

U.S. DEPARTMENT OF COMMERCE  
+ + + + +  
NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION (NOAA)  
+ + + + +  
HYDROGRAPHIC SERVICES REVIEW PANEL  
PUBLIC MEETING

+ + + + +  
WEDNESDAY  
NOVEMBER 28, 2012  
+ + + + +

The Panel met in Ballrooms 1 and 2  
at the Astor Crowne Plaza Hotel, 739 Canal  
Street, New Orleans, Louisiana, at 8:30 a.m.,  
Matt Wellslager, Chair, presiding.

PRESENT:

MATT WELLSLAGER, Chair

SCOTT PERKINS, Vice Chair

REAR ADMIRAL KEN BARBOR

LAWSON BRIGHAM, Ph.D.

JEFFREY CAROTHERS

CAPT. DEBORAH DEMPSEY

REAR ADMIRAL EVELYN FIELDS

WILLIAM HANSON

DAVID JAY, Ph.D.

GARY JEFFRESS, Ph.D.

FRANK KUDRNA, Ph.D.

CAROL LOCKHART

JOYCE MILLER

SUSAN SHINGLEDECKER

NON-VOTING MEMBERS PRESENT:

ANDY ARMSTRONG, Center for Coastal and Ocean  
Mapping, University of New Hampshire  
JULIANA BLACKWELL, Director, National Geodetic  
Survey  
RICHARD EDWING, Director, Center for  
Operational Oceanographic Products and  
Services  
DAVID KENNEDY, Assistant Administrator,  
National Ocean Service

NOAA STAFF PRESENT:

REAR ADMIRAL GERD GLANG, HSRP Designated  
Federal Official  
TIM OSBORN, Navigation Manager, Gulf of Mexico  
Region  
MARGARET SPRING, Principal Deputy Under  
Secretary  
CAPT. JON SWALLOW, Chief, Navigation Services  
Division, Office of Coast Survey  
KATHY WATSON, HSRP Program Coordinator  
CRAIG WOOLCOTT, NOAA/NOS/PPAD

NAVIGATION SERVICES STAKEHOLDER PANEL:

CHRIS D. BONURA, Director of Industrial  
Development, Port of New Orleans  
CAPT. PETER W. GAUTIER, Captain of the Port,  
U.S. Coast Guard Sector New Orleans  
KENNETH GRAHAM, NOAA/NWS Meteorologist in  
Charge, Weather Forecast Office,  
New Orleans-Baton Rouge  
CAPT. DOUGLAS J. GRUBBS, Crescent River Port  
Pilots Association  
CAPT. MICHAEL R. LORINO, JR., President,  
Associated Branch Pilots (Bar Pilots)  
for the Port of New Orleans  
CAPT. DAVID B. TRENT, President, Port of Lake  
Charles Pilots

GEOSPATIAL & WATER LEVEL STAKEHOLDER PANEL:

HENRI BOULET, Executive Director,  
LA-1 Coalition

STEPHEN V. ESTOPINAL, South Louisiana Flood  
Protection Authority - East

JAMES E. MITCHELL, Ph.D., IT GIS Manager,  
Louisiana Department of Transportation  
and Development

CLIFFORD J. MUGNIER, Center for  
GeoInformatics, Louisiana State  
University

RANDY L. OSBORNE, Center for GeoInformatics,  
Louisiana State University

ROBERT A. TURNER, JR., South Louisiana Flood  
Protection Authority - East

ALSO PRESENT:

JON DASLER, David Evans & Associates

RALPH DIAZ, Boh Brothers Construction

SEAN DUFFY, Big River Coalition

RICHARD DURRETT, Waggoner Engineering

WIN ELLINGTON, Office of Senator Thad Cochran

CHERRIE FELDER, LMRWSAC

JOE GONZALES, Manson Construction Co.

