

1       ferry, just west of Tacoma harbor in Puget Sound. As you  
2       can see, the chart looks like an ENC with a radar  
3       overlay. The image was too small to see if there was AIS  
4       also available, but it gives you a good example of what's  
5       available to the master.

6               Now, the reason I bring that up is because with a  
7       concentration of underlays or overlays on the drafts, and  
8       the depths in the chart, it blocks out the view of the  
9       AIS, and that's also in the overlays on the screen. And  
10      for a pilot, that gives us a difficulty in maneuvering  
11      and avoiding traffic.

12             As I said before, we've come a long way in a very  
13      short time from this. And also in less than 150 years  
14      we've gone from block-and-tackle steering to this  
15      "Beam me up, Scotty."

16             The modern bridge is almost the equivalent of a full  
17      glass cockpit of a new Boeing Dreamliner. It isn't just  
18      the radar, or the ECDIS, its engines, thrusters,  
19      metrological information, fire alarm status,  
20      communications, and emergency signaling response and  
21      alarm bells going off, sometimes constantly. And all of  
22      this requires knowledge and training on how to use it.

23             When I walk aboard a ship today, I'm supposed to be  
24      knowledgeable about every piece of equipment displayed on  
25      this console. Not just the fact that a radar is a radar,

1 but is it a touch screen, is it controlled by a joy-stick  
2 or track-ball, is it the left, middle or right button  
3 that acquires a target, and is it the same one that gives  
4 me the target information.

5 As for the ECDIS, is it a true ECDIS or is it an  
6 ECD, what are the differences and do I know them. If  
7 it's an ECDIS, does it have radar overlay and/or AIS?  
8 How do I control the amount of information displayed on  
9 the screen, and is there too much information or not  
10 enough or is it just right.

11 Because of the many variety of systems available to  
12 the ship owner today, with each manufacturer using a  
13 different set of symbols to depict navigational aids,  
14 wrecks, or obstructions, it becomes incumbent on the  
15 ship's master to be intimately knowledgeable about the  
16 charting system used and the symbols displayed on his  
17 vessel. He must know them well enough to be able to  
18 explain them to the joining officers, pilots and port  
19 state controls.

20 Recent accidents and the master's inability to  
21 explain the symbols used on his charting system have  
22 raised renewed awareness of this problem.

23 A major stumbling block to full change to ECDIS is  
24 the ongoing cost of ENC updates. Ship owners previously  
25 only needed to order light list and notice to mariner

1 updates and have the officer on watch make any  
2 corrections to the paper charts.

3 With the change to ECDIS, now the owner must provide  
4 electronic updates, in a timely manner, and insure that  
5 the officers on board know how to upload the new chart  
6 data. All this, at what I've been told is a hefty price  
7 for the update alone.

8 AIS poses its own set of problems. In the numerous  
9 articles I've read, and in my own experience, AIS because  
10 of a myriad of problems has turned out to be the problem  
11 child of navigation.

12 To start with, there's the human factor. Vessel  
13 information is entered wrong, or not at all. Vessel  
14 status is not updated; for example, if you're underway  
15 out of the Florida Keys and the empty bulk freighter  
16 ahead of you is also underway, but the AIS information  
17 shows it's a tanker, loaded, and all fast to a dock in  
18 another country.

19 Then there's the technical information, poorly  
20 placed transceivers, showing a vessel up to a half a mile  
21 from where it really is or crossed wiring showing a  
22 northbound ship heading at 090, 180 or 270 degrees.

23 While half mile difference may be acceptable in the  
24 middle of the Pacific, it's intolerable in pilotage  
25 waters. This is why more and more pilots are carrying

1 their own equipment on board, totally independent from  
2 the ship's equipment.

3 As you can see from these two slides, the dramatic  
4 difference between the ship's GPS/AIS, the orange pins,  
5 the WAAS signal in yellow, and then the SubMeter  
6 corrected signals in green. In tight quarters, such as  
7 the Houston Ship Channel, or the C&D Canal, such  
8 inaccuracy could lead to disaster.

9 Mistakes, inattention, downright incompetence and  
10 poor operation of a vital piece of equipment such as AIS  
11 is bad enough on a bright sunny day, but what about a  
12 dark, foggy night approaching ambrose lights with your  
13 own radar in need of repair and the mate on watch  
14 counting on the AIS targets on the ECDIS for collision  
15 avoidance.

16 With the ever-growing shortage of qualified people  
17 willing to go to sea for a career, how will a vessel  
18 owner in the near future be assured the personnel they're  
19 hiring are capable and knowledgeable enough to handle the  
20 tools they are given in the navigation industry?

21 Every pilot and co-pilot must be type rated for  
22 every aircraft they fly. There are five versions of the  
23 737. Pilots must get a separate type rating for each  
24 before being allowed to fly.

25 My flying partner at home is type rated in a Hawker

1 600 and 800 as well as the Gulfstream III, IV and V.

2 Where are the regulations that state that a master and/or  
3 mate must be proficient in using electronic navigation  
4 instruments available to them on the vessels that they  
5 serve on?

6 Other than radar and ARPA certificate requirement  
7 in the United States, there aren't any other  
8 requirements.

9 Years ago, we were all required to show efficiency  
10 with a sextant, and were tested plotting sun lines and  
11 star fixes. The type rating for mariners is nonexistent.

12 When a ship's master or mates is licensed, they're  
13 expected to pick up the necessary knowledge of modern  
14 electronic navigation devices along the way. No testing,  
15 very little if any, training, and if there is some, it's  
16 probably on a set that isn't even on the vessel they are  
17 serving on.

18 Vessel managers today make wholesale changes of  
19 vessel crews, from master to mess men, onto vessels  
20 they've never sailed on before. Who's left to show the  
21 new master and officers how to properly operate the  
22 bridge equipment? Unfortunately, no one.

23 The eventual accident is laid at the feet of human  
24 failure. But is it the failure of the master or the  
25 officer? Or is it the lack of proper training to insure

1 that they have the knowledge to operate the tools given  
2 to them?

3 Given the choice, I would much rather see this than  
4 this.

5 Thank you for your attention.

6 MR. SKINNER: Thank you very much.

7 MR. LUTHER: Good morning. I'm Mark Luther. I'm  
8 professor of the University of South Florida College of  
9 Marine Science, and a local operator in Tampa Bay PORTS.

10 You would have thought that all of us got together  
11 and coordinated our notes, because most of what I'm going  
12 to say is just going to reiterate some of the comments  
13 that have already been made.

14 As Steve mentioned early on, the reason Tampa Bay  
15 PORTS exists is in many ways the same reason that this  
16 beautiful new bridge across Tampa Bay exists, due to the  
17 Skyway disaster in 1980.

18 I'm going to talk a little bit about Tampa Bay  
19 PORTS, but as a component of what we call a coastal ocean  
20 prediction system for Tampa Bay.

21 Being a university professor, I feel incumbent to  
22 take the PORTS data and build upon it and build new  
23 things upon it. That's just a list of the people in our  
24 lab who have been working with me on this system over the  
25 years.

1           Again, here's some pictures of that Skyway Bridge  
2 disaster. In 1980, the Summit Venture knocked the bridge  
3 down and the port was closed for several days.

4           And as Steve mentioned, they were having to go to  
5 lighter ships offshore. Petroleum and coal carriers as  
6 much as the electric power generated for this part of the  
7 state is generated by oil and coal that's shipped under  
8 this bridge. I was told that Disney World came close to  
9 going dark at this time near after this disaster.

10           This is the Tampa Bay PORTS system as well as some  
11 additional augmentation that we've put on board it when  
12 it went operational in 1992 and was turned over to a  
13 local consortium.

14           The local maritime interests and the university got  
15 together. We set up a nonprofit corporation outside the  
16 university to handle the funding. Steve is the chief  
17 executive officer of that corporation. I'm the chief  
18 operating officer. We have a network of subcontractors  
19 that actually do a lot of the O&M.

20           The corporation has a cooperative agreement with the  
21 university to house the system in our lab at USF. We  
22 have cooperative agreements with CO-OPS at NOAA that  
23 basically gives us the authority to operate that system.

24           And that cooperative agreement has expired, but in  
25 the absence of any following agreement we are operating



1 as though it is still in force.

2 The ship channel, as Steve mentioned, is one of the  
3 longest in the country, certainly by far the longest in  
4 the State of Florida.

5 The ship channel is shown by a thin blue line there.  
6 The average depth of the Bay is only about 12 feet. The  
7 controlling depth of the ship channel is about 43 feet.

8 The ship channel, the dredged portion of the ship  
9 channel, even though it follows the natural deep river  
10 bed of the Hillsborough County River, most is dredged to  
11 43 feet or better. It's only about 600 feet wide.

12 There are no passing lanes or no turning basins or  
13 emergency anchorage anywhere along the ship channel. So  
14 once an inbound vessel passes markers 9 and 10 at  
15 Egmont Channel, which is about the seaward most part of  
16 this chart, the vessel if it's more than 600 feet long,  
17 which most of them are, is bound to go all the way to the  
18 other end to its final destination.

19 As Steve mentioned, there are several places where  
20 there are hard right turns across the normal tidal flow,  
21 so that causes problems for inbound or outbound vessels  
22 as well.

23 So the PORTS system has acoustic doppler profilers  
24 at several places. Water level sites at the four major  
25 port facilities around the Bay are given by the red and

1 the yellow dots. We have additional wind sensors in the  
2 Port of Tampa that are not shown on this chart that we  
3 put in because of issues with wind damage on inbound or  
4 outbound cruise ships.

5 Cruise ships going into the main cruise terminal  
6 that you can see from the hotel here have to pass several  
7 anhydrous ammonia and fuel terminals as they go into the  
8 cruise port. If there's too much wind on the beam, the  
9 sail area of the ship becomes a problem and pilots don't  
10 like to bring them in. So we have three additional wind  
11 sensors in addition to the original wind sensor in the  
12 Port of Tampa for those purposes.

13 Again, we work very closely with NOS CO-OPS people.  
14 They provide all of the data quality control and  
15 assurance and technical support for us here. All of the  
16 local operations are managed here locally.

17 A little bit of history. Tampa Bay is operated  
18 differently than all of the other PORTS systems in the  
19 country, again for historical reasons. We were the first  
20 in the country and we're still one of the more complex in  
21 the country. Because we have this nonprofit corporation,  
22 all of the O&M money stays here locally and managed here  
23 locally where some other ports give the money back to the  
24 NOS and they manage it from the spring.

25 As I said, a network of private subcontractors as

1 well as through the university. We get incredible local  
2 support from the Coast Guard agency to the navigation  
3 group. Troy Dillman, who heads that group for the  
4 district or for sector St. Petersburg, is in the  
5 audience. They've actually built some of the towers that  
6 we use for the data telemetry for some of the sites; the  
7 offshore site off Egmont Channel. There is one that we  
8 built about ten years ago, again with the assistance from  
9 the Coast Guard.

10 We had a wave ADCP out there for awhile measuring  
11 current speed, direction and as well as waves. It was  
12 unfortunately run over by a construction barge and the  
13 Coast Guard is in the process of rebuilding that tower  
14 for us, and we're going to redeploy a wave ADCP out there  
15 as well as a visibility sensor, again because those are  
16 not standard PORTS products. We're going to distribute  
17 those data through our own university channels and people  
18 may use them at their risk.

19 The two sites out of the mouth of the Bay out at  
20 Egmont Key and Anna Maria Island are also  
21 university-operated sites that also have full speed  
22 sensors and water level, temperature and ~~sonarity~~ *salinity* on them  
23 as well.

24 What else do I want to say about this?

25 Again, Tampa Bay was the first, but there are now

1 18 ports in other locations. I'm sure you're all aware  
2 of that.

3 We did a study of the Tampa Bay PORTS system a  
4 couple of years ago looking at its users and its economic  
5 benefits.

6 Again, safe and efficient navigation is the primary  
7 customer group for Tampa Bay PORTS, but there are a host  
8 of other end user groups that are well-documented,  
9 everything from hazardous material spill response to  
10 fisheries management, red tide study, sediment transport  
11 studies, dredging studies and the like.

12 We were the first to put PORTS data on the web. We  
13 put realtime data from Tampa Bay PORTS on the web in 1993  
14 before most people knew what the web was. ✓

15 These are some photos of some of the sites. The  
16 tower in the upper left corner there, again, was built by  
17 the U.S. Coast Guard agency to the navigation group for  
18 us. Unfortunately, it was run over by a construction  
19 barge a couple of months ago. We're in the process of --  
20 the people who did it fessed up to it in this case, so  
21 they're helping us to rebuild it.

22 One of the things we've done though, because PORTS  
23 operated in our research institution, is that we've been  
24 able to piggyback lots of other equipment onto the PORTS  
25 infrastructure.

1           That particular tower is also home to a suite of  
2 instruments to look at several environmental issues in  
3 the Bay, primarily nutrient decomposition from the  
4 fossil fiber as well as transportation through the bays.

5           So we had about \$100,000 worth of extra equipment on  
6 that tower, much of which was purchased by funding from  
7 our State Department of Environmental Protection.

8           And so the responsible party is -- well, I haven't  
9 heard from them since I sent them the estimate of all of  
10 the cost replacement of that equipment, but we feel  
11 confident that they will be helping us rebuild all of  
12 that equipment.

13           Again, this is just some of the graphics off of the  
14 website. Wind currents and water level are updated every  
15 six minutes. The transportation tower from the  
16 sky is in the lower right. The water gauge for the Port  
17 of Tampa is in the upper right. The upper right is one  
18 of the older portal pilot units that the Tampa Bay pilots  
19 carry on board before the present AIS standards came to  
20 be. They could get text data, all of the realtime data  
21 from PORTS, adjust it to text drop down.

22           When the new AIS standards came along, they lost  
23 that capability. We're now just regaining that with the  
24 test bed that Steve mentioned getting PORTS data out  
25 via AIS.

1           Again, since PORTS became operational, the Kippel  
2           (sic) study showed at least 60 percent reduction in  
3           ships, may actually be higher than that, and conservative  
4           estimates of the annual benefits easily exceed the  
5           operating cost by 20 to 50 times depending on your  
6           estimate of those benefits.

7           While we do have a reasonably steady source of  
8           funding for the operation and maintenance here, it's  
9           still a bit of a shoestring budget.

10          The only reason we're able to get by on the level of  
11          funding we have for them is because we leveraged three  
12          institutions of the university and much of that  
13          operations and maintenance are done by university  
14          employees as a sideline.

15          Graduate students and other technical staff in our  
16          lab participate in the O&M at fairly low cost as compared  
17          to hiring a commercial contractor like NOAA or SAIC to do  
18          the same job.

19          And again, you've heard about AIS or PORTS data  
20          over AIS. That began in September. We are the prototype  
21          for the Coast Guard to figure out how to do that.

22          But going back to some of the other comments that  
23          were made, the AIS binary stream is just the first step.  
24          The AIS unit on the vessels that -- to do something with  
25          it and how you display that data set is an issue.

1           The pilots right now are very happy with the text  
2 drop down box just giving them the latest data because  
3 they've worked with it long enough. They know what that  
4 tabular data means to them, but there's a lot more that  
5 you could do with that through some quasi heads-up  
6 display, some graphical overlays, but then the issue  
7 becomes cluttering up the screen. **There's too much**  
8 **information quite often on the AIS screen as it is.**

9           We have just begun working with an engineer that  
10 specializes in human machine interactions. We hope to be  
11 working closely with the pilots in the near future and to  
12 come up with some ideas of some better ways to display  
13 those data on their AIS and charts.

14           Well, again, I'm a numerical circulation model by  
15 training, so I saw the Tampa Bay PORTS data as an ideal  
16 way to blend those data with numerical circulation model  
17 to do the realtime nowcast/forecast problems.

18           **The pilots don't really want to know what's**  
19 **happening right now at certain points along the ship's**  
20 **channel for the port facilities. They want to know**  
21 **what's going to be happening when they get there, or they**  
22 **might want to know what's going to be happening at some**  
23 **point in-between where we're measuring it. So for that**  
24 **you need a predictive model.**

25           Mark Vincent, who now works for CO-OPS, originally

1 developed this system as a quasi forecast system. He's  
2 now the modeling czar in the CO-OPS shop for the realtime  
3 models they operate.

4 Unfortunately, the model that Mark developed for his  
5 dissertation is not one of those operational models.  
6 We'd very much like to see it become one of those  
7 operational models.

8 As we're running in a quasi operational mode, it  
9 doesn't have all of the fail-safe and backup systems that  
10 one would expect in a fully operational model. There  
11 aren't personnel resources to monitor the model's  
12 progress 24/7 as the CO-OPS models, but we do use it in a  
13 lot of spill response issues.

14 We've used it for phosphate water spills, anhydrous  
15 ammonia spills, raw sewage accidental spills, and  
16 permitting issues for water supply projects like the  
17 seawater desalination facility and river diversions for  
18 potable water supply. So it does get exercised.

19 We do work with our state emergency response. We're  
20 in the area of contingency plan for spill response. We  
21 also work closely with the NOAA HazMat folks. And we're  
22 doing some basic science looking at resident type of  
23 particles in the Bay, how do things like fish larvae or  
24 shell fish larvae get infected around the Bay or harmful  
25 organisms get injured around the Bay.



1           Based on our experience and success with Tampa Bay  
2 PORTS, in 1996 and 1997 we branched out onto the coastal  
3 areas of Florida and put a large number of additional  
4 sites up and down the West Coast of Florida and due east  
5 offshore that measure wind and wave current type,  
6 temperature and salinity. We call this the Coastal  
7 Oceanic Monitoring and Prediction System, or COMPS, and  
8 direct that within our lab.

9           We early on struck an agreement with the NOAA  
10 Navigational <sup>Buoy</sup> Bureau Center. All the data from these  
11 sites go through the NDBC or QA QC by their standards and  
12 put in the NOAA gateway there.

13           The 13 water level gauges up and down the West Coast  
14 of Florida, which the two at the mouth of the Bay are a  
15 part, are maintained as best we can with our meager  
16 resources to navigational water level operational network  
17 standards.

18           And as soon as we can work with Gary Jeffress' group  
19 to get the tidal information process for those sites, we  
20 hope that we can get those data into the navigational  
21 water level program as well.

22           Both Tampa Bay PORTS and COMPS are components of the  
23 Gulf of Mexico Ocean Observing System and the  
24 Southeastern Atlantic Boat Association, which are  
25 regional contributions to the U.S. integrated ocean

1 observing system.

2 We're working closely with the Navigational  
3 Federation of Regional Associations and the NOAA IOOS  
4 program office to build data standards through their data  
5 integration framework to make sure all of these data  
6 are -- that they're shared as widely as possible and  
7 utilized for maximum efficiency for all potential end  
8 user groups.

9 I'm also sitting on the Board of Directors of the  
10 Gulf of Mexico Coastal Ocean Observing System. I'm on  
11 the standing committees for Southeast and Regional  
12 Associations. I am also a chairman of an entity called  
13 the Alliance for Coastal Technologies, which seeks to  
14 develop better sensors for making these kinds of  
15 measurements in coastal waters.

16 We recently established at USF the Navigational  
17 Center for Maritime and Port Security in collaboration  
18 with the SRI International, just opened an office in  
19 St. Petersburg.

20 If you're going to have maritime <sup>domain</sup> doing awareness,  
21 you must know what the wind and waves and currents and  
22 tides are doing. If you don't, you don't have maritime  
23 awareness.

24 Port security is much more than terrorist attacks.  
25 A terrorist attack has never shut down a U.S. port;

1 doesn't mean it couldn't happen, but it never has. Human  
2 error and natural disasters, weather and otherwise have  
3 definitely shut down ports in the recent past. And in  
4 the recent past the Skyway Bridge disaster is an extreme  
5 example of that, but the recent gulf storms that shut  
6 down the Port of Houston and the Port of New Orleans are  
7 just a part of maritime port security as our  
8 terrorist-related activities.

9 Some of the other speakers have already mentioned  
10 the fact that this basic information on wind, wave,  
11 current and tide is critical to maritime port security  
12 and should be funded as such.

13 And that concludes my comments. Thank you.

14 MR. SKINNER: Mark, I would disagree that -- your  
15 comment about the presentation not being coordinated. It  
16 seems like you guys actually met long and hard to  
17 coordinate the presentation, because it gave us, I think,  
18 a very broad-based view of what's going on in this  
19 region, and we want to thank you all for the  
20 presentation. A number of different perspectives will  
21 give us something to chew on.

22 I'd like to open it up for some discussion and  
23 see if any panel members have some questions to start  
24 off.

25 DR. JEFFRESS: I do. Gary Jeffress.

1 Steve, our last meeting was in San Francisco. One  
2 of the things that surprised me up there is the Port of  
3 San Francisco actually consists of eight ports.

4 Is that the same case here in Tampa, or is it just  
5 more than the Port of Tampa? Is there more port entities  
6 involved?

7 MR. FIDLER: There's three ports: Tampa Bay,  
8 Manatee and St. Pete. Tampa and Manatee basically do  
9 99 percent of the maritime activity. St. Petersburg is  
10 going through an evolution to probably factor -- their  
11 goal is between a yacht harbor, but most of the effort  
12 that supports the ports and other things is coming from  
13 the Tampa entity, so --

14 MR. LUTHER: If I could follow-up. There's several  
15 distributors around the Bay, so they're not at all one  
16 location.

17 MR. WHITING: Larry Whiting. This is just a  
18 little comment I'd like to ask you guys.

19 Have you guys reported the <sup>cost</sup> coast benefit ratio of  
20 this PORTS system to the Senate and the House  
21 representative Conference Committees here?

22 Our government representative on staff, every time  
23 he goes to Washington and talks to a senator or  
24 congressman or whoever, he always mentions NOAA. He  
25 mentions the PORTS system, the benefit of it, and I mean,

1       yeah, constantly, but I'd be real interested in that  
2       fiduciary.

3               MR. FIDLER: He gets mixed responses.

4               MR. SKINNER: And, again, we spent --

5               MR. LUTHER: We spent some time on the Hill talking  
6       about the same things. I think Steve kind of danced  
7       around it.

8               One of the issues we have to be careful, if the  
9       commercial maritime community is benefiting so greatly  
10      from this, then why aren't they paying for it, is the  
11      question we're often asked.

12              But, again, why aren't they paying for the nautical  
13      charts and the tide and current information? That's a  
14      basic government responsibility as far as my opinion  
15      goes.

16              MR. FIDLER: They actually are directly and  
17      indirectly. The fact that the mariners, the commercial  
18      facilities, we charge the harbor master fee in the Port  
19      of Tampa, any vessel that comes into the docks and ports  
20      in Tampa a basic fee. That fee, part of that money goes  
21      towards certain expenditures towards the ports and other  
22      things as well, but it's a general harbor improvement  
23      fund. It can't go specifically to a single terminal or a  
24      single entity. It doesn't -- it's a broad based benefit,  
25      but that is an argument that we always have to defend.

1           Fortunately though we've -- other than the education  
2 of the people that don't know what's going on, we've been  
3 successful in maintaining in at least the understanding  
4 that, okay, so there already is kind of a user fee  
5 involved in this, but the traditional funding, and that's  
6 why we've been successful with the Hillsborough County  
7 Commission with the other funding.

8           MR. DASLER: I had a question for Tom Watters. I  
9 think that was a fascinating work, to **match topographic**  
10 **data with bathymetric data.**

11           Are you -- when you acquire that data, is that  
12 ultimately on any of the ADA, or are you doing anything  
13 on chart data? Do the vessels use RKGUS when you collect  
14 that; and how do you -- I guess with the data or is that  
15 based on your observation on tidal benchmarks.

16           MR. WATTERS: We are using an ADAT data. The by  
17 doing the observations that we're performing on a tidal  
18 benchmarks that allows -- like doing the observations  
19 that we do on the tidal benchmarks, that provides us  
20 access to updated items on shore. That's how we  
21 associate that, and it's used.

22           And we do use RDK/TED realtime tides in our  
23 hydrographic operation and with our topographic data  
24 collection. We maintain tide data whenever we're doing  
25 that for MECCA.

1 MR. DASLER: And how do you find its measuring with  
2 lighter work? Have you compared any actual physical  
3 profiles with the topographic and bathymetric lidar?

4 MR. WATTERS: Yes, sir. Actually we do a couple of  
5 things. On the topographic lidar, we maintain an  
6 inventory of what we call the control services, which are  
7 basically surveying locations throughout the object when  
8 we're performing the surveys, and we're typically getting  
9 an agreement to RMSA .36 feet and with our data sets and  
10 we'll over a 200-mile wide lidar swatch, we'll typically  
11 have about 15,000 lidar control points that we'll have  
12 something to compare something with.

13 And for the bathymetric lidar we simply compare it  
14 to our single-beam found data and our accuracy level is  
15 within a foot, you know, of that data.

16 But we would certainly like to have more updated  
17 information. It would make our lives easier than having  
18 a single-beam system where we're kind of limited as to  
19 what we can do with it.

20 REAR ADMIRAL WEST: Dick West. Just a couple of  
21 comments, and then I have got a question for Steve. Is  
22 it Captain Hunziker? Did I say that right?

23 CAPTAIN HUNZIKER: That's correct.

24 REAR ADMIRAL WEST: I was real interested because I  
25 participated in a navigational seminar at Kings Point

1 several weeks ago, and the deputy director of the  
2 Navigational Transportation Board gave a presentation on  
3 human machine interface and how it affects accidents. It  
4 was absolutely fascinating.

5 This guy was an airline pilot and started talking  
6 about airline accidents, but then he showed several  
7 maritime that started to migrate into this interface.

8 So we might want to get him, Tom, to come brief the  
9 board next time. It was a great presentation about what  
10 Captain Hunziker was talking about.

11 By the way, they don't come -- technology is to a  
12 point now you can -- if you want that tag to stay that  
13 way they'll stay with them. So that's a solution, and  
14 that's a poor excuse to say we can't do that.

15 A comment about the Jacksonville area. They just  
16 announced, I think, yesterday or day before we're going  
17 to put a nuclear-powered carrier back in Mayport.

18 The problem we have interfacing in our ocean issues  
19 is a classic one. There's 15 federal agencies that's got  
20 a piece of the ocean. So we're talking about the  
21 major -- you've got DOT, the Navy, Homeland Security and  
22 NOAA and Navigational, but you never get them to sit down  
23 at the same time at the same place to solve the same  
24 issues.

25 I don't know, Jack, maybe I'll throw that back to

*Speaker  
in  
note*



1       you, here's, you know, security for CPN and it's in the  
2       public now. It's going to be in Mayport, the whole thing  
3       about, you know, the main and all this other stuff.

4               The question for Steve: I've been in and out of  
5       here a couple of times. I actually was involved with  
6       diving the salvage of the Thornbird, which was a long  
7       time ago, but I've been in and out of it a couple of  
8       times with ships, and participated in Gasparilla Day. By  
9       the way, does that still go on?

10              MR. FIDLER: Yes, sir.

11              READ ADMIRAL WEST: I had a hell of a time to get my  
12       ship -- great time, but it's a challenging place to come  
13       in and out of for all the reasons you outlined, so I'm  
14       not surprised this is the first place the PORTS went to.

15              But when you put it in place, did you understand  
16       that the federal government would put the groundwork in  
17       place but then you were responsible for the O&M over the  
18       long haul; is that the original understanding?

19              MR. FIDLER: Yes. In fact, to predate the time they  
20       finished the project, there was a lot of discussion as to  
21       how much it was going to cost, how it was going to be  
22       handled. The representative from the state that was on  
23       that acknowledged that at that point.

24              And what we found, that the cost estimate for what  
25       the O&M would be was a lot higher than what we were

1 actually able to achieve. But Professor Luther talks  
2 about -- we are leveraging an awful lot of the sets and  
3 resources through USF. And, yeah, we clearly knew they  
4 were going to pay for that.

5 MR. LUTHER: Part of the problem is when you do it  
6 on a shoestring and you're successful people expect you  
7 to continue to do it on the same shoestring. So it's  
8 somewhat of a self-defeating process.

9 REAR ADMIRAL WEST: We, as a group, have always  
10 supported PORTS from day one. We're all on board and I  
11 think it ought to be funded and everything, but at some  
12 point the economic benefit of the infrastructure is  
13 provided by the federal government, I think, because  
14 there's other things NOAA has to pay for, but I don't  
15 think we've ever come up with an answer to that, have we,  
16 as a group?

17 MR. SKINNER: No, I don't think so.

18 REAR ADMIRAL WEST: Does NOAA -- you put simple  
19 PORTS in and then this technology comes on. More things  
20 get better and visibility and all this other stuff. Who  
21 pays for all this? What's the -- what's the formula for  
22 the federal government putting an infrastructure in a  
23 port and then the O&M afterwards?

24 MR. DUNNIGAN: Well, the formula for the O&M  
25 afterwards is the local partner pays for that. The

1 formula for deciding which ports to go to, we have a list  
2 of. And Mike can fill in, but, you know, we know where  
3 all the PORTS are. We know where we've got assets.

4 The recent investments that we've made in extending  
5 the system has come from supplemental funding that is  
6 associated with hurricanes. So that's why we've done  
7 most of our work in the Gulf of Mexico.

8 You want to add to that, Mike?

9 MR. SZABADOS: Part of the PORTS system is the  
10 overall data management and quality control and ingesting  
11 new technology like visibility and those type of  
12 capabilities, like air gap, we recently did that.

13 So we do have that, but again it's a little bit of  
14 budgeting and you have to make some tough decisions, what  
15 are the technologies you're going to test and integrate  
16 into PORTS.

17 The need is greater than the resources, but that's  
18 where we need to work with the partners to try to make  
19 those hard decisions on the technology.

20 And, as Steve indicated, visibility has been -- I  
21 think since day one PORTS -- since going almost 20 years  
22 now, a few more years, visibility has been a challenge to  
23 us. The technology in the past has not been there. I  
24 mean it's been promising, but it's never panned out.

25 Getting back to your specific question, that's part

1 of what we invest. NOAA does fund PORTS. It pays for  
2 that infrastructure and data management program oversight  
3 and some development, but I'd like to see more,  
4 absolutely. We'd like to see federal funding in PORTS.  
5 I think we've already agreed that NOAA supports that  
6 concept.

7 MR. SKINNER: This is Tom Skinner. Admiral, just to  
8 clarify my comment, we haven't -- the panel hasn't  
9 identified a specific funding source other than that we  
10 supported full federal funding of the PORTS system  
11 including O&M. We didn't say half of gas tax or anything  
12 like that.

13 Andy and then Dave.

14 CAPTAIN MCGOVERN: Thank you. Andrew McGovern.  
15 Just a follow-up on the Admiral's question. We were the  
16 second port to have a PORTS system. We probably should  
17 tell NOAA to change the names. It's very confusing. It  
18 may be one of the problems, but a port's a port.

19 But anyway, we were told right off the bat that, you  
20 know, that the goal was that we would be paying the O&M  
21 and begrudgingly agreed, at least I did, with the thought  
22 that I am now going to fight to get it, you know, we got  
23 it.

24 We got PORTS, because right after -- probably  
25 actually it was 1991 that NOAA did a Q and A study on our

1 current charts. In the old days, we had the charts and  
2 found discrepancies of up to 128 percent; and therefore,  
3 they pulled them.

4 We noticed the mariners back in 1991 that announces  
5 that the current charts are being pulled for  
6 inaccuracies. When I asked if they would be replaced,  
7 the answer was, no, we don't need to replace them  
8 anymore, we have got this brand new technology called  
9 PORTS where we can do realtime, why do you need a chart,  
10 we can do better.

11 But, here's the rub, we'll put it in, but we're not  
12 going to pay for it, so you're basically stuck between a  
13 rock and a hard place, this is back in '91, so you have  
14 to agree to it.

15 And since '91, I have been fighting to get federal  
16 funding. And as you can see, I've been very successful  
17 on that, for the O&M part, that is, but it is something  
18 that -- it's easy in a lot of these ports where he's  
19 talking about, a single state, a lot of times a single  
20 counties like in New York. I have two states. I've got  
21 about a dozen counties and thirty-some odd municipalities  
22 to deal with to try to get funding for this to try to get  
23 this O&M, and then when we're talking about identifying  
24 the user, we talked about this, everybody uses the PORTS  
25 system. It's opened to everybody.

1           One of the issues the industry has, okay, I'll pay  
2 for it, but it's mine then, you know. The information is  
3 commercial. It's not open to the recreational public.  
4 It's not open to the commercial fishermen.

5           So when you're identifying those, who's going to pay  
6 for this? That's one of the big issues. That's why it's  
7 hard to go to a specific -- you know, go to just to --  
8 pick on Minas -- go to a cruise ship and say, okay, I  
9 need a couple hundred thousand bucks a year from you. So  
10 Minas says, correct response, I'm not the only guy that  
11 uses it, I'll pay my share, but why do I have to pay for  
12 the whole thing?

13           So that's why -- one of the big issues with this is  
14 where do you identify the running stream from? Who do  
15 you get it from? Can I tax a recreational boater? We  
16 talked about putting in a 900 number instead of an 800  
17 number or putting some type of subscription service on  
18 the website, too. We were told we can't do that, you  
19 know, that it was a good idea back in '91.

20           In fact, NOAA came up with that, let's do it, and  
21 they found out -- the league probably told them you can't  
22 do that, but, you know, that way it would pay for itself.

23           So there is a real problem with -- going back, I  
24 mean we're a bi-state port. We're interstate. Who pays  
25 interstate? I mean our port -- and I'm sure the Port of

1 Tampa does a whole region. Who pays for that? It's  
2 federal government.

3 Well, you can't -- it's nonspecific. You know,  
4 federal government pays for that. So that's our argument  
5 as to who will pay, you know, and which is why we have  
6 refused to do an economic benefit study in the Port of  
7 New York and New Jersey.

8 We feel it's a double-edge sword. They're just  
9 going to try to use it against you. You benefit from  
10 this, you pay for it. So does Massachusetts and  
11 Connecticut and New Jersey and, you know, Illinois, for  
12 that matter.

13 MR. SKINNER: I think that's part of the reason I  
14 think at one point our recommendation included the  
15 analogy to the Navigational Weather Service, same type of  
16 peril.

17 MR. ZILKOSKI: Dave Zilkoski. I take a little  
18 different take on things since I'm going to be gone in a  
19 month and-a-half.

20 You can continue to beat me up afterwards, but I  
21 look at what geodesy did, and this is about the same time  
22 PORTS was being established, and maybe a little bit  
23 sooner we started this, putting in continuous operation  
24 reference stations.

25 My budget hasn't increased in over a decade or more.

1 We haven't gotten an increase in money. We have got some  
2 earmarks from height monitorization that focused on doing  
3 some of that, but not from my geodesy side of the course  
4 and GPS infrastructure.

5 We transitioned from putting all those monuments in  
6 the ground into putting in continuing reference stations,  
7 but we built the models and tools.

8 We became the data storage, the data analysis, sort  
9 of similar to Mike's COMPS, so we identify our roles and  
10 responsibilities. *COMPS Continually*

11 And if you look at the correspondence's network  
12 today, it's over 1400 stations, over 250 partners. NOAA  
13 doesn't pay for that. The states pay for it.

14 Now, we're actually getting all these states putting  
15 in these realtime networks. They need our foundation.  
16 That's what we use our money for.

17 The Coast Guard and the Corp of Engineers built the  
18 navigation system. That's federal, so I'm not saying  
19 what -- PORTS may be not a federal issue, but I think  
20 that -- sometimes I think you need to think a little bit  
21 different about this and look and say, well, maybe I can  
22 convince the right people like the Coast Guard.

23 We convinced the Coast Guard about the GPS, putting  
24 in GPS stations, and then they were going to put in  
25 receivers that would only benefit them. And then we



1 convinced them to put in dual-frequency receivers so that  
2 it helped everybody else.