P.J. HAHN, Plaquemines Parish

KURT JOHNSON, Louisiana Department of  
Transportation and Development

JOSHUA KENT, Louisiana State University (C4G)

TARA LEVY, C&C Associates

MATT LOVE, Ocean Conservancy

JAMES MURPHY, MARAD

MIKE NITSKA, The Hydrographic Society of

America, Louisiana Chapter

GEORGE PETRAS, U.S. Coast Guard

JASON PORET, Hydroterra Technologies

NANCY RABALAIS, National Sea Grant LUMCON

CAROL SHORT, University of New Orleans

BETHANY STICH, University of New Orleans

KIRSTIN SULLIVAN, U.S. Coast Guard

SUZANNE VANCOOTEN, NOAA/NWS, Lower Mississippi  
River Forecast Center

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

2 (8:36 a.m.)

3 CHAIR WELLSLAGER: Good morning.

4 Welcome to day two. We have today some  
5 business things that need to be taken care of  
6 first and foremost. All speakers and guests,  
7 if you could please sign in, that would be  
8 greatly appreciated. The court reporter takes  
9 that information and logs it in.

10 There will be stakeholder breakout  
11 sessions with HSRP members on Thursday. If  
12 you look on the back table you will see one of  
13 three sheets. We have, as I said, three  
14 breakout sessions. The sessions include  
15 hydrographic surveying and charting,  
16 geospatial positioning needs, and tides and  
17 currents -- well, tides, currents, and water  
18 level needs for the Gulf of Mexico. They have  
19 a brief synopsis at the top of the page about  
20 what each of these will actually be and then  
21 below that you will see bullet points. And on  
22 these bullet points are going to be places for

1 you to collect some thoughts and put down  
2 talking points that you would like to address  
3 during the breakout session tomorrow. We will  
4 collect those at the end of the day and these  
5 will then be provided to the facilitators of  
6 the breakout sessions tomorrow so they can  
7 direct the course of conversations and the  
8 things that we are going to try to discuss  
9 during these breakout sessions.

10 The sessions will last about two  
11 hours and they were started in Alaska as a way  
12 to really drive home some of the things that  
13 we wanted to find as speaking points and  
14 points we wanted to address to NOAA  
15 Administration and they were a success, a huge  
16 success. So, we wanted to bring the same down  
17 here to New Orleans and see what the New  
18 Orleans area had to say about the navigation  
19 products provided by NOAA.

20 Other than that, people speaking,  
21 if you would please try to speak slowly,  
22 clearly and into the mike. Our court reporter

1 had a difficult time at times yesterday trying  
2 to keep track of some people as they walked  
3 around, myself included not being very good  
4 about that. But the idea is these mikes are  
5 here for a purpose and we need to use those.

6 Other than that -- oh. And panel  
7 speakers, if you would please before the end  
8 of the day make your PowerPoint presentations  
9 available to Kathy Watson, our coordinator,  
10 because she will take those and add them to  
11 the HSRP website as part of this meeting.

12 MS. WATSON: Or you can email them  
13 to me.

14 CHAIR WELLSLAGER: Other than  
15 that, with the breakout sessions today we will  
16 have speakers. They will each have about 20  
17 minutes to talk and make their presentations.  
18 We would like to hold questions until after  
19 everyone has had the chance to speak and then  
20 open the discussion to the entire panel. I  
21 will do that this morning and then again this  
22 afternoon.



1                   Admiral Glang, is there anything  
2                   that you can think of that we need to address?

3                   ADMIRAL GLANG:    Good morning.  
4                   Gerd Glang.    I would like to welcome the  
5                   stakeholders this morning for our panel,  
6                   welcome back the HSRP panel members for day  
7                   two of our New Orleans meeting.

8                   Just some housekeeping items.  You  
9                   should have noticed by now for those folks  
10                  here for the second day where the exits are.  
11                  To my left there is a stairway that goes down  
12                  and then to my right, there is a fire door  
13                  that gets you out in the other direction.  And  
14                  then the bathrooms are out this way as well.  
15                  And that is it for sort of the maintenance and  
16                  housekeeping.

17                  So I welcome everybody back for  
18                  day two and look forward to a good discussion.  
19                  Thank you.

20                  CHAIR WELLSLAGER:  Well, I think  
21                  that about covers everything.  Kathy, is there  
22                  anything that you think that we need to

1 address?

2 MS. WATSON: No, I think you got  
3 it.

4 CHAIR WELLSLAGER: Okay, very  
5 good. A little bit ahead but Captain Douglas,  
6 would you like to start things today?

7 CAPT. GRUBBS: I'd be happy to.

8 CHAIR WELLSLAGER: Thank you.

9 CAPT. GRUBBS: All good pilots go  
10 to their ships early. And that is for a good  
11 reason. They need to make sure that the  
12 coffee is well done.

13 (Laughter.)

14 CHAIR WELLSLAGER: I forgot to put  
15 the ladder down there at the base of the thing  
16 for you. Sorry about that.

17 CAPT. GRUBBS: Well, I will find  
18 it. I will find it. If I want to get off  
19 this ship, I will find it.

20 Good morning, everybody. Welcome  
21 to New Orleans. It is really a pleasure to  
22 see you people down here. So with that, let

1 me just give you a quick scope of what you are  
2 seeing on your screen.

3 This is not a simulation. This is  
4 the cruise ship Carnival Elation that we went  
5 down the river with Monday night. And while  
6 everything looks crisp and clear on this  
7 eChart, it was rainy and foggy, typical New  
8 Orleans weather. So at times it was clear and  
9 at times it was blacked out rain, and then at  
10 other times maybe a little blacked out fog.  
11 But with the type of navigation that we have  
12 here on the river, that is normal. That is a  
13 normal day.

14 This is, what you are seeing here  
15 is a NOAA S57 database. So all resurveyed.  
16 This was started in 2003. It was a  
17 collaboration of the Corps of Engineers and  
18 NOAA in resurveying the Mississippi River from  
19 Baton Rouge to the sea.

20 And this is what we used: accuracy  
21 bank-to-bank. And this is what the pilots  
22 wanted because we were heavily involved and

1 inscribed in this. The bank-to-bank accuracy  
2 is about four to eight meters, which is really  
3 good. All your aids to navigation are pretty  
4 much in the place that they -- you all can  
5 hear in the back? Nobody's going to throw  
6 popcorn? Okay. I've got orders to talk into  
7 the mike. Let me do that.

8 All your aids to navigation are  
9 pretty much in place but pilots do this every  
10 day. If there is a light misplaced or a buoy  
11 misplaced, they know it. The difference  
12 between e-Navigation as we know it today and  
13 what will be in the future and pilots is that  
14 we can turn all this stuff off and we would  
15 still get from point A to point B. But this  
16 is the next level of help that we get.

17 All the targets here, if it is a  
18 red dot they are stationery. The anchored  
19 ships -- let me turn this down a little bit --  
20 whether they are anchored ships or other  
21 vessels. You can see the anchored ships.

22 Most of the AIS targets -- and

1 these are all AIS targets. There is a lot of  
2 barge fleeting up in here that we are not  
3 picking up on this but we will pick up on the  
4 ship's radar. All your pipeline crossings,  
5 your anchorage management areas, and pretty  
6 much anything else you need to know. And it  
7 is programmed like we have our charts, our  
8 eChart on six different levels. So we have  
9 different aspects of the chart on six  
10 different levels.

11 For instance, if we wanted to an  
12 absolute clear chart for nighttime navigation  
13 where all the other aids to navigation  
14 wouldn't get in the way, we would just click  
15 on this and it removes everything, the docks,  
16 the aids to navigation. All you are seeing is  
17 the bank-to-bank and all the vessels in-  
18 between.

19 Get back to some of the  
20 attributes. If we wanted surveys, we click on  
21 Chart 5 and we have surveys. In areas where  
22 the Corps surveys every week or few days, we

1 will get this company Raven will go to those  
2 either the NOAA website or the Corps website.  
3 They will get either the surveys or the S57  
4 updates, repackage it, and put it on our  
5 website and we can download it quickly. And  
6 sometimes with surveys we will get it every  
7 couple of days.

8 Now, navigating up and down the  
9 Mississippi River with a whole bunch of  
10 surveys and other stuff is just not a good  
11 idea because you might hide some of your  
12 vessels. So we generally do it on say Chart  
13 3 or even Chart 1, we remove all that stuff.

14 Now I will give you an idea.  
15 There is 500,000 vessel movements from Baton  
16 Rouge to sea each year. And over here, for  
17 instance I will just give you an example,  
18 these are all vessels, whether they underway,  
19 or they are moored, or they are working barge  
20 fleets. If I wanted to know how many AIS  
21 vessels I have, I just click on right here.  
22 I have what 161 in my area, 161 vessels in my

1 area, not counting barges, not counting non-  
2 AIS participants. So that is 161.