3 So now it's capable, if we can just get a little bit  
4 more infrastructure in, of positioning to central meter  
5 levels. It's not there yet. It's capable. We convinced  
6 the Corp of Engineers to do the same thing up the rivers.

7 We have got NP GPS now with -- the trained  
8 individuals are still trying to get that so it's more  
9 navigational, but my point is it is a federal system  
10 being built. It's just not being built by NGS or NOAA.

11 So what that infrastructure is doing is built by the  
12 federal government, not by NOAA, and we're utilizing our  
13 money to build the models and tools necessary.

14 And by the way, Tom, we do have RKGS projects. By  
15 the way, it's coming, developmental mode and all, a  
16 beta version testing as soon as we get it going, but it's  
17 almost ready now. So we build these models and tools to  
18 help that. We give you quality assurance and quality  
19 checks just like MIMES does with his COMPS.

20 So I think if you think slightly different about  
21 this and get the right people in the room, and I don't  
22 know who those people are, you still could be funded by  
23 the feds just not by NOAA, and maybe you give Mike his  
24 money he needs to really do the navigational stuff that  
25 he needs in the operation end of it.

1           And some of those models that are developed at the  
2 universities, maybe he would have the resources to  
3 actually implement those models and make them 24/7, but  
4 someone else has to pick up the other stuff.

5           MR. WELCH: Mark and Steve, what is the annual  
6 budget you get from the phosphate?

7           MR. FIDLER: We get \$150,000 a year.

8           MR. WELCH: And what percentage of that phosphate  
9 severance money does that represent?

10          MR. FIDLER: Probably about 70 percent of the  
11 budget.

12          MR. WELCH: I'm sorry. I explained it wrong, as  
13 total phosphate severance money. And how much are you  
14 getting?

15          MR. FIDLER: That's -- I'm not really sure. Since  
16 the severance tax is a state tax, that's issued on all  
17 counties that have mining operations.

18          Hillsborough County probably gets close to  
19 somewhere, almost half a million, so they give us  
20 \$150,000.

21          MR. WELCH: So you're getting maybe a third or a  
22 little less of that portion of the money that comes  
23 through this county?

24          MR. FIDLER: Right, it depends. Polk County has a  
25 lot more mining than they do, so they have a larger

1 return.

2 MR. WELCH: And then, Mark, what would you estimate  
3 the value of various types of in kind or low cost help  
4 that comes from the university or the other equivalents?

5 MR. LUTHER: It's difficult to say, because the  
6 system essentially is housed in our lab rent-free. We  
7 pay for utilities and basic network services and things  
8 like that.

9 On the other hand, the PORTS' corporation funds a  
10 graduate assistant stipend and tuition, so probably a  
11 trade-off. The cost of that graduate student's support  
12 is probably about what we would pay in commercial rent  
13 had we had to rent some space somewhere. So it's  
14 probably a wash there.

15 But, again, just having the technological expertise  
16 and support of the university infrastructure is worth a  
17 lot, but I can't really put a dollar figure on it.

18 MR. WELCH: Is it fair to say though if you were  
19 able to convert it to a dollar figure it would be a  
20 minority position compared to the \$150,000 of actual  
21 money?

22 MR. LUTHER: Yeah, it would probably be in the order  
23 of \$50,000 a year, for a wild guess. But on the other  
24 hand, if I -- as I said earlier, if we were to pay for  
25 the same services provided to SAIC or AFUGO or somebody

1           like that, I'm betting that we'd be paying several times  
2           the budget costs that we are paying now, the operating  
3           costs that we're paying now.

4           MR. WELCH: Okay. You mentioned in passing  
5           collapsing of your cooperative agreement with NOAA. Do  
6           you need for this panel to say anything about that to the  
7           people we work with at NOAA?

8           MR. FIDLER: No. We're working that out already.

9           MR. SZABADOS: Part of this is working through the  
10          NOAA lawyers.

11          MR. DUNNIGAN: Who are they?

12          MR. SZABADOS: Everyone --

13          MR. WELCH: Go ahead.

14          MR. SZABADOS: Except the process is sometimes  
15          painful, painfully slow.

16          MR. WELCH: And, Steve, could I ask you to maybe  
17          take a moment or two and sort of elaborate more on the  
18          traffic and the cargo and the type of maritime users here  
19          in the greater Tampa port areas?

20          MR. FIDLER: Sure. We are experiencing economic  
21          downturn. In years past, we've done 5,000 vessel  
22          movements. Now we're at somewhere 3600, 3800 vessel  
23          movements.

24                 We have a major -- the major business is primarily  
25          bulk phosphate fertilizer, the chemicals that are used in

1 that process, anhydrous ammonia, sulphur.

2 We have a lot of petroleum that comes in here  
3 because we service central Florida. It's all refined  
4 petroleum. We have a growing container business. We  
5 really got started seriously with that two years ago.

6 We have one liner service that's currently calling  
7 and there's another one that's basically lining up.  
8 Hopefully, that we'll see the first quarter of next  
9 year.

10 Historically with our general cargo bulk, business  
11 in the past has been automobile imports and exports, a  
12 lot of building materials. The building material  
13 business is in a downturn. A lot of lumber, cement, we  
14 have five cement terminals. We have aggregate  
15 facilities.

16 There's cruise operations, I forget that. And then  
17 we have three shipyards, pretty large shipyards in  
18 Tampa.

19 MR. DUNNIGAN: Thank you.

20 MR. ARMSTRONG: If I can change the subject a  
21 little bit here to immigration, I sort of -- since that  
22 conundrum here between several of the panel members,  
23 I think there was a point that we need more AIS-based  
24 data coming in.

25 And, of course, there's always calls for more

1 information, more information. And then I hear Captain  
2 Hunziker talk about the sort of sensory overload on the  
3 watch team and the complexity of the systems, and I have  
4 sort of -- one specific question is that should we be  
5 sort of linking these data altogether in the ECDIS  
6 display, or should we be simplifying the ECDIS display  
7 and providing data in sort of complementary systems?

8 So, you know, do we want more and more of this put  
9 together, or how would we rationalize that?

10 CAPTAIN HUNZIKER: Well, I'd like to see it all in  
11 one spot where I don't have to run back and forth across  
12 the bridge to get the information I need. The problem  
13 comes with being able to rationalize how much is enough  
14 and how much is too much.

15 And where I started to go with the AIS and the  
16 Tillaquah ferry picture that was up there was the fact  
17 that the ship's master -- many times things that -- he  
18 needs all of the information up there. I've had pilots  
19 tell me I know where the deep water is, show me where the  
20 shallow water is. So I don't need all of the depths and  
21 everything on the ECDIS, but give me the small screen up  
22 in the corner of the ECDIS that gives me the realtime  
23 currents, the realtime depths of water, clearances from  
24 the wires or the bridges, things like that.

25 So, yes, I believe that the PORTS information needs

1 to come over the AIS, needs to be displayed on an ECDIS  
2 whether it be the pilot's own personal Pilot unit or the  
3 ship's unit, but it just needs to be something that's  
4 more accurate.

5 MR. LUTHER: And if I could follow-up on that, one  
6 of the things -- we're talking about Pilots and the  
7 engineers that deal with human machine interactions. You  
8 can turn things on and off. That's the beauty of these  
9 electronic displays. They're layers.

10 You can only look at the layer that you want to see  
11 when you want to see it and with a mouse click you can  
12 display something or not display something as you desire  
13 at the time.

14 The problem is, as Captain Hunziker mentioned, is  
15 the training, getting people used to using that  
16 information and knowing how to utilize it to maximum  
17 efficiency.

18 CAPTAIN HUNZIKER: And a follow-up to that, I think  
19 another one of the problems that needs to be addressed is  
20 the uniformity of symbology, especially on the charts.  
21 You've got TRANSIS. You've got NOAA symbology. You've  
22 got symbology from the different manufacturers.

23 And I hate to bring this up, but in the Cosco Busan  
24 incident the pilot questioned the master many times what  
25 the symbols on the chart on the ECDIS meant. And the

*major  
issue*

1 captain was unable to explain sufficiently to the pilot,  
2 and the pilot wasn't used to the symbols that he was  
3 seeing on that ECDIS.

4 This is one of the reasons for having a personal  
5 Pilot unit that the pilot himself carries, because he's  
6 used to the symbols then that he sees on that chart.

7 There is no uniformity on what's available. We walk  
8 toward five different ships and you might see three  
9 different symbology displays.

10 MR. WELCH: With regard to that problem, isn't that  
11 a problem that if it's to be solved it's going to have to  
12 be done in some international forum whether it's the IMO  
13 or one of the equivalents? It's not really something  
14 that NOAA can directly address.

15 CAPTAIN HUNZIKER: No, but NOAA has some influence  
16 on the American representative to IMO.

17 MR. WELCH: Right.

18 CAPTAIN HUNZIKER: And I think that that's where  
19 that needs to go.

20 MR. WELCH: Right.

21 CAPTAIN BARNUM: If I could follow-up to that,  
22 another one of the hats I wear is U.S. navigational  
23 guide, too. Recent development is that IHO and 54 in  
24 London this past July has moved forward to make ECDIS  
25 standard on



1       solus vessels. So that's moving through an improvement  
2       process that will be -- there will be some  
3       standardization on ships on the display of the ECDIS  
4       performance of which there is a standard for colors and  
5       symbols.

6               In going back to the colors and symbols, the  
7       symbology, the basic display you saw of NOAA, it's not  
8       really NOAA. It's an IHO standard and how that's  
9       performed.

10              At the recent IHO sub committee meeting of  
11       hydrographic standards they voted to eliminate that basic  
12       display showing buoys and triangles because mariners like  
13       to see buoys as buoys. So IHO is listening. We are  
14       moving forward as an international community to bring  
15       standardization beyond that to Raster charts.

16              The Coast Guard has been recently directed by  
17       Congress, and I think about two or three years ago, to  
18       come up with regulation for carrying electronic chart  
19       systems.

20              NOAA has been a proponent of Raster systems for  
21       nonsolas class vessels. So providing sub standardization  
22       of systems for this solas class and just one step further  
23       in the ECDIS system, you mentioned what's TRANSIS, so  
24       it's very complicated in mariners. It's an education  
25       issue of what systems they are using because an ECDIS --

1 again there is an international standard.

2 And based on international standards, an ECDIS is  
3 only an ECDIS when it's using official ENC's from a member  
4 nation, so in that case it's NOAA, which we give our  
5 charts away for free, unlike many of the consternation of  
6 many other nations.

7 However, many of our distributors are foreign  
8 distributors such as SeaMap, UCO, TRANSIS and others.  
9 And they provide distribution services and that's where  
10 their charts come up.

11 So Salamander could go in and download their charts  
12 for free, but many of their employee distribution  
13 services we'll see in the chart as IHO.

14 MR. LUTHER: If I could follow-up on that, too.  
15 I've been sitting in on the AIS sub committee for AIS  
16 International Association of Lighthouse Authorities, and  
17 they're trying to come up with similar standards for how  
18 you display information in ECDIS, so that is moving  
19 forward.

20 MR. DUNNIGAN: I'd like to come in a little bit  
21 different direction. One of the things that we and this  
22 committee have been working with for a long time is this  
23 projection of increase in maritime trade over the next  
24 30 years where the common number that's used is that  
25 we're going to double our requirements for maritime

1 transportation in three decades.

2 So there's always been a question about whether  
3 America's port infrastructure is going to be able to be  
4 ready to deal with that.

5 Some of our largest ports, LA Long Beach, for  
6 example, has got a lot of problems with congestion. It's  
7 going to make expansion extremely difficult.

8 From your perspective in safe -- the ports of Tampa  
9 and Cam Los and Jacksonville, is this an issue that your  
10 community is trying to figure out how to deal with, and  
11 is there a thinking or a plan for how you could double  
12 your capacity over that period of time to be able to  
13 handle the requirements that are developing?

14 MR. FIDLER: In Tampa, we still have land that's  
15 available for development, so we have a future net room.  
16 The issue with the channel is the main channel, the  
17 Skyway on in, is 500 feet wide.

18 When they did the original study back in the '60s  
19 for the harbor deepening, which brought us to 43 feet,  
20 the Corps study analyzed the traffic and the Corps always  
21 tells us they look 50 years out.

22 Well, that study indicated that the channel should  
23 have been 585 feet wide. Well, it would make sense to  
24 build it to six. Well, the Skyway Bridge only allowed a  
25 500-foot width under the channel.

1           Oh, consequently the engineering concept went into  
2 play and they built a 500-foot wide channel. Now, the  
3 latest geode we did with the Corps will last eight years,  
4 is that we really need to widen the channel to 600 feet  
5 with that addition that we started back in 2000 that we  
6 were to have completed by 2004, because it was  
7 fast-tracked.

8           We're still waiting for the report to widen one  
9 section, one run of the channel, cut B, in Tampa Bay. It  
10 will provide another meeting location for us to handle  
11 our traffic.

12           We have what we call term vessels which are of  
13 concern. Those are vessels with wide beams or handling  
14 requirements that are sensitive enough that we need to  
15 manage the traffic.

16           All our large cruise ships are in that category,  
17 safety zone for our anhydrous ammonia carriers and  
18 LNG carriers.

19           So all that in the equation, we've had a situation  
20 there is only two locations in the harbor, one out  
21 between Egmont Key and the Skyway Bridge, and then up  
22 near the point where we're able to do these meeting  
23 locations.

24           Having that third location is -- in the interim  
25 while we work to move forward to try to get the main

1 channel widened to 600 feet. That's going to be an  
2 enormous project, even harder today than in the future,  
3 getting the harbor deepened to 42 feet deep back in the  
4 late '60s, early '70s when that was authorized.

5 We don't think in Tampa it's a good thing that the  
6 Panama Canal is going to a deeper depth. We may not need  
7 to go to the exact depth that they're at, because we  
8 don't anticipate -- don't see in our conversations with  
9 container liners that their largest vessel will come to  
10 Tampa. We'll have a service. It will be a mid-grade  
11 service.

12 We're currently basically on a feeder line out of  
13 Jamaica. It's hard to say because economics of the  
14 shipping industry in that regard has changed in the last  
15 two years and the cost of freight is really impacting on  
16 how much of the fleet is still floating in active  
17 service.

18 We've read recently where several ships just anchor  
19 off for the next couple of three years waiting for this  
20 to be approved.

21 The expansions that we have in the Tampa Bay area,  
22 basically it just comes down to the wider channel and  
23 deepening somewhat. We don't know yet. We haven't  
24 identified exactly what it would be or go to.

25 We also have a couple of side channels that still

1 are not federal channels, and we've been working with the  
2 Corps and with Congress on that project for -- well,  
3 let's say I started one in 1983 and another one in 1990,  
4 but hopefully we'll achieve that, just maintaining the  
5 channels as they are at this point.

6 CAPTAIN HUNZIKER: In Jacksonville, if you take a  
7 look at both sides of the equation, both the cargo  
8 handling capacity and terminal space and then congestion  
9 issues, I think that the cargo handling capacity is our  
10 limiting factor right now.

11 We have about 2,000 vessel loads a year. Our  
12 primary ones are container cargo and automobiles. And so  
13 the container docks and the automobile docks and their  
14 infrastructure are probably about 65 to 75 percent  
15 utilized right now.

16 The congestion issue itself on a number of vessels  
17 that we can cue up and move in and out is really not a  
18 problem. We had not gone to 24-hour operations, so  
19 there's another eight hours of operation that could take  
20 place. So I think Jacksonville is really fairly  
21 well-equipped to absorb a significant increase in cargo.

22 MR. DUNNIGAN: Do you know what's your controlling  
23 depth?

24 CAPTAIN HUNZIKER: 82 feet right now.

25 MR. DUNNIGAN: How large container ships are you

1 able to take on?

2 CAPTAIN HUNZIKER: Again, not -- I can't tell you  
3 that. Not the great big one, that's for sure.

4 MR. DUNNIGAN: Thank you.

5 A couple of other things that, just for the group,  
6 that I've learned and as others, I was taken by this  
7 human engineering question that they all have brought up,  
8 which I think is an interesting challenge, and thank you  
9 very much for that.

10 The other one was Captain Hunziker's comment on  
11 education. And certainly from a NOAA perspective, you  
12 know, we -- the Congress passed a law last year that, you  
13 know, strengthens our education mandate for all of our  
14 programs.

15 And I think that you're raising a really good point  
16 here, is that people don't understand the relationship  
17 between our PORTS system and sneakers on the racks of  
18 Wal-Mart in Kansas.

19 So there's something we need to do and there is this  
20 committee on the Marine Transportation System, which is a  
21 large area group. NOAA is one of their principal players  
22 there.

23 One of the things I learned this morning, maybe we  
24 ought to take this maritime transportation education  
25 issue to that group and see if we can get some good

*Dunnigan*

*Dunnigan's  
action.*

1 inter-agency collaboration to raise that. So thank you  
2 for raising that. That's a great point.

3 MR. LUTHER: If I could follow-up on this as well.  
4 Jack and I talked about this yesterday. PORTS has been  
5 operational since 1992. I'm still amazed how  
6 recreational boaters know about it, the hard core sailors  
7 all know about it, the sail boarders and kite surfers  
8 know about it, but there are over a million registered  
9 voters in the State of Florida probably, at least a  
10 hundred thousand in the Tampa Bay area, and I would bet  
11 that a very small percentage of those people even know  
12 that this resource exists.

13 So we're trying to put more effort into reaching out  
14 to the Power Squadron and the Coast Guard Axillary, the  
15 yacht clubs and those sorts of people, but it's an uphill  
16 battle. Perhaps U.S. could help us with that.

17 MS. DICKINSON: Elaine Dickinson. Thank you for  
18 that. And we've publicized PORTS in our magazine, but  
19 you're right, a lot of boaters who don't belong to the  
20 organized groups probably aren't aware of it.

21 So I mean I would say anytime you have a new  
22 development or something new that you want to get out  
23 there that you can, let both U.S. know or put out your  
24 own press release like "Outdoor Riders." They love that  
25 stuff. People love reading technology.



1           So just let us know when anything new is happening  
2           and we'll try to let boaters know.

3           MR. SKINNER: Well, I think we're running a little  
4           short on time. I had a couple of quick questions, but I  
5           wanted to make sure that the panel had a chance to raise  
6           an issue.

7           Mark, you had mentioned that some of your platforms,  
8           some state agencies and others, put other sensors and  
9           other equipment on those. Is the information from that  
10          displayed through PORTS, or is that done separately?

11          MR. LUTHER: Those data are all handled separately  
12          for liability QA QC issues. They're not to the level of  
13          QC, truly operational systems like PORTS requires.

14          So we have separate trilemetry, separate data  
15          acquisition and distribution channels, but they are all  
16          publicly available through the Internet, and they all go  
17          into the integrated ocean observing system data stream  
18          such as exists.

19          MR. SKINNER: So someone could go to one site and  
20          get all of the different information for us in Tampa  
21          Bay?

22          MR. LUTHER: Yes. In fact, we have a grant through  
23          the NOAA -- the college of -- University of  
24          Wilmington, as part of the Southeastern Ocean Observing  
25          Association to build what we call a marine information

1 web portal working with the same meteorologists that  
2 Steve mentioned earlier at the local weather forecast  
3 office. So working with several other forecasters to  
4 bring in all of the PORTS data, but then all of the  
5 weather service data, all state and local agency data  
6 that are available in realtime and put it all in one  
7 place for commercial and recreational maritime  
8 interests.

9 So that is a move from one weather forecast office  
10 region to another. There's a consistent look and feel  
11 and all of those data are available in the same place.

12 Right now the ports have to go to the PORTS website  
13 to get to the weather service. They have to go to a  
14 weather -- and university data you've got to come to our  
15 website. Even though there are cross-links among those  
16 websites, you're still hopping around to different  
17 websites. It would be nice to have all of that in one  
18 spot.

19 MR. SKINNER: I think that's very -- I applaud you  
20 for trying to use this area for sort of a -- to integrate  
21 all of that data. I know Mike has been involved in that  
22 as well, and certainly we appreciate what your office has  
23 done.

24 Mike, are there other areas in other PORTS systems  
25 where there's a similar type of -- I'm trying to build on

1 the PORTS platform with new ongoing efforts to sort of  
2 expand the information that's available.

3 MR. SZABADOS: This has been in several areas. Port  
4 of New York, there's an activity similar to that and  
5 actually Houston-Galveston. We've worked with Texas A&M  
6 already and so there are areas where we have been doing  
7 that.

8 MR. SKINNER: All right. I think the last couple of  
9 meetings we talked a lot about integrating data and a  
10 cross system. So I think that's great and I want to  
11 commend lots of different offices at NOS for doing that.  
12 I think that's moving in the right direction.

13 MR. LUTHER: Again, it's part of the IOOS data  
14 integration framework. Mike's shop has been closely  
15 involved with that. All the PORTS data are now in a web  
16 service interface. We're putting our data up in a  
17 similar web service to facilitate that exchange of data  
18 in cross platforms.

19 MR. ARMSTRONG: Would you see the AIS system as a  
20 mechanism to distribute this additional data as well?  
21 That would be available to mariners.

22 MR. LUTHER: We're talking with the Coast Guard R&D  
23 Center about doing just that. The problem is limited  
24 bandwidth.

25 In AIS there's only so much information you can pipe

1 out through those channels that are dedicated. You have  
2 got to pay attention to the waterways as well, but  
3 basic tabular texting is about all you can push right  
4 now. And we're talking about, you know, the kind of  
5 model and animations that we showed, GIS layers that  
6 would have to be distributed through some other telemetry  
7 mechanism that was mentioned earlier. You can get public  
8 Internet on most vessels that the ship owner invests in  
9 the technology.

10 Cell-based communications on little boxes like this  
11 are capable of relaying that kind of information if  
12 you're close enough to shore. So there are other ways of  
13 pushing the data out.

14 CAPTAIN MCGOVERN: Thanks. A few things I'd like  
15 to support the panel on, one was on the right whale  
16 issue. The boundary lines need to be put on the charts  
17 so that incoming vessels and even outgoing vessels know  
18 where those 10-knot speed restrictions begin and end.

19 And especially with D&C, et cetera, it can be  
20 layered and it's very easy to see on an ECDIS or ECS when  
21 you're crossing that line, and without that it's really  
22 hard to -- you know, it's very hard to plot a 20-mile  
23 radius arcing on a chart, you know.

24 We don't have set points. It's not -- I can't put a  
25 line between two coordinates. So the only way to do it

1 is with, you know -- and the other is, in talking about  
2 the integrating the information, we have got Stevens  
3 Institute in New York that's really pushing, and I think  
4 some of what they want to do is a waste of money because  
5 it duplicates the PORTS system that we already have, but  
6 a lot of the other information that is new information,  
7 and they're kind of hung up -- if they want to get this  
8 onto the PORTS screen, there's a lot of hoops they have  
9 to jump through.

10 Their biggest problem seems to be in the O&M in  
11 having to back up redundant systems in the maintenance.  
12 Our biggest issues as far as the maritime community is  
13 that we need -- if there was information on the PORTS  
14 screen, we need it to be accurate information, you know,  
15 which is the whole basis for the quorum. If the  
16 information is inaccurate, it's pulled from the screen.

17 So we need to have good information or no  
18 information. That's the way we feel. We need to go  
19 forward.

20 So maybe as a compromise, especially with the IOOS,  
21 is that the PORTS screen is maybe divided into two  
22 halves. One is the government data and the reliability  
23 of the data as far as being there meets the PORTS --  
24 well, not the accuracy, but the availability of it; the  
25 other part of the screen is maybe data from these

1 different educational institutions, et cetera, that the  
2 accuracy is confirmed, but there is a little note saying  
3 that, you know, the availability of it is subject to  
4 the -- you know, to the provider, but -- so that seems to  
5 be -- because they don't mind that the information will  
6 be QA to see. It's just when they get into this other,  
7 that's what costs the big bucks, is that the rest of the  
8 redundancy that NOAA is requiring now for any of the data  
9 that's on the PORTS screen.

10 So it just seems to be a real problem that we can't  
11 get that data QA QC by NOAA unless they go through all  
12 the other hoops where we're just looking at, you know, if  
13 it's available we just want it to be good data.

14 MR. SKINNER: Right.

15 CAPTAIN MCGOVERN: We don't want inaccurate data.  
16 That's -- the biggest problem I think is inaccurate data.  
17 We know what to do. What we couldn't have, we revert  
18 back to what we've done for the last umpteen years.

19 What we can do with good data is maybe pushing the  
20 development maybe a little farther is what we're talking  
21 about. We don't want to push the vent with bad data. We  
22 want to be sure that that data is good. That's what we  
23 need, to rely on it. That's why we can't use data that  
24 doesn't go through, you know, NOAA's QA QC. Yeah, so  
25 that's, you know -- so I think maybe there's a way, you

1 know, to maybe -- you know, and we talked about having  
2 these multiple screens together, maybe one screen. It's  
3 just different notes as to what you know, but the data is  
4 all gone through Mike's shop as far as QA QC, but, you  
5 know, if the sensor's down, it's dead, you know. What  
6 are you going to do?

7 MR. SKINNER: Thanks, Mike.

8 MR. SZABADOS: I'd like to add to that a little bit  
9 about what he indicated, first of all, about quality  
10 control.

11 Quality control starts when the data comes into the  
12 computer. It's a systematic process. Okay. It includes  
13 calibration, routine maintenance, cleaning of instruments  
14 is part of the process, and the quality control going on  
15 in the computer bank itself. It depends on that  
16 maintenance, and I'm willing to go, to be unique in  
17 itself. Some require high maintenance, some not as much,  
18 but it's part of the process.

19 And that's why we have stringent NOAA agreements in  
20 making sure our partners, like here in Tampa, do maintain  
21 to those standards, because we rely on those being  
22 calibrated, cleaned so we can do the on-line QC out to  
23 users.

24 So it's important that all of us -- it's a  
25 systematic approach to quality control. It's not just

1 realtime going into the computer.

2 The other thing I would like to add too is a little  
3 bit with the right whales. I know it's a very sensitive  
4 topic, but as part of the AIS testing going on, not the  
5 part -- we're a part of -- with the environmental data,  
6 the reports, but the zoning message and information like  
7 right whales bills and depths are being tested right now,  
8 also right now on the East Coast being coordinated.

9 I think University New Hampshire is a player on  
10 that. In addition to the environmental depths, they are  
11 testing zone messages. So the right whale information  
12 I'm not fully -- I don't know all the details of what  
13 kind of information is displayed. It will be on the AIS.

14 CAPTAIN HICKMAN: Man, just so you folks know, I  
15 don't think we have had a meeting since inception that we  
16 haven't talked about the PORTS program and the funding of  
17 it.

18 Honestly, we all feel the same; that it should be  
19 funded by the government. Unfortunately, not only have  
20 we touched upon it in every meeting, we put it in our  
21 five-most-wanted and that it should also be the backbone  
22 of the integrated ocean observing system.

23 One step worse is the fact that there's ports that  
24 want the program. I can't get the equipment, let alone  
25 have O&M follow it. So it's high on our list.



1           MR. WELCH: Well, right whales are on the East  
2 Coast. We have gray whales, blue whales, other mammals  
3 on the West Coast. So any studies done here need to be  
4 taken over to the West Coast as well, tagging being what  
5 it is, anything that we can do to help minimize the  
6 problems on the West Coast with the species relevant to  
7 that area should be studied.

8           MR. SKINNER: We are a little pressed for time, so I  
9 want to continue this discussion, but if anyone is --  
10 I'll just leave it at that.

11          REAR ADMIRAL WEST: Does that mean I can't talk?

12          MR. SKINNER: No. I would never presume to try to  
13 stop you from talking.

14          REAR ADMIRAL WEST: What time zone are you in? I'd  
15 just like to follow-up with what Sherri just said. I  
16 suggest, Tom, when we talk about what's in the future we  
17 need to help NOAA with a model of what to do with PORTS.  
18 It's an integral policy of IOOS. IOOS doesn't have the  
19 money. There is a lot of coordination here that maybe we  
20 can help them with our recommendations and a model for  
21 the future of installing PORTS systems, and we have to be  
22 concerned with that if you have a lot of money, let's say  
23 Jack's pot of money, there are other things that are  
24 important, too.

25                 So where does this all fit in and help how to

1 prioritize? Where does IOOS fit in? And maybe we can  
2 give a little outside help with that and maybe not talk  
3 about PORTS at our next meeting.

4 MR. SKINNER: Other comments? Break? Well, we  
5 really appreciate your comments today. It's been very  
6 helpful. As you can see, it's stimulated a lot of  
7 discussion here. So thank you all very much.

8 I think we're up for a break, so let's try and keep  
9 it to around ten minutes. If we can have any members of  
10 the public sign in and indicate whether you want to make  
11 a statement. We'll be having our public comment period  
12 at noon as well as periodically throughout the meeting.

13 (There was a recess taken at 10:55 a.m.)

14 (The session resumed at 11:04 a.m.)

15 MR. SKINNER: Okay. Just a couple of announcements  
16 for our last panel members. Those of you that are still  
17 here, I think you have some forms to fill out. Okay.  
18 Also, we need to vote on the Minutes from the last  
19 meeting. So once we have everyone seated, we'll do that.  
20 And we will be planning to take a class photo from all of  
21 us. So if we could have everyone here.

22 Unfortunately, I don't know if everyone saw the  
23 E-mail, he was asked a couple of days ago to be part of  
24 the transition team in Puerto Rico, so he was not able to  
25 attend this meeting, which we're sorry he's not here, but

1 glad that it wasn't like one of the other things that  
2 happened for the other two meetings that he missed where  
3 he had deaths in his family. So this one actually looks  
4 like good news.

5 We're going to start this next session with reports  
6 back from panel members on plans from different offices  
7 within NOAA, and I think we're waiting still for a few  
8 members.

9 Sherri's first on the list, but if there's anyone  
10 else that would like to go forward.

11 Cathy, are you ready?

12 Can we just check and see if anyone -- if there's  
13 anyone out in the hallway? I don't want to start  
14 without -- we're doing a class photo just before lunch  
15 since we have most of the panel members here, and it's  
16 Dave's last HSRP meeting so we wanted to give him a  
17 momento suitable for framing, exactly, and usable for  
18 Christmas to holiday counts as well.

19 We now have a forum to do the Minutes, if you want  
20 to.

21 MR. WELLSLAGER: I'll go first correspondence  
22 course. Matt Wellslager.

23 I had the privilege of reviewing the strategin for  
24 the Co-Survey. Before I get into that, I would like to  
25 apologize about missing your conference call when you

1 were going through and setting up the thoughts and plans  
2 on your analysis of yours. I think that would have been  
3 a better way of going about using the room. Instead,  
4 what I wound up doing was passing this out to individuals  
5 and some indirectly associated with this office of  
6 Co-Survey in the past, and others not, but after reading  
7 Sherri's I had an impression that a lot of what I stated  
8 in mine conceptually she had covered, and I would like to  
9 address.

10 This strategic plan that I looked at is very good.  
11 It is high level. There will be other more defined  
12 timelines and plans that will come out after this has  
13 been released.

14 So the brevity that I think I was suggesting stated  
15 in this was actually fairly long isn't as much of an  
16 issue as it could have been.

17 Secondly, aesthetics, in some of the other  
18 literature that I looked at there's imagery that you can  
19 see that helps convey points. Those points, I think, are  
20 more easily defined if you can see a picture indicating  
21 what it is and that program or issue that is trying to be  
22 addressed at the time.

23 And in this strategic plan up until about page ten  
24 we've got very good imagery. After that, it's gone. And  
25 not pointing fingers or anything else, I think that if it

1 would be possible to add some jpegs, one or two, that  
2 might be fruitful for just presentation purposes more  
3 than anything else.

4 In looking at specific comments, I guess going from  
5 top to bottom these site selections confirm a priorities  
6 plan and are there priorities incorporated for where  
7 charting will be done?

8 I thought based on that there might be one or two  
9 priority plans: One from the navigation response teams;  
10 and then secondly one from the NOAA ships, because it  
11 would be addressing completely different areas.

12 And I don't know if something like that has been  
13 done. If it hasn't, it might be good to see, because  
14 there are some high priority areas that should possibly  
15 be addressed more frequently than others that are not as  
16 high priority based on the use of the PORTS, based on the  
17 recreational use, and issues there.

18 We still have miles, thousands of miles, of  
19 uncharted area up in Alaska, and that's where the rub, I  
20 guess, would be if there was one; and that is, we're  
21 bound to chart those areas, yes, but is that as high on  
22 the priority list as it should be? Should we look at  
23 other areas? I'm sorry.

24 Larry, I'm not trying to say it doesn't matter. It  
25 does matter. And now with the passage of the Northwest

1 Passage, you know, we have got a lot on our plates. It  
2 would be interesting to see based on that what we have  
3 for priorities.

4 Standards, I think we should make it known that NOAA  
5 has specific standards that they apply when they do the  
6 nautical charting, and this should be something that  
7 they've known for the public.

8 When they see this strategic plan, it's very  
9 detailed. It's very concise. And we set the standards  
10 and I think those should be shown in the strategic plan.

11 I asked -- one informational piece that I got was  
12 from Gary when he reviewed this and he made a point in  
13 saying -- I'm sorry -- document outlining legal aspects  
14 of using nautical charts that are in litigation.

15 If you know you have an obstruction, and the chart  
16 is a legally binding document that should be used in a  
17 court of law as a statement, don't go there. And if you  
18 do, it's your fault. It's not someone else's fault.

19 So would the strategic plan be a place to define  
20 that this is or could be used as a legally binding  
21 document? And I don't know. And that is a thought that  
22 you have with it.

23 Others that I was wondering, new products.  
24 Technology is changing. Do we have a crystal ball that  
25 we might be able to say the research and development in

1 NOAA or the Navy or other hydrographic expertise, do we  
2 know something, are we moving into a new and much more  
3 robust way of going out and collecting hydrographic  
4 data?

5 Back in the day, what I was doing pales in  
6 comparison to what we have today. It would be nice to  
7 know what we have, the technology, when we're using that  
8 technology towards hydrographic charting.

9 In the hydrographic surveying program, I realize  
10 the NOAA fleet has diminished greatly, but there are new  
11 ships, I'm sure, that are going to be added, and it would  
12 be interesting to know when they are going to be added to  
13 the fleet.

14 And if the new ships would be used for marine  
15 fisheries, if we had some coming into the fleet for  
16 hydrographic surveys, what they were and what the  
17 capacities might be for the ship I think could be  
18 beneficial to know, once again, using the technology  
19 excuse more than anything else.

20 And then finally, it should be noted that the  
21 IOOS plan and the July 28th meeting on the integrated  
22 ocean observing survey outline goals very similar in  
23 scope. And I think that's beneficial for us since it  
24 sees how -- why some of the organizations might be  
25 diverse, they're also integrated in different ways, and

1 they're all working towards the same or similar goal, and  
2 that's beneficial for us as well as NOAA.

3 Other than that, those were the only modifications,  
4 changes, suggestions that we sought to be made. I  
5 thought it was a very good and high-level document. I  
6 think it would be useful to see the more detailed plans  
7 when they're made available. Thank you.

8 MR. SKINNER: Thanks, Matt. Thanks to the group  
9 that also worked on this.

10 Steve, do you have any comments?

11 CAPTAIN BARNUM: Sure. Again, I appreciate the  
12 input, Matt, from you and the panel. And on reviewing  
13 this plan, it's something that we take very seriously in  
14 taking the recommendations and the previous  
15 recommendations of the panel trying to roll that into the  
16 strategic plan to reflect that.