3 So I know we are going to have a  
4 busy day. All the anchorages now are full.  
5 The port is doing great business right now.  
6 And so we are pretty much good to go.

7 There is an initiative coming out  
8 of IMO called e-Navigation. And I am just  
9 going to read you something really, really  
10 quick because it is a mouthful. It is a  
11 definition of e-Navigation ala IMO. "e-  
12 Navigation is the harmonized collection,  
13 integration, exchange, presentation and  
14 analysis of marine information onboard and  
15 ashore by electronic means to enhance berth to  
16 berth navigation and related services, for  
17 safety and security at sea and the protection  
18 of the marine environment." I'm not sure what  
19 lawyer wrote that.

20 (Laughter.)

21 CAPT. GRUBBS: It sounds great.  
22 It sounds good.

1                   Now, we have to go back into like  
2 Tim Osborn said, the real world. And the real  
3 world is that someone has got to take whatever  
4 is being developed, sometimes in a vacuum, and  
5 apply it, hopefully, to his environment.

6                   What we have got here with this  
7 NOAA S57 database is right now is as good as  
8 it gets. And it is really good. What we have  
9 got now with the Corps of Engineers surveys is  
10 very good. What we have got now with the Port  
11 of New Orleans surveying all the docks is very  
12 good. We just need to integrate this into our  
13 system where we would get the exact survey  
14 information for ships docking. Sometime back  
15 about four or five years ago, they had a large  
16 container ship going to Napoleon Avenue and  
17 there was a lump somewhere between the Dock  
18 Board's Authority and the Corps' Authority and  
19 it was maybe 100 feet, 150 feet or so. That  
20 is the debatable point off the dock. And this  
21 foist 446 foot container ship hit that lump in  
22 high river and didn't stick. It teetered into



1 the dock and you had millions of dollars later  
2 and a whole bunch of attorneys arguing over  
3 who was right and who was wrong. These are  
4 the things that we hope all the agencies will  
5 get together and work on.

6 In this e-Nav initiative you have  
7 got the Coast Guard, you have got the Corps of  
8 Engineers, you have got NOAA, all with  
9 proposals of what e-Navigation is going to  
10 look like. And for the most part in groups  
11 like this, they are getting that word around.  
12 You are getting a feeling for what we use here  
13 now and what e-Navigation is but we need more  
14 outreach from NOAA and the Coast Guard and the  
15 smart people who understand e-Navigation of  
16 what it is going to look like. Because now  
17 you have got -- e-Navigation will get to be a  
18 reality in 2014. So from now to 2014 all the  
19 details are being worked out in London -- not  
20 New Orleans -- in London at IMO. And as we  
21 all know, the devil is always in the details.

22 So when NOAA and the Coast Guard

1 and the Corps get together, they should come  
2 up hopefully with a program that applies to  
3 SOLAS vessels but will come into the inland  
4 waterway system over here and some part of  
5 that will be part of the inland fleet.

6 It is going to scare the hell out  
7 of a lot of people. I promise you that. I  
8 mean, if they have to buy new equipment, if  
9 they have to retrain people for whatever new  
10 equipment that might come out, the bottom line  
11 is going to be why do I have to pay for this?  
12 We are successful now. And I have a number of  
13 answers for that. Is that you want your  
14 people to be as good as they can be and you  
15 have to negotiate a better price with the  
16 training centers for training these people to  
17 use this equipment. It went to nighttime  
18 display.

19 So when we talk about e-Navigation  
20 here in New Orleans, I mean we are really  
21 proud of this, we have been practicing e-  
22 Navigation since 19 -- right after the Exxon

1 Valdez maybe, when they a port needs study and  
2 they said they needed a VTS system over here.  
3 Now VTS used to be a bad word. It used to be.  
4 VTS here in New Orleans since it lit up in  
5 about 2001 or so, is the darling of the  
6 waterway. The cynics, the naysayers, they  
7 have wrapped their arms around this VTS  
8 system, this Coast Guard and the Coast Guard  
9 just got a special place in their heart. For  
10 the local navigator, that is a big deal.

11 Whenever we have planning on  
12 traffic management plans, I mean, this is a  
13 city of festivals, a city of Mardi Gras,  
14 parades, river parades. It doesn't take much  
15 to get a parade in this area. A lot of  
16 fireworks, fireworks barges. And Captain  
17 Gautier hasn't turned white yet. But all this  
18 goes on his desk and then he sends it to his  
19 VTS desk and says develop a plan. And when  
20 they develop a plan, they develop it with the  
21 local partners. They have pilots up there  
22 24/7. It was all part of the vision of VTS

1 New Orleans and it is working great.

2           So you develop this plan and you  
3 really don't stop traffic. You just maybe  
4 control a space. They do a really good job of  
5 this, of not saying everybody stop from Baton  
6 Rouge to sea. They said just slow down a  
7 little bit here, don't get to this point until  
8 this time, and this will work out fine. And  
9 we can shoot the fireworks and all the people  
10 can stand on the levee and have their  
11 Hurricane drinks -- and you need to stay away  
12 from all that Hurricane stuff. It's not good.  
13 It's not good for you. They have their  
14 Hurricanes and Cuba Libres or whatever they  
15 are going to drink on the levee and have a  
16 good time. After it is all over, all the big  
17 tankers are in, there is ammonia tankers,  
18 passenger ships, tows, then start meeting,  
19 like we are doing about right here. They  
20 start meeting and passing and safely doing so.  
21 This is not chaos at all. There is a rhyme  
22 and reason behind everything these ships do.

1                   For instance that passenger ship  
2                   coming down right here encounters this ship  
3                   that is at anchor right here that was dragging  
4                   anchor, and he could immediately measure this  
5                   and realize he has got not 1500 feet of space,  
6                   now he has got 680 usable feet of space  
7                   between not two cushiony banks but between  
8                   steel and bank. And he calls this other ship  
9                   that was getting underway down here in the  
10                  anchorage and tells him, look, not a good  
11                  idea. We shouldn't be meeting right here. So  
12                  he just holes up right there until the cruise  
13                  ship gets down past all that stuff. They rush  
14                  a pilot out to the ship that is dragging  
15                  anchor, pick up the anchors, I believe they  
16                  re-anchored or got underway, whatever they did  
17                  with it.

18                  But it kind of works that way.  
19                  There is a rhyme and reason behind all of  
20                  this. You know, bad things happen but in  
21                  ports like New Orleans where you have these  
22                  tools, this VTS, this electronic chart, this

1 Raven system, this depth data. You can come  
2 to some kind of a plan and minds can come  
3 together about well this will work. And it  
4 always does.

5 I know there have been collisions  
6 here in the past. And when you sit back and  
7 analyze the collisions, it is mostly human  
8 error. And that is one of the things that we  
9 want to deal -- we want to -- what we need  
10 from NOAA is what we have got here right now:  
11 a very accurate S57 database that can get  
12 better and better.

13 What we need from our AIS is what  
14 we have got. We need real-time information.  
15 You know when moving, turning, you need two  
16 seconds or maybe a little bit more than that,  
17 two second updates so that you can make timely  
18 decisions. What we need from the Coast Guard  
19 is for that VTS to work exactly as it is right  
20 now.

21 Well, no. We need it to get a lot  
22 better but they need a lot of money to

1 upgrade, like NOAA needs for its light, like  
2 the Corps needs. And so the big issue -- I'm  
3 not supposed to be speaking on money today but  
4 really we all get down to money. You know,  
5 VTS needs an upgrade. NOAA needs upgrades.  
6 Douglas is a very happy person exactly where  
7 I am at right now and I am here to help you  
8 with the upgrades, if we can but it all gets  
9 back to money.

10 So in this port, things are  
11 working pretty good. And we don't want e-Nav  
12 -- somebody's vision of e-Navigation in London  
13 to screw it up. But when you look and see  
14 what happened in this explosion of technology  
15 -- and I will just give you a quick -- I think  
16 my time is almost up here but I did start  
17 early. It's not even nine o'clock yet. Thank  
18 you.