17 And certainly we struggle to keep it shortened. We  
18 hear you on the images, but certainly the priorities  
19 that's captured in our hydrographic survey document shows  
20 where, but it doesn't have the specific timeline, but we  
21 are working for that, not only for NOAA ships, but also  
22 the contract.

23 Our whole effort is to include what we like to  
24 include, what you mentioned, new ships, and integrated  
25 oceans and coastal mapping and how we take advantage of



1 those opportunities.

2 Standards, certainly one of the key points that we  
3 adhere to, mostly because of the litigation aspects of  
4 our products do often enter into cases of law, and part  
5 of the things that saves us is our processes and  
6 standards.

7 Mentioning that I think would be a good point. I  
8 appreciate that, but I really again thank you for the  
9 effort in reviewing this and providing the input. Thank  
10 you.

11 MR. SKINNER: I'm assuming that these are comments  
12 that just internally we won't be excluding these in our  
13 overall meeting recommendations, or is there -- you have  
14 any thoughts on that?

15 CAPTAIN HICKMAN: In other words, these were  
16 basically informal recommendations to the different  
17 offices on the plans that we don't need formal  
18 recommendations at the end of the meeting.

19 DR. JEFFRESS: I don't believe so. I think that we  
20 integrated into the strategic plan woven into the actual  
21 plan. Am I correct, Mike?

22 MR. SZABADOS: Yes, that's correct.

23 DR. JEFFRESS: My understanding, we reviewed these  
24 as DROPS final verse, right?

25 MR. SKINNER: Correct. I want to make sure that

1 that's what every -- okay. Great. Who's next?

2 CAPTAIN HICKMAN: I'll go next. This was covered in  
3 an E-mail to everybody, background and the philosophy of  
4 it all. And as we say, it is a high-level document, but  
5 it focuses on bullet two, and I'm not putting specifics  
6 into it when we did the call, the conference call, so  
7 that was brought up, Adam Rosznaum, (sic) but that would  
8 be in the implementation plan, which is probably going to  
9 be a much more deep document.

10 Anyway, I don't think I need to go over everything  
11 on here. It's pretty self-explanatory. This strategic  
12 plan itself is addressing a lot of what the panel here  
13 feels is the Corps' capabilities necessary with NOAA to  
14 continue.

15 This was some of the general comments that came back  
16 to me, obviously first pointed in my direction, having  
17 the right people. Also, the panel had wanted and put in  
18 the five-most-wanted, Adam had brought up the fact that  
19 there's nothing brought in about the budget and none of  
20 this can be implemented without a budget, but that --  
21 this strategic plan and implementation plan when that  
22 comes out they'll be used to help support the need for  
23 the funding.

24 Same with the -- Adam brought up the accountability.  
25 There is no timeline on this. So nobody can be

1           accountable if nothing's put into effect, so that would  
2           be brought into the implementation plan as well.

3           And the PORTS expansion and implementation plan,  
4           there were a few comments bringing up how this ties in  
5           with -- go to the next one -- why don't we address this  
6           first. There it suggests new frontiers on Homeland  
7           Security. And my question was -- is that through the  
8           PORTS and the AIS system, and it's something I didn't  
9           really think about, but it came back as -- Mike informed  
10          me that with counterline warfare as well I never thought  
11          about that. So we're going to put this information also  
12          into this strategic plan, the final draft of it.

13          Gary, was it you that said partners and customers we  
14          need to put in the insurance industry? I don't know.  
15          Somebody brought that up.

16          DR. JEFFRESS: Maybe I will speak on it. It's  
17          virtually the same comment I made with Matt, was about  
18          highlighting the real aspects of this information in  
19          terms of, you know, addressing litigation and you  
20          mentioned admiralty law.

21          This data is used in court and it's assumed to be  
22          the high standard, and the court does not question the  
23          data because it comes from NOAA.

24          CAPTAIN HICKMAN: So we definitely include on the  
25          partners and customers page admiralty lawyers, and that

1 the information does become evidence -- NOAA's  
2 information becomes evidence in a collision or a  
3 grounding.

4 CAPTAIN McGOVERN: Just another follow-up on that,  
5 the Homeland Security aspect, we did have -- a number of  
6 years ago NOAA was contracted by the Pentagon to do these  
7 counterline warfare surveys, these high-resolution  
8 surveys of our channels.

9 And I don't know if a lot of people realized, but  
10 NOAA's survey capability and survey standards is much  
11 higher than the court's, but the knowledge it's all been  
12 excluded from the court's Corps channel because that's  
13 their territory and NOAA has the rest.

14 And when NOAA did these high-resolution surveys, the  
15 secondary benefit from this, and I don't know if we can  
16 squeeze this in here, was that they found many, many  
17 uncharted obstructions and dangers in the channels that  
18 were then addressed by the Corps.

19 In New York they actually found a -- I don't know if  
20 it was steel or cement, but it was a column and it was  
21 literally sticking straight up in the air out of the  
22 bottom and just -- it was just plain luck nobody had hit  
23 this, but it was in the middle of Manrush Channel and it  
24 was well below beneath.

25 The way the Corps does surveys, they missed it all

1 those years and it fell off a construction barge and the  
2 only one that found it, and there are actually others,  
3 but that was the most obvious. And I know there was some  
4 up in Maine too where they found some in rocks.

5 In these counterline surveys they found many, many  
6 other hazards that were then identified and were able to  
7 be addressed. So I don't know if that's -- it's a  
8 secondary advantage to this, but if there is a way to do  
9 that, I'm not sure. Thanks.

10 CAPTAIN HICKMAN: Okay. And the insurance sector  
11 as well, that's just not insurance. That's when the  
12 collision's taking place or the groundings, but also for  
13 flooding. These were recommendations -- actual  
14 recommendations that came in over the phone conferences.

15 So actually you've got the issues that were brought  
16 up, which most of them have already been discussed, and  
17 do you have the questions and clarifications? Is that  
18 the next one you have?

19 These were questions that came in and  
20 clarifications, question and answer, and the action is  
21 going to be taking place on the strategic plan. So if  
22 anybody has actual questions on that, please -- it's  
23 pretty self-explanatory of what's going to take place.

24 MR. SZABADOS: I'd first like to thank Sherri and  
25 her team for helping us in review of our strategic plan.

1 And, again, I want to emphasize it's the first of two  
2 documents. It's, as Sherri pointed out, it's a visionary  
3 high-level document identifying some of the outlining  
4 with NOAA and some of the requirements identified by this  
5 panel. The implementation will be how we plan to execute  
6 that. We will have specific measurables in that  
7 implementation plan. And when we have that completed,  
8 we'll be looking forward to having input into that.

9 Again, Sherri, thank you to you and your team, and  
10 your comments have been incorporated.

11 MR. SKINNER: Thanks, Mike. Are there comments?  
12 Adam. Just to follow-up, any question with the  
13 implementation?

14 MR. McBRIDE: Mike, when do you -- I guess the first  
15 rule of planning is given the completion date or a dollar  
16 amount and they were given both at once.

17 Can you tell us when we'll have the implementation  
18 plans to review, because that seems to have much of the  
19 substance of how you explain these strategies contained  
20 in this.

21 MR. SZABADOS: I wish I could. To be honest with  
22 you, basically I'm looking for that answer. I put a team  
23 together to do that. I'm waiting for that answer. I'm  
24 getting the estimate from that team. I can get -- I'm  
25 hoping to see something by December, early summer, early

1 summer, late spring. I can't guarantee you until I get  
2 it from the team, so I don't -- it's a judgment call.

3 MR. SKINNER: Other questions? Comments?

4 MR. McBRIDE: Let me add, the strategic plan, I  
5 liked it, and we had a discussion about it, Mike, and I  
6 as well, but without that implementation plan it's  
7 good will and best wishes which, you know, hope is not a  
8 strategy. So we need to see on those, to me, the  
9 specifics of how you accomplish them and in what time  
10 frame and by what means. That's an essential part of  
11 forward thinking.

12 MR. SKINNER: Admiral.

13 REAR ADMIRAL WEST: Dick West. Last week I served  
14 on the Federal Advisory Committee to NOAA and  
15 another visionary down in Louisiana. A couple of years  
16 ago this group met, I think it was in Houston, and we  
17 reviewed how NOAA participated in the recovery of  
18 Katrina. We were very happy with what they did.

19 And Jack Kelly said, "And this is going to be in  
20 this pros and con report." As far as I know, that never  
21 came out.

22 Last week we looked at some other aspects of what  
23 NOAA did in that area. It was superb. When we left on  
24 Friday, one of the things we said we were going to go to  
25 NOAA leadership, got to get the word out how good you are

1 and important you are in the field. And I looked at  
2 improve public awareness and increase the use -- you say  
3 navigational, blank, and leave that blank. That's true  
4 across NOAA. You get out in the field and they're  
5 wonderful, but you guys have a hard time getting the word  
6 out.

7 And Jack Kelly sat right there and get it out and  
8 said, "We're working on that." That was two years ago.  
9 And every time we go to a stakeholder -- we love money  
10 and we want more money from NOAA, but, you know, you have  
11 got to, you know, not beating you up, Jack, but when you  
12 take this bat, when you and all those folks have got  
13 to -- that's an important key thing.

14 Right now we have got a new administration coming  
15 in. The more people know about how important you are the  
16 more you stack. Okay. Thanks.

17 MR. SKINNER: Thanks very much. Sherri. That's  
18 great. And Gary.

19 DR. JEFFRESS: Well, the first thing, I did want to  
20 review this. It was sent out to everyone on the panel  
21 and I got three responses: Myself, Matt and Andy.

22 And in my response how I wrote it up, the first  
23 thing I did was to compliment NGS on the work they do and  
24 how critical it is to the whole entire geospatial  
25 industry.



1           And if you did an analogy with a boat, NGS would be  
2 the keel and the hull and the Plimsoll line for the  
3 maritime industry, you wouldn't be afloat without it,  
4 right.

5           So in terms of the strategic plan, it was very  
6 succinct. It was only two pages. We made a couple of  
7 comments. They left off the dates, so we ought to put  
8 the dates on there.

9           It mentioned "CORPS" a lot. It wasn't very well  
10 defined, so we asked them to define or put in a  
11 definition of what the CORPS system is. It's a critical  
12 component of NGS's work.

13           And VDatum, we didn't see the term VDatum in this  
14 plan. And we mentioned to the panel it's a critical new  
15 component of integrating topographic mapping and coastal  
16 mapping and bathymetric mapping. So we'd like to see  
17 that highlighted in the strategic plan.

18           Coastal mapping plays an emphasis on three days'  
19 testimony and what the implications of that is in terms  
20 of managing the coast, particularly in relation to sea  
21 level rise and hurricane storm surge indication and  
22 tsunami indication models.

23           And the last bullet, we wanted to change the wording  
24 to maintain recognized global leadership in the  
25 geospacial community and replace that with instead of

1           become a recognized global leader. I'm of the opinion  
2           and I think the rest of us are that NGS is a global  
3           leader.

4           And actually when I was being trained as a  
5           surveyor back in Australia, a lot of the standards that I  
6           was taught emanated back then from the U.S. Coast and  
7           Geo survey. So you've been a leader in this field for a  
8           long time and congratulations, Dave, you do a great job.  
9           That's all.

10          MR. SKINNER: Dave.

11          MR. ZILKOSKI: With that comment, the fact that you  
12          only got three was good.

13          No. We started with our 10-year plan that passed  
14          through the Committee. So we actually have a little bit  
15          more detail. And our process is -- we have a 10-year  
16          vision of where we wanted to be and that had a little bit  
17          more detail. Things would probably be a little bit  
18          easier with the strategic plan, because you kind of knew  
19          where it was going, but I'll follow-up to some of your  
20          other comments about -- in realities, the implementation  
21          plan is what's really going to be of interest to people,  
22          and we realize that. And inside NGS we have a planning  
23          process that we're now -- we use this strategic plan, we  
24          use our 10-year plan for what we do every year, and we're  
25          putting those together, and we're actually looking at

1 saying what's our one to three year implementation plan,  
2 if you will.

3 I mean you can control things in the first and  
4 second and maybe your third year, but after that reality  
5 you don't really know what you're going to do in your  
6 fourth and fifth, so we're focusing on that.

7 So that will be a document that will come forward  
8 again saying here's what we're doing, you know, this year  
9 and next year and the year after that to meet this  
10 strategic plan as well as it meets the 10-year plan. So  
11 that document will come forward also. I appreciate  
12 people looking at it.

13 MR. SKINNER: Thanks, Dave. Are there other  
14 comments?

15 MR. WHITING: I have this one comment in general.  
16 On all three of them, the only plan I read word-for-word  
17 was the NGS plan. The other two I kind of skimmed over  
18 and they were too long for my short time frame that I  
19 had, so I would shorten all of them to some specific --  
20 maybe add a little bit more to yours. That's what I'd  
21 say, but --

22 MR. SKINNER: Thanks. Any other comments? Great.  
23 We, once again, appreciate the panel members taking the  
24 extra time to provide the feedback and also to the  
25 various offices for both helping out and listening and

1 integrating the comments into the final plan. So thank  
2 you very much.

3 I think you're up with the CLPS.

4 MR. WELLSLAGER: Thank you, Tom.

5 *ed wells:* Ashley, are we going to pick up Gary's -- okay.

6 Unlike the previous discussions, the document that I'm  
7 going to be speaking of was not in draft form. It is the  
8 navigational strategic plan that was put together by the  
9 committee for the Marine Transportation System.

10 And many of you will remember that at prior meetings  
11 we've had representation from the committee, *Brill* the CMTS as  
12 they call themselves, either from Helen Rowell (sic) or  
13 Gary who briefed us on their activities. And they would  
14 have liked to have come today, but they've been pulled in  
15 about four different directions so they send their  
16 regrets.

17 But just to familiarize people, if we need  
18 familiarization, the MTS, of course, is a broad system of  
19 various types of marine transportation and its various  
20 components.

21 And the CMTS is an inter-agency governmental entity  
22 with, I think, 18 different types of representatives from  
23 different departments and agencies and other folks within  
24 the federal government.

25 NOAA is a member of the CMTS, and it has a small

*Broke*  
1 staff headed by Helen Rowell, and it's supposed to get  
2 input from these different agencies and come up with  
3 general strategies for dealing with CMTS problems and  
4 coordinate the activity of these various agencies.

5 And this talks about how NOAA participates in CMTS  
6 with Jack being the primary person, I guess. The CMTS  
7 has a number of different types of things that they look  
8 at. We'll get back to that in a minute.

9 And so one of the things that they've been working  
10 on in the, I think, probably the year and-a-half is to  
11 develop their own navigational strategy government  
12 document that will map out their future activities.

13 And so this summer they finally got approval and  
14 released their navigational strategy, which is about a  
15 55-page document, and it's up on their web page, if  
16 anybody who cares to go through it.

17 And so I went through it and I had put a memo to  
18 folks in your folders that has my take on this, on this  
19 strategy, and my memo is not an attempt to give an  
20 unbiased review of the -- I'm not trying to shorten the  
21 document into a summary form for us.

22 I went through it and said let's focus on the types  
23 of things that we and this panel are particularly  
24 interested in, what does this document have to say. So  
25 that's the tenor of my memo.

1           The strategy struck me as a somewhat awkward  
2 document, if I could say so. It looked like it had been  
3 written by a committee. It spent more time on some  
4 subjects than it did on other subjects. I couldn't quite  
5 see what the rationale was for devoting more discussion  
6 to some subjects and less to others, but it did identify  
7 a variety of areas that it needed to discuss. I think it  
8 had five different areas. Let's go to the next line.  
9 Yeah, here are the areas.

10           So the discussion is supposedly divided into these  
11 types of areas, and within these various areas there are  
12 a number, I think, 34 recommendations for various types  
13 of general actions to be taken.

14           So my document, which is a four-page document, is  
15 going through sort of focusing on these actions and  
16 saying which of these say something about the programs  
17 that the HSRP is involved in.

18           And so, for example, they spent -- out of a 55-page  
19 document a full two and-a-half pages talk about Arctic  
20 transportation, which, of course, we're interested in and  
21 we've talked about it, but that seemed to me kind of  
22 disproportionate, the amount of time in that type of a  
23 document.

24           Then they had a very nice discussion, which I've  
25 reproduced in total, about the need for various types of

1 maritime data.

2 Well, this panel couldn't have written that much  
3 better if we had written it ourselves. And seeing how  
4 Helen had a lot to do with writing it like we did write  
5 it ourselves, Helen, of course, being a former member of  
6 this panel, and basically there are a variety of things  
7 in this document, some greater in scope, some lesser in  
8 scope, that we could use, we used to advocate the types  
9 of things we're advocating.

10 So, in that sense, the document I think we ought to  
11 use as a reference point and maybe on occasion refer to  
12 it when we're communicating with NOAA or communicating  
13 with CMTS or communicating with anybody else in  
14 government, because it is a way of us evaluating our own  
15 particular arguments.

16 Now, and I'm not going to go through everything I  
17 put in my document, but if you skim through it you'll see  
18 the types of things that are of interest to you or to us  
19 as a whole.

20 Let's run through the rest of Gary's slides real  
21 briefly, and I'll highlight anything and let's keep  
22 going. These are just examples of the types of things  
23 that they have for action.

24 Let's keep going. Let's just keep going.

25 Gary gets specific here on some of the types of

1 things. We can dispense with the rest of this.

2 Now, what are they going to do with this document?  
3 Again, it's a strategy document. So the question is what  
4 is the strategy unless they come up with an  
5 implementation plan.

6 And the CMTS plan is developing some type of  
7 implementation document right now, and I don't have a  
8 draft form of it, but it's supposed to be more specific  
9 recommendations to the various CMTS agencies or to all of  
10 them as a whole as to how to carry out some of the things  
11 that are in this strategy document.

12 And they are hoping, and this is supposed to be on a  
13 much more specific level than the strategy document, they  
14 are hoping, the staff, to present some kind of a  
15 finalized document to the CMTS group in early September,  
16 September the 9th. So that, to me, suggests --

17 MR. DUNNIGAN: December.

18 MR. WELCH: Well, I think they've got -- I think  
19 they're trying to draft something in maybe preliminary  
20 form by early September.

21 MR. DUNNIGAN: You said September. It's already --

22 MR. WELCH: Right. I see. I got you. I'm a little  
23 bit slow here. Okay.

24 But anyway, this, I think, presents some opportunity  
25 to NOAA, Jack and Steve, and if there are specific things



1 that you can suggest that ought to be in that  
2 implementation plan presented to CMTS and you have the  
3 freedom to make those recommendations, if you have not  
4 already, that seems to be a good opportunity.

5 And then the only other thing that I have as a  
6 result of this report, what will CMTS do beyond that.

7 Obviously, they're looking to the transition with  
8 some uncertainty, because the CMTS really is not  
9 particularly institutionalized. And so it could be  
10 considered to be perhaps a little bit vulnerable to the  
11 attitudes of a new administration.

12 And after talking with the CMTS staff, it may be  
13 that this panel would like when we start talking about  
14 the transition and whether we, as a panel, want to have  
15 input into the transition, whether we might want to  
16 make a recommendation to the transition team or to the  
17 incoming Secretary of Commerce to continue to participate  
18 in CMTS, continue to endorse the role of CMTS, perhaps  
19 even to advocate that CMTS be given a further footing  
20 either by means of an Executive Order by the new  
21 president establishing it, or even a better thing by  
22 having an authorized and a statute passed by Congress.

23 So if there's some interest in that, I'll probably  
24 draft up something as the day wears on for a possible  
25 recommendation to that effect from the panel.

1           So with that, I'll be glad to respond to any  
2 questions or comments. Thank you, Tom.

3           MR. DUNNIGAN: Well, Ed, thank you very much for  
4 taking the time to do this and summarize the latest stage  
5 here. The coordinating board of the CMTS will be in  
6 Washington on December the 9th, and that's what they're  
7 getting the papers ready for.

8           From our standpoint, there are a number of  
9 ongoing things, as I said, that are happening on an  
10 implementation side.

11           For example, the CMTS has been operating under a  
12 series of integrated action teams, and right now the most  
13 active of those is the action team on integrating  
14 technology.

15           And so that's what we were talking about this  
16 morning when we talked about the Tampa Bay pilots on the  
17 integration of PORTS data and AIS. That's being done  
18 under the actions of the AIS, and they have about 14  
19 other projects that are related to the actions that are  
20 in this strategy.

21           So there are those things that are happening, but  
22 the biggest problem that I see and that I could use some  
23 help on is trying to understand among these 34 actions  
24 which are the highest priority, because we can't  
25 obviously just jump in and say, you know, we're going to

1 write ourselves an action plan, we're going to do all 34  
2 of these things within the next 12 months.

3 Well, they're probably all going to take somewhat  
4 longer than that, but from a NOAA perspective -- I won't  
5 be able to be at that meeting, but from a NOAA  
6 perspective and a Congress perspective what do we want to  
7 have our leadership moving forward with as a part of this  
8 implementation in terms of where is the priority, what do  
9 you want us to do first. That advice would be helpful.

10 MR. SKINNER: Thanks, Jack. Other comments?

11 Ed, thanks again for taking a look at that, and I  
12 think it would be helpful to have -- if you would draft  
13 up some language for this afternoon, that would be great.

14 MR. WELCH: Okay. I will do that. Okay. One  
15 intangible of the CMTS is that it's completely apart from  
16 the structure of it all. The staff people involved are  
17 another locus within the federal government that actually  
18 has some understanding and in appreciation of the various  
19 types of hydrographic services.

20 There aren't that many places within the government  
21 where they're appreciated, at least for now that's true  
22 over in the CMTS section.

23 MR. SKINNER: Thanks again, Ed. I think that's  
24 very helpful. I also like the idea of using the CMTS  
25 report as a reference point for some of our -- that's a

1 good point to show some of the cross pollination.

2 John, I think you're up.

3 MR. DASLER: My comments are on the National Ocean  
4 and Coastal Strategic Action Plan. Some of these  
5 probably weren't as well-vetted as some of the others, so  
6 I'll provide further comment as we go through this.

7 Overall, HR people believes this action plan is in  
8 line with the recommendations we made and provide a more  
9 coordinated mapping front across agencies.

10 And I know I think specifically in the economic  
11 climate that lies ahead pooling the resources to have a  
12 more unified mapping front makes a lot of sense, and it's  
13 hard to argue with that, and we applaud that effort.

14 And just in going through this a little bit, in the  
15 beginning some of the same comments I think were raised  
16 in some of the other reports that you could use some  
17 words, especially in the beginning was a little  
18 difficult.

19 There's a lot edited in the beginning, and in trying  
20 to clean that up you might start losing some people after  
21 awhile, but as you start getting into the meat of it  
22 there is a lot of really good statements in there that  
23 really state the case for the need for this.

24 Some comments under the short-term objectives  
25 establishes an outreach team and seems, to me, having a

1 vehicle for dissemination of survey areas well in advance  
2 of operations near its stated year. It probably needs to  
3 be longer than that. And not only for government  
4 agencies, but also for the other communities that mapping  
5 programs are going into to find out in advance where  
6 there's additional areas that might be added to a survey,  
7 what are the other needs, data that could be acquired.  
8 So there could be a more comprehensive planning program.

9 An example of that is we're doing some work on the  
10 Columbia River now for surveys and we're about halfway  
11 into it and we saw solicitation come out from the lower  
12 Columbian estuary program to map some of the same areas  
13 that we're mapping and some of it goes into it.

14 So we're working now with them and trying to  
15 coordinate that and share data and we have been talking  
16 with Roger about that.

17 I think a lot of the communities don't realize when  
18 there's programs coming up and finding some vehicles, I  
19 know that, but part of that plan, I guess, should be come  
20 up with some kind of vehicle that they -- you can get  
21 information out to these communities and other agencies.

22 Also the Corps of Engineers, we're all there running  
23 the surveys and, of course, they're passing us. We're  
24 passing each other as we go.

25 As a hydrologist, I understand why that happens when

1 they're not doing the surveys, the standards needed for  
2 charting updates, but as a taxpayer it raises some  
3 questions. I think just having that coordinated effort,  
4 I think, would alleviate some of those concerns.

5 And I don't think the district was aware of that  
6 program. They weren't aware we were redoing it until we  
7 started the process of demonstrating and build upon  
8 success.

9 I think probably the best thing that in moving  
10 forward is lead by example if NOAA can perfect the  
11 internal mapping effort among fisheries and coastal  
12 survey.

13 I think Steve had mentioned fishery people are on  
14 the NOAA survey ships and there is a potential for  
15 hydrologists going on board some of the fishery vessels.

16 Some of their instrumentation might not be up to  
17 charting standards, looking at that, but more importantly  
18 I guess following procedures that those can be done to  
19 charting standards.

20 So, again, starting internally and building from  
21 there seems like a pretty good approach to make this  
22 happen.

23 A few concerns were raised regarding that lack of  
24 teeth in the action plan, like how is it getting funded,  
25 where are the lines of authority in moving that forward

1 and accounting at a high level and how that comes into  
2 play. So there is the interagency working group and the  
3 authority that it operates under.

4 You said how is that funded and can that funding  
5 then be used to provide money for coordination of federal  
6 mapping. So I think really to get some of this started,  
7 it would take seed money.

8 So it would take then authority within that group to  
9 authorize that and move projects forward, and I think the  
10 main goal, even though it's going to take some seed money  
11 to start, the objective would be that overall you're  
12 going to have more efficiency in mapping operations than  
13 a coordinating effort that would recover that.

14 It's going to take some funding to do that. Roger  
15 sent around some information. He's sent a charter for  
16 the IWGOCM.

17 One of the things we did notice in there was it's  
18 due to expire in March of '09, but anything -- we can get  
19 just re-upped signatures from the co-chairs that are on  
20 that.

21 And the other information he passed around is the  
22 S-39 Association and Coastal Exploration and NOAA Act or  
23 Ocean Act addresses some of the funding issues and also  
24 HR 2400, which is the coastal mapping integration map,  
25 which establishes NOAA's coastal program and authorizes

1 funding to implement that.

2 But from what I can see, it passed the House, but  
3 it's stalled now and it would be nice to get an update on  
4 those moving forward.

5 And I guess that's a question I have, is it looked  
6 like there was some funding opportunities through the  
7 HR 2400. Is that what that funding would be used for to  
8 help seed this integrated effort, or maybe if Roger comes  
9 back we can get an update on some of this.

10 Thank you.

11 MR. SKINNER: Thanks, John. Any comments or  
12 responses? Concerns? Questions?

13 CAPTAIN BARNUM: Thank you, John, for reviewing this  
14 and ISM. International coastal mapping is certainly an  
15 effort that NOAA is working towards and we have some  
16 small successes.

17 But as you point out, there's no dedicated funding  
18 for this. So it's a coordination of efforts not only  
19 within NOAA but across agencies and certainly to the  
20 larger picture involving some of the smaller players like  
21 you identified.

22 So I know that with IMEG they were trying to scope  
23 out their issue and just trying to get the federal house  
24 in order, if you will, and that's easily based on one  
25 stop as an opportunity to broadcast where people intend



1 to survey and take advantage of those opportunities,  
2 but as far as Congressional language, I think it's  
3 anybody's -- as this session closes, I think it's dim  
4 anything is going to happen, but it was something in the  
5 Ocean Action Plan.

6 Of course, we're going through transition and where  
7 that's going to lie in the new administration is  
8 anybody's guess, but I would -- hopefully, it would be a  
9 significant continued activity. Thank you.

10 MR. ZILKOSKI: Something that a lot of people may  
11 not realize, I don't think anything was written in that  
12 document, and it has since a working group. It involves  
13 all of the program offices and there's also NOAA offices.

14 So we're trying to internally do the stuff you're  
15 talking about, the coordinating mapping effort, inside  
16 NOAA.

17 We've been doing some demo projects, but we clearly  
18 have to put something more and institutionalize it, but,  
19 yes, that's a good point to make about that.

20 The other aspect of it is letting people know. If  
21 you've got any suggestions how to do that, please let us  
22 know. It is so difficult.

23 When I attended one of the working group meetings,  
24 actually Mark Luther was part of that too where we had  
25 the strategic plan in process, but what you needed to do,

1 and there were projects -- when we got this small group  
2 of people together, they just didn't know what was going  
3 on, and these people were the ones that were developing  
4 this, you know, the coastal mapping program, and it's  
5 just so difficult just to keep everybody informed.

6 Part of what we have done, and maybe this is just  
7 like a federal adjudicated sub committee which I shared,  
8 we meet and we talk about what our plans are, but even  
9 there kind of posing that is difficult.

10 So maybe that's some aspect of some kind of posing  
11 that you do meet, and part of the meeting is to talk  
12 about what's existing out there.

13 Short of that, you still have to disseminate that  
14 throughout the organization. I mean NOAA and the Corps  
15 meet and talk about some of those projects, but if we  
16 don't distribute it back through our own organizations  
17 you could be still surveying next to the Corps because it  
18 just wasn't transmitted.

19 So it's more than just NOAA in that case, but it's a  
20 good point. We need to figure out how to do that.

21 MR. SKINNER: Thanks, Dave. Are there other  
22 comments?

23 John, did you want to add anything for the group to  
24 take action on in addition to the issues you were  
25 raising?

1           MR. DASLER: And I know Roger's not here at this  
2 meeting, but in follow-up I guess on what they think  
3 could be done in terms of getting funding, I think that's  
4 the big issue, is how do you put some teeth into this  
5 thing. It's a great plan. How do we move it forward or  
6 what can be done with a panel in terms of advocating for  
7 it.

8           I think it makes a lot of sense to put some seed  
9 money, like I said, out in front where you could save a  
10 lot of resources that are being spent across agencies.

11           I think what really triggered a lot of this, we're  
12 finding out there is a lot of money being spent to look  
13 at some of the same areas and trying to coordinate that,  
14 but I think it's going to take some money and some action  
15 to get it going, and how can we do that.

16           So maybe Roger can come back and address some of  
17 that and give us some feedback.

18           MR. SKINNER: Okay. I guess I was asking in terms  
19 of as we're developing recommendations for this meeting  
20 do you want to try and propose something for later this  
21 afternoon when we talk about some recommendations or  
22 maybe wait until we hear from Roger?

23           MR. DASLER: Well, I think this was forwarded on to  
24 him and I know that was in a draft form. So just like  
25 the other action plans, he can take those as

1 recommendations from the draft.

2 MR. SKINNER: Okay. Thanks. Elaine.

3 MS. DICKINSON: This is more of a procedural  
4 question, I guess, for Jack. These plans are '09 to '11.  
5 Anyway, what's the deadline for all of these strategic  
6 plans being finalized, and do they have a life span into  
7 the next administration?

8 I mean are they ongoing documents that will be acted  
9 upon by NOAA going forward, or would a new administration  
10 come in and just throw them all out and we're starting  
11 new now and we're going to have another plan?

12 MR. DUNNIGAN: Well, there are a couple of things  
13 that -- there have been -- let me tell you how I view  
14 these documents.

15 These are strategic plans from the major navigation  
16 services business lines that the navigational service  
17 runs. NOAA is going to be committed to continuing those  
18 business lines.

19 So the value of having these is that it gives us a  
20 foundation, a grounding, that we can move forward with  
21 whatever kind of planning and programming at parodyne the  
22 new administration wants to come up with.

23 What we have had for the last seven years is a  
24 strategic plan and programming mechanism that was built  
25 around <sup>goal</sup> gold teams and CTS, C&T rather than one of those

1 gold teams and programs, and, you know, a whole  
2 well-defined process structure.

3 I don't know if the new people are going to want to  
4 keep that, but what I do know is that I want to have this  
5 level of planning from the main business lines that we  
6 have in animated services so I can be responsive for  
7 whatever it is they're looking for.

8 These are living documents and will be used, and I  
9 think put us in a position of being able to be flexible.

10 REAR ADMIRAL WEST: Following up on that, those  
11 are your documents. The CMTS that Ed talked about is an  
12 administrative thing put in place by the OAP, Oceanic  
13 Action Plan, which could go away. And what goes away  
14 with that is all interagency working groups, the JSOPS,  
15 IOOS.

16 All this was put in place by the WP, put in place  
17 with the knot program, which was directed by Congress,  
18 which is law.

19 So this is an administrative thing. So we could go  
20 away or he could -- the new president could adopt any  
21 piece of it that he wants.

22 Would it benefit Jack and Steve if we endorse the  
23 CMTS piece of it, because it helps evaluate data on an  
24 interagency basis what you do and don't throw that out,  
25 in other words, type of recommendation so that's

1 something we ought to think about.

2 MR. DUNNIGAN: Yeah, I think -- I fully agree. I  
3 mean there is a substantial amount of discussion about  
4 the OAP structures and the GST and all these acronym  
5 things that we do.

6 And I for one personally see value in that I see  
7 that there's a lot of value within NOAA with the emphasis  
8 that we've had on this strategic collaboration across the  
9 line programs. We do so much more of that now than we  
10 did before this emphasis.

11 And also I think on an interagency basis the CMTS  
12 has been much more successful than its predecessor, the  
13 IMCTS, because, you know, it actually had some staff  
14 commitment you had some real agency wanting to be  
15 collaborative.

16 One of the fears I have with the new administration  
17 is that, you know, we'll move to our natural stove pipes,  
18 and I don't think that's good. I don't think it returns  
19 value to the people we work for.

20 So I would suggest that you might want to consider  
21 as you're putting your thoughts together on this to have  
22 a statement that says something about the value of their  
23 agency collaboration and strongly recommending that -- if  
24 you believe this, strongly recommending that the new  
25 administration maintain an interest on this in the area

1 of transportation.

2 MR. SKINNER: Other comments? Let's see. We have  
3 a couple of things.

4 One, I want to quickly see if we could approve the  
5 Minutes from the San Francisco meeting. And for that, we  
6 will need a motion.

7 DR. JEFFRESS: I move that we adopt the Minutes from  
8 the San Francisco meeting.

9 MR. WHITING: I'll second it, Larry Whiting.

10 MR. SKINNER: Any discussion?

11 (No response.)

12 MR. SKINNER: All in favor?

13 (Collectively.) Aye.

14 MR. SKINNER: Any opposed?

15 (No response.)

16 MR. SKINNER: Any abstentions?

17 (No response.)

18 MR. SKINNER: Thank you very much. The motion  
19 carries.

20 We have a couple of things. First, we have a  
21 public comment section scheduled for noon. Is there  
22 anyone signed up to make public comment?

23 Is there anyone here that would like to make a  
24 public comment at this time?

25 Okay. We also -- Andy Armstrong agreed to do a

1 brief presentation on right whales. So I think at this  
2 point since that was a hot topic this morning, if you  
3 could provide that, that would be great.

4 MR. ARMSTRONG: Okay. This is a quick presentation  
5 on a project that the joint hydrographic center is  
6 partnered with the Coast Guard and the State of  
7 Massachusetts and Cornell University.

8 So, you know, as we know, right whales and  
9 collisions with ships is a hot issue. And this is just a  
10 map showing the location or a number of years of strikes  
11 of ships on Baleen whales. And you can kind of see some  
12 areas of concentration, a big one, of course, up by  
13 Boston.

14 CAPTAIN McGOVERN: I have a comment on that last  
15 slide. You have some within the Port of New York up  
16 there.

17 MR. ARMSTRONG: I suspect that's in the map. Now,  
18 remember, that goes back to 1979.

19 CAPTAIN McGOVERN: Just so -- you mean what happens  
20 with that, we've had numerous vessels enter the port with  
21 whales across the back, the first time they come back  
22 well into the port and that is where the strike is  
23 attributed, according to the press.

24 MR. ARMSTRONG: Well, yeah. I would say that, in  
25 fairness, those are the positions reported for the



1 strike. Whether they're aware the strike happened or not  
2 is up to conjecture. So thank you for that. I'm sure it  
3 didn't happen inside the port.

4 CAPTAIN McGOVERN: Or the Bay.

5 MR. ARMSTRONG: So recently an issue in a number of  
6 places is LNG offshore terminals. There is a couple  
7 going up in Massachusetts Bay. This is sort of what it  
8 looks like. The ship comes up to a buoy and gasifies the  
9 natural gas and then pumps to a shore.

10 It just so happens that some of these things are  
11 planned in Massachusetts Bay right next to the Stellwagen  
12 National Marine Sanctuary which NOAA manages, another NOS  
13 program. There is a couple of terminals being developed  
14 there. You can see those locations. The purple circles  
15 and the blue circles.

16 We've taken a look at traffic patterns in the area  
17 using AIS information. And so AIS for an individual trip  
18 isn't perfect. We can extract useful information about  
19 ship density and ship type over a particular area.

20 So you can see here the sort of heavy tracks of  
21 ships through the Stellwagen Bank Sanctuary.

22 This is, again, a historical accumulation of right  
23 whale sightings. In this case, it's broken down by the  
24 type, but we can see where over the years the whales have  
25 been known to congregate. And overlaid on that in the

1 lines was the former traffic separation lane, which was  
2 relocated based on this information to the solid lines.

3 So going through a much less dense area of whale  
4 sightings, but nonetheless they're still going through  
5 areas where eight whales frequent. So here's the new  
6 traffic separation scheme overlaid on the whale  
7 sightings.

8 Something important to remember is that these whales  
9 spend a lot of time in the zone of 13 meters or 14 meters  
10 up to the surface. So that you can see over 60 percent  
11 of the time these whales -- any individual whale in the  
12 area with it could be struck by a ship.

13 So we're looking at that with partners here, and  
14 particularly with the terminology, a plan to use  
15 automatic buoys to detect whale calls in the Boston  
16 traffic separation scheme. So right whales in particular  
17 areas have a distinctive sound they can make and they can  
18 be detected on hydrophones that are on buoys.

19 So this is what a buoy looks like. It's got a  
20 hydrophone. There is computer software that identifies a  
21 right whale call, transmits the data to a land base, in  
22 this case Cornell, and then they can tell if it's a right  
23 whale within the hydrophone range of this buoy.

24 So this is some of the software they use. They can  
25 distinguish right whale calls from other whales and other

1 noises in the ocean. They process this data and then  
2 they can make an alert on the presence of a whale.

3 Okay. So, in this case, as a condition to put the  
4 LNG terminal there, the Coast Guard required the  
5 construction and operation of a realtime detection system  
6 that's funded by the LNG carriers, and these buoys were  
7 placed along the traffic separation scheme.

8 So what happens is the buoys detect a call. They  
9 send this detection to Cornell. Cornell then picks up  
10 the telephone and calls the LNG ship in the original  
11 implementation and the ships slow down.

12 So this is a website you can go to if you want to  
13 check out a little more completely how this system  
14 works.

15 So if you go to the website you can then see each  
16 of these buoys. And in this case you can see that  
17 there's been a whale call in the last 24 hours within  
18 five miles, which is the range of the hydrophone of each  
19 of those buoys, and then there's other buoys where  
20 there's been no whale call.

21 So up until recently there was this website but no  
22 way to get the information out to the ships other than  
23 sorted phone calls. Then there would be a right whale  
24 alert and this would be put out in a broadcast notice or  
25 something or get in the mail and somebody would get it

1 three days later, or a fax might not get through, but  
2 this project now is sort of a new approach to that.

3 Okay. So what we do is work with the Coast Guard  
4 and the AIS system so that the buoys and the radius can  
5 be displayed on an electronic chart display in realtime.

6 So here is a picture of that. That's been labeled  
7 in Google Earth here to show in this case a Raster chart.  
8 It can be an ECS as well as a vector chart. So you see  
9 each of the buoys are all green. There's no whales  
10 there.

11 Okay. So what happens, we hear a whale within the  
12 radius there. A signal goes out. An AIS turns that  
13 circle red or yellow, depending on the color, and then it  
14 starts a 24-hour countdown.

15 Okay. So then another one comes on, you know, a new  
16 24-hour countdown starts on that circle. We go on here,  
17 okay, then 24 hours is up, the color warning turns off  
18 and now the ships can resume their regular speed.

19 So here's the same display on a vector chart. This  
20 is not an ECDIS system, but this is on S57 ENC data. So  
21 that ENC data that could be displayed on any ECDIS system  
22 provided the manufacturers build these provisions to do  
23 that.

24 Incidentally, these things could be built to carry  
25 around an LNG carrier in a safety zone. It's a fairly

1 simple matter to send a single -- to make a signal on the  
2 AIS system.

3 Okay. That's it. So the thrust of this is that the  
4 ships only slow down below ten knots when there's a whale  
5 within the circle of radius detected by the hydrophone.  
6 The rest of the time they go at -- in this case, there's  
7 another agreed-upon speed, but higher than the ten knots.

8 DR. JEFFRESS: Andy, were all the collisions fatal?  
9 Were they fatal?

10 MR. ARMSTRONG: Yeah. The bottom line is, yes,  
11 almost all of them are fatal. There's a sense that any  
12 strike above 12 knots on a right whale is going to be  
13 fatal.

14 What happens, it breaks their jawbone, but there is  
15 another project that UNH is doing which is sort of  
16 modeling ship/whale interaction with models of the whales  
17 and models of the ships and models of the jawbone, but  
18 the funding has run out for that.

19 DR. JEFFRESS: And as the ten knots is -- that means  
20 it's a survivable collision or the whales have time to  
21 get out of the way?

22 MR. ARMSTRONG: The theory is below ten knots the  
23 collision may be survivable. There is a lack of -- I  
24 would say there is a lack of data to sort of  
25 scientifically say what speed, what size ship, what

1 manner of striking the whale, but I think the feeling is  
2 that the whale would have a chance below ten knots and  
3 not above ten knots. But that's not my field, so I'm  
4 reluctant to go too far into that.

5 MR. SKINNER: Admiral.

6 REAR ADMIRAL WEST: Andy, was that all funded by the  
7 LNG Association?

8 MR. ARMSTRONG: Yes, it was totally.

9 REAR ADMIRAL WEST: Well, interesting, because if we  
10 are looking for funding miles of oceans, I think we might  
11 have found a piece of that.

12 People who benefit -- if you want to come here  
13 you're going to put this in, but it applies to a lot of  
14 things we're talking about as far as the unemployment  
15 capability of, you know, all of these system works and  
16 regional observing systems and all of this other stuff.

17 So who maintains the long-term of this? Are they  
18 numb now or somebody has to pick it up or how does it  
19 work?

20 MR. ARMSTRONG: Well, the long-term setup is a  
21 combination of the Coast Guard infrastructure, the  
22 Cornell lab, and the UNH AIS transmitters and coding.

23 REAR ADMIRAL WEST: But if it works, it obviously  
24 should move up and down the coast, surround the East/West  
25 Coast, all around the town.

1           So who pays for it then? Go back to maybe helping  
2 out how we model paying for all this stuff, what gets  
3 funded first and whatever.

4           MR. WELCH: If I can add a couple of things.  
5 Actually, I was at a meeting last week and they gave a  
6 presentation by the Stellwagen people and also the people  
7 that are doing -- the hardware company. I can't remember  
8 what their name was, but, first off, I can't remember the  
9 amount that they gave us. This is really expensive  
10 stuff. I mean most people could not afford it, but these  
11 LNG people can afford it. So you are not going to find  
12 deep pockets like this.

13           I think they would have gotten off cheaper if they  
14 had agreed to fund all the PORTS systems around the  
15 country, you know, for us than if they had funded this  
16 particular acoustical buoy system for the right whales.

17           The rulemaking for the right whales has just gone  
18 into effect. It's been extremely controversial. The  
19 proposed rule was held up by White House Management and  
20 Budget to acquire half and subject to lawsuits and was  
21 actually an example, number one, of a bunch of groups  
22 that were sliding improper political interference in the  
23 normal rulemaking process, but it actually has finally  
24 been implemented and a final ruling will be in effect in  
25 five years.

1           It will have to be after that, but there is one  
2 weakness to this system in the sense that the whales  
3 actually have to make noise before their presence is  
4 picked up.

5           Now, my understanding is they make noise frequently  
6 enough that they're usually picked up, but it's not --  
7 it's not foolproof. You can have mute whales, silent  
8 whales.

9           MR. SKINNER: Just to get back to the issue, and  
10 for full disclosure, I was actually one of the  
11 consultants on the Northeast Gateway Project and part of  
12 the mitigation included the O&M for the buoy system over  
13 a 20-year period, which I believe was approximately \$20  
14 to \$25 million. Does that sound right?

15           MR. ARMSTRONG: We have the AIS and the display part  
16 of the system, so I couldn't say what the rest of it is.

17           MR. SKINNER: I believe between 20 and 25. The  
18 second project would split that amount in half if it  
19 became operational, so that was the setup.

20           There was also -- you talk about funding, IOOS  
21 through this process is part of the state mitigation  
22 package. This is a little bit where it's interesting.  
23 The state required mitigation for impacts in federal  
24 waters.

25           There was for both projects \$1.2 million to the



1 GOMU system, and then I believe the same amount to the  
2 state fisheries for their buoy system, all of which were  
3 supposed to be in action.

4 Just as a side note, Kirk Swear (sic) from -- I  
5 believe he works with you, Andy, gave a presentation on  
6 this to the Port Outriggers Group in Boston. It was very  
7 well received from the Stellwagen Bank, who was a  
8 frequent presenter and has done some amazing work and  
9 someone we work with closely on the project. So  
10 unfortunately Jack's not here, but they were very  
11 excellent people to work with on the project.

12 MR. McBRIDE: Adam McBride speaking. Andy, just a  
13 couple of key questions. The numbers of right whales  
14 sighted or observed was about 900. It was only a tiny  
15 fraction of all of the whales.

16 Of the right whales, is that only one that makes a  
17 sound or are the other ones unprotected in this process?

18 And the second question I have is, is there a  
19 presumption only LNG tankers strike whales, or do other  
20 vessels strike them as well?

21 MR. ARMSTRONG: Well, I'm somewhat disconnected from  
22 the policy and politics on this. Maybe Tom is in a  
23 better position to answer those questions than I am, but  
24 I think that the issue is that the right whales are the  
25 ones that are severely endangered at this point, and thus

1 are the most significant problem in terms of impact. And  
2 what was the other half of the question?

3 CAPTAIN McGOVERN: Is it only LNG tankers?

4 MR. ARMSTRONG: In this case, this was a specific  
5 mitigation and requirement for permission of LNG carriers  
6 to put this in so the LNG carriers paid for it, and  
7 they're the only ones who are bound to use it officially  
8 and probably the only ones who are actually doing  
9 anything with it.

10 MR. WELCH: Actually, there's no record or even any  
11 inference that an LNG carrier has ever struck a right  
12 whale. The records of strikes are mostly inferences.  
13 There are a handful of documented strikes, vessel  
14 strikes. There are a lot of others that are suspected.

15 The greatest offender of actual documented strikes  
16 of right whales is the federal government, the Navy and  
17 Coast Guard. There are only two.

18 Well, there are only --

19 REAR ADMIRAL WEST: That is truly unfair, because  
20 the only thing you can verify is using afterwards the --  
21 you'll find, if you go look at those, most of those were  
22 merchant vessels.

23 MR. WELCH: I understand.

24 REAR ADMIRAL WEST: I'm taking you to the Supreme  
25 Court.

1           MR. WELCH: There is a difference between actual --  
2 first, the federal agencies are -- everybody is supposed  
3 to report a strike, but I think it's probably clear that  
4 the federal agencies, if there is a strike, they report  
5 the strike whereas the other people may or may not.

6           But the bigger point I was trying to make is there  
7 are only a very small number of strikes that occur where  
8 people know for sure where it took place, when it took  
9 place, and what type of vessel it was, and then there are  
10 a lot of suspected things.

11           And I don't mean to say there's not some evidence  
12 there, but it's a little bit more ambiguous. We're not  
13 talking about a huge number of strikes, but we're also  
14 talking about a very tiny number of right whales there.

15           I mean the scientists say there are about 300, give  
16 or take, right whales in existence in the Atlantic. And  
17 the scientists also say any man-made fatality,  
18 man-caused fatality, basically jeopardizes the long-term  
19 existence of the species.

20           The other cause of man-caused deaths are tying them  
21 up in fishing lines. And there have been a whole bunch  
22 of regulations on the commercial fishing industry as to  
23 the type of gear and they pull it and when they can do  
24 it.

25           MR. SKINNER: Did you have --

1           CAPTAIN MCGOVERN: Just a couple of follow-up. They  
2 are -- our Safety Committee was approached by New York  
3 State DEC, which is looking into these buoys, to put  
4 two lines of them on one point north, one point south.  
5 So they will be able to potentially detect the  
6 migrating.

7           Our most Atlantic ports, it's a migration issue.  
8 I'm not quite sure of what when Andy talked about these  
9 speeds, because there are seasonal management areas, two  
10 different types. I'm very "up" on these, on the  
11 rulemaking.

12           There is a seasonal management area and a dynamic  
13 management area, and these buoys are only really for the  
14 dynamic areas. Seasonal management areas, it's 10 knots  
15 during that entire season.

16           The dynamic management area is when they detect the  
17 whale and then you have this slow-down in that area, and  
18 so that's what we're looking at for that.

19           But, you know, my objection to that one slide was  
20 that, you know, we've gone on board, had ships entering  
21 the Port of New York and seen this whale carcass draped  
22 across the bow and when you get up on the bridge, Hey,  
23 Captain, you know you got a whale on the back.

24           And they say, Gee, I was wondering why about two or  
25 three days ago we started losing a knot, you know, and

1 that's all they knew about it. It's just they started to  
2 get some extra drag.

3 But then again, it's attributable to the first time  
4 you back a ship is generally off the dock and that's when  
5 the whale carcass falls off, and that's when it makes the  
6 news and the report goes in another whale in New York Bay  
7 or in the Hudson River. It's not where it happened, but  
8 that's where it was reported.

9 We have never seen whales in New York live once,  
10 shall we say in New York Bay.

11 MR. ARMSTRONG: In defense, the right whales are a  
12 set of whales that live very close to human activity near  
13 ports, so they do get pretty close to the ports in our  
14 region, sometimes in them.

15 But, yeah, I think it's fair to say that that's  
16 where -- the report had a figure, not necessarily where  
17 the strike was.

18 CAPTAIN MCGOVERN: On the other hand, the latest DIS  
19 came out and didn't talk about these bow incidents, as Ed  
20 said.

21 The fact that you don't -- it specifically says the  
22 fact that a whale has not been detected by the buoy means  
23 there aren't whales in the area. It just means they  
24 haven't been detected, because they haven't made enough  
25 noise to be detected.

1           So that is one of the issues, is how good are these  
2 really. But, again, the State of New York is looking  
3 into putting a line of them going north and south so that  
4 when we go into the dynamic management season that we  
5 would be able to better detect them, better manage that  
6 part of the rule.

7           REAR ADMIRAL WEST: I assume Cornell is part of  
8 this, because I think this is true, federal government  
9 funds them to be the repository of all ocean sounds and  
10 literally that's their job, and I take NSF.

11           So if you ever find a weird sound, you send it to  
12 them and they can tell you what it is, right?

13           MR. ARMSTRONG: Yeah. Cornell has a buoy acoustic  
14 lab that is sort of the interpretation piece of this  
15 puzzle.

16           CAPTAIN MCGOVERN: One more. As was mentioned  
17 earlier, West Coast beware, because this will come out  
18 there. I mean that's -- they're shaking in their boots,  
19 because they realize once they get through with the  
20 lawsuits on the East Coast, it will move to the West  
21 Coast.

22           CAPTAIN JACOBSEN: Yeah. It started to happen. We  
23 had blue whales come down, quite a lot of them, so we had  
24 a couple of strikes. One came in across the bow,  
25 unfortunately. We were up in helicopters that record the

1 pods, send it back, the GTS calls the ships to tell them  
2 detour around certain areas.

3 MR. SKINNER: Any other final comments?

4 MR. DUNNIGAN: So as we go to lunch, let me add this  
5 to the category of comments that you're going to regret  
6 you made as soon as you said them.

7 There are also similar issues and acoustic issues  
8 from the operation of ships in the ocean, it's not just a  
9 question of strikes, and the impact that ocean noise has  
10 on animals.

11 It's not just a question of the Navy doing testing.  
12 We're just talking about the sonar signatures of ships  
13 and their proposal plans running through the water. And  
14 there's research being done on the impacts this has on  
15 whales and other marine mammals.

16 And at some point, it's going to come to a level  
17 where we're going to have to talk about it. So just why  
18 don't you keep that in mind, that it's just not just a  
19 question of strikes.

20 I think the next big area of controversy here is  
21 going to be acoustics in the water.

22 REAR ADMIRAL WEST: Most of you know that the Navy  
23 was taken to the Supreme Court -- I mean up to the  
24 Supreme Court last week after several years in the  
25 Supreme Court ruling in favor of the Navy. I've been a

1 critic of the Navy. I love green, mammals, and all sides  
2 of it.

3 The problem with it is we don't have enough  
4 scientific data to stand in front of somebody and tell  
5 you this is absolutely what's going to happen.

6 Joe Reynolds, who runs NRIC, and I have had  
7 this discussion. If you keep pressing this in the court  
8 system, sooner or later the DOT has no choice but to keep  
9 bumping it up. So it finally got to the big guys, and  
10 there's no scientific data to say one way or the other.

11 So we're going to have to put more money into the  
12 interface between human ships. The backyard noise in  
13 shipping alone is the number one problem. It's not  
14 sonar. We kill over 150, 160 now, let alone one or two  
15 that gets picked on.

16 So they've got this perception that the Navy pings  
17 mid range, by the way, not to lower it to upper range,  
18 and every time this pings a whale rolls over. That's  
19 baloney.

20 There is another bill, it's actually going with me  
21 right now, to put some money into this relationship  
22 between noise sonar, whatever, noise in the water and  
23 limiting marine resources.

24 So it's a big issue and now that you've broken the  
25 ice here with doing things to mitigate that, it's going



1 to come out big time all over the place. It's going to  
2 be part of every port, and enough said.

3 MR. SKINNER: With that, can we adjourn? Or what do  
4 we do? Recess? Recess, thank you, and have our group  
5 photo up front. Is that where you want it? Okay. And  
6 then lunch.

7 *(There was a luncheon recess taken at 12:40 p.m.)*

8 *(The session resumed at 1:30 p.m.)*

9 MR. SKINNER: One of the things I forgot to mention  
10 when I was going over the agenda was Frank's presentation  
11 on PORTS data, the individual PORTS data into AIS, which  
12 is the next presentation. And I think we'll just have to  
13 move ahead and hope that everyone comes back in here.  
14 Mike, if you wouldn't mind.

15 MR. SZABADOS: You want to start or wait a few  
16 minutes? It's your call. I don't want to get too far  
17 behind here.

18 MR. WHITING: They're going to have more input into  
19 this, at least Sherri is.

20 MR. SZABADOS: Okay. This presentation actually was  
21 prepared by Garrett White, my program manager, who  
22 unfortunately had a family issue and requested that I  
23 give the presentation.

24 First of all, let me just say that I am familiar  
25 with the work that he's doing and also in the early phase

1 in. I'm quite familiar with the process.

2 A little historical background of this. NOAA  
3 worked with the Coast Guard back in late 1990s on the --  
4 not the design, yes, but when they were looking at a  
5 design we worked with some prototypes in New York and in  
6 Tampa.

7 In New York was Lockheed and here in Tampa I think  
8 it was Ross Engineering was the company, and I think  
9 they're both a success.

10 The one issue I'll comment about the New York test  
11 back in late 1990 designed by Lockheed was a suitcase  
12 that -- they were very concerned about having a leather  
13 suitcase up a ladder, so we've come a long way.

14 Tampa Bay here actually used the raw system for at  
15 least a decade and the pilots became very useful with the  
16 AIS-type system.

17 So our involvement has been not just recent tests,  
18 but also over a decade now engineered with the AIS Coast  
19 Guard.

20 Real quick, they build this test of integrating  
21 PORTS data. It's environmental data. And let me make --  
22 it's environmental data. They want to use PORTS as an  
23 example.

24 The reason why they want to use PORTS is basically  
25 PORTS was packaged, it's in one centralized location,

1 quality control, and it was the low-hanging fruit to  
2 test.

3 The group responsible for their role test is the  
4 Radio Technical Commission for Maritime Services  
5 self-working group, which is referred to as RTCMS. They  
6 set the overall requirements and the test requirements as  
7 part of the environmental tests.

8 There are two other tests I wanted to mention, which  
9 are the right whale spills and accidents, which is  
10 actually going on, they just started that. That came to  
11 really testing that -- I'm not going to report on that.  
12 I'm not familiar with that part of it, with that test.

13 And there's a third component, which is the  
14 Waterways Management message from the Army Corps of  
15 Engineers.

16 The participants, and this is a good collaboration  
17 between NOAA and Coast Guard, the local communities, we  
18 have the use of CO-ARAD Center, Alliance and Technology  
19 Group. The Coast Guard Department of VTS is actually  
20 working with Steve Fidler here in Tampa Bay. And the  
21 Tampa Bay Pilots, George Vezzio, who's not only a Tampa  
22 Bay pilot, but he's also chairman of the American Pilots  
23 Association Technology Group.

24 So anything we're doing is being collaborated with  
25 the other pilots throughout the country. And, of course,

1 NOAA and Darren Wright has been our point person for  
2 that.

3 Okay. The user group is very important. The  
4 device was initially evaluated by the Tampa Bay pilots,  
5 and that after the pilots may bring in the Marine Towing  
6 of Tampa Bay and the See Bulk Towing Group.

7 Coast Guard managed the data and transmits it over  
8 the AIS system. It's a third party that takes that  
9 information and puts it on the three prongs, PPU, which  
10 is a portable pilot unit, I believe is what it stands  
11 for. So Arring, is one of the companies we're working  
12 with, but there's other companies. Raven?

13 CAPTAIN MCGOVERN: Raven, yeah.

14 MR. SZABADOS: Raven, they're in New York, and  
15 Houston. And a lot of pilots use that to -- they're  
16 working on this also, but we're not testing in that area  
17 yet. This is the basic test bed design.

18 I'll just go over this real quickly. I'm not going  
19 to go through all the details. The upper left side is --  
20 the PORTS information is being assembled and being picked  
21 up by the Coast Guard.

22 If you look down to the blue clouds it's a collision  
23 format. It's part of the test Army Corps of Engineers  
24 for the waterways information system and that we'll be  
25 covering later. This is what's going on now from the

1 test bed who -- this was a no-brainer for us. I will be  
2 honest with you, our time coordinating.

3 Because of the operational infrastructure we have  
4 set up and the web services that we have designed over  
5 the year, the actual IT requirement engaged working with  
6 the Coast Guard with the IT person was basically about  
7 15 minutes calling the Coast Guard how to get the  
8 information.

9 Basically our infrastructure sharing the data to the  
10 AIS was preexisting, so our effort really is coordinating  
11 with our partners. Then that information is picked up by  
12 the Coast Guard in the fetcher format, fetcher formatter,  
13 and ACTAD with VTS information and goes into cue manager  
14 and scheduled for transmission.

15 The Coast Guard up in the upper right is monitoring  
16 this time, and that's the ground above cue manager and  
17 then transmitted over the AIS transmitter and that's the  
18 test group which the pilots evaluate information.

19 Okay. Conceptionally, I -- this is a little bit  
20 better picture of it. We have the transmitter -- Coast  
21 Guard transmitter. We have the AIS transmitter, I'll  
22 refer to it. It doesn't really display the environmental  
23 data. That's where the PPU or the third party vendor  
24 comes in, and they have that information. They have to  
25 display it.

1           This is the format when they come into our database,  
2           our web services, and we send it out to them to format  
3           HTML and actually XML format which they use in packaging  
4           with the AIS message.

5           This is, okay, an actual display of the Arring  
6           system. And in talking to George Vezzio, who I spoke to  
7           last month at a meeting, right now their assessment,  
8           okay, not the final assessment, is that the data is being  
9           provided on time. They don't see any noticeable PD life  
10          in the information, and the information is very useful.

11          The display, these are my words, are -- I won't say  
12          it's crude, but it's simple. It's a simple display and  
13          we did not want to have a test -- Andy's explained how  
14          best to display the data that can come later and actually  
15          move that up to the third party and work with the  
16          customer, but the primary purpose of the AIS test is can  
17          Coast Guard grab the post data format and transmit it and  
18          get it aboard the ship in a usable form and not delay it  
19          and be reliable.

20          And the test -- everything I've heard today, that is  
21          happening. So there is no delay in the data showing up  
22          aboard the ship. The information is useful. There's  
23          definitely room for improving how to display the  
24          information, but that can come later, especially not with  
25          Arring, but with the other third party vendors.

1           Okay. This is a slide from the Coast Guard trying  
2 to -- part of the test assessment is the data being  
3 received in a timely manner, is the data being used, is  
4 the data improving operations, and it goes on.

5           This is a six-month test. At the end, they're going  
6 to send out a report assessing the impact and how  
7 successful it is and how useful it is as part of the  
8 assessment.

9           Again, everything seems to be on track. Again,  
10 the information is getting up on the ship and is very  
11 useful.

12           Okay. This is the plan for implementation. The  
13 first -- down in Tampa all the red circles are where we  
14 have PORTS systems. The stars are where we have VTS.  
15 The first implementation would be where VTS -- well, and  
16 PORTS.

17           They plan to have a nationwide implementation, but  
18 that would be another phase, but the first phase will be  
19 implementing -- after this, will be implementing them in  
20 all VTS locations. So those are where we have PORTS, and  
21 VTS will have this capability.

22           Once they roll it up on a navigational scale, the  
23 additional PORTS areas information will be available  
24 through the AIS.

25           I would also add that our only navigational water

1 level program is now basically on the same technology as  
2 far as bringing the GATAR and all navigational all over  
3 200 stations, what we can, potentially over the AIS, and  
4 that's our intention to do that, and same thing with the  
5 weather service seaman buoys.

6 PORTS was just the initial test bed, but the  
7 potential here is to transmit all of the buoys of  
8 navigational weather service also and other platforms,  
9 appropriate platforms.

10 Okay. And basically this is a quick overview. I  
11 didn't want to spend too much time on it. We've already  
12 spoken a lot about it this morning.

13 I'll be happy to answer any questions that I can.  
14 And, if not, I'll definitely get them to the other  
15 sources and get back to you.

16 CAPTAIN MYRTIDIS: Minas Myrtidis. On the previous  
17 slide, I realize there's something big missing there;  
18 that's the port of Miami, which probably has the most  
19 traffic of all these ports together when it comes to  
20 cruise ships.

21 MR. SZABADOS: I recognize that. Again, this is --  
22 the plan is to implement where they have VTS first and  
23 then nationwide.

24 Again, I can't speak for the Coast Guard, but I do  
25 believe they recognize a need for it, and it's in their



1 plan, just a matter of which phase.

2 CAPTAIN MYRTIDIS: So what is the timeline that  
3 we're looking at?

4 MR. SZABADOS: I will have to get back to you on  
5 that one. Okay. I will get back to you.

6 CAPTAIN MYRTIDIS: A year, 2010 or --

7 MR. SZABADOS: To put things in perspective, okay,  
8 this test of the PORTS through the Tampa system is over  
9 the next six months. The total test, along with the  
10 other two tests which is being planned, the whole test  
11 period is 18 months.

12 So the question -- I'll get back to you on that. I  
13 believe 18 months from now is when they're going to plan  
14 to implement -- make this operation across the nation at  
15 the VTS centers, but I can verify that.

16 MR. LUTHER: Unfortunately, Miami doesn't have a  
17 PORTS system or a VTS, and until it has both of those  
18 it's just not feasible to do anything there.

19 And with the state of funding per the reports per  
20 the discussion earlier, who knows when that might  
21 happen.

22 MR. SZABADOS: But I know some areas like New York  
23 and Houston would probably be very interested in what  
24 that time schedule is for operation. I'll have to get  
25 back to you on that.

*Szabados*

1 MS. DICKINSON: Elaine Dickinson. We talked about  
2 this in Miami when Chuck Husick (sic) was here visiting  
3 us. There was a very long delay with the FCC approving  
4 AIS for Class B recreational users, and that's just been  
5 approved.

6 So there may be many, many thousands, perhaps even  
7 millions, more AIS users out there now that the Class B  
8 has been approved.

9 MR. SZABADOS: For those users, again, where we have  
10 the capability, the message will be there imbedded with  
11 the overall AIS message. The third party vendor will  
12 have to develop to use them.

13 MR. DASLER: In your test bed design you listed  
14 it -- is it that bathymetric indicator or just channel  
15 depths or what waterways indicate? What is that, and how  
16 is that used?

17 MR. SZABADOS: I don't know the full list, but I  
18 know some of the information is currently in some  
19 critical areas in the waterways.

20 MR. LUTHER: Particularly around locks and inland  
21 waterways where currents are, in and out of the moving  
22 vessels, in and out of the locks.

23 MR. SZABADOS: One of the differences is the  
24 approach, the different way NOAA does it in the Army  
25 Corps, who does it currently right now. We've been in a

1 centralized location and transmitted to Corps and their  
2 test wanted it transmitted directly from the sensor.  
3 That's a major difference between our two approaches  
4 here.

5 CAPTAIN MCGOVERN: I don't think his question to you  
6 -- maybe it's more for Steve, but is this -- the live  
7 charts that are envisioned down the road, are they going  
8 to be populated to use in this AIS transmission system or  
9 some other system? Are you going to use a system with a  
10 larger bandwidth?

11 CAPTAIN BARNUM: Yes. As I talked about, the charts  
12 are dynamic charts or soundings that could be corrected  
13 with the actual depths versus depths that mingle in the  
14 water. That is a subject that was at the recent CLIPS  
15 meeting. The issue is how we're going to move forward to  
16 implementing the dynamic chart. There's some discussion  
17 about memorization, whether we should do that.

18 The U.S. feels we should, but the framework and the  
19 standards have yet to be developed on how we would  
20 implement that into vectors.

21 MR. SZABADOS: I know that some work has been done  
22 to demonstrate that capability. Coast Guard did  
23 something and demonstrated that capability.

24 Technology-wise, I think it's something that's  
25 feasible, but there's obviously issues about standards

1 and other concerns.

2 CAPTAIN MCGOVERN: I guess my question was the  
3 amount of bandwidth. You have VAV. Is that enough or  
4 you need a different type of transmission system to get  
5 that information out? If you don't know --

6 CAPTAIN BARNUM: I don't know the answer to that  
7 question. I know the bandwidth for the AIS is very  
8 limited for the amount of information that comes across.

9 One of the areas we're looking at potentially is  
10 pushing across chart updates, but, yeah, the bandwidth is  
11 very limited to doing that kind of information.

12 So it would -- again, it has to be an area of --  
13 research has to move forward in how we can potentially  
14 move that data to enable dynamic charts.

15 MR. SZABADOS: One of the challenges also is having  
16 the appropriate information, resolution of that  
17 information. Some areas may have a sufficient realtime  
18 waterway; some areas may not. And that may be a  
19 challenge, how you manage that. It might be a reason why  
20 we need to have more tide gauges.

21 MR. ARMSTRONG: A couple of questions, Mike. Just  
22 the -- in these cases, in the early implementations, the  
23 PORTS data and the AIS is going to be sent from the VTS  
24 systems; is that correct?

25 MR. SZABADOS: That is my understanding in the first

1 phase. That's why we're limited to where there's VTS.

2 MR. ARMSTRONG: And the second question is, do you  
3 know how this compares with the St. Lawrence Seaways  
4 system?

5 They have some kind of ocean data transmission  
6 program up there, and I just wondered if you know how  
7 this compares or --

8 MR. SZABADOS: I'm hesitating because I don't have  
9 firsthand knowledge; secondhand knowledge of that system,  
10 and I've heard some successes. I've also heard of some  
11 frustrations. And since it's secondhand information, I'd  
12 be kind of reluctant to say anything.

13 MR. ARMSTRONG: Thanks. I sort of kind of just have  
14 sketchy information as well. So I don't -- you know, I  
15 don't really know how that system works.

16 MR. SZABADOS: One of the comments that I had  
17 received from Sal Teese, (sic) a pool pilot that brings  
18 the ships in from the ocean to the Great Lakes, they had  
19 encouraged us to talk to the PORTS program, one of the  
20 concerns was the reliability of the information, and they  
21 raised some concern and encouraging the Seaway to talk to  
22 the PORTS about that.

23 MR. SKINNER: We have any other questions or  
24 comments?

25 Is there any recommendation people want to consider

1 for the panel to move forward? It's not a trick  
2 question. If not, I think we can move along, but  
3 something to consider.

4 I also want to remind folks that from this morning's  
5 conversation with the Stakeholders Panel there were a  
6 number of issues discussed. And any of those issues that  
7 generated potential recommendations that you'd like the  
8 rest of the panel to consider to put forward, please  
9 think about those, and we can talk about them at the end  
10 of the meeting.

11 MR. WELCH: It might be that we want to put on the  
12 future agenda the results of the report of this test  
13 study that Mike was describing. We might want to report  
14 at a future meeting of what test study --

15 MR. SZABADOS: Again, what I'd like to do is have  
16 the Coast Guard at the meeting for a joint presentation  
17 with NOAA Coast Guard.

18 There is a meeting -- unfortunately, there is a  
19 conference right now. There is a meeting in Seattle --  
20 so for future meetings, I think after March would be a  
21 good time to have that, and we'll have more specifics  
22 about rolling it out.

23 MR. SKINNER: Anything else? Mike, we appreciate  
24 your standing in at the last minute, and we look forward  
25 to future presentations with results we expect. Thank

*Active*

1           you.

2                     At the San Francisco meeting we heard about the  
3 effects of climate change and some of the impacts coming  
4 both from navigation for coastal communities and for a  
5 whole range of constituencies.

6                     So we have a panel here that we're very fortunate to  
7 have here. And, again, we've allotted a fair amount of  
8 time both for the presentations and hopefully for the  
9 discussion afterwards.

10                    Today's panel has Judy Gray from NOAA's  
11 Meteorological Laboratory. And, Judy, where is that  
12 located?

13                    MS. GRAY: Miami.

14                    MR. SKINNER: Davis Seris from the U.S. Coast Guard  
15 Management Branch, District 17, which is in Alaska. So  
16 thank you very much for coming all the way down here,  
17 David.

18                    And we, you know, often hear from NOAA agencies. We  
19 also appreciate getting the input from other agencies  
20 that are related to hydrographic services like the Army  
21 Corps and U.S. Coast Guard, so welcome.

22                    Keelin Kuipers from the U.S. Center is also here.  
23 I know from my background in coastal management she is  
24 one of the "go to" people on the coastal management  
25 issues. It's a pleasure to see you.

1 MS. KUIPERS: Thanks a lot, Tom. I appreciate the  
2 intro.

3 Since I have everybody --

4 MR. SKINNER: That's an attention grabber.

5 MS. KUIPERS: Exactly, that was the point.

6 MR. SKINNER: No falling asleep.

7 MS. KUIPERS: No falling asleep. I wanted to start  
8 off with a rather dramatic image of the potential impacts  
9 of sea level rise on lower Manhattan. Let's observe that  
10 a little bit while I talk about what I want to cover in  
11 my presentation.

12 I want to do three things: First, to talk about  
13 some of the challenges that coastal communities are  
14 facing when it comes to climate change, and in  
15 particular sea level rise.