19 In this explosion of technology,  
20 and I was in on the ground floor maybe of the  
21 development of ECDIS, not personally  
22 development but I was a partner with the Coast

1 Guard in developing VTS New Orleans. But in  
2 that development, ECDIS was being developed.  
3 Coast Guard R&D and the Canadians had an ECDIS  
4 test bed and I was privy to ride on a lot of  
5 Canadian lakers that had this big \$90,000  
6 monstrosity onboard. And this was the last  
7 word in navigation. This was as good as it  
8 gets. That's what they said.

9 Here is the problem. If people  
10 aren't trained to use it and if the menu is so  
11 busy that you could easily get confused with  
12 how do you operate that machine, and then some  
13 more people said well I can save you money.  
14 I will just take the ECDIS and hopefully you  
15 will have this accurate of a chart. Maybe you  
16 will, maybe you won't. And I will put a radar  
17 layer over that and I will put an AIS layer  
18 over that. And oh by the way, I have got a  
19 real smart guy in the back room who can  
20 develop an algorithm that will make it all  
21 line up. And then we will just put an  
22 automatic button for all the stupid people



1 onboard who really don't know too much about  
2 how do you line that stuff up and they just  
3 hit automatic.

4           And then you have a Cosco Busan  
5 where it is obvious there was something wrong  
6 with that pilot. He went to jail. The crew  
7 was the Chinese crew first time ever in San  
8 Francisco, first time on the bridge of that  
9 ship. He didn't understand that equipment at  
10 all. You didn't hear too much about the  
11 equipment but what happened was the equipment  
12 was on automatic. And the Chinese mate didn't  
13 quite understand it, so he was trying to  
14 realign so he wasn't seeing two targets, two  
15 different icons of the same target. And  
16 sometimes it would work and then it would go  
17 back into the automatic mode, sometimes it  
18 wouldn't.

19           So for a whole bunch of silly  
20 reasons, they decided to leave the dock and  
21 the end result was a ship hitting the San  
22 Francisco Bridge, an oil spill, millions and

1 millions of dollars, additional legislation,  
2 Congress telling the Coast Guard there is a  
3 real problem with the physicals. And so we  
4 have more regulations on the physicals, more  
5 regulations on training.

6 For the most part, pilots have  
7 been training for so many years. They have  
8 continuing education. This is kind of a  
9 natural part of our life but now you have to  
10 force feed regulations into a group of people  
11 who thought they were well-trained but really  
12 weren't. And some of the people who were  
13 well-trained would have to be additionally  
14 trained. It is all money. It all gets back  
15 down to who is paying for all of this and can  
16 you afford that.

17 Another ECDIS issue wasn't that  
18 long ago. A ship turned -- a pilot turned a  
19 ship off a northern European dock, headed out  
20 to sea. The pilot disembarks. The captain  
21 gave the command to the third officer. There  
22 is an ECDIS there. Steer so-and-so course.

1 You might have to deviate once or twice. And  
2 the third officer, if you haven't heard a  
3 grown man cry, but you probably hear this  
4 third officer cry trying to dodge some  
5 sailboats. And the ECDIS alarm, the audible  
6 alarm, they turned down. They didn't realize  
7 it. Now there was a visual alarm. There was  
8 some flashing. The ECDIS might have even been  
9 shaking up there. He went from 12 knots to  
10 zero knots with a 120-foot gash in the hull.  
11 He had to get it off of ground. And I can  
12 imagine a captain sending out those notices.  
13 That is really embarrassing and he will  
14 probably lose his job. Turn around, bring it  
15 into port, discharge it, put it in dry dock at  
16 some millions and millions of dollars in  
17 repair. And is that an ECDIS issue or is that  
18 a human error? Well it was a human error.  
19 Somebody that wasn't trained to use that ECDIS  
20 properly. These are the things that encourage  
21 e-Navigation development. As all of this --  
22 and even your vertical information. What we

1       could use in New Orleans now is instead of  
2       having the internet -- on this same  
3       navigational system I have the NOAA PORTSp.  
4       I have an app for NOAA PORTSp. That is all  
5       internet. It is wonderful. A long time  
6       coming. The Port of New Orleans sponsored  
7       that. Great -- bridge clearances.

8                 But what we could use would be  
9       instead of getting this via internet, maybe  
10       get this through AIS. For bridge peers and it  
11       could be maybe some virtual buoys, which is  
12       going to be very controversial by the way,  
13       virtually it is a navigation that is part of  
14       e-Nav approach versus visual. You don't take  
15       a whole culture anywhere in the world that has  
16       been operating for 100 years or so with visual  
17       aids to navigation, just take them and move  
18       them and put a bunch of dots in cyberspace and  
19       call that an aid to navigation. So it is  
20       going to be controversial. Some of that you  
21       can do but you have got to be real careful.  
22       It's not that cheap just to put a virtual

1 system in place. Somebody has got to be  
2 responsible for all the chart updates there.

3 But you might want to put a couple  
4 of virtual buoys leading up to the bridge  
5 approach because in New Orleans you are going  
6 to get caught in the fog. You are not  
7 supposed to be running through the harbor in  
8 fog but it happens all the time. You start up  
9 at Audubon Park. At Six Mile Point it is  
10 clear. By the time you get down to heading  
11 down the Greater New Orleans Bridge, it is  
12 blackout fog. It happens that quickly. So  
13 maybe a better approach toward setting your  
14 ship up for that approach to the bridge and  
15 then also having that PORTSp information  
16 through AIS where you can get the bridge  
17 vertical clearances quickly; not having to  
18 switch back and forth between my chart and the  
19 internet.

20 And the internet works in New  
21 Orleans but when you get down in the lower  
22 end, sometimes internet is not that reliable.

1 But AIS is reliable.

2           We learned a lot after Hurricane  
3 Katrina. All your radios, I mean everything  
4 went dead -- cell phones. What did work was  
5 AIS, ship-to-ship. We could easily see the  
6 tugboats that were washed on the other side of  
7 the levee still had power, had its AIS and we  
8 could see where it was at. It was sitting in  
9 somebody's house but the AIS was still  
10 clicking and we had a position on it.

11           AIS is the common denominator  
12 between SOLAS and shallow water. The tour  
13 boat people took AIS and ran with it and they  
14 have done some wonderful things. So the key  
15 to all these PORTSp is not one person having  
16 enough money to be able to afford something  
17 and the poor guy can't, it is this common  
18 denominator that we can all pick and choose  
19 from. It is a set of tools that is available  
20 to me as a ship pilot and that cruise ship  
21 with all the money they have got and that tour  
22 boat who is really operating on a very, very

1 slim margin. And AIS is one of those tools.

2 Now there are going to be many  
3 aspects of e-Nav that should be discussed. We  
4 don't have time to discuss it all but if  
5 anybody has got any questions after this is  
6 over with, I would be happy to answer it.

7 But it is a pleasure speaking to  
8 you all. Again, welcome to New Orleans. Have  
9 a good time. Pull me off to the side. And I  
10 am really happy to meet Captain Dempsey again.  
11 I guess I am showing my age. Captain Dempsey  
12 was a cadet for Kings Point when I was a pilot  
13 on a dock of lights. I don't know how long  
14 ago that was.

15 MEMBER DEMPSEY: Excuse me,  
16 Captain. The Maine Maritime Academy.

17 CAPT. GRUBBS: It may be dementia,  
18 I don't know. But we have all come a long  
19 ways and I am glad to see you here in New  
20 Orleans. Thank you very much.

21 CHAIR WELLSLAGER: Thank you,  
22 Captain Grubbs.

1 (Applause.)

2 CHAIR WELLSLAGER: We will address  
3 questions to the entire panel at the end of  
4 all the presentations.

5 Our next speaker is Captain Peter  
6 Gautier, the Captain of the Port, United  
7 States Coast Guard, Section New Orleans. He  
8 will be addressing the integration of  
9 navigation and waterways vessel traffic data:  
10 highlighting storm and flood protection  
11 concerns.

12 MS. WATSON: We need just a minute  
13 to log out of computers.

14 CHAIR WELLSLAGER: Not a problem.

15 CAPT. GAUTIER: Maybe I'll just  
16 take a few moments as this is queuing up. I  
17 really appreciate the invitation to come here  
18 and speak today and see a couple of old  
19 friends, some veterans from the Deepwater  
20 Horizon spill.