16 I want to talk also about how NOAA's navigational  
17 services portfolio models data observations that come  
18 from NOAA; and also from our partners' organizations too  
19 with other federal agencies and other groups, how that  
20 information can and is being used by coastal  
21 decisionmakers to address this issue now.

22 And then also talk about a couple of examples of  
23 specific partnerships and projects that are underway to  
24 help address some of these issues, both from a climate  
25 change sea level rise aspect specifically, but also some



1 broader things related to coastal hazards that certainly  
2 also apply to climate change as well.

3 So I should explain a little bit what this slide is.  
4 This is actually a visualization that was done by NASA.  
5 It appeared, I think, in "Vanity Fair" magazine a couple  
6 of years ago.

7 What it shows is a dramatization of what lower  
8 Manhattan might look like under an 80-foot level sea rise  
9 scenario. That is something we may see over a period of  
10 several hundred years if the Greenland and Antarctic ice  
11 sheets were to melt completely.

12 Okay. It's a little bit of background on the  
13 impacts of climate change on coastal communities, but in  
14 particular kind of looking at it at the perspective of  
15 the riding issues the coastal communities are facing.

16 As I think many of you in this room probably know,  
17 13 of the largest cities worldwide are actually port  
18 cities. So ports are certainly an extremely important  
19 part, but also coastal communities contribute 57 percent  
20 of the U.S. gross domestic product in the United States,  
21 and this is based on coastal watershed counties. And  
22 then also coastal communities contain about 53 percent of  
23 the population.

24 So we have a pretty significant economic population  
25 as well as development that's happening in these regions

1           that are also quite environmentally sensitive.

2           And with increasing sea levels, we might expect by  
3           the 2070s total world-wide city population exposed to  
4           inundation could grow to more than 150 million people.  
5           That's a pretty significant portion of the world  
6           population that could experience that and other aspects  
7           of climate change.

8           Okay. So this is just kind of a quick snapshot of  
9           billion dollar weather disasters over the past several  
10          decades.

11          This was actually put together and updated on a  
12          fairly regular basis by the National Climate Data Center,  
13          which is part of NOAA.

14          And I wanted to put this out here just to show the  
15          variety of disasters our country has experienced in the  
16          past several decades including hurricanes, tropical  
17          storms, floods, heat waves, drought, a variety of issues  
18          that are certainly all affected by climate. And we would  
19          expect that over the next century or so that this map  
20          would get a lot busier.

21          And another thing to point out, you probably can't  
22          read it very well in the bottom, but it says on that last  
23          little paragraph the U.S. has sustained 78  
24          weather-related disasters over the last 28 years with  
25          overall damage costs exceeding over a billion dollars in

1 each event; and that 66 of these disasters occurred  
2 during or after 1990; and total costs for the 78  
3 events were 600 billion using a GNP index.

4 From the perspective of, yes, we may be seeing  
5 changes of climates that make these types of events  
6 happening more frequent, but we also have more that's  
7 invested on the East Coast. We have more development.  
8 We have more infrastructure and other people that are  
9 potentially at risk.

10 We spent most of our time, I think, talking about  
11 the application of models and observations and those  
12 kinds of tools for decision-making, but I wanted to also  
13 make a plug for the social science and the human  
14 dimension aspect of this issue, which is that it's  
15 extremely important how we think, how we develop and  
16 deliver the products and services that we provide that  
17 we're looking an eye towards; how can we best support:  
18 decision-making at the regional, state and local levels  
19 on this issue; and how is that information being received  
20 by coastal decisionmakers. And what I mean by that is a  
21 variety of people.

22 And so certainly, of course, ports, harbor masters,  
23 also natural resource managers may have a variety of  
24 people involved making decisions on a day-to-day basis  
25 that are affected by climate.

1           So this is a graphic from the recently released  
2 IPCC report that came out. This is the Intergovernmental  
3 Panel on Climate Change Fourth Assessment Report that was  
4 released about a year and-a-half ago or so that shows  
5 what we may be seeing in terms of projected sea level  
6 rise increases.

7           And you should know that the IPCC themselves stated  
8 that these projections are fairly conservative. They did  
9 not include data past 1999, because they were looking at  
10 published data that they could be able to include in that  
11 assessment at that time.

12           And it also does not include the rapid changes that  
13 we've been seeing just over these past couple of years in  
14 melting of both the Greenland and the Antarctic ice  
15 sheets.

16           So you can see, the first part in gray there, some  
17 estimates of the past in the red that shows information  
18 that we have both from tide gauges as well as satellite  
19 data, some direct observations of the increases there.  
20 And if you look at the projections for the future, that's  
21 based on model data.

22           And so there you can see we're looking at, you know,  
23 and this again is a fairly conservative estimate,  
24 anywhere from .2 to .5 rise in sea level.

25           But with some of the examples that I'll talk about a

1 little bit later in my talk, most coastal communities are  
2 looking at greater increases in that.

3 In the types of planning they're doing, a lot of the  
4 work happening around that is looking more at perhaps the  
5 sea level rise because of some of these changes that have  
6 been happening in recent years.

7 This visual shows a map that was created by the NOAA  
8 Coastal Services Center for Mayor Riley in Charleston,  
9 South Carolina. He asked for a visualization of what  
10 might be some of the impacts of sea level rise when we're  
11 looking at just regular high tide events that might be  
12 occurring in the city.

13 And so for this particular scenario, what they were  
14 looking at here is looking at an abnormally high tide of  
15 2.1 meters (7 feet) that were predicted for two dates  
16 during the study year, and looking at what that looks  
17 like under current conditions. So the dark blue shows  
18 you what that 7 meter rise -- or 7 foot rise might look  
19 like under existing conditions, but if we have a half  
20 meter rise in sea level, that kind of medium blue color  
21 there, you see that much more of the city is inundated.

22 And then if you get to that light blue color, an  
23 even larger area is inundated. And that light blue  
24 represents a one-year rise in sea level.

25 And what that would mean is that a significant

1 portion of the city would actually be susceptible to  
2 flooding 289 days out of the year.

3 Okay. Here's another example for the West Coast.  
4 The San Francisco Bay Conservation Development Commission  
5 is responsible for a number of planning activities for  
6 the shoreline of San Francisco Bay.

7 One of the issues that they have been trying to  
8 grapple with is what might be the impacts of climate  
9 change and sea level rise for the airports in their  
10 region.

11 And so here what they've done is develop a couple of  
12 maps that look at what the impact over one meter sea rise  
13 might be for both San Francisco Bay and San Francisco and  
14 Oakland airports.

15 And as you can see, in both consensus, should this  
16 prove to be true, that the runways would be inundated in  
17 both of those areas.

18 So what we're looking at here is decisions that are  
19 being made now about how and where to place very  
20 expensive infrastructure and how to make updates and  
21 changes to that, what the implications for that might be  
22 in the future.

23 And the really significant economic investments that  
24 these communities and large cities are having to make  
25 today can account for what those changes might be, say,

1 50 to 100 years from now.

2 This is another example of what a coastal state is  
3 grasping with when it comes to this issue. This is an  
4 example of issues around wastewater treatment plants and  
5 what the -- this is from the State of Delaware, their  
6 Coastal Zone Management Program. And if you look here on  
7 the left-hand side, you can see that existing conditions  
8 that -- for example, Wolf Neck Wastewater Treatment Plant  
9 is currently surrounded mainly by upland areas and  
10 wetlands. And on the right-hand side under one meter sea  
11 level rise scenario, what you might see there is open  
12 water.

13 And so, again, a really serious consideration for  
14 them as to how and where they plan for infrastructure  
15 development could be affected by these kinds of changes  
16 in the future and mapping products that involve  
17 collection of high-resolution lidar, tools like VDatum,  
18 all these kinds of products that come from NOAA as well  
19 as our partners is important to these communities when  
20 thinking about these issues.

21 So I just want to put this quote up here because it  
22 reminds us that oftentimes there are these teachable  
23 moments out of events such as Katrina and Ike, and we  
24 have kind of a limited window of time that may happen  
25 after those to be able to make changes, and oftentimes

1 complacency can kind of set in after the fact.

2 And so this is an issue that we're really trying to  
3 work with. Coastal states and coastal cities are coming  
4 to NOAA and to other agencies to say we really want to  
5 address this issue.

6 So, again, just another image here shows us that  
7 coastal storms gives us insight to what life at higher  
8 sea levels might actually look like.

9 I know Judy's going to talk a lit bit more about  
10 this issue in detail and some of the science and research  
11 that's gone into coastal storms.

12 But I wanted to note here that, again, nautical  
13 charting, geodetic positioning, tides and currents, of  
14 course, all of those products and services are very  
15 important and all of those issues will be affected by sea  
16 level due to rising sea level rise.

17 And this here actually shows a trunkline LNG  
18 terminal in Louisiana, and the impacts there are  
19 flooding.

20 So why develop a sea level rise plan? Actually  
21 many states are beginning to address this issue. A  
22 recent survey by the Coastal States Organization that is  
23 yet to be published shows that about 82 percent of state  
24 Coastal Zone Management programs are current in climate  
25 adaptation plans over the next three to five years.



1           And several states have actually already started to  
2 do this, in particular Maryland and Virginia. Both have  
3 executive orders and commissions that are looking at this  
4 issues.

5           The State of California, very recently Governor  
6 Schwarzenegger signed an executive order asking that all  
7 state agencies develop adaptation plans to assess future  
8 infrastructure investments and also what investments  
9 they're making in existing infrastructure to shore it up.

10          So, again, these impacts to sewage treatment plants,  
11 airports, ports, all of these issues are being addressed  
12 within that scenario.

13          And as part of this, they are requesting a study for  
14 the National Academy of Sciences that they will use the  
15 data that comes out of that as a basis for long-term  
16 planning.

17          So they are asking for the research and science to  
18 address this issue, but at the same time they are looking  
19 to the existing products and services that are available  
20 to do that.

21          In addition, Washington State is also sketching out  
22 plans to look at the anticipated effects of sea level and  
23 actually considering raising the wharves at the Port of  
24 Tacoma.

25          All right. So this is the one that has the

1 graphics. Okay. There it is. So here I just wanted to  
2 make a point that a number of the core data sets and  
3 models that are provided by NOAA as well as other  
4 partners like USGS and Army Corps are really important to  
5 addressing this need.

6 And so we've got water level data that's a critical  
7 piece, geodetic data. You can't know how high you are  
8 unless you actually know what your accurate height is  
9 now. And so relative sea level rise, it's extremely  
10 important to have that to be accurate in high resolution.

11 Geophysical data is a critical data area as well.  
12 Models, and then, of course, transformation programs like  
13 VDatum are extremely important in this type of effort.

14 Finally, how you pull all that together into  
15 geographic information systems, that information can be  
16 conveyed in a graphical format that can be used for both  
17 public outreach and education, but also by decisionmakers  
18 to understand where and how they may build.

19 And then this is just a plug again for the need for  
20 high-resolution data. We're hearing that continually  
21 from the coastal managers that we work with that where  
22 that information is available, where it can be collected,  
23 it just makes for a better product for them to build to  
24 be able to make decisions.

25 So switch gears a little bit and talk about some

1 examples of projects and activities that are underway  
2 related to sea level rise and coastal hazards more  
3 broadly.

4 The Sea Level Rise Rectification Program, this is  
5 actually an effort coming out of USGS where they've  
6 generated a suite of future sea level rise projections  
7 from the various global climate models and using that to  
8 look at what might be the impacts of sea level rise on a  
9 regional and local basis.

10 And a really critical data set that they're looking  
11 at is also incorporated in the historical tide gauge data  
12 that is produced by NOAA, to look at that.

13 This slide here shows a project that's underway now  
14 in the Albemarle center region of North Carolina. And,  
15 again, here the point here is that most existing products  
16 now are looking at an existing digital elevation model  
17 and then being able to make some visualizations about  
18 what might be projected sea level rise in a region. It  
19 doesn't necessarily take into account other types of  
20 dynamic factors like changing tides.

21 So with this project the Co-Survey Development Lab  
22 is actually work with another partner of NOAA, the  
23 National Centers for Coastal Ocean Science, looking at  
24 the ecological impacts of sea level rise in this region  
25 to apply technology that was developed primarily for

1 navigation services to an ecological problem and being  
2 able to develop a more dynamic model that takes into  
3 account, for example, changing tides and being able to  
4 make some better decisions about, for example, how and  
5 where you might protect land or acquire land, where roads  
6 may be located, and a variety of other issues.

7 So this is a product that's currently under  
8 development in a couple of different phases through the  
9 NOAA Coastal Services Center. And it is called, "A  
10 Roadmap to a Seamless Topobathy Surface." And it's  
11 currently available as a website off of the Coastal  
12 Services Center website, but what it essentially is is a  
13 series of documents and maps that seek to improve and  
14 streamline the process for creating a seamless topobathy  
15 digital elevation model.

16 And right now we're focusing primarily on the Gulf  
17 of Mexico and collecting data from a variety of agencies  
18 that fill that region to kind of develop a one-stop shop  
19 for that resource.

20 And the website itself includes, in addition to  
21 these data resources, processes to generate  
22 high-resolution digital elevation models that minimize  
23 error as well as examples of topobathy applications.

24 This is another relatively new product. This is  
25 the NOAA shoreline website. Again, this is hosted by the

1 Coastal Services Center. Again, it's really a cross-NOAA  
2 effort. It involves a partnership with the National  
3 Geodetic Survey, Office of Coast Survey, as well as the  
4 Office of Ocean and Coastal Resource Management, all  
5 within NOAA.

6 And the point here is that we found that the variety  
7 of customers that want to and need to access shoreline  
8 data and information are often confused about where to  
9 go.

10 So this provides sort of a one-stop shop for looking  
11 at these resources and how they're available through NOAA  
12 as well as other partners too and provides a couple of  
13 additional value-added products on the site, which  
14 includes revamping of NOAA's Shoreline Data Explorer, and  
15 that's a partnership specifically with the National  
16 Geodetic Survey, and that will include Raster historical  
17 maps as well as NOAA National Shoreline Vectors on that  
18 piece of the site.

19 But you can see here from this image some of the  
20 things that you might be able to access including a  
21 variety of shoreline applications, history of -- NOAA's  
22 history of mapping shoreline, the various types of  
23 shoreline and what they mean, why they were developed as  
24 well as a variety of other resources.

25 Okay. So, close to wrapping up.

1           Here I also wanted to include some information on a  
2 broader effort that we're undertaking called Digital  
3 Coast. And the vision for Digital Coast is that coastal  
4 communities will have easy access to organized and  
5 relevant data and tools needed to make more  
6 informed decisions.

7           Digital Coast is more than just a website. It's  
8 more than just being about data. It is really meant to  
9 be a repository for how you might access information,  
10 tools, training, all kinds of resources that are  
11 available and out there to help a variety of coastal  
12 decisionmakers with information on climate change,  
13 coastal hazards, land cover change, a whole range of  
14 management issues.

15           And this really is a partnership effort, and we are  
16 working very actively with a number of groups outside of  
17 NOAA including the Association of State Flood Plan  
18 Managers, Coastal States Organization, National  
19 Association of County Officials, National States  
20 Geographic Information Council, among others, to provide  
21 their input on what they'd like to see provided through  
22 Digital Coast as well as developing partnerships for  
23 collecting the resources that will be available on it.

24           It is a phased approach. We do just have an initial  
25 version of the site that's available now, but we do

1 expect to be expanding that as time goes on.

2 Okay. And last slide. So just to remind everyone  
3 what the title of this talk was, it's "A Rising Tide  
4 Floats All Boats."

5 So, as you can see, this irreverently named boat is  
6 probably lifted a little bit higher than they had hoped,  
7 given this circumstance, but I wanted to end with this  
8 slide just to show that, you know, we very may well all  
9 be in this situation.

10 Coastal communities will be over the next 50 to 100  
11 years or more where we're seeing increased flooding  
12 events, more frequent flooding events, intensity of  
13 storms, a variety of issues that can really threaten  
14 coast infrastructure development as well as our natural  
15 resources, and wanting to insure that we are providing  
16 now the information that coastal communities need to make  
17 decisions on where they're placing this high-value  
18 economically important infrastructure so that in the  
19 future we're not losing out on those kinds of  
20 investments. And related to that, also protecting the  
21 natural resources like wetlands and other areas that can  
22 also ultimately protect coastal development and people in  
23 these regions.

24 So while we're sort of in this process of needing to  
25 develop better high-resolution tools and models that can

1 help coastal communities make decisions about what the  
2 impacts of sea level rise are, we also need to recognize  
3 that these decisions are being made everyday now on a  
4 permit-by-permit basis by coastal communities.

5 And the information that we can and should provide  
6 are available through NOAA and other organizations, other  
7 agencies. And it's our responsibility, I think, to  
8 insure that they have the information that they need to  
9 build and use that information most effectively.

10 So, thank you.

11 I take questions, too. I don't know if we want to  
12 take questions now or in the end.

13 MR. SZABADOS: Probably wait at the end so we get  
14 the full scope, but thanks so much, Keelin.

15 MS. KUIPERS: Sure.

16 MR. SKINNER: And, Judy, just so you know, there  
17 will be people coming in to clear out the lunch during  
18 your presentation. Don't think you have to finish up  
19 quickly or anything like that. We've got plenty of time.

20 MS. GRAY: Thank you.

21 So let me re-introduce myself. I'm Judy Gray and  
22 I'm the Deputy Director of NOAA's Atlantic Oceanographic  
23 and Meteorological Laboratory in Miami, Florida.

24 And I can't sit still and talk at the same time, and  
25 I always have to take my shoes off in order to talk.



1 It's a Miami thing, I think. I don't know.

2 Anyway, I wanted to talk to you today about some of  
3 the research that we're doing within NOAA, specifically  
4 around hurricanes, the relationship between hurricanes  
5 and climate. And then I had something that I thought you  
6 might be interested in at the very end of the talk.

7 The Atlantic Oceanographic and Meteorological  
8 Laboratory houses the Hurricane Research Division of  
9 NOAA. So I don't want to get you confused between that  
10 and the National Hurricane Center, which lives within the  
11 weather service. We have a very close relationship with  
12 them, but we do no forecasting. We literally do the  
13 research, but it provides a basis for improved  
14 forecasting.

15 We have made great strides in the last few decades  
16 in track forecasting. We do a much better job. We can  
17 forecast tracks now at five days out with the accuracy  
18 that ten years ago we didn't have with three days out.  
19 So we've made a lot of progress and it's had a huge  
20 impact on evacuation scenarios and things like that.

21 We have not done as well with intensity forecasting.  
22 And, in fact, we have very limited equipment in intensity  
23 forecasting, and there are several reasons for that, some  
24 of them tie back to climate and most of that through the  
25 ocean.

1           And so I'm going to actually touch on three aspects  
2 of sort of climate hurricane interaction, rapid  
3 intensification, the relationship with the ocean, and  
4 then the Saharan air layer, which are all sort of  
5 climbing the scale of larger events.

6           Very quickly, rapid intensification is one of the  
7 most difficult things that we have to forecast. And  
8 there's a model that, a statistical model that we're  
9 using right now, at the hurricane center. It's called  
10 SHIPS, the Statistical Hurricane Intensity Prediction  
11 System, and it's based on seven predictors.

12           And Keelin in the car today was shocked to learn  
13 that there was a hurricane last week, Hurricane Paloma.  
14 Hurricane Paloma was a rapid intensifier and SHIPS and  
15 the scientists that developed SHIPS actually forecasted  
16 that it would be a rapid intensifier two days before it  
17 occurred. So it rapidly intensified between the Grand  
18 Caymans and Cuba and came ashore Cuba as a Cat 4.

19           There are seven factors that go into the SHIPS  
20 model, and I'll talk a little bit more about wind shear,  
21 but all of these have to do with the relationship between  
22 the ocean, and which is sort of the memory for the  
23 atmosphere, and the atmosphere itself.

24           I presume all of you have heard about wind shear,  
25 and basically the story is that if you have low wind

1 shear, that's pretty favorable for the development of a  
2 hurricane whether it's genesis of a hurricane or  
3 maintenance of the hurricane.

4 And the real story here is that if the winds are  
5 moving at the center at approximately the same speed and  
6 in the same direction both high in the atmosphere and low  
7 in the atmosphere, you can get a beautiful annular shape  
8 that's easy to maintain.

9 If, however, they're in different directions high  
10 and low or different speeds high and low, your shearing  
11 apart the storm is not as favorable for development or  
12 maintenance of a hurricane.

13 The role of the ocean is very important. For  
14 almost the entire life cycle of a hurricane it is the  
15 energy source, one of the big energy sources for  
16 hurricane development and maintenance.

17 And so in the last few years we've been doing a lot  
18 of work on making ocean measurements commensurate with  
19 the atmospheric measurements that we make with our  
20 aircraft program.

21 This is an example of some drifters that were  
22 deployed ahead of Hurricane Dean in 2007. You may recall  
23 that Dean came ashore in the Yucatan peninsula. I  
24 believe it was a Cat 5 when it came ashore. And we are  
25 very lucky. You can see the array of drifters that we

1 put out and deployed by C-130s. And Dean went right over  
2 the array and especially lucky to capture that forward  
3 right quadrant, the most severe quadrant of the storm.

4 We look at surface ocean temperatures. With  
5 satellites, it's relatively easy to do. What's hard to  
6 get is what is going on with depth. These drifters not  
7 only move around with the winds, they have long thermal  
8 chains underneath that can collect temperature and depth.  
9 We also deploy to collect bathymetric thermographs  
10 measuring temperature with depth. And so we're getting  
11 the three-dimensional structure of the ocean heat content  
12 under the storm.

13 And that's important, because it's -- the hurricane  
14 doesn't just give energy from the top. It's measured by  
15 satellite. It's, you know, a very dynamic system.  
16 They're mixing up heat from down deep. If your hot layer  
17 is very shallow, it's not going to be particularly  
18 helpful to the storm.

19 I also want to talk about an atmospheric  
20 phenomenon, the Saharan air layer. The dust storms that  
21 come off the Sahara are very important in hurricane  
22 formation, and actually for a lot of other reasons, too.

23 It turns out the Sahara dust is one of the main  
24 mineral sources for all of the ecosystems in the  
25 Caribbean Bahamas. Who knew that, you know, there's no

1 local source phosphorus, you know, for iron. A lot of it  
2 comes out of these dust clouds. The blue areas, the  
3 cooler colors, are the Saharan air layers. That's what  
4 SAL stands for.

5 And we have Tropical Storm Irene from 2005  
6 imbedded between these Saharan air layers, and this is  
7 literally -- a little black line you see around Irene is  
8 the -- if you'd click that again -- the red circle shows  
9 you an actual drop bar.

10 This is an instrument that is dropped from the belly  
11 of the plane. The plane's flying at about 10,000 feet or  
12 more, yeah, 10,000 feet, and it's measuring temperature,  
13 humidity and winds, the height down to the surface.

14 The graph on the right, the black line, shows what  
15 the climatology is for the relative humidity at that  
16 location over the ocean. You can see it's fairly moist  
17 and trails off with height. This is height on the  
18 vertical axis in millibars.

19 The actual relative humidity you can see here at 800  
20 millibars should be about 70 percent. It's actually  
21 around 20. That's desert air.

22 Similarly, the winds associated with the Saharan air  
23 layers frequently have an eastern jet associated with  
24 relatively low levels. So here we have 30 knots of wind  
25 from the east right adjacent to Tropical Storm Irene.

1           We measure wind shear typically between 200  
2 millibars and 850 millibars. If we took just those two  
3 numbers on this sounding and use that as our shear  
4 calculation of what is the shear in the environment  
5 around Tropical Storm Irene, we would get 17 knots of  
6 shear.

7           Seventeen knots is moderate shear and we see for a  
8 hurricane, and we see this all the time, and we see them  
9 doing very well in the environment with 17 knots of  
10 shear.

11           You can see what the storm is actually feeling is  
12 30 knots of shear, because of this jet at 700 millibars.  
13 We have three very areas that we drop bars to make sure  
14 we don't willingly accept they are classic shear  
15 definitions, but you actually get some of the structure  
16 in the storm.

17           And this is what it looks like. This is what the  
18 Saharan air layer looks like from 45,000 feet. And by  
19 the way, this is what it looks like in Miami when they  
20 come over Miami. It looks like it's smokey and you can't  
21 see downtown from my house. It can be quite dense.

22           I'm going to start moving into more of a climate  
23 discussion. I wanted to just give you a little bit of  
24 background what we're doing in the research areas. And  
25 just to give you an idea of the complexity, I mean

1           there's a myriad of aspects of hurricanes like the  
2           eye-wall replacement cycles and how they interact with  
3           the larger environment and how they interact with the  
4           ocean. There's all of these little micro structures  
5           stuff and the cloud micro physics and a lot of other  
6           stuff that's involved in the hurricane research. And  
7           overlaying all of that is what's going on in the larger  
8           environment with the climate, what's going on with the  
9           ocean, which I think of sort of like the brain or the  
10          memory of the atmosphere.

11                 Underlying arguments about global warming and the  
12           impact on global warming on hurricanes is -- the  
13           assumption is that you actually have data that can  
14           measure that. And this is an example of -- we have the  
15           1933 hurricane season and above the 2005 hurricane  
16           season.

17                 In 1933, we didn't have satellites and there weren't  
18           any ships in this region, so who knew if there were  
19           hurricanes out there or not.

20                 So one of the fundamental arguments that has been  
21           put forward in recent years about the increase in  
22           hurricane activity is based on bad data. We just don't  
23           know.

24                 2004/2005 saw a record number of hurricanes in  
25           particular, U.S. landfalling hurricanes, a record number

1 of hurricanes.

2 At that time, after 2005, several of the top  
3 scientists in this country came out with statements about  
4 global warming having an impact on hurricanes and  
5 increasing the number of hurricanes and increasing the  
6 intensity of hurricanes.

7 Like I said, it's based on faulty data, in our  
8 opinion, but they said it anyway. There was a lot of  
9 combat in the press. I know Chris Lancey from the  
10 hurricane center spent a lot of time duking it out with  
11 Kerryn Manuel on the "Today Show" and things like that.

12 Unfortunately, the media picked up on this  
13 connection of global warming and hurricanes. And what  
14 I'd like to get across to you, it's a whole lot more  
15 complex than that. And, in fact, 2006 and 2007 were  
16 relatively quiet systems or years, I mean.

17 I think of hurricanes like the same way I think  
18 about crime. If I hear crime statistics and I hear that  
19 my neighborhood is like 30 percent higher crime rate than  
20 someplace else, I'm still living there. I'm not, you  
21 know, selling my house and moving, because it hasn't  
22 happened to me yet.

23 Hurricanes are the same way. They're not 30 percent  
24 or 20 percent. They're either a hundred percent or  
25 nothing. You either get hit or you don't.



1           And so one of the points I want to make about 2006  
2           and 2007 is that the Yucatan got hammered. The numbers  
3           were lower, and that's what we were looking at, but it  
4           was a terrible year for some of those parts, and that  
5           the U.S. escaped, for the most part, but other parts of  
6           the world or parts of the Caribbean basin got hammered in  
7           2006 and 2007.

8           Keelin showed the sea level rise picture. This is  
9           also from the IPCC report as the top panel sea surface  
10          temperature, and the panels on the right show globally  
11          averaged.

12          So this isn't sea level rise in any one place. This  
13          isn't temperature in any one place. This is an average  
14          over the whole globe, all of the data that they can get  
15          their hands on.

16          The problem with that is that when they're looking  
17          at how does climate impact me or things that I'm looking  
18          at in hurricanes, you can't look at global averages. You  
19          have to look at what's happening in my basin or what's  
20          happening in my hemisphere.

21          And, in fact, what the top panel shows is that the  
22          northern hemisphere warmed by 2.3 degrees, and the  
23          southern cooled by .04 degrees. And I'll ignore the  
24          other two panels.

25          As I mentioned before, we can't just look at the

1 surface. You have to look at depth. Well, how deep do  
2 you look? Do you go to the mixed layer where you can see  
3 the northern hemisphere and southern hemisphere in total,  
4 heat storage, or do you go all the way to 750 meters  
5 down?

6 You get a different answer about what the heat  
7 storage is in the ocean and how different it is in  
8 different parts of the ocean.

9 So global warming has different impacts in  
10 different parts of the world, and if you're looking at  
11 the main development region for Atlantic hurricanes,  
12 which is in the little box there, the main development  
13 region is an area in the atmosphere that has influence  
14 from all of the oceans.

15 And it turns out that while global warming refers to  
16 an average over the whole globe, not locally, the three  
17 tropical oceans actually compete with one another how  
18 they're going to affect Atlantic hurricanes.

19 And harping back to the bad data issue, one of  
20 our scientists, Tao Si Lang (sic), went back and  
21 eliminated -- he didn't look at all of the hurricanes in  
22 the Atlantic basin. He only looked at U.S. landfalling  
23 hurricanes, and he has found a statistically significant  
24 decrease since the 1850s 'til now in U.S. landfalling  
25 hurricanes. And so I just want to say a few words about

1           how that might be in this global warming scenario.

2           The climate affects hurricanes not, you know,  
3 globally in the sense that all these three basins of the  
4 oceans are competing for how they affect the main  
5 development region, but also it can develop climate  
6 signals or climate indices that are more regional and try  
7 to link those to hurricane activity.

8           So I want to talk about two of them. The upper  
9 right -- or the upper left-hand panel is the Atlantic  
10 Multidecadal Oscillation. It's a statistic that's  
11 developed that is basically -- it's based on the mean  
12 North Atlantic sea surface temperature analogy, so they  
13 take the mean out and whatever the difference around that  
14 mean it's printed, it's plotted there.

15           It looks stunningly like active versus nonactive  
16 hurricane years. The plot's almost an overlay -- and I  
17 really regret I didn't have that other plot today. I'm  
18 sorry. I did this on the plane this morning. But right  
19 now we are in an incredibly active phase. The phase  
20 lasts 20 to 40 years.

21           And so all of us who created building codes in the  
22 1970s based on the coastal populations in the '70s are  
23 now more victims of hurricanes, more chances of being  
24 victims of hurricanes because in the '70s we're in an  
25 inactive phase, and now we're in an active phase.

1           The middle panel, that shows what we call the  
2 Atlantic warm pool. The Atlantic warm pool is defined by  
3 the 28-degree sea isotherm. So the dark black line here  
4 is the 28-degree sea isotherm. It averages over all the  
5 summer months. And the warm pool, or the image on the  
6 bottom, that's a pretty small warm pool. So there's a  
7 lot more cold water in the Atlantic than the Eastern  
8 Pacific.

9           The one on top, the image on top, is a large warm  
10 pool, and you can see that a lot of that warm pool is  
11 down in the main development region of the Atlantic.  
12 I'll come back to that.

13           And, in fact, we have 82 busy years all associated  
14 with large warm pools and only 3 busy years that were  
15 associated with small warm pools.

16           So there's a connection, at least a statistical  
17 connection, between warm pools and how busy your  
18 hurricane season might be. Let's see if we can put some  
19 physics behind it.

20           Most of you have heard of El Nino, I'm sure you all  
21 have, El Nino Southern Oscillation, and ENSO primarily  
22 impacts the United States in the winter.

23           And so one of the things that we're looking for is  
24 what kind of indices can we use to look at summer  
25 climate, in particular hurricanes.

1 I mentioned before that the Indian and Pacific  
2 oceans compete with the Atlantic on how the atmosphere is  
3 going to respond to inter-basin anomalies, and I also  
4 mentioned the sizeable warm pool.

5 So here is an example of small warm pool, large  
6 warm pools, and that the warm pool actually acts as a  
7 link between that Atlantic Multidecadal Oscillation and  
8 tropical cyclones where 80 percent of large warm  
9 pools occur during the warm phases of the Atlantic  
10 Multidecadal Oscillations. That's why you're getting  
11 more active years during that, the warm phase of the AMO,  
12 and a lot of this is related to shear. So large warm  
13 pools are associated with low shear so you get more  
14 hurricanes.

15 I think the main thing I want to show you here is  
16 the left panel is the average vertical of wind shear and  
17 the right panel takes the large warm pool years and  
18 subtracts the small warm pool years and shows that nice  
19 blue area; that basically the warm pool reduces the lower  
20 tropospheric easterly flow, the upper tropospheric  
21 westerly flow. And so you have reduced shear and then  
22 you're favoring Atlantic hurricane development in that  
23 main development region.

24 Another way it affects this is through the fact  
25 that the ocean is a major heat source for hurricanes.

1 And so a larger warm pool makes more energy available to  
2 hurricanes and so you get increased air surface air  
3 temperatures and higher water vapor contents and so the  
4 hurricanes are fueled. So you can get more and more  
5 intense storms.

6 So global warming is associated with increased  
7 vertical wind shear in the main development region  
8 because of the duking it out between the three oceans.  
9 So that's the mechanism by which we were explaining the  
10 downward trend at least in U.S. landfall trends in global  
11 warming.

12 And any scenarios on increases or decreases of  
13 hurricane activity associated with global warming is  
14 going to have to tease apart that competition between  
15 those basins. So there's some really good science that  
16 has to be done there.

17 We have got a warm pool that we're creating an index  
18 around that can act as a link between this active and  
19 inactive phase of hurricane years and the warm or cool  
20 phases of the Atlantic Multidecadal Oscillation.

21 And I just said that about the shear. I don't need  
22 to say it again. And then, of course, we have the  
23 Saharan air layer than can mess up everything. We have  
24 got lots of dust storms coming off the Sahara. It  
25 doesn't matter how warm the ocean is, if you've got that

1           incredible low-level shear and you've got really dry air  
2           then pulled in too and they're spinning up, you're not  
3           going to get a hurricane.

4           Because I know that you're a hydro office and not a  
5           climate science office, I wanted to throw this in,  
6           because one of the things I've been sensitized with to  
7           recently is the fact that navigation isn't just  
8           interested in tides.

9           If you're going into a port, you're not just  
10          interested in how high the tide is or sea level rise.  
11          You're also interested in how much water is flowing out  
12          of the river that feeds that port. It can make a huge  
13          difference in the water levels that you observe.

14          And so this is some work that is related, once  
15          again, to the Atlantic Multidecadal Oscillation. And  
16          what they did was there's that same graph on the AMO, and  
17          what we've done is we've overlaid water inflow into Lake  
18          Okeechobee in South Florida. Here's the lake right here.  
19          And as you can see, it looks -- I mean the correlation is  
20          phenomenal.

21          What we've done is, based on that information, we've  
22          created a nomogram where we can say how many years has it  
23          been since the last shift.

24          So the last shift happened normally in 1995. That's  
25          when we went from an inactive hurricane season to a more

1 active hurricane season. That's also when AMO shifted.

2 So here in 2008, it's been 13 years since the last  
3 regime shift between AMO phases. So what is the  
4 likelihood that in 15 more years, you know, we're going  
5 to have another regime shift? Well, it's about  
6 75 percent. So in 15 years we have a 75 percent chance  
7 that we're going to shift back into that inactive phase.

8 It's incredibly important for people like water  
9 managers in South Florida, which is who this was  
10 developed for, but also it might be of interest to you in  
11 how you think about the role of river inflow into your  
12 ports and things like that, because -- look, for the  
13 water managers, they decide how much water they're going  
14 to leave in Lake Okeechobee before the hurricane season  
15 even starts. They're guessing how many hurricanes  
16 they're going to get. They're guessing how much rain is  
17 going to fall in that summer rainy season. And they  
18 lower that lake in anticipation of what they think  
19 they're going to get. So a regime shift is incredibly  
20 important to them.

21 So the Southwest Water Management District,  
22 75 percent is better than any kind of statistics that  
23 they are using right now. The confidence limits on this  
24 are as good as anything else that they're using.

25 Okay. I want to say something. I'm a meteorologist



1 and I want to say something in defense of hurricanes.  
2 You can't imagine how much mail I get about how we can  
3 get rid of them. And a very popular role model, a  
4 nuclear bomb said this, there are a couple of problems  
5 with that, is that the energy is incredibly diffuse and  
6 nuclear bombs are a pretty focused energy source, but the  
7 really big problem is that I live in Miami and if you  
8 look historical tracks and they almost all go near Miami,  
9 we don't always get hit, but last year we were scraped by  
10 like five or six, and if you blow them up, I'm pretty  
11 much in the fallout zone, and that says nothing about the  
12 ocean ecosystems or the coastal ecosystem.

13 So, anyway, I get a lot of mail about how to get rid  
14 of them, throw gel on the water, you know, giant fans --  
15 I never figured out how that would work -- but what I  
16 want to say about hurricanes is that they're an essential  
17 part of the global engine.

18 And what I mean by that is we're constantly  
19 overheating the tropics and overcooling the poles. And  
20 so in the wintertime we have fronts, these big low  
21 pressure systems with warm fronts and cold fronts, and  
22 that's our main mechanism in addition to ocean currents,  
23 which are there all of the time, for moving warm air from  
24 the tropics into the poles.

25 Well, in the summertime at least in the atmosphere

1 we don't get those big fronts, we don't have those big  
2 temperature differences. And hurricanes are one of the  
3 main mechanisms of moving heat from the tropics to the  
4 sub tropics.

5 The other thing is that tropical storms  
6 in general, whether hurricanes or not, are one of the  
7 main sources for recharging the aquifers in the whole  
8 southeast basin.

9 And so I just thought I'd throw that in as a side in  
10 defense of hurricanes. And, you know, I don't want to  
11 get hit by one particularly, but I do -- they are a part  
12 of the natural system, and I think they're pretty  
13 important. And thank you.

14 MR. SKINNER: Thanks, Judy. I just wanted to  
15 remind folks that Jack had mentioned that he has a fairly  
16 important meeting tomorrow in Washington on the  
17 transition and will likely have to leave fairly soon. So  
18 I just wanted to once again say thank you for being here  
19 as long as you could.

20 Normally, we try and block his way and prevent him  
21 from leaving, but I think in this case we all wish you  
22 good luck with the meeting.

23 MR. DUNNIGAN: Appreciate that.

24 MR. SKINNER: David.

25 MR. SERIS: Good afternoon everyone. I'm Davis

1 Seris. I'm with the 17th Coast Guard District up in  
2 Juneau, Alaska. I'm in the Waterways Management Branch,  
3 and we have got an integral role in the Coast Guard  
4 portion of charting, publishing to local mariners,  
5 activities like that.

6 We also manage a fleet of four sea point buoy  
7 tenders that made a couple of appointments up in the  
8 Arctic this summer. That's largely why I was sent to  
9 talk to you, because we're pretty involved in that  
10 process.

11 And I wanted to pass along thanks from our  
12 District Commander Admiral Brooks for the invitation and  
13 opportunity to speak to you about the Arctic today.

14 It's a very important issue for us and we welcome  
15 any chance we can get to kind of broaden the  
16 understanding of what's really going on in the northern  
17 regions of our state in District 17.

18 Four main things I want to talk about, just briefly  
19 about the fact that, you know, our assessment is the  
20 Arctic is changing. We're going to talk about the key  
21 strategic drivers that have affected the Coast Guard's  
22 view of the situation and why we think this is important.  
23 Then later on give you a little overview of our recent  
24 and future operations. And then lastly a couple of  
25 particular comments about hydrographic services that I

1 think might be of interest to you.

2 Our District Commander likes to say that change is  
3 upon us in the Arctic. This is happening now. It's a  
4 maritime domain. We have got a lot of Title 10 and Title  
5 14 statutory responsibility for this.

6 Search-and-rescue, maritime and environmental  
7 response, port and waterway security. If it's water, we  
8 own it. And that's pretty much the way the Coast Guard  
9 sees it.

10 What has happened in Alaska District 17 and some of  
11 our assets that are working out of the Pacific area is  
12 that this is -- the activity that we've engaged ourselves  
13 in is really a full core press into operating in the  
14 Arctic, figure out lessons learned, trying to understand  
15 what this new operating area means to us.

16 The amount of activity that you're seeing from our  
17 operational units in that area is really unprecedented.  
18 And for the Coast Guard we have budgetary constraints  
19 just like you or any other agency. You know, carving out  
20 a million and-a-half dollars to, you know, fund some of  
21 the logistical support for that activity, that's hard for  
22 our agency to do.

23 And it's something that I want to make sure that you  
24 understand it's a little unusual for the Coast Guard to  
25 push that hard in a new direction without being told to

1 do so by Congress or some other force.

2 Next step, I'm going to deal with some of the  
3 strategic drivers that we're seeing in the Arctic and why  
4 we think it's important.

5 This diagram shows you where we have agreed for  
6 years where we have 200-mile limits of the EEZ and some  
7 of the activity that we're seeing now with nations trying  
8 to extend their 200-mile limits based on the naturally  
9 occurring asymmetry that is out past the EEZ.

10 Before I start, I want to point out that the  
11 boundary line between the U.S. and Russia has not been  
12 approved by the Russians. That boundary line between the  
13 USA and Canada, that's not an agreed-upon boundary  
14 either.

15 Disputed boundaries have a tendency to create work  
16 in the Coast Guard, so we watch those very closely. We  
17 spend a lot of time patrolling the U.S. and Russian  
18 maritime down there. And as the sea ice melts and we  
19 have more open water in the Arctic, that becomes a bigger  
20 job for us.

21 One of the key things for us to understand here  
22 is that the U.S. has not ratified the United Nations'  
23 convention on the law of the sea. That's the process  
24 that governs -- see that shaded area? You know, Russia  
25 is looking to claim all the way out well across 200 miles

1 going all the way to the North Pole. To begin that  
2 process, you need to be a party to that treaty, and  
3 that's not been ratified by the Senate yet.

4 And from the strategic perspective, what we see  
5 going on is that every other nation in the Arctic is  
6 moving forward, and they're moving forward progressively  
7 on this.

8 Canada, Russia, Denmark, have all approved the  
9 treaty. They're all actively engaged in doing their own  
10 C4 mapping to try to figure out what they can do in the  
11 next ten years or so, because there's a deadline for how  
12 long you have to make a claim to extend your EEZ, and  
13 we're really bringing up the rear if you look at what the  
14 other nations in the Arctic are doing.

15 So that's a -- it's a big deal for us. We don't  
16 really have a voice on the table and we're not a party  
17 from the treaty. So from a maritime perspective, we see  
18 that as a big problem.

19 The next strategic issue is you've heard a lot, I'm  
20 sure, about the possible Northwest Passage, shipping  
21 routes and the fact it's shorter. We're seeing now the  
22 Canadian Arctic Northwest Passage opening to the point to  
23 where we're seeing a couple of recreational vessels  
24 making that transit in the summertime.

25 We're seeing also -- I mean on the Russian side

1 we've always had ice breaker assisted movement of  
2 commercial ships, but we're seeing a reduction in sea ice  
3 levels there as well.

4 What we don't see, and the thing you don't read  
5 about very often in the press, you see a lot of  
6 stakeholders talking about the possibility of, you know,  
7 wide open polar shipping routes and a lot of potential  
8 impacts from that, but you don't really see any shipping  
9 instruction. You don't really see a lot of segments of  
10 the marine industry right now actively pursuing that  
11 stuff.

12 And there are a lot of factors out there like  
13 insurance, you know, like how do you mitigate the risk in  
14 a certain environment to the satisfaction of the insurers  
15 of the shipping line itself.

16 You know, likely in an Arctic polar transit probably  
17 there would be some speed restrictions placed on that  
18 ship, so all of a sudden that shorter transit starts to  
19 become not as attractive if you have to slow down.

20 So there's a lot of factors out there that we see  
21 that are kind of holding that, you know, wholesale  
22 development of new trade routes from happening.

23 So you are not going to see that this year. You are  
24 not going to see it in the next five, probably not the  
25 next ten. It doesn't mean that it might not happen at

1 some point in time in the future.

2 And if I can digress a little bit, from the Coast  
3 Guard strategic issues and maybe talk about one I think  
4 we share an awful lot in common with, is that this  
5 discussion of potential new shipping routes, the fact  
6 that the ships might not show up for 20 or 30 years does  
7 not give you that much time, I think, to get a handle on  
8 some of the hydrographic issues in that region.

9 There's two particular things, they're coming down  
10 the pike, that we see going to impact our needs for  
11 hydrographic surveys.

12 And the first one is that we're closely watching the  
13 Arctic Marine and Shipping Assessment, that's  
14 international -- trying to get a handle on what, you  
15 know, the 15, 20, 25, 50-year future in the Arctic is  
16 going to be. We're expecting that study to come out next  
17 year. I'm expecting to see that to be something of a  
18 call to action to get a handle on ship traffic management  
19 in the Arctic whether you know well in advance of when  
20 the ships arrive.

21 The other factor that's going on and I want to make  
22 sure you're aware of is that oil and gas development is  
23 proceeding in the Arctic. And it's probably going to  
24 happen faster than the establishment of any shipping  
25 routes.



1           For the U.S., if you look, you can see the Bering  
2 Strait is sort of a natural choke point. And if you want  
3 to talk about ship routing measures, that's a pretty good  
4 place to start.

5           Directly north to that is the Chukchi Sea, and we've  
6 got ongoing, you know, active oil and gas exploration  
7 that's happening in spits and spirts, but it's happening  
8 right now.

9           And so we see these two factors kind of combined.  
10 There's going to be a lot of attention in the near future  
11 on the future ship traffic, and the oil and gas  
12 exploration is proceeding.

13           So if you imagine for a moment what the Gulf of  
14 Mexico would look like had we allowed outer continental  
15 Oil and gas development and then came in later and tried  
16 to put in safety fairways or ship channels, that would be  
17 a problem.

18           And so there's a tremendous advantage, we believe,  
19 you know, to be correct and to the point where we kind of  
20 get a general idea where ship routing is going to happen  
21 before we allow wholesale oil and gas development to  
22 proceed wherever the oil and gas happens to be.

23           There's lots of other factors that come into play on  
24 that. The Bering Strait is an international strait, so  
25 anything you do in that arena is going to be a joint

1 effort with the U.S. and Russia, possibly Canada,  
2 possibly other nations. That process has to go through  
3 the IMO. Five years would be a really fast timeline to  
4 see something like that happen, but it's something that I  
5 think we're going to have to grapple with in the  
6 relatively near future.

7 So what does that mean for you? If we're going to  
8 start sitting down and picking ship routes, we need to  
9 have a good handle on what the underlying hydrography is.

10 If we start that discussion in earnest today or even  
11 a year from now, we're going to be making assumptions on  
12 where the ships should be going through the Bering  
13 Straight, and I would remind everyone that that was  
14 during the last ice age, and it's pretty shallow. There  
15 is a lot of six and seven fathoms on that chart.

16 We don't have a good handle on what this future  
17 shipping is going to look like. It might be trans-polar  
18 ship routes. It might be ships coming in and out of the  
19 Arctic to pick up hydrogeodetic resources. We don't know  
20 that yet.

21 But if that discussion starts a year from now  
22 looking at routes, some of our discussions on where a  
23 good place to be is going to come from looking at a chart  
24 with data that's 50 years old from a single-beam echo  
25 sound or possibly in a worse case scenario maybe

1 information that came from a Russian admiral over a  
2 hundred years old, even older.

3 We view that as an area of concern and I hope you  
4 share that concern. You know, sometime before we start  
5 serious discussion about shipping routes, we need to get  
6 a handle on what the actual bathymetric conditions are up  
7 there.

8 So if you think you're off the hook in the Arctic  
9 just because the shipping is not coming up, I want to  
10 make it clear we don't believe that to be the case.

11 Okay. Getting back to strategic drivers for the  
12 Coast Guard. Coastal erosion, it's a problem in areas.  
13 We're seeing now really sort of an annual deployment to  
14 someplace up in Alaska where we're concerned about a  
15 field farm. And that is a lot of times just firming up a  
16 plan ahead of time to make sure that we've got -- you  
17 know, consideration is taken if we're going to have a  
18 storm erosion event.

19 In my office, even in the AC navigation shop, we've  
20 got -- we face our own coastal flooding issues and we get  
21 nervous every October until we shore up ice, because if  
22 we get a significant storm it will wash over the sand and  
23 that can cause us some serious problems.

24 Economic/energy security, clearly a driver, puts us  
25 back pretty closely to the unresolved boundary issues.

1 There's going to be a future need to protect our energy  
2 critical infrastructure in the Arctic, like it or not,  
3 because that's coming as the Coast Guard looks into the  
4 future. You know, it's not a question of if, it's a  
5 question of when.

6 And again, having some forward motion on the law at  
7 sea convention would really help facilitate, you know,  
8 this discussion on how we're going to divvy up these  
9 tremendous resources in the Arctic in the future.

10 Northern migration of fish is another thing we're  
11 watching, waterway resources, you know, seagoing  
12 fisheries. Law enforcement is a very important part of  
13 the District 17's operational profile.

14 We devote an awful lot of cutter hours every year  
15 enforcing our domestic fisheries laws, and we're also  
16 spending a lot of time watching for foreign fishing  
17 vessel encouragings in our EEZ.

18 The diagram in the lower left is the one you want to  
19 look at. You can see the difference in ground fish  
20 distribution in the last several years. We're seeing  
21 those species move to the north, and you can't argue with  
22 the catch rates.

23 So some of the things that are happening on this  
24 front, the diagram on the top kind of shows you where our  
25 current fishery management regime set off.

1           There's a lot of forward motion right now to close  
2 off fishing in the Arctic until we have commercial  
3 fishing, that is, until we have a much better handle on,  
4 you know, what the stocks are, you know, and some of the  
5 other hydrographic services that comes into play, and I  
6 think you can anticipate, you know, some pressure in the  
7 future.

8           To try to get a handle on these thoughts, I think it  
9 takes a lot of branches in the Department of Congress and  
10 NOAA to try to get a handle around that to decide, you  
11 know, what, if anything, in the future is going to happen  
12 with the management of fisheries up there.

13           And as I mentioned before, you know, if we decide  
14 that we want to shut out the Chukchi Sea to commercial  
15 fishing, that creates a closed area enforcing problems  
16 for the Coast Guard.

17           We have to do something probably to make sure that  
18 closed area is being observed. That might be ship board  
19 transits when we have the opportunity to do that. It  
20 could be over flights with the C-130 or some other asset  
21 to try to make sure, you know, what rules are in place  
22 are ultimately actually being followed.

23           Threatened and endangered species. Following on a  
24 similar line, I see a pretty strong parallel of what's  
25 happening in Alaska with the seals and sea lions

1 protection measures and several years' worth of work  
2 that's been placed on that.

3 We have a lot of closed areas, no fishing areas, no  
4 transit areas that we actively spend some time enforcing  
5 to make sure they're being followed by the fishing fleet.

6 Three big questions marks in the near future about  
7 what's going to happen with the endangered species in the  
8 Arctic with the recent listing of the polar bear.

9 Depending on what type of regulatory regimes,  
10 critical habitat area designations, you know, depending  
11 on how that all pans out, since these are marine mammals,  
12 there may be some time of marine law enforcement  
13 component that's going to be called on to, you know, to  
14 perform some enforcement work in those areas.

15 Lastly, we see a trend of growing eco-tourism in  
16 Alaska, or the Arctic in general I should say, not quite  
17 so much in Alaska.

18 The case last year in the Arctic that got our  
19 attention was a port of vessel Explorer hitting an  
20 iceberg and sinking. It's not too hard to imagine a  
21 similar scenario in our Arctic, and that was a real  
22 wake-up call for us.

23 Something like that happens, it's pretty clear  
24 there's going to be an expectation on the part of the  
25 National Coast Guard that it's going to respond, so we're

1 looking hard at that.

2 I would point out that the great majority of the  
3 eco-tourism type activities is happening on the Atlantic  
4 Coast instead of the Pacific Coast. An example, this  
5 last year we had seven passenger vessel transits on our  
6 side of the Pacific and there were 76 over on the  
7 Atlantic side.

8 Okay. The next couple of slides are kind of getting  
9 more into the nitty-gritty of what's actually going on up  
10 in the Arctic. And I'll try to give you a feel for what  
11 the activity level is.

12 We're seeing, you know, the numbers on the slide, we  
13 have got about 70 or so U.S. vessels, about 30 Russian  
14 vessels that we're seeing going back and forth, about  
15 180 transits through the Bering Strait itself right now  
16 and that is, you know, without any trans polar shipping  
17 or anything like that.

18 We have one operation that goes on right now on the  
19 U.S. side that is a little bit north of there that I'll  
20 talk about on a different slide on that, but it's a large  
21 mine, it's got an ongoing seasonal layering operation to  
22 bring in ore from the mine.

23 And then numbers here -- and I guess I'll point one  
24 thing out first. The picture on the bottom is the AIS  
25 tracks for a couple month period. They probably pale in

1 comparison to what you see in a lot of the other ports in  
2 terms of traffic density. A couple of things to keep in  
3 mind is that Barrow doesn't have a port. So, you know,  
4 we're seeing a lot of activity for just a piece of  
5 coastline without any substantial navigational  
6 improvements.

7 And from the Coast Guard's perspective, the fact  
8 that we have a very light traffic volume there is still  
9 significant, because it still brings into play the  
10 complete range of coastal commissioned areas that we  
11 might be called upon to perform.

12 So whether it's one small cruise ship or a hundred,  
13 the fact that they're up there means that we have some  
14 risks, and it makes it something that we need to worry  
15 about.

16 This is a look ahead of the next year, what we  
17 think is going to happen. We're not anticipating any  
18 significant change in the cargo traffic.

19 The picture on the bottom right is securing a vessel  
20 that's going to transit unassisted through the Northern  
21 Sea Route. That's new.

22 Our oil and gas activity, we're expecting that to be  
23 on hold for another year. And Shell's efforts to drill  
24 in the Chukchi Sea lease area work their way through the  
25 9th Circuit.



1           Even if they are going to get some kind of favorable  
2 decision in court, we don't think that they're going to  
3 mobilize like they did in 2007. But to give you a feel  
4 for what that looks like when they do, in 2007 they had a  
5 fleet of 18 vessels including two charter Russian ice  
6 breakers that were stationed to get ready to work inside  
7 to Chukchi Sea to start doing some exploration work.

8           We're also anticipating a slight decrease in  
9 oceanographic research activity that's correlating with  
10 the end of the interpolar year.

11           This is just a slide to give you an example of, you  
12 know, what the commercial activity in the Arctic looks  
13 like. We don't have either the classic deep craft port  
14 scenario that most of you are used to seeing elsewhere in  
15 the country.

16           This is a picture of the Red Dog Mine. This is  
17 something typical in Alaska. The top left picture is a  
18 picture of what looks like a margin for the season when  
19 everything is frozen.

20           There is a very large -- zinc and a couple of other  
21 different metals that they mine our there, primarily  
22 zinc. It's one of the largest zinc mines in the world.  
23 They run the mine all year long and stage -- brake ore in  
24 warehouses. And as soon as the navigational season opens  
25 up, we'll start seeing work areas. They'll come up and

1 anchor off a couple miles offshore at the dock, you see  
2 there in the center.

3 And it's basically a round-the-clock 24/7 operation  
4 that goes on all summer until the ice comes back. So  
5 that's kind of typical if you look at the hydrology of  
6 the Arctic region. It's a very flat, very shallow,  
7 sloping kind of configuration. And you don't see deep  
8 craft, you know, activities or resource extraction that  
9 has some type of land work nexus.

10 The only thing we have that looks anything at all  
11 like what you're used to seeing as a board would be the  
12 Board of Nome. That's got a controlling depth depending  
13 on what the dredging has been doing somewhere between 20  
14 and 22 feet.

15 You hear discussions about making that a little bit  
16 deeper, but we don't know if that's actually practical  
17 given the nature of the region up there and how fast --  
18 how much material you have to dredge, so just some  
19 background on what operations looked like up in the  
20 Arctic.

21 Next couple of slides give you a review of what the  
22 Coast Guard did this summer. The cornerstone of that  
23 effort was taking the Tailored Force Package, we call it.  
24 The Coast Guard deploys up to Port Barrow, that included  
25 a C-130 fixed-wing aircraft, we had a couple different

1 types of helicopters, we transported some of our Coast  
2 Guard standard issue patrol boats, the same assets you're  
3 seeing in every other port that you might happen to be in  
4 throughout the country. And then some other cutter  
5 operations that happen simultaneously.

6 Throughout the year we've been flying what we call  
7 Arctic Domain Awareness Flights. These are fixed-wing  
8 C-130 air patrols. Basically this gives us, you know,  
9 eyes-on verification of what is going on over the Arctic.  
10 So our maritime domain awareness picture is not really  
11 solid. And so because we don't have other mechanisms  
12 that allow us to remotely monitor what's going on up  
13 there, sometimes you just have to do it the hard way and  
14 fly and see for yourself.

15 We learn a lot of lessons in working in aircraft up  
16 there. A good example is that our Coast Guard versions  
17 of the C-130 don't have heated fuel tanks. They can't  
18 fly when it gets more than 40 below.

19 So there is limitations to our assets, and this is  
20 two of the small boats. We saw a lot of problem areas  
21 using the existing assets that are in the Coast Guard's  
22 inventory to be able to operate in that area effectively.

23 Coast Guard Cutter Healy made a couple of  
24 deployments in 2008 in support of the National Science  
25 Foundation. They're doing science of opportunity for

1 NSF, and they're also heavily engaged in doing  
2 C-4 mapping. Kind of with our fingers crossed that we're  
3 going to ratify, uncross, and be ready to move forward  
4 with our own claims to extend our 200-mile EEZ.

5 One of the things we did that was new for us in  
6 Alaska was to use the Coast Guard Cutter Polar Sea, which  
7 is one of our ice breakers, much older ice breakers, in a  
8 multi-mission capacity.

9 In the past, they've primarily been doing work down  
10 in Antarctica. When they are doing work in the Arctic  
11 regions, it's primarily science-driven. It has not had a  
12 focus on other Coast Guard mission areas like fisheries,  
13 ports and search-and-rescue.

14 So this is internally for the Coast Guard a pretty  
15 significant step to take that ship that we know is  
16 capable of operating in the Arctic and exercise some of  
17 our commanding control infrastructure at the District to,  
18 you know, kind of see how that would work if we had a  
19 case in District 17 and we needed to use that certain  
20 asset to respond to it. So that's something that  
21 happened in 2008.

22 For buoy tenders and navigation sites, we had to --  
23 this is the Coast Guard Cutter SPAR made a deployment up  
24 to the Arctic and we had one other ship, the Coast Guard  
25 Hickory, which sails out of Homer, made a deployment,

1           although it wasn't quite as long.

2           Part of what we were doing here, this is a -- we  
3           have a program called Waterways Analysis and Management  
4           System, or WAMS, study.

5           The primary purpose of that study is to kind of  
6           verify the need for our AIS navigation systems if we need  
7           to install more visual aids to navigation, but also looks  
8           at some other things as well.

9           This is a little more detailed view of what their  
10          itinerary was. This trip on the SPAR was the trip that  
11          we brought along Lt. J.G. Matt Jacowski with the Office  
12          of Co-Survey to help us take a look at a lot of the rest  
13          of the navigational services in that area.

14          The purpose of this slide is to kind of try to  
15          illustrate to you a little bit of the distances involved.  
16          You know, to get up and around the coast of Alaska and  
17          then to come back, we knock out probably about one-third  
18          or one-half of the places that we really want to look at.  
19          You know, that's the full line effort. It took us six  
20          weeks. That represents about as much as we can do with  
21          one of our buoy tenders in a year given our other  
22          employment activities.

23          I can't say enough about having an OCS  
24          representative on board the ship. We got a lot of work  
25          done with investigations in particular ports. A lot of

1 reconnoissance on some that we did with the Coast Guard  
2 Cutter SPAR, some small boat assets, we've got a couple  
3 of boats that we kind of outfitted on our own trying to  
4 go in and do our own verification of soundings.

5 We don't have a good handle on how to get high-end  
6 information. We don't have a protocol to handle  
7 temperature or solidity data values.

8 But for the Coast Guard, it's a pretty  
9 forward-thinking survey effort, and it's one area in the  
10 future I think that there's some low-hanging fruit for  
11 the Coast Guard and NOAA to work on since we had four  
12 buoy tenders in Alaska.

13 And since we're going to be operating up in the  
14 Arctic, NOAA's only got two ships. It might make a lot  
15 of sense to look at some avenues to try to hit some of  
16 these areas of particular concern, you know, maybe with a  
17 navigation response team that could deploy one of our  
18 cutters. We're very interested in that kind of work.

19 I don't think you'll get a programmatic answer out  
20 of Coast Guard headquarters that we're having to take on  
21 production of soundings, but I can tell you that from  
22 District 17's perspective if that's what it takes to get  
23 a job done we are on board trying to do something in a  
24 collaborative effort.

25 So, again, we've got a lot done with reconnoissance

1 on the different harbor and port facilities and a lot of  
2 these small villages. There are identifying landmarks on  
3 the chart, verifying our own and part of it verifying  
4 information that was in the coast pilot. Really valuable  
5 experience for the Coast Guard Cutter SPAR to have  
6 somebody with Office of Co-Survey on board the ship and  
7 something we look forward to doing in the future.

8 One other quick highlight was a search-and-rescue  
9 exercise between Coast Guard Cutter SPAR and that's the  
10 Coast Guard Cutter Hamilton that's in the background.  
11 That's one of our high endurance cutters.

12 The big take-away lesson from this is actually the  
13 ice in the picture and the fact that the ice forecast  
14 models were a continuous challenge for the assets that we  
15 had operating up there.

16 It took us two days of planning and working on  
17 scheduling and looking at the ice forecast to try to pick  
18 a time and a place and modify it two or three times to  
19 where we could get the SPAR and the Hamilton together and  
20 the fact that the Hamilton's not -- it made it a little  
21 difficult.

22 The evening before the exercise everything is  
23 looking great, but the next morning conditions have  
24 changed. The ice pack that we thought was receding has  
25 now moved forward between the coast and we wound up

1           having a really hard time just getting together to pull  
2           that exercise off.

3           The simple weather conditions observed, you know,  
4           forecast versus observed, during that exercise kind of  
5           raised some eyebrows for us.

6           We had, you know, fog that really wasn't expected,  
7           the ships in the wind were driving the ice pack where  
8           they weren't really expected.

9           There is a few more slides on that later, but the  
10          big take-away is the current suite of the ice observation  
11          products need a little work, I guess is what I would say,  
12          needs a little work.

13          One other very important issue that we've walked  
14          away from our first year of operations in the Arctic has  
15          to do with Alaska native and tribal engagement.

16          You can see we've got a significant number of  
17          recognized tribes in the country that reside in  
18          Alaska. The picture in the background is Bowhead whale  
19          migration. I was going back to the comments the Admiral  
20          made before.

21          When you're operating a ship in this area we have  
22          found that the engagement with the natives and the tribes  
23          and even with the Alaska Eskimo Commission, the Walrus  
24          Commission, that turned out to be a lot more involved  
25          than we were anticipating.



1           It really takes a full-run effort. And when you say  
2 "engagement with the natives," you know, that might mean  
3 engaging on a great number of different levels. You  
4 might be talking on the North slow Barrow, running your  
5 plans past a local regional commission and then you'll  
6 need to go and work with the Eskimo Whaling Commission.  
7 And you might find that even going down deeper -- you  
8 might have to go to each individual community where you  
9 plan to operate and touch base directly with whoever the  
10 local whaling captain is to make sure your activities are  
11 not going to interfere with some of the traditional use  
12 subsistence activity that they had planned.

13           And we found that to just be a critical part of  
14 operating in the Arctic, you know. The issues we spoke  
15 about today, right whales, we have got the same kind of  
16 issues on the West Coast.

17           And, in general, one observation is that a lot of  
18 the development activity that has happened so far, and if  
19 you look, you know, the offshore reaches happening with  
20 Shell and some of the operations in years past that ice  
21 breakers have undertaken, there is sort of a generally  
22 recognized kind of stay 50 miles off the coast and things  
23 will be okay strategy that's been used in many shipping  
24 activities.

25           The interests of navigation have not completely been

1 taken into account, and that's partly because the  
2 interests of navigation aren't really present to a great  
3 extent when some of those historical arrangements were  
4 made. So this is definitely an issue that's glooming on  
5 the horizon, especially if you look at increases in  
6 maritime activity whatsoever.

7 There are expectations already set, you know,  
8 regarding how impacts of endangered species are going to  
9 be handled. Those are not necessarily favorable to the  
10 interest of shipping.

11 And then we, of course, do everything we can to try  
12 to build and improve on relations. We do a lot of  
13 community outreach with the villages when we are in the  
14 area.

15 In general, we found that Coast Guard visits past --  
16 you know, when we send operational units to these areas  
17 and we take the time to do a visit and have boating  
18 safety, it gets received very, very well.

19 And it's something that, you know, certainly I hope  
20 NOAA would do the same thing if they spend time in the  
21 near future up in the Arctic.

22 A couple of quick lessons learned from the summer  
23 activities. We saw activity that was a little bit more  
24 than what we anticipated. A couple of Chinese research  
25 vessels that we didn't know were out there; a little more

1 small boat activity than we anticipated.

2 This summer we had one guy in a lobster boat that  
3 had come through the Northwest Passage. We kind of ran  
4 across him when we had some units up there. We were  
5 actually expecting a little more recreational traffic  
6 because Britain is here. There were three sail boats and  
7 they come through, but this one was the only one lobster  
8 boat we saw and generally operation -- it's hard. The  
9 environment is difficult.

10 You need a lot of protective equipment, but hard,  
11 limited place to get fuel. You don't have communications  
12 and infrastructure to do a lot of things you want to do.  
13 You're lucky if you've got, you know, on board satellite  
14 communications capability to support the things you need,  
15 but if you start looking at a lot of the other things,  
16 you talk about PORTS or, you know, realtime monitors, the  
17 infrastructure and communications to be able to back that  
18 up just does not exist up there.

19 A couple more lessons, we learned an awful lot  
20 about our own limitations of our own assets, small boat  
21 short-range helicopters are not going to cut the mustard  
22 up there. You need poles with ice-breaking capability or  
23 ice-hardened vessels, vessels with on-board helicopters.  
24 Again, our communications architecture was a problem.

25 And outreach, can't say enough but, you know, having

1 a strong outreach program if you're going to operate in  
2 the Arctic is the key.

3 I guess, to summarize, you know, we see Coast Guard  
4 missions in southern Alaska and spanning into northern  
5 Alaska.

6 In the 17th District, our wintertime homework is  
7 going to be working on documenting what those mission  
8 needs are, documenting what those resource requirements  
9 are to operate in the Arctic and put that together and  
10 send it back to D.C., because if the nation wants to have  
11 the Coast Guard that's capable of responding to the  
12 challenges that climate change in the Arctic is going to  
13 bring, the time to take action and build those assets and  
14 get ready for it is now.

15 One other thing that I would throw out there that  
16 might be of interest to the Committee, and this is sort  
17 of unique to District 17, sort of unique to our the  
18 District Commander, is that he is very forward-leaning in  
19 the informational posture.

20 He's got a program that he calls Information  
21 Operations. And that's really an aggressive outreach  
22 plan, you know, using your public affairs tools trying to  
23 do things to get the word out in the Arctic.

24 What we're seeing this summer is the Coast Guard  
25 exploring social media to try to get some of the word out

1 in the Arctic.

2 We've had probably one major network news crew  
3 making the swing through the Arctic almost every month in  
4 the late summer. We're getting -- you know, these folks  
5 are getting on our C-130s, they're flying on these  
6 patrols to see what we're doing, they're getting stock  
7 footage.

8 You know, we had an interview that the District  
9 Commander had done with BBC and when that gets on-line,  
10 it's 70, 80 million hits worldwide.

11 So, you know, I've read some of the documents about  
12 previous meetings and you're talking about trying to get  
13 the word out. The thing unique about the Arctic is that,  
14 you know, it gives the Coast Guard a forum that captures  
15 the attention of the nation and allows us to talk about,  
16 you know, activities the agency is doing in the Arctic,  
17 you know, we're raising awareness.

18 And this is the only time that you can get that type  
19 of penetration into the national news media without  
20 having something really bad happen first like the Cosco  
21 Busan, so the difference is you're in control of the  
22 message.

23 And that's a strategy that's worked out very well  
24 for us in District 17, to have a forward-leaning posture,  
25 you know, engage with your operational units there, get

1 the news media out with those units and let them see what  
2 you're doing. That strategy, I think, has paid some  
3 pretty strong dividends for us.

4 This is just a quick look ahead for what's coming  
5 up this next summer. Polar seas are actually up in the  
6 Bering-Chukchi Sea up in the dark, doing their thing.  
7 Continued day-to-day flights with the C-130s, we'll make  
8 one at least, possibly two or more trips up there.

9 And we're looking at another tailored force  
10 package deployment with C-130s and small boats, maybe  
11 some different kinds of small boats that are a little  
12 more suitable for working in the ice. Probably going to  
13 Nome this year to get an idea for what kind of  
14 infrastructure is available in that area.

15 Two other things that I want to mention. You know,  
16 they're not really part of the operational Coast Guard  
17 that I deal with everyday. We've got risk assessment  
18 studies. There's one that's moving forward in the  
19 oceans.

20 There's a lot of discussion about a risk assessment  
21 study in the Arctic. It would help us form a framework  
22 to try to figure out what kind of regulatory activities  
23 we need to pursue in the future.

24 And a lot of what -- you know, some of the coastal  
25 mapping-type activities play pretty heavily into those,

1 into those two study initiatives.

2 You really need to have a good handle on what your  
3 coastal resources are. From a Coast Guard perspective,  
4 if you want to start talking about rulemaking, that's  
5 going to start affecting the industry in order to  
6 preserve certain areas of the environment. So that's  
7 another aspect of Arctic operations.

8 I want to move on now. These are just a couple of  
9 things that I'm hoping you might be interested in.

10 This first slide shows the vintage of the  
11 hydrography in Alaska. I'll pass along one quote at the  
12 risk of offending someone in the crowd, but one of the  
13 mariners that was interviewed by the SPAR when they were  
14 up there this summer said, "At best, the jerks are  
15 ignored; at worst, they're a joke."

16 And that's not entirely the same assessment that our  
17 assets have had from working up there, but there are some  
18 places that we have found that have real problems with  
19 the underlying data that the charts are based on.

20 If there is a silver lining to this cloud, it's that  
21 we have a great relationship with the navigation  
22 community up in Anchorage, and it's pretty easy for us  
23 to, you know, kind of influence and make sure that  
24 there's information being passed about where the priority  
25 areas are we're charting so that when NOAA is out doing

1 their survey work we're getting some survey work done in  
2 the key areas.

3 In fact, I just had a meeting with them last week up  
4 in Juneau talking specifically about some issues with  
5 Glacier National Park, but we talked about future plans  
6 in the next two, three, four, five years in the Arctic.

7 Some of the key areas, the Bering Straits area we  
8 talked about, you can see it's all eco sounders or sonar,  
9 but if you get into Northern Sound there's some  
10 legitimate activity happening there that doesn't have  
11 good chart coverage backing it up.

12 South of the Bering Straits you can see St. Lawrence  
13 Island. There's some gaps around the island itself.  
14 Moving south from there even there's an island that went  
15 straight, but that there is pretty much nonexistent.

16 And one of the things people don't realize, if you  
17 look way down the road what's that -- what's that  
18 transpolar path going to look like, you're kind of  
19 sailing straight north or even a little bit to the west,  
20 if you come through the pass and you want to go over the  
21 top.

22 So there's a good chance that some of that traffic  
23 might actually run a lot closer to the Alaskan coastline  
24 than you might expect from, you know, looking at some of  
25 the other maps you've seen of the Pacific Ocean.



1           This is just a few slides -- this is a slide from  
2 the National Ice Center. I'll try again to illustrate  
3 some of the -- give you some examples of the ice  
4 products.

5           There's pretty general opinion that the current ice  
6 forecast products aren't really meeting the needs of, you  
7 know, the vessels that are operating up there. That's  
8 part timing, part frequency in which those products are  
9 distributed, and part of it is it's just they're kind of  
10 hard to read.

11           So typically when we have an asset working up there  
12 we'll be working with the center. We're getting some  
13 kind of custom product from this. This is just an  
14 example of one those.

15           I'll try a little bit more user-friendly display of  
16 where the ice-free areas are and what the area ice  
17 coverage percents are.

18           This is another product. This one is propriety  
19 probably. This is from Shell. This is radar set two  
20 data. I think that comes from Canada.

21           Just another bad point to talk about ice cap  
22 products in the Arctic. The oil companies are going out  
23 and buying their own from Canada. So that's sort of a  
24 confirmation on what we saw regarding the suitability of  
25 products for, you know, operating in this newly-changed

1 environment up in the Arctic.

2 This is just another example that shows the,  
3 you know, current 72- and one 68-hour forecast ice  
4 edges.

5 The Coast Guard's got a long history of service in  
6 the Arctic, 143 years. And I would point out that your  
7 agency does, too.

8 Going back to the 1880s, the Co-Survey was active up  
9 in the Arctic. Actually I was on the airplane flying  
10 down to Juneau reading a book about the expedition to  
11 Point Barrow.

12 My Lieutenant Ray with the U.S. Signal Corps, they  
13 came in there in the early 1880s and set up camp and  
14 proceeded to take 27 straight months of meteorological  
15 observations.

16 And the thing that I would -- you know, in my mind,  
17 what I see happening in the Arctic is that we chase the  
18 commerce, or hopefully we stay a little bit ahead of the  
19 commerce, and I think your agency historically has done  
20 that, too.

21 When the nation is fascinated with the whalers that  
22 are trapping at Point Barrow and all of the eyes are on  
23 the Coast Guard, running reindeer over there trying to  
24 save them, you know, that's when you see a really strong  
25 involvement on the part -- not the Coast Guard but on our

1 services.

2 We saw the same thing in World War II. We saw the  
3 same thing really in the early '70s going into the late  
4 '70s where the Transatlantic Pipeline was being built.

5 We have barge convoys going up to the north slope.  
6 The Coast Guard is there providing escort service through  
7 the ice through that effort. That's been about, you  
8 know, 25, pushing 30 years ago, and things have been  
9 pretty quiet from a shipping standpoint, but what we're  
10 seeing loud and clear right now that trend, once again,  
11 is reversing, or we're seeing a pretty aggressive posture  
12 on the part of MMS. We're seeing industry with an  
13 aggressive posture to move forward on exploration. We're  
14 seeing the state with an aggressive posture to move  
15 forward on Alaskan natural gas pipeline, which may have  
16 some play in this as well.

17 So, you know, it's pretty clear to me that, you  
18 know, as the activity in the Arctic waxes and wanes,  
19 we're definitely on the uptake now. And the thing that  
20 makes it even more compelling is the fact that overlaid  
21 on top of that is what we're seeing today with climate  
22 change.

23 This is a Coast Guard standard slide.

24 Key points. The Arctic is upon us. We need to get  
25 these Arctic boundaries figured out. We need to get

1       these ratified.

2               It's not the Coast Guard's job to make all the  
3       development decisions about where we're going to drill  
4       and when and where things are going to go and what kind  
5       of activity is going to be allowed to proceed, but we're  
6       going to have to be there to provide maritime safety and  
7       security for whatever kind of activities are allowed to  
8       happen in the Arctic.

9               And I would submit to you that it's not just the  
10       Coast Guard. Other federal and state and local agencies  
11       are all going to have a role in what happens up there.

12              And that's all I have.

13              MR. SKINNER: We appreciate, once again, you coming  
14       down and also your district commanders letting you go for  
15       a couple of days to join us down here. I think you gave  
16       a very comprehensive view of many of the issues in  
17       Alaska.

18              We certainly heard some of the issues. We had a  
19       meeting up in Anchorage. We have a panel member, Larry  
20       Whiting from Alaska. He usually describes southern  
21       Alaska in the summertime, I think. So it's interesting  
22       to hear some of the issues out in the northern part, so  
23       we thank you very much.

24              And also for the whole panel probably our meeting  
25       last March was the first meeting where we really focused

1 on some of the sea level rise climate change issues and  
2 the importance of hydrographic data for emergency  
3 responders, coastal managers, and flood-related type  
4 folks, and then as we mentioned earlier, in San Francisco  
5 the presentation of some new navigation issues that might  
6 present themselves in Atlanta.

7 So I think this has been very useful in giving us  
8 all background information on this.

9 I'll open it up to questions and comments.

10 DR. JEFFRESS: Gary Jeffress. This is for Judy.  
11 Judy, I read in the VRS magazine back in four or 2005  
12 there was a correlation between the rapid intensity of  
13 Hurricane Katrina and ocean surface topography. I don't  
14 know if you saw that, but topography was not one of the  
15 factors on your list.

16 MS. GRAY: No. In fact, I'm not aware of the  
17 article and I'm surprised.

18 The relationship between the ocean and the hurricane  
19 is certainly impacted by the depth of the warm water pool  
20 that's underneath it.

21 And so -- I'm trying to make up a physical scenario  
22 that -- you know, the waves are touching the bottom, it's  
23 a fully mixed column, so it goes into equilibrium faster.  
24 I do know that -- so that's the only thing I can think of  
25 in terms of physical explanation for that.

1 I do know that the hurricanes that transit the Gulf  
2 of Mexico frequently encounter these rings, the warm core  
3 rings. They're much warmer than their surrounding water.  
4 They're much warmer in the Gulf in the summer, isn't a  
5 lot, but it's warmer water and it's warm water deeper  
6 than the surrounding waters.

7 And so, for example, Hurricane Opal in 1995  
8 crossed rigs and deepened overnight from a Category 2 to  
9 a Category 4 while everyone was asleep and no one was  
10 getting the warnings. And then as soon as it pulled off  
11 the rigs, like Katrina, downgraded very quickly and came  
12 ashore as a 2.

13 So it turns out that the forecast verified, but  
14 verified for all of the wrong reasons. It was a bust,  
15 but it was a hundred percent verification, because even  
16 though they missed the blip, it verified it on landfall.

17 We often see them decrease in intensity as they  
18 approach the land. And a lot of that has to do with the  
19 fact that a major portion of the hurricane at that point  
20 is over land. Landfall is the eyewall landfall, but a  
21 huge chunk of the hurricane is already here, the increase  
22 of friction, the lack of fluxes from the ocean of heat,  
23 and so a lot of -- you'll often see a decline in  
24 intensity as they make landfall.

25 I've never heard the shoaling of the ocean being a

1 cause of that, but I'll ask about it. Yes.

2 MR. LUTHER: Am I allowed to --

3 MR. SKINNER: You can if you go to a mike.

4 MR. LUTHER: Sea surface topography and the sea  
5 surface height is simply mirroring the depth of the  
6 thermo climb. So as it goes down, the sea surface goes  
7 up.

8 During that particular summer of Katrina and Rita,  
9 there was a very large loop current extension up very far  
10 in the north and west end of the Gulf of Mexico that  
11 pushed the thermo climb and raised the sea surface up,  
12 which means there was a much thicker warm water pool to  
13 pump energy into those storms than normal.

14 And so that was the reason for the correlation  
15 between hurricane identification and sea surface  
16 topography, as I recall.

17 DR. JEFFRESS: I had another question about  
18 thickness of the heat waves in the ocean. There's also  
19 fixed platforms out in the Gulf of Mexico. Why don't we  
20 put some on those lakes and get some real data?

21 MS. GRAY: I might have to defer to the Admiral on  
22 this one.

23 The Gulf Ocean Observing System, GQOS, has been very  
24 active in working with the private industry, with all  
25 facets of private industry that services those platforms.

1 It's not just the platforms themselves, but the ships  
2 that go out and take care of them.

3 And I know that Texas A&M is very active in trying  
4 to instrument those platforms. Admiral.

5 REAR ADMIRAL WEST: Yeah, I think USGS requires all  
6 new structures to have sensors on all the rigs out there,  
7 and most of them have retro fitted a lot of the rings, so  
8 it's already being done.

9 MR. DASLER: Actually on the drilling platforms they  
10 require ADC measurements. That's a big concern with the  
11 loop currents coming in, the currents on the drill stems,  
12 that they pull those out before any currents hit them,  
13 and then they also have ships trying to map those loop  
14 currents.

15 One thing I did hear, Judy, is that the jet stream,  
16 as with climate change, is tending to push further and  
17 further south, which is one reason why there's more  
18 hurricanes that are hitting Mexico and Central America,  
19 and also maybe pushing some more into the Atlantic, and I  
20 wanted to get your view on that.

21 MS. GRAY: I am going to -- I would have to look  
22 into that. I had not heard the connection between the  
23 dip in the jet stream and the deflexion of the  
24 hurricanes, but I'd be happy to get back to the group on  
25 that.



1 MR. SKINNER: Any questions or comments?

2 MR. ZILKOSKI: I've got a question and a comment.

3 It was nice to see that one slide there about the  
4 geodetic and geo physical, and it actually looks like a  
5 slide that I used in places, so I liked that slide, but I  
6 guess -- we're hearing a lot about the natural resource  
7 products that report climate change. And clearly the  
8 ones that people think about are bathymetry and water  
9 level, and now we're starting to get into the geodetic  
10 and spacial side of it, and people are starting to talk  
11 about that, and grab deeper for the nation which is going  
12 to help for getting better heights.

13 It was mentioned, David, that you needed better  
14 height information. Alaska does not have good height  
15 information, and that is one thing that I think we might  
16 be able to collaborate on in the department on getting  
17 some data.

18 My question is that the map phase seems to be almost  
19 like an afterthought about the climate change. Okay.  
20 The weather is a big issue about it. And you even all  
21 talk about sea rise, and you're using numbers that come  
22 from, you know, tidal information, which is important and  
23 good, and come from other information, but what can we do  
24 in navigation to be able to get more of our programs up  
25 front to see if you really want to know what true sea

1 level rise is?

2 You can use the geodetic and water level information  
3 together and come up with a value that you could probably  
4 scientifically depend on.

5 Someone mentioned before -- I think it was Dick West  
6 mentioned before you need data that you can say here's  
7 what it is. We can do this, but we need to be able to  
8 get out there in front of people that are talking about  
9 the true measurements of what sea levels are really doing  
10 and not -- the effects are obviously very, very important  
11 and that's what the average citizen worries about. So  
12 that's what you have got to focus on. I understand that.  
13 We're kind of like the input to that value.

14 I guess my question is, what can we do as a group  
15 and maybe just as a panel to help get that so we're out  
16 in front with the same people trying to explain what that  
17 means so we can move our programs forward?

18 MS. KUIPERS: I have a couple of thoughts on that,  
19 and I'm sure others in the room probably do as well.

20 I think that, you know, part of the issue is when  
21 we're thinking about what the contribution us for  
22 navigational services and why maybe that hasn't been at  
23 the forefront before is that the conversation around  
24 climate change in many ways has been around mitigation up  
25 until recently.

1           How is it that we can reduce greenhouse gas  
2 emissions, which is certainly an incredibly important  
3 part of the picture. More and more recently because we  
4 are starting to see some of these changes like the ones  
5 that David's slides so eloquently demonstrated what we're  
6 seeing in the Arctic, that more and more we're hearing  
7 coastal managers talking about adaptation and what is it  
8 we can do now to start to address these issues.

9           And in many cases we do have -- stay close to zone  
10 managers and local officials who are pretty savvy about  
11 NOAA's products and services and know who to go talk to.  
12 In many cases, they may not.

13           And I think, you know, one way of addressing that  
14 might be to reach out to some of these organizations that  
15 may not necessarily be traditional partners for us, like,  
16 for example, the U.S. Council of Mayors.

17           They did a survey a couple of years ago on what some  
18 of the top water resource issues were for local  
19 officials, and the top five things were all climate  
20 change related.

21           And one of those at the very top was infrastructure,  
22 how is it they're going to be dealing with infrastructure  
23 that's aging and in need of replacement and looking at  
24 that with respect to sea level rise and other impacts of  
25 climate change. But they may not necessarily be a group

1 like that tied into the kinds of products and services  
2 that NOAA can provide.

3 Other groups like that, the National Association of  
4 County Officials, those kinds of groups, I think, that  
5 represent the state and local decisionmaker would be good  
6 for that kind of outreach.

7 MS. GRAY: I also would like to add that anything  
8 that we can do to create a unified article datum that  
9 will benefit everyone. It will benefit the scientific  
10 community, the remodeling. It will benefit -- how do you  
11 know sea level will rise relative to what, is a really  
12 good question.

13 MR. SZABADOS: Just for the course, someone said  
14 something about what Dave said, is that Navigational  
15 Services Information is more than information. It's that  
16 we have the expertise to understand geodetic and the sea  
17 level datums and understanding the long-term trends in  
18 that and that we have a lot to offer beyond the data  
19 itself.

20 MS. GRAY: Sorry. I just had another thought.

21 One of the most difficult aspects of talking about  
22 climate change is that it's really little, itty-bitty  
23 changes over a really long time. And we're talking to  
24 people who are making millions and sometimes billions of  
25 dollar decisions based on these very small changes that

1           happen over a long period of time. And so how we  
2           communicate about that, I think, is incredibly important.

3           Introducing, you know, probabilistic ideas into our  
4           conversation and, you know, actually developing a common  
5           understanding about what does it mean to -- like does  
6           anybody know what 30 percent chance of rain means --  
7           those kinds of things. Does that mean I'm going to get  
8           rained on 30 percent of the day, or is it 30 percent of  
9           the area they cover on the TV screen? What does it mean?  
10          And we have a lot of the same kinds of problems in the  
11          climate change scenario.

12          And I think having a sense of sort of a common  
13          communication strategy around that, I think, is really  
14          important and just -- and being patient that it is -- you  
15          know, whatever we're going to see is one or two  
16          generations away. It's not our generation.

17          MS. DICKINSON: This is for Judy also. Elaine  
18          Dickinson.

19          As I recall, something like 80 percent of the U.S.  
20          landfalling hurricanes originate in the Sahara. And I  
21          was wondering, I know NOAA was doing a project where you  
22          were actually flying planes studying the dust storms in  
23          the Sahara Desert. I was wondering if that is still  
24          happening.

25          MS. GRAY: Yes. We have a long-term experiment that

1 the impact of the easterly waves that promulgate off of  
2 the African Coast is a major source for hurricane  
3 development.

4 Even if a hurricane develops in the far western  
5 Caribbean, it's often associated with an easterly wave  
6 that's peeled off the coast of Africa and it just didn't  
7 develop over the central Atlantic, but we can see the  
8 waves.

9 So in addition to looking at a lot of little  
10 nitty-gritties and the physics of the hurricane and how  
11 it interacts with its environment, we're very interested  
12 in genesis and why do some waves develop in hurricanes  
13 and others not.

14 And so I believe it was last year we had a major  
15 program flying out of Cape Bird, and we did not repeat  
16 that this year, but we will go back.

17 MR. DASLER: This is -- actually, David, maybe Andy  
18 you can address it, I had heard at one point why the U.S.  
19 has not been signatory to that yet is that you have to  
20 file everything at once and once you sign the 10-year  
21 clock starts. Is that -- what's the problem with that  
22 argument?

23 MR. ARMSTRONG: I think the problem with that  
24 argument is that's not the reason we're not signatories.

25 It's true that a 10-year clock starts for filing the

1 boundaries of the extension of the continental shelf, but  
2 we're not signatory, I think, for other political  
3 reasons.

4 MR. WELCH: Could we put Dave's presentation back up  
5 and go to the slide that he had about the historic  
6 hydrographic survey data of the state? It was a map.

7 While you're locating that, Dave, we were provided a  
8 couple of months ago, this panel, with a report of the  
9 NOAA officer that was on the SPAR, which I thought was an  
10 excellent report, and his report and your report  
11 tracked a lot, so that says something right there.

12 And I'm thinking perhaps that this panel might want  
13 to make a recommendation to NOAA to consider pushing hard  
14 for continuing that program of putting a NOAA  
15 representative on any kind of a Coast Guard summer  
16 exploration if the offer is extended by the Coast Guard  
17 again.

18 I had one other question, Dave. I think you had a  
19 slide that showed various types of transits up in the  
20 northwest based on, I guess, going out of AIS data from  
21 Port Barrow -- Barrow's not a port -- what kind of AIS  
22 receiving facilities are there to receive AIS  
23 transmissions?

24 MR. ARMSTRONG: Yeah, that's a good question.  
25 That's a transmitter that was set up by the Alaskan

1 Marine Exchange, one of the exchange programs. You have  
2 many other locations throughout the country.

3 MR. WELCH: So, in other words, there is some kind  
4 of receiver up in the Barrow area?

5 MR. ARMSTRONG: Yes. It's just for the Barrow area.  
6 There are a couple other places, remote places, through  
7 Alaska where the Marine Exchange, you know, kind of on  
8 their own has moved forward and set up AIS sites, kind of  
9 similar to a lot of situations elsewhere in the country.

10 It's, you know, it's -- Coast Guard certainly loves  
11 to see that AIS side and we have a little bit of  
12 influence just with the relationship we have with the  
13 Exchange about where those sites are going to go.

14 You know, we might make available the location for  
15 them in the lighthouse or something like that, but it's,  
16 you know, it's not an O&M Coast Guard funded thing and  
17 it's really looking, you know, in that Barrow area.

18 You're limited by the distance of the receiver that  
19 you've got to be able to pick up those transits.

20 MR. WELCH: Okay. And in your presentation about  
21 summarizing the various types of traffic up in the  
22 Arctic, you didn't say anything about the annual barge  
23 resupply through the Bay. Has that stopped?

24 MR. ARMSTRONG: The barge supply crew that was  
25 escorted by the Coast Guard in the '70s and '80s, you're



1 not seeing that activity happening. Once the pipeline  
2 was finished and fully constructed, a lot of that tapered  
3 off.

4 What you do have in the Arctic on an annual basis,  
5 and this is really throughout the State of Alaska or  
6 anyplace you're off of the road system, is a rather  
7 extensive fuel delivery network that involves barges that  
8 are making coastal transits and then heading up rivers.

9 Sometimes they're just making an offload to a  
10 facility that's on or near the beach. Sometimes they're  
11 using a manifold to pump through to a pipeline to supply  
12 a community in the area. Some places they're bringing  
13 their own trucks and then driving the fuel off the barge  
14 up the tundra and to the village.

15 There's an awful lot of that that goes on throughout  
16 the State of Alaska and into the river systems in the  
17 State of Alaska. And we don't do a whole lot to  
18 facilitate that traffic. We kind of know where it's  
19 happening.

20 If you backtrack, you know, 10 or 15 years, before  
21 we had GPS, we had a somewhat extensive network of ray  
22 cons that were installed in the north slope.

23 We had a project in the early '90s to expand that  
24 constellation of ray cons, and it was primarily to help  
25 the tug and barge traffic. But then as the GPS came

1 on-line, budgets, I think, were getting tight.

2 At some point in time in the mid '90s we made a  
3 decision to stop going down that road. And instead of  
4 adding new ray con sites, we actually pulled them all  
5 out. But at the end of the day, you know, there's a lot  
6 of oil and gas moving, you know, in these areas every  
7 year every summer.

8 MR. WELLSLAGER: If we could go back to the map of  
9 the state for a moment, please.

10 What struck me about that map was, first, it showed  
11 me how nonexistent or old so much of the hydrographic  
12 data is around the state, not just in the Arctic, but  
13 also in the areas in which there is currently a lot of  
14 marine traffic.

15 You know, there are deficiencies in the  
16 Glacier Bay area. There's a lot of marine traffic up  
17 there. And we mentioned the risk assessment that's going  
18 on in the Aleutians. There is a huge amount of  
19 commercial shipping going through the Aleutians on the  
20 North Pacific Arctic.

21 So I worry a little bit about getting carried away  
22 about the future projections in the Arctic when we aren't  
23 doing a satisfactory job in the areas where there is a  
24 lot of marine traffic now.

25 And I know that, you know, we can't get the BBC to

1 do articles about, you know, hundreds and hundred of  
2 ships going through the passes of the Aleutians or the  
3 cruise ships going to the Glacier Bay, that's not used  
4 anymore, but there's some real needs there with limited  
5 resources.

6 And you wonder if you're going to divert things  
7 north that need to be attended to the south in Alaska,  
8 which brings me to my last point, which is it sure seems  
9 to me that this acoustical buoy system of right whales  
10 and LNG development in Massachusetts provides us with an  
11 example of what might be done with oil and gas  
12 development up there in Alaska in the Arctic.

13 Why can't the federal government extract from the  
14 people that want to profit from energy development up  
15 there the relatively miniscule amount of money that would  
16 be needed to have adequate funding of hydrographic and  
17 perhaps Coast Guard services and a few other things?

18 I don't think the federal laws are set up that way  
19 now, but why couldn't they be? It's sort of the concept  
20 of we're not going to allow -- we're a county and we're  
21 not going to allow new subdivisions until the developers  
22 agree to finance the roads and the schools and the  
23 infrastructure.

24 And, you know, the Coast Guard and NOAA and our  
25 equivalents are always going to be scrambling for dollars

1 and cannibalizing other worthy projects to take care of  
2 the North unless we sort of change our philosophy about  
3 being a little more aggressive with financial  
4 contributions from people that want to profit from our  
5 public resources up there, and they can afford it.

6 MR. SKINNER: It was a little unfair earlier in my  
7 characterization of Larry as a warm water Alaskan. We  
8 all know he's very experienced with the whole wide state.  
9 I thought I'd just kind of get that in before you try to  
10 set the record straight, Larry.

11 MR. WHITING: Thank you for the introduction.  
12 Larry Whiting.

13 I have been an Alaskan resident for 41 years. And  
14 in answer to the last comment here why you have a  
15 significant amount of resources being dedicated to  
16 Alaskans is, the green circle route starts on the West  
17 Coast goes through the Numack Pass, (sic) I believe it  
18 is, and there must be thousands of ships a year that  
19 cross through that thing north of the Aleutian Islands  
20 and then down to China and into Japan.

21 So there's a significant need for surveys that  
22 hadn't been conducted there since Captain Cook was up  
23 there. So there's sea monsters haven't been thought of  
24 yet. So there's going to be accidents coming up in that  
25 area. That's one reason.

1           MR. DASLER: That's my exact point. I mean that's  
2 an area where we should have done this type of stuff a  
3 long time ago and we haven't done it.

4           MR. WHITING: You're correct. We haven't done it,  
5 but at the same time, you know, I had not heard that we  
6 could extract money from an oil company for these type of  
7 surveys other than to get the MMS to do the survey.

8           I think it behooves NOAA to go out there and say,  
9 MMS, do the survey to NOAA's standards, you know. And  
10 they would do it, because that's part of their lease.

11           And so I agree with you, but I also say we need to  
12 go somewhere else, go up there and survey. If they're  
13 going to be coming in there, these guys need the data,  
14 the cruise ships need the data, because you're going to  
15 be there next year, you know.

16           So, anyways, I'll be quiet for one second.

17           MR. DASLER: I just wanted to touch on -- I think we  
18 talked about this in San Francisco as well. I think  
19 there was record blocked leases in the Chukchi Sea last  
20 year, but I think we raised that issue then, the same  
21 thing. I think it's a little late to capture it in those  
22 leases, but moving forward, is there some way to  
23 coordinate with MMS on that concept?

24           The infrastructures drastically need it up there,  
25 and if they're getting all this revenue for lease blocks

1 up there, how can that get taped in to support that  
2 infrastructure.

3 I don't think we came to a resolution. I know it  
4 was discussed. So it may be something that, I don't  
5 know, we can work out a recommendation of eventually some  
6 liaison with MMS on the issue, a permanent one.

7 MR. WHITING: Well, you know, the infrastructure is  
8 going to be required to support those offshore rigs, the  
9 offshore exploration.

10 I don't see why as part of their permitted drilling  
11 you can't get them to fund the survey around those  
12 villages that it's going to need it.

13 And that's up to the -- I don't know who gives out  
14 those permits here in the federal government, but MMS has  
15 got to have some input into the State of Alaska, and I'm  
16 sure that NOAA could.

17 You need to have that infrastructure survey now, not  
18 after the guys get in there, the oil companies.

19 REAR ADMIRAL WEST: I think the rub is for those  
20 assets going to the general treasury. I think that's by  
21 law.

22 If you remember, the Ocean Commission said we're not  
23 going to give you direct permission without some means of  
24 payment; therefore, a bill was recommended to come out of  
25 the general treasury from those royalties that come out

1 of oceans and nobody did anything about this and that was  
2 four or five years ago.

3 So if this president just opened up -- I think you  
4 opened up the rights to the continental drilling, I think  
5 new guy, and didn't say no, but if they do stand there's  
6 a lot of royalty money going to be pouring in soon into  
7 the general treasury.

8 And so where's the general treasury go? Does  
9 anybody know where the money goes? No.

10 MR. LUTHER: Wall Street.

11 REAR ADMIRAL WEST: The only way you can figure out  
12 how to do it is to freeze it and see who yells. I'm  
13 serious. Where does the general treasury money go?

14 If you ask that question in Washington, I've never  
15 got an answer from that. And this all started with the  
16 Ocean Commission that said how about putting some of that  
17 money into the recommendations that the U.S. Ocean  
18 Commission came up with. Nothing.

19 MR. WHITING: There' a -- I'm not finished yet. I  
20 had a couple of comments. Keelin, is that how you  
21 pronounce your name? What is going to be -- what is the  
22 largest component of sea level rise? Is it temperature  
23 of the water, or is it the ice melt, or do we know yet?

24 MS. KUIPERS: Well, I think it's a variety of  
25 factors. I'm not an expert to know all the details of

1 what goes into those projections, but certainly a big  
2 chunk of what we're seeing in terms of the changes in  
3 projections over the past couple of years do have to do  
4 with increasing ice melt in the Greenland and Arctic ice  
5 sheets. Also, too, sea level temperature has a role to  
6 play in that as well.

7 Judy, do you have other thoughts?

8 MS. GRAY: Yeah. I think you're referring to the  
9 fact that it's warmer and it takes up more volume. It's  
10 a combination of both. I don't know what the larger  
11 signal is.

12 MR. SZABADOS: Besides those two factors, which are  
13 the increasing volume due to the melting of the Greenland  
14 ice sheet and the thermal expansion of the sea surface,  
15 when you're talking about relative volume relative to  
16 land, you've got other issues like subsidence.

17 And while it's not due to the global -- it's what  
18 they call local sea level and it's relative to land. And  
19 that's probably in some areas a bigger factor like in and  
20 around New Orleans it's on the order of ten millimeters  
21 per year, which is five times more than the sea level  
22 rise.

23 MR. ZILKOSKI: You actually have sea level with  
24 wouldn't it be rise? It would be lowered, because you  
25 guys -- you're living in Alaska. It's about ten



1 millimeters or more here.

2 MR. WHITING: That's going to keep my house from  
3 falling into the sea, right?

4 Judy, you have -- NOAA has this big study about  
5 cyclones being formed in Africa and the tropical storms  
6 coming around, the hurricanes that happen, similar to  
7 that -- does that happen similar in the Pacific? Because  
8 I've noticed that cyclones down around the Philippines  
9 will come up along the South Asia coast and Siberia and  
10 come across into Alaska with a hundred mile-an-hour  
11 winds. It's not even hardly mean when it gets to Alaska.

12 MS. GRAY: Yes. We have the same -- the patterns in  
13 the Pacific and the Atlantic while aren't always  
14 correlated, it's a more intense set of seasons in the  
15 Arctic, not necessarily correlated with more seasons in  
16 the Pacific, but in terms of individual storms,  
17 absolutely see very similar patterns with the same  
18 easterly waves. They promulgate all around the  
19 earth. And so you see storms forming in the Pacific and  
20 then moving towards the Philippines recurving just like  
21 they recurve in the Atlantic.

22 Some of them hit Japan, some of them skirt Japan,  
23 and a lot reach the Aleutians. It's just like we get  
24 hurricane-force winds in England in the Atlantic basin.  
25 It's the same. They get caught up in the West and go

1 through some type of extra-tropical conversion like the  
2 Perfect Storm where they hooked up with a big front and  
3 you can get hammered on the West Coast on the other side  
4 of the Aleutian Basin.

5 MR. WHITING: Thank you. That must increase the  
6 snow level in Washington and Oregon and in through there,  
7 so I went skiing.

8 MS. GRAY: Wrong season.

9 *(The court reporter requested a short recess.)*

10  
11 MR. SKINNER: Well, thank you all very much. That  
12 was very useful. I hope you all stick around and we're  
13 on the last portion of the meeting.

14 We're a little bit behind schedule. It's no one's  
15 fault. It's very informative. I think having some  
16 flexibility to really drill down on some of these issues  
17 is important.

18 We have a presentation by Steve. There's some  
19 refreshments up here that people should feel welcome to  
20 make use of.

21 Do we need to take a break quickly to go in and out?  
22 Five minutes.

23 *(There was a recess taken at 4:05 p.m.)*

24 *(The session resumed at 4:13 p.m.)*

25 MR. SKINNER: So while you're getting settled, I

1 just want to check to see if anyone else has signed in or  
2 would like to make public comment? Right behind you,  
3 this gentleman, he signed in. You have a public comment?

4 Anyone who is from the public who has not signed in  
5 who would like to make a comment? Going once. Going  
6 twice. All right.

7 CAPTAIN BARNUM: Okay. Thank you. I was talking to  
8 David and he had some charts from Alaska you might want  
9 to take a look at.

10 There's charts up there that basically were very  
11 pretty scary, but just showing some of the challenges  
12 that they're dealing with.

13 I'm going to give a quick update. Some of the  
14 things I talked about this morning I've already included  
15 in this presentation.

16 The point of this presentation was to give you an  
17 update on some issues that have been occurring, update on  
18 what's happening with the IHO, and the mandatory  
19 directives, what's happening -- we talked about the VSB,  
20 the Raster system that went down this past July and what  
21 we've done to get that back on its feet and also to close  
22 in holes for single points of failure to prevent that  
23 from happening again. I may have skipped some slides  
24 here, so bear with us.

25 So, again, we talked about some of the drivers,

1 overview of current status, your charting budget, what's  
2 going to be happening with our nautical chart system two.  
3 This is a system that we're implementing to create  
4 nautical charts on a single database. And we'll talk  
5 more on that in a second.

6 The stakeholder requirements, we have heard a lot  
7 about it today, that we're in the internet age and we're  
8 still dealing with systems of partners where compilation  
9 of data sometimes takes a couple of weeks with the  
10 publication of local notice to mariners.

11 We're looking at ways that we can get this  
12 information or be in demand at how we can present this  
13 information on almost a 24-hour basis to the mariners.

14 So all the way from the Pinga chart where we take  
15 soundings and publish it on the nautical chart of how we  
16 publish changes that are occurring on the seas.

17 Again, more, better, faster. IMO character  
18 requirement for ECDIS starts in 2012, that's proposed.  
19 The IHO is committed to full worldwide coverage for ENC  
20 suite by 2010.

21 This has created a lot of international  
22 coordination, to include Canada, how we mesh and  
23 harmonize our electronic and paper charts to not  
24 duplicate coverage.

25 One of the tenants of ENC and ECDIS is to not have

1 overlapping coverage, because the ECDIS systems are not  
2 happy when that happens.

3 The U.S. Coast Guard ruling on electronic charts, we  
4 mentioned that earlier today, it's expected late 2007,  
5 but I haven't seen it yet, an increased request for  
6 charting products for non-navigational needs such as  
7 nitrous oxide, whales, critical habitat, et cetera,  
8 et cetera, et cetera.

9 Internal drivers. Certainly, as I just mentioned,  
10 the Pinga chart. We are getting better at the Pinga  
11 chart. We've had much discussion internally on improving  
12 our processes. Great strides made in delivery of water  
13 level data and shoreline data. This was a banner year  
14 for shoreline data and certainly delivery of water level  
15 data to increase or decrease the amount of time on the  
16 Pinga chart.

17 We had a session that was held at the Shallow Water  
18 Conference this past -- the month of October. It was  
19 held at UNH on Pinga chart. It was an international  
20 conference, and we didn't know who was going to show up  
21 at this conference. It was held the last day on Friday,  
22 Friday afternoon, we had standing room only.

23 So representing many individuals both in the  
24 U.S. and international representation including Canada,  
25 the U.K., Finland and others.

1           And I think Andy's aware we shared a lot of the same  
2 issues of how to collect the data and finally publish it  
3 on the nautical chart.

4           So we are working to eventually create some  
5 additional forms in the future, international forums on  
6 how to share ideas and technology, how we can improve  
7 that delivery of data to the mariner.

8           NCS chart system, that's our current chart system  
9 that's produced both in vector and Raster products,  
10 basically two production lines.

11           Our goal is to have one production line so that when  
12 a piece of source data comes in it's applied once to the  
13 database as opposed to twice.

14           Anytime you apply something twice to different  
15 databases you have a question of which one's correct and  
16 keeping them harmonized.

17           So this is the Holy Grail of many hydrographic  
18 offices around the world, including our competitors -- I  
19 shouldn't say this -- associates across the pond, the  
20 U.K., and who is also working to make this happen. But  
21 it's the hydrographic offices are -- this is the ultimate  
22 goal to have a single database for maintaining  
23 information.

24           And the ultimate delivery of this will be an  
25 improved process for the data -- improve the system and

1 to again get it faster to the mariners.

2 Some statistics on our web downloads continue to be  
3 for ENC's, over a million a month; RNC's, 300,000 a month.  
4 We have 74 agreements in place for the Raster nautical  
5 charts and 8 vendors for the certified distributors and  
6 value added distributors.

7 It's interesting to note that we found over  
8 43 percent of the downloads for our Raster nautical  
9 charts were people with iPhones, so we thought that was  
10 interesting.

11 BSB product issues. We talked about this in the  
12 San Francisco meeting. The BSB Raster chart product,  
13 again, does not meet solas nautical chart requirements.

14 However, it does assist mariners or situations with  
15 mariners where ENC's don't exist. The Cooperative  
16 Research and Development Agency Agreement partner MapTech  
17 went out of business unexpectedly, and they were the sole  
18 provider of this source, BSB source, Raster charts.

19 During the shutdown of MapTech, NOAA experienced  
20 difficulties in getting the required software from  
21 MapTech, which we final got in July. We rebuilt the  
22 system in-house. We implemented it with our partners to  
23 include testing with the Coast Guard private vendors and  
24 others, and it came back on-line full availability in  
25 September the 26th.

1           So, lessons learned, we have taken that lesson of a  
2           single point of failure seriously, and we are looking at  
3           a complete supply line both of ECNs and Rasters at how to  
4           ensure that we don't have a single point of failure.

5           And the POD, that's the print on demand product.  
6           Currently, Ocean Graphics is our single provider for that  
7           product. We are moving forward to expand that to  
8           additional providers of POD products.

9           Again, the Coast Guard is currently working, not  
10          very fast, on draft ECDIS rulemaking. That may be  
11          speeded up with the IMO's movement to make ECDIS  
12          mandatory, but we also expect the Coast Guard -- we'd  
13          like to encourage the Coast Guard to allow the use of  
14          hydrographic office-produced Raster charting products as  
15          official data on official -- as official data for  
16          nonsolas vessels or as appropriate.

17          Here's a slide showing basically our trends in  
18          sales. The traditional litho paper chart shown in  
19          purple, the POD -- well, I guess it's close to purple, I  
20          guess that's fuchsia, I guess is more traditional -- and  
21          purple for the POD and the yellow show in total. So you  
22          see the total trend downward, probably expect to see that  
23          as the electronic charts become more popular.

24          I think there will always be a place for paper  
25          charts in navigation as appropriate backup, but you can



1           certainly see the POD rising rapidly and the litho going  
2           down. So, in fact, the POD is overtaking litho as the  
3           number one choice.

4           So charting budget. All this has been happening  
5           with no increase since '04. Downward trend, and  
6           basically we're eating inflationary out of hide.

7           Our production process. I talked about migrating  
8           from NCS1. Our current charting system of NCS2 is  
9           basically going to be changing the wheels of the buses  
10          going down the highway at 60 miles-an-hour. Some impacts  
11          of that will be though that we may have to reduce the  
12          number of new additions.

13          We'll be keeping up with critical data, critical  
14          updates, but some of the other data that's not critical  
15          such as -- generates a new addition such as new  
16          hydrographic survey's main language until we get this  
17          NCS2 up and running. Again, it's just a matter of having  
18          two production systems in line at the same time as we  
19          transition.

20          So, again, I mentioned some of the attributes of  
21          the nautical charting system two, again, change at once,  
22          and it ripples through all the product lines.

23          Again, product timeline of this is that we planned  
24          to accept -- well, there's several contractors involved.  
25          And behind the scenes there's ESRI that produces art

1 view, and there's a workload of products layered on top  
2 of that, but ESRI is a manufacturer of GIS software. And  
3 so we have great faith, a lot of avenues in the  
4 publications. ESRI has done a lot of publications or  
5 advertising in their publications of this partnership.  
6 So they see this as, once it's accessible, they will be  
7 able to market it to other hydrographic offices around  
8 the world.

9 Again, January 9th we plan to accept this, undergo  
10 rigorous testing through early '09. The software part is  
11 easy. It's the people and the training is the hard part,  
12 the change in that process, the change in the culture,  
13 but we have a dedicated individual that is heading up  
14 that team and we're addressing those issues.

15 This shows a chart, if you will, that shows the  
16 charts maintained by a current production system shown in  
17 fuchsia. The yellow showing that the charts that will be  
18 maintained in NCS2. So it will be a transition period  
19 over several years as we transition the systems from the  
20 old system to the new system. And similarly for the  
21 Raster nautical charts as we transition those two  
22 systems.

23 So, again, it's analogous to changing the tires  
24 while the vehicle is moving, rebuilding the Woodrow  
25 Wilson Bridge while rush hour.

1           No new resources available. We have markers in our  
2 current budget to last a couple of several years, but  
3 those have yet to have been passed because of the CRs.

4           So we are diverting some limited resources, dollars  
5 and fees from existing production lines to keep this  
6 going, but as we continue to build new NCs, it continues  
7 to slow us down, if you will, adding toothpicks to our  
8 back.

9           So, again, we talked about the new improved product  
10 suites and the new delivery of data. That's what it's  
11 going to be all about, the NCS2.

12           And, again, out year budgets, no new resource  
13 increase. We hope that FY '09 may be different. We'll  
14 see certainly a lot of changes that Jack talked about  
15 with the transition and having the understanding of what  
16 these services provide the nation.

17           So with that, that is it. I'll take any questions  
18 if there's any.

19           CAPTAIN HICKMAN: I just have a comment for the  
20 record and the court reporter's benefit. That be  
21 would -- put that, the distribution, that one -- that  
22 one's fine right there.

23           Well, the other one, but anyway traditional -- just  
24 so you know, it's periwinkle.

25           CAPTAIN BARNUM: Thank you.

1           CAPTAIN HICKMAN: You have fuschcia, right? I want  
2 it on record that it's periwinkle.

3           CAPTAIN BARNUM: I thought it was violet.

4           MS. DICKINSON: Elaine Dickinson. What's the  
5 status with Ocean Graphics? Are they continuing as your  
6 provider?

7           CAPTAIN BARNUM: Yes, Ocean Graphics is continuing  
8 as our provider. But we, again, are opening the market  
9 to additional providers, and they will have to meet a set  
10 of standards of capability and quality.

11          MS. DICKINSON: Do you have any companies who have  
12 come forward and said they're interested in doing that?

13          CAPTAIN BARNUM: Our intent is to publish a Notice  
14 of Interest. So basically we're going to go out and be  
15 talking about how we intend to open up this market and  
16 looking for comment from companies.

17          DR. JEFFRESS: Steve, with your budget being flat  
18 since 2004, has your capacity to produce hydrographic  
19 charts diminished?

20          CAPTAIN BARNUM: It is becoming diminished,  
21 particularly with being able to maintain or publish new  
22 editions. There is a price for not being able to handle  
23 certain requests for new charts.

24          We've had a lot of new chart requests, there was an  
25 earlier slide, and we're having to delay those to the

1 future until we can get over this hump of the current  
2 system to the new system. And hopefully the resources  
3 will come through to allow us to continue to do it to a  
4 level that we want to be.

5 DR. JEFFRESS: So if you do get more resources,  
6 you're going to vamp up your facilities?

7 CAPTAIN BARNUM: Well, a lot of the work is  
8 contracted out. We have contract partners that help us  
9 maintain the ENC's, but quality control is certainly done  
10 all within NOAA and some -- but one of the significant  
11 parts is the compilation and maintenance. Maintenance is  
12 the big part. It's one thing to build them; it's another  
13 thing to maintain them.

14 DR. JEFFRESS: And do you think the private sector  
15 has the capacity if budgets do increase to take up the  
16 slack in producing more?

17 CAPTAIN BARNUM: Through our partners, yes. Yes.  
18 It's a resource issue.

19 MR. SKINNER: Other questions or comments?

20 MR. WELCH: Steve, with regard to the MapTech  
21 situation, have you produced or could you produce a one  
22 or a two-page summary of what happened and how you were  
23 hurt by what happened that you could give to the new  
24 departmental people, the transition people, so the next  
25 time somebody comes up with a bright idea of doing

OCS  
Action

1 something similar, like if you produced it right now it  
2 would be fresh and knowledgeable and you'd have some  
3 people who had firsthand experience. You know, sooner or  
4 later somebody's going to come back and introduce that as  
5 a new idea or a better way of doing things, and if you  
6 aren't careful you'll have to learn the same lesson all  
7 over again.

8 CAPTAIN BARNUM: Sure.

9 MR. SKINNER: Other comments?

10 MS. DICKINSON: Well, let me just throw this out  
11 there: What I understood was part of the reason MapTech  
12 got into trouble was that NOAA changed the structure of  
13 their contract and they were losing so much money they  
14 couldn't continue.

15 Is there any truth to that, or is that just  
16 speculation?

17 CAPTAIN BARNUM: My understanding is that the  
18 holding company that held onto MapTech -- it was --  
19 MapTech had many -- the company had many other pieces to  
20 it, and that particular individual became uninterested in  
21 pursuing that and those pieces were sold off, which left  
22 us, NOAA, holding the bag as far as being able to  
23 distribute product.

24 MS. DICKINSON: I know it was sold off, but what I  
25 had heard was that -- I guess, you know, private company

1 has to have a certain level of profitability to stay in  
2 business and there was something that changed with their  
3 agreement with NOAA that just made that unattainable.

4 CAPTAIN BARNUM: I'm not -- I'm not aware of any  
5 changes in that. MapTech was a primary partner in that,  
6 and we didn't charge them for the data. So it certainly  
7 wasn't a monetary issue. They had the rights for  
8 distribution and packaging of that product, the Coast  
9 Guard being one of the primary customers of that product.

10 MR. SKINNER: Additional questions?

11 MR. WHITING: I can't pass it up. Larry Whiting.  
12 Steve, how much of that maintenance of your ENC's is  
13 outsourced to places like India, you know?  
14 what does it look like, you know?

15 CAPTAIN BARNUM: Well, that's -- I don't have a  
16 number for you right now, but a significant number of it  
17 is, and that includes other nations around the world,  
18 including the U.K. uses a company.

19 MR. WHITING: I was just curious. The old company  
20 before I retired had a maintenance contract who could not  
21 compete with the outsourcing part and now they're a  
22 subcontractor.

23 CAPTAIN McGOVERN: This may be a stupid question,  
24 but you were talking about limiting the number of new  
25 charts that you're going to be able to put out, but

1 you've got ENC's and PODs.

2 How often do you need a new chart if those are  
3 continuously updated, you know, unlike the litho charts  
4 with all of the pencil marks and taped pieces on it and  
5 everything else? The others are just continuously  
6 updated. So why did you need to concentrate that much on  
7 new charts?

8 CAPTAIN BARNUM: Those are continually updated for  
9 critical corrections. So if there's a large application  
10 of shoreline or large application of hydrographic  
11 surveys, those kind of changes are typically delayed for  
12 a new edition and there is a certain amount of work in  
13 publishing a new edition.

14 CAPTAIN MCGOVERN: So you're saying that, you know,  
15 the ENC is not really updated for the latest information,  
16 or is it --

17 CAPTAIN BARNUM: It's updated to the latest  
18 information for the critical information. All the  
19 information that's shown in them are shown to mariners.  
20 There may be a hydrographic survey, say, that was  
21 produced either by NOAA or a new shoreline that might not  
22 be critical to the chart, i.e. the depths went deeper.

23 So any critical information out of that survey such  
24 as obstructions or wrecks or shoreline would come through  
25 immediately and be posted in the local notice to



1 mariners; however, the application of the full source of  
2 that hydro survey would be delayed, which in some cases  
3 is important to users who are looking for deeper water.

4 REAR ADMIRAL WEST: I don't understand why you have  
5 to put out a new chart. It just send out more digits,  
6 right?

7 CAPTAIN BARNUM: I'm sorry. Say again, sir.

8 REAR ADMIRAL WEST: I understand what you said, but  
9 why is that considered -- why is that considered a new  
10 chart rather than sending out little minor updates, this,  
11 that? It's still digits going over the air.

12 When you do a new shoreline or a survey, it's just  
13 more digits over the air waves if you've got a digital  
14 database on board already, right?

15 CAPTAIN BARNUM: Well, our current production  
16 system -- ultimately in the future we will, and the  
17 nautical system too, but currently the system is --  
18 there's actually two databases that are maintained.

19 One is the latest edition where the critical  
20 applications apply to it; and then there's another chart  
21 that's maintained that has applied to it all of the other  
22 data that's noncritical. Crit and noncrit. And there's  
23 resources that take and apply that data to the chart.

24 So we're taking basically those resources that apply  
25 that noncritical data and putting them elsewhere. We're

1 basically trying to keep the critical data going out for  
2 all the products.

3 MR. SKINNER: Ashley.

4 MS. CHAPPELL: Ashley Chappell. I think that new  
5 chart also refers to requests for completely new chart  
6 areas on a larger scale from a smaller scale chart if a  
7 port is becoming of greater importance and actually  
8 rescheming or formatting a chart of an area that we  
9 haven't had before. We do get those requests. Those are  
10 also the ones that have to be put on hold.

11 CAPTAIN BARNUM: That's correct. A request for new  
12 charts, in which case a new chart would have to be  
13 completely built where you would need source data of  
14 shoreline, hydrography, et cetera, et cetera, et cetera,  
15 to build a new chart on a larger scale. We've had  
16 requests for many new charts around the nation. Again,  
17 we're having to defer.

18 MR. SKINNER: Other comments?

19 MR. DASLER: On that NCS2s, so that's all going to  
20 be done through ESRI software then? So they'll just be  
21 reading in S57 data and it's all going to be compiled  
22 through ESRI?

23 CAPTAIN BARNUM: Well, the source data will come in,  
24 but the ultimate compilation of all of that source data  
25 will be done through the ESRI system, and, again, some

1 layers of product work flow and nautical chart system  
2 tools applied on top of it, special tools that are  
3 developed as far as the nautical part, but under the hood  
4 it's basically a commercial off-the-shelf system.

5 MR. SKINNER: Steve, is there anything that we can  
6 do for you to move this along? Supplying more money,  
7 more staff?

8 CAPTAIN BARNUM: Well, think positive for 2010, but  
9 certainly -- but I wanted to get back to you on the BSB  
10 and the issues that happened there and what the NCS2 --  
11 we're on the precipice of implementing that starting  
12 early next year and the implications of that transition.

13 Certainly, as I mentioned, finally, you know, I  
14 don't think there's anything we're precluded from  
15 lobbying here, but make you aware of the issues and what  
16 the lack of increased funding that has gone all the way  
17 through to final House and Senate parts. It just has  
18 never resulted in the final budget.

19 MR. SKINNER: Andy.

20 MR. ARMSTRONG: All right. I guess I'll risk this  
21 with my boss here, but I noticed that the transition to  
22 the new chart system is carried out until 2014. That  
23 seems like a long time to be in transition.

24 Is this a resource issue or is this a human staffing  
25 organizational issue that carries this transition all the

1 way out seven years or so, eight years, six years?

2 CAPTAIN BARNUM: A combination of all of the above.  
3 You know, certainly we want to be very careful as we  
4 transition to this new system to make sure that the  
5 products that we're putting out are proper, but I agree  
6 it is a long transition, but based on the current  
7 resources we have this is what we project that it's going  
8 to take. Ultimately, when you go to see that, it will  
9 free up resources in the end.

10 Again, getting over this hump, that will allow us to  
11 again focus on some of these resources on new charts and  
12 new technology and so forth.

13 MR. ARMSTRONG: So could additional resources speed  
14 that up or would you rather not speed that up?

15 CAPTAIN BARNUM: It would speed it up to a certain  
16 extent, but kind of like, you know, cooking an omelette,  
17 you know, it takes a certain amount of time to turn up  
18 the heat you'll just burn it. So you certainly want to  
19 have at least some orderly transition to move to the  
20 system.

21 Certainly, as we move forward this is untested,  
22 uncharted waters, if you will. Again, I've mentioned  
23 it's the Holy Grail of all HOs. We want to make sure as  
24 we transition to this, again, it's going to work properly  
25 and that the data is going to be correct. So that's our

1 ultimate goal, make sure it's correct and accurate.

2 MR. SKINNER: Any final comments? Thanks very much,  
3 Steve.

4 It's just about 5:00 o'clock, so we're almost done  
5 on time. The last thing I want to try and do is see if  
6 we can recap any specific areas we'd like to make a  
7 formal recommendation on.

8 Ashley has offered to try and put those into written  
9 form if we can articulate them here now, and then we  
10 would be able to hopefully agree on the concept subject  
11 to future approval in a draft letter. That way we'll be  
12 able to agree on the concept tomorrow at some point.

13 So I know it's the end of the day. I know  
14 everyone's tired and would like to move on, but if we  
15 could spend just a few minutes on going over some of the  
16 presentations here. If there are any issues that jump  
17 out -- here we go. Well, let me rephrase that. Please  
18 direct your attention to the screen.

19 MS. CHAPPELL: These are just what I picked up in  
20 listening, but if there are other thoughts, of course, on  
21 what you heard.

22 MR. ARMSTRONG: I wonder -- just looking at that, I  
23 wonder if it would be appropriate, maybe Steve would  
24 comment on this, if the panel would actually direct a  
25 document to the transition team; in other words, from the

1           Advisory Panel a document specifically aimed at the  
2           transition team for navigation services.

3           MR. SKINNER: I think that that was one thing that  
4           we had talked about in the past.

5           MS. DICKINSON: Just give them our report.

6           MR. SKINNER: Yeah. I think that's one of the  
7           things, but I think we also talked about sort of a more  
8           effective way to do it since things are going to move  
9           fairly quickly, I believe. And Steve --

10          CAPTAIN BARNUM: Jack had to leave to go to his  
11          meeting for the transition tomorrow. Mine is scheduled  
12          for Monday. So I do plan to carry a HSRP top  
13          five-most-wanted with me. I have to report that to my  
14          seniors too, what I'm giving the transition team, but  
15          it's a public document, and I think it stands on its own,  
16          so I leave it at that.

17          MR. SKINNER: I think that there are two things --  
18          maybe two categories of things that came out of today's  
19          meetings or presentations: One are the things that we  
20          want to follow-up on; and two would be the items that we  
21          put in sort of more policy-oriented issues that would go  
22          as our official recommendations to the administrator.

23          And I thought that the human machine interface issue  
24          that was raised was really an interesting one. I thought  
25          Admiral West's comment that we have that person come in

1 and do the whole presentation might make any  
2 recommendation we made a little more informed. ✓

3 So I don't -- I guess my view on that would be to  
4 perhaps put that on the list at the next meeting with  
5 perhaps a presentation from this person, because I think  
6 that's a critical aspect.

7 We're talking about all these new aids to navigation  
8 and other things, what about the other end of it, the  
9 human side?

10 So I guess maybe we'll delay on that for -- put it  
11 down on a to-do list and maybe not have it as part of our  
12 recommendations. Is that acceptable?

13 ADMIRAL WEST: No, that's really what I meant, next  
14 time we meet. It's a great presentation. I don't know  
15 where our next meeting is going to be. Is that too  
16 early?

17 MR. SKINNER: I think we had said something about  
18 having the next meeting in either Baltimore or D.C. I  
19 heard this morning from Jack that it was going to be in  
20 Boston in April so --

21 REAR ADMIRAL WEST: We need to get the NTSB reset to  
22 get on the schedule. That's all.

23 CAPTAIN MCGOVERN: I'll follow-up on that. There is  
24 -- that's a thought. Actually I attended a  
25 NTSB-sponsored conference on that subject a number of

1 years ago, and it was interesting that we finally got --  
2 we had the Atlas Krupps and the other manufacturers there  
3 and the shipbuilders, et cetera, and they finally  
4 admitted after a day and-a-half that, no, they did not  
5 take the man/machine interface or any ergonomics into the  
6 design of their equipment. At first, they were like, oh,  
7 yeah, you know, and they finally said, no, we don't. But  
8 I think part of that is not only -- and there is a  
9 gentleman that did a lot of work with the NTSB and he's  
10 left there and he's now at ABS so if you can't get the  
11 NTSB guy that would -- since he's gone to NTBS, they've  
12 actually put out a guidance on ergonomics for ships and  
13 machines.

14 But the other part of this is, and maybe somebody  
15 actually from NOAA can follow-up on, because it's not  
16 only the numerology, but it's also talking about the  
17 symbology and all this other. And there's been a lot of  
18 work put into that, a lot of conferences on that, and  
19 maybe somebody from NOAA, because NOAA's obviously  
20 involved and there's a lot of mariners involved in it,  
21 and say maybe give us a little background on why things  
22 look the way they look and, yes, the ENC's are different  
23 than what we're used to on the old litho charts, but, you  
24 know, this is a worldwide standard now so things are  
25 different, and maybe there has to be some talk about that



1 too, because it's not only the numerology, but the other  
2 stuff. Maybe it could be a combined and that would be  
3 in-house probably.

4 CAPTAIN BARNUM: Just to add to that, the U.S.  
5 representative was elected chair of the colors and  
6 symbols at the last month's meeting. So, again, it's an  
7 international agreement. We have a lot of forces, but  
8 certainly the elected chair gives us an opportunity to  
9 provide leadership.

10 MR. SKINNER: Make sure he knows the difference  
11 between periwinkle and -- they're in charge of colors.

12 MS. DICKINSON: Tom, I think for purposes of the  
13 transition team briefing, the most impressive thing was  
14 that we wanted the Committee on Marine Transportation to  
15 continue.

16 MR. SKINNER: And with that, Steve, is that  
17 something that we just -- is noted by you and Jack as you  
18 make your presentations or do we also include that as one  
19 of our specific recommendations?

20 CAPTAIN BARNUM: I think you would get more impact  
21 with a specific recommendation.

22 MR. WELCH: With regard to the transition team, I  
23 think it's fine for Steve to bring up the report and hand  
24 over the report, but having been one of these people on  
25 the transition team a long time ago, these people are

1 deluged with paper. They won't read that report.

2 I think what we need to do is take our report in a  
3 one-page letter that's from us that summarizes our five  
4 key recommendations, maybe add a paragraph that talks  
5 about continuing and formalizing the CMTS and put your  
6 signature on it, because Sally knows you and that  
7 distinguishes it. Steve can do his thing too, but that  
8 way our recommendation is not necessarily Steve's  
9 recommendation. We've got a little bit of -- I think  
10 this would be useful if we can quickly draft something  
11 like that.

12 I mean basically we'd be cutting and pasting out  
13 the report and then condensing it down to a one-pager  
14 that they actually might read it.

15 MR. SKINNER: I'd be happy to put that together and  
16 send it around in short order to get people's comments.  
17 I think a lot of these look more like things that we're  
18 going to do rather than specific recommendations. There  
19 may be some incorporating the NOAA rep on Arctic vessels;  
20 we may want to do something as a result of this  
21 afternoon's presentation in terms of specific  
22 recommendation for that. Any suggestions on that?

23 MR. WELCH: I think what we could do is commend NOAA  
24 and the Coast Guard for having it this past year and make  
25 it an observation that appears to us that it worked well

1 for both agencies and encouraging both agencies to  
2 continue that relationship and future Coast Guard  
3 deployments up to the Arctic.

4 MR. SKINNER: Okay. Let me just perhaps take that  
5 idea and let me go through today's schedule and just run  
6 through some ideas.

7 The first one for the Stakeholder Panel, I know we  
8 talked about PORTS a lot and a lot of our recommendations  
9 involves PORTS, but putting the letter -- once again, you  
10 know, this seems to be in a different area of the country  
11 a critical issue, and we focus on the need to fully fund  
12 PORTS. Do we need to say that again? I think it's -- we  
13 said it before, but having different input from a  
14 different region, I think it's important to respond to  
15 what the Stakeholder Panel says with people coming in.  
16 Any concerns with that? Larry, and then Sherri.

17 MR. WHITING: You know, fully funding PORTS, that  
18 was our first motion that we -- first recommendation, but  
19 why don't we figure out a way to fully fund PORTS, if the  
20 federal government can buy -- I don't know how we go  
21 about doing that, you know. What do you do? What type  
22 of funds do you set aside for this thing? Where do you  
23 go?

24 MR. SKINNER: Well, keep in mind -- I just want to  
25 quickly respond -- that we did hear some ways that the

1 Tampa area PORTS is funded and that we can also maybe  
2 list -- maybe talk about that as a way of maybe providing  
3 a model that if the local user groups are all providing  
4 that, that the federal government needs to provide a  
5 bigger share. I'm talking out loud here and I'm as tired  
6 as the rest of you, so it's probably not making much  
7 sense, but keep in mind the letters -- we usually do a  
8 narrative before we get to the recommendations, so if we  
9 can talk about some specific areas in Tampa Bay or  
10 specific characteristics that might address that issue.

11 CAPTAIN HICKMAN: I was just -- when I mentioned  
12 it, I wanted the Stakeholders to know that it was a  
13 priority for us and not that just because we brought it  
14 up in every meeting. I meant that it was important, not  
15 that we should stop talking about it, so it's very  
16 important. We're going to probably be talking about it  
17 for a long time to come.

18 MR. SKINNER: Agreed.

19 CAPTAIN McGOVERN: I believe that -- we're not  
20 talking about a whole lot of money here to try to figure  
21 out a way for the federal government to pay for it. I  
22 mean it's a program. We're talking pennies on the -- if  
23 we're looking at what the federal government spends in a  
24 day.

25 But in lieu of that, you know, going back to what I

1 had mentioned earlier, originally it was the thought that  
2 one of the locals had to pay for it, but we would be able  
3 to charge for the information in order to recoup that  
4 money, and we were told eventually that we were not  
5 allowed to do that, because it is -- it's NOAA's  
6 information that has to be available to the public, but  
7 we have to pay for it. So it doesn't make sense.

8 REAR ADMIRAL WEST: It's public money used to pay,  
9 not NOAA's.

10 CAPTAIN MCGOVERN: Well, but it was public money, it  
11 was private money.

12 REAR ADMIRAL WEST: No, the installation to provide  
13 the data.

14 CAPTAIN MCGOVERN: All right. But the O&M is  
15 private money and we weren't able to charge for that  
16 information, but maybe being able to charge for that --  
17 if a port is allowed to charge for that information,  
18 whether it's a subscription fee on the Internet or a 900  
19 number, you can recoup your money from the actual users  
20 and not -- because otherwise, as I said before, you can't  
21 identify all the users in order to pay for them unless  
22 they pay for it as they use it.

23 REAR ADMIRAL WEST: Yeah, I agree with Andy. I  
24 think that's one of the things we ought to look at  
25 tomorrow for the future.

1           We can sit here and say fund it all, it's nice to  
2 say that. It's not going to happen. If you tell Jack to  
3 fund it all, he's got to go find the money someplace  
4 else. So where does he squeeze it all? I think that  
5 there's a model -- if we really think about this and  
6 start thinking about, you know, LNG ships paying for some  
7 of this and right whales and hurricanes, I don't know  
8 what the hell, there's got to be some model that we may  
9 be able to help them to put this in place and make it  
10 real, because we can say fund it all for the next ten  
11 years and the money's not going to be there.

12           So maybe we could help with some type of model.  
13 Like Andy says, they're paying for the O&M. We ought to  
14 be able to get -- recoup some money from that.

15           There is a law that if you use public money then it  
16 has to be available through the data, but this is a  
17 little bit different, but I don't think we've looked at  
18 it that way before, and maybe we should.

19           MR. SKINNER: I know, Dave, you wanted to say  
20 something, but I wanted to -- I think I may have scared  
21 us into the wrong track here.

22           What I want to make sure we do before we leave  
23 tomorrow is agree in principle and have a vote on a  
24 recommendation subject to the recommendation being  
25 circulated and revised by the members.

1           So, it being late in the day, I want to sort of go  
2 through the general areas we want to cover. Is it safe  
3 to assume that we're going to have, on PORTS, another  
4 recommendation on PORTS based on what we heard about  
5 Tampa Bay? And is that enough for a vote that we can  
6 then revise on the language update to circulate? I don't  
7 mean to cut off discussion. I just don't want to --

8           CAPTAIN JACOBSEN: We should continue to ask for the  
9 funding for PORTS. In going parallel, we should look for  
10 other alternatives, but keep asking for the money.

11           MR. DASLER: I think problematically it just seems  
12 wrong to me to put instrumentation in and rely on  
13 somebody else to pay for operation and maintenance, but  
14 yet you're reliable for it.

15           It seems like a no-brainer that operations and  
16 maintenance needs to be a key component of that if you're  
17 responsible for the data that's coming out of it and the  
18 government's liable. And they're not -- in the case of  
19 San Francisco, in the Cosco Busan one, systems weren't  
20 operating when they should be.

21           I mean it seems like the only approach is to do that  
22 and maybe we need to emphasize that again. That's what I  
23 would as far as -- state those facts again and make a  
24 recommendation that it should be fully funded.

25           REAR ADMIRAL WEST: I agree with all that, but the

1 reality of this thing is, and as I asked Steve, did you  
2 understand that it was your responsibility to O&M once it  
3 was installed, and your answer was yes, and that was the  
4 agreement with the federal government. So that's in  
5 place and that's there.

6 I don't agree with it and I've said all along you  
7 put it in place and you ought to fund it, but that's what  
8 we're dealing with. NOAA has a right to it. You put it  
9 in with this agreement here -- I don't know if in the  
10 City of Tampa, Florida, that this is the way it was going  
11 to be and they agreed to it.

12 And, hey, by the way, is Mark here? Mark, y'all did  
13 an economic study of the advantage of PORTS and publicly  
14 said, I think, it was \$18 million or something, which it  
15 generated funds.

16 So if I'm in NOAA B and I'm going, okay, great, let  
17 them pay for part of it, which goes back to what Andy  
18 just said, there's got to be some way to maybe work this  
19 all out that everybody's happy.

20 But I will tell you if it looks like it's benefiting  
21 a specific area or region and you say they're making  
22 money off of it, they're going to want to say all right  
23 then let them pay for part of it.

24 The only thing I'm asking is I think we ought to  
25 look at some model to maybe sort this thing all out.



1           MR. SKINNER: We were told to give Dave a hard time.  
2           That didn't mean ignoring him.

3           MR. ZILKOSKI: That's okay. I think I'll go back to  
4           the geodetic side. I think there could be a model that  
5           you start looking at. We had the same issues. We could  
6           not get the funding that we needed for all of our GPS  
7           cores. We did get the funding, and we looked at what are  
8           our roles and responsibilities, and that's the framework  
9           for the standards, the quality assurance, quality  
10          control, the storing of the data, and in some sense the  
11          distribution of the data, but our state partners actually  
12          charge a service for the data.

13          And Matt here can probably talk more about it,  
14          because he does get to charge a service. Now, if you use  
15          our money to put something in, you're absolutely correct,  
16          we do not allow you to use our money to get that  
17          service.

18          So we looked and said, well, what are we paying. We  
19          pay the framework if you have got to put a core site in  
20          there, but I won't buy the instrument to get it realtime  
21          to people, because that's what they're doing, but I'll  
22          put the GPS cores, because I need that for my framework.

23          So we separated roles and responsibilities. I think  
24          that's what you need to figure out how you do that and  
25          maybe he wants to say a little bit more on that, but the

1 states do charge, and that's how they maintain it.

2 MR. SKINNER: Mark, do you have --

3 MR. LUTHER: You can comment on that if you like.

4 MR. SKINNER: Not to be rude, but I'd like to -- I  
5 really want to focus on what are the areas we're going to  
6 make recommendations on. And I know there are a lot of  
7 elements to it and hopefully -- I'm happy to work with  
8 you, Ashley, on trying to put something together based on  
9 some of the comments we heard in this discussion, but in  
10 the interest of giving you at least seven minutes of  
11 personal time before we have to leave, I want to go  
12 through some of the possible other areas, maybe just get  
13 a yes/no quick idea of where we want to focus on.

14 We know -- it sounds like we're going to do  
15 something on PORTS as a recommendation based on what we  
16 heard; it sounds like there was a general agreement to do  
17 something on keeping the CMTS as part of that  
18 recommendation as part of that presentation.

19 I think that the other presentations were going to  
20 be internal in terms of the strategic plans. John, did  
21 you want to say something?

22 MR. DASLER: Let me -- just from the standpoint of  
23 recommendations, I guess most of the time when we -- I  
24 feel we're discussing this stuff that it's being heard,  
25 but I guess from Steve's perspective maybe like the

1 comment on a plan for disseminating charts, survey areas  
2 out ahead of time or internal, Matt, would  
3 recommendations like that help?

4 I guess I don't want to see us make recommendations  
5 if they're not needed, and where it's going to help Steve  
6 move a program forward, I think that's what we want to  
7 focus on.

8 So I guess that said on the strategic ocean and  
9 coastal mapping efforts, you know, we had one about  
10 developing a vehicle for dissemination of planned mapping  
11 areas and trying to get those out to agencies. And you  
12 think a recommendation on that is needed or it will  
13 happen internally that that's --

14 CAPTAIN BARNUM: I think a recommendation like that  
15 adds weight to the initiative to make this happen. So  
16 recognizing from the fact that it seems worthy, and I  
17 think it would add some weight to it, so it would be  
18 good.

19 MR. DASLER: So that's -- probably those two add-ins  
20 that we were going to put in there tabled as  
21 recommendations.

22 MR. SKINNER: Tabled as recommendations?

23 MR. DASLER: Well, added.

24 MR. SKINNER: Taken and not disseminated, right?

25 MR. DASLER: Disseminated.

1           MR. SKINNER: Taking a sharp turn in policy course  
2 here. Larry.

3           MR. WHITING: Vice-chair aside, I think we ought to  
4 make some type of a recommendation on at least getting a  
5 plan to survey along the newly-opened Northwest Passage,  
6 and I don't know, but I would assume NOAA's already got  
7 some plans in place, but if they do I'd like to hear them  
8 so --

9           MR. SKINNER: I think that was next on our  
10 list. I'm just going in chronological order.

11           Is there anything else from the morning that you  
12 wanted to get a recommendation of?

13           CAPTAIN MCGOVERN: I've got another one, but it has  
14 to deal with PORTS, so I can wait until tomorrow. It's  
15 not just on the funding part, but it's what we talked  
16 about as far as the other information that's out there  
17 and maybe, you know, the initiative and to try to move,  
18 you know, more of that information into the PORTS stream,  
19 shall we say, you know, and maybe the rules are different  
20 for that and, you know, and maybe they're at a different  
21 box on the PORTS page, but that -- so something about  
22 that I'd like to bring up tomorrow also.

23           MR. SKINNER: Okay. That's good to know.

24           CAPTAIN MYRTIDIS: For the record, but with all due  
25 respect, I think everybody's fairly tired. I think

1           probably that's a good discussion to give tomorrow  
2           morning, you know. I think -- I see people around, you  
3           know, that I'm not sure they're listening to what's going  
4           on. So I don't know if this is a good time to bring up  
5           this discussion.

6           MR. SKINNER: Okay. Point taken. The only problem  
7           is, and we've run into this in past meetings, if we don't  
8           sort of focus here on what we're going to decide then we  
9           can't -- it's very difficult to get together to do it.

10          We did have some time tomorrow. I guess what we can  
11          do is just come up with some suggestions. There's really  
12          only one or two more areas. The climate change panel was  
13          the last area, and maybe we can just work on some draft  
14          language and circulate that tomorrow if people want to  
15          make any recommendation in that area as well.

16          MS. CHAPPELL: Actually, I didn't hear anything  
17          specific other than the references to the ones that I  
18          captured here, the last four -- the last three bullets,  
19          but one about the Alaskan Arctic.

20          So, you know, you might think tonight about  
21          recommendations on the sea level rise aspects that we  
22          heard about or, you know, increasing the partnership of  
23          the coastal zone, management interest in NOAA externally,  
24          those kinds of things.

25          MR. SKINNER: And, again, for this meeting it's --

1 all we need is the vote on the general topic that we're  
2 making a recommendation on.

3 So we'll take Minas' suggestion and maybe tomorrow  
4 morning just vote on the general topics after people have  
5 had a chance to think about them and then we can  
6 circulate by E-mail the actual recommendations after the  
7 meeting. I think that's what we've done before.

8 CAPTAIN BARNUM: As long as the agreement on the  
9 general concept and direction, the final verbiage can be  
10 finalized later.

11 MR. SKINNER: Acceptable? You'll agree to anything  
12 right now. I'm with you.

13 Motion to the board to recess? I'll ask again if  
14 there's any public comment.

15 And what do we do? A recess or adjourn? Recess.

16 MR. SZABADOS: Question: Tonight, what's the dress?

17 MR. SKINNER: Officially, we're in recess. Do we  
18 need a vote? We don't need a vote.

19 *(Whereupon, the public meeting adjourned for the*  
20 *evening at 5:30 p.m.)*

21 \* \* \* \* \*

1 STATE OF FLORIDA )

2 COUNTY OF HILLSBOROUGH )

3 I, CATHY J. JOHNSON MESSINA, Registered Merit  
4 Reporter, Registered Florida Reporter, and Notary Public in  
5 and for the State of Florida at large, hereby certify that the  
6 Public Meeting was recorded in Stenotypy by me and that the  
7 foregoing pages constitute a true and correct transcription of  
8 my recordings thereof.

9  
10 WITNESS my hand and seal this 8th day of  
11 January, 2009, at Tampa, Hillsborough County, Florida.

12  
13 *Cathy J. Johnson Messina*

14 Court Reporter  
15 My Commission Expires:



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