21 And it is always nice to hear a  
22 compliment from a river pilot in the morning.



1 So thanks, Captain Grubbs. That doesn't  
2 happen very often but in truth --

3 CAPT. GRUBBS: Few and far  
4 between?

5 CAPT. GAUTIER: -- the VTS is a  
6 collaborative effort. Captain Grubbs was a  
7 central driver in getting the VTS formalized  
8 in its current form. And it is a shared  
9 effort between the Coast Guard and we do have  
10 -- we are the only VTS in the country that  
11 actually has pilot advisors who are actually  
12 there together with the Coast Guard employees  
13 helping watch over the traffic every day. So  
14 thanks very much, Captain.

15 I guess in terms of the panel, you  
16 have heard about AIS and electronic  
17 navigation. You are going to hear more about  
18 the Port of New Orleans and future growth. We  
19 are going to hear about some navigation  
20 challenges from Captain Lorino and we have got  
21 weather service and others.

22 The way I view myself in this mix

1 is basically an integrator. Now we have a  
2 great woman on the city council here, Jackie  
3 Clarkson, who calls me the Czar of the  
4 Mississippi River. And I just think that is  
5 great but I think it is a complete misnomer  
6 because although the Captain of the Port does  
7 have some very awesome authorities to effect  
8 safety and security, environmental protection  
9 Mississippi River and offshore, really what we  
10 do is absolutely a collaborative effort  
11 between everyone from the river pilots, from  
12 the other federal agencies, as well as state  
13 and local agencies. So really what I view  
14 myself as is a coordinator and an integrator.  
15 And what I want to do is just use the next few  
16 minutes to illustrate how we do this, how the  
17 Coast Guard does this integration and  
18 collaboration with the greater port community  
19 when we get bad weather, which we tend to do  
20 here in southeast Louisiana. And this is  
21 timely because of the recent impact from  
22 Hurricane Isaac.

1                   What I would like to do is as I  
2 discuss a couple of things is use some photos  
3 from the Hurricane Isaac response to  
4 illustrate these points. Can everybody hear  
5 me okay? Okay.

6                   The importance that NOAA provides  
7 to us, the Coast Guard and I think the greater  
8 port community, starts with data. It starts  
9 with just raw data that then is segued into  
10 information which then becomes knowledge. As  
11 the Captain of the Port, my staff and I have  
12 to make a lot of key decisions in terms of  
13 preparing the port and then responding after  
14 we get a strike from bad weather. And these  
15 decisions are heavily contingent upon  
16 knowledge that we gain from the products that  
17 NOAA provides to us.

18                   Now forgive me. I know this is a  
19 hydrographic group but there are other  
20 elements of NOAA that come together during  
21 times of and pending heavy weather. And I am  
22 going to talk a little bit about those because

1 the lines blur in times of emergency. And so  
2 I am going to talk a little bit about the  
3 weather products that were provided and  
4 scientific support that we also get from NOAA  
5 in terms of pollution response.

6 But what we have here in New  
7 Orleans is something called the Maritime  
8 Hurricane Contingency Port Plan that governs  
9 how we prepare a waterway when we know that we  
10 are going to get tropical activity headed our  
11 way. What we do here in terms of the  
12 framework is not a lot different than my  
13 counterparts, other Captains of the Port  
14 around the country do as well. We have these  
15 same sorts of port conditions, these same  
16 steps that we walk through to prepare  
17 ourselves for a hurricane but we are just a  
18 heck of a lot more challenged down here. We  
19 have got a five-port complex that is linear,  
20 unlike any other place in the country. The  
21 distance of this continuum of the port complex  
22 is longer than the distance between the drive

1 on I-95 between Washington, D.C. and New York  
2 City and yet this is all a single integrated  
3 port complex. And the waterway is a limited  
4 resource. You only have so much area, so much  
5 x- and y- axis available to you to navigate,  
6 to have terminals and other activities that go  
7 on that waterway.

8 So that is context. What we do is  
9 we start with the Weather Service and their  
10 predictions for when we are going to hit, how  
11 severely we are going to get hit, and what  
12 direction and what kind of storm surge and  
13 winds we are going to be getting and we use  
14 that to walk through different port conditions  
15 that are just outlined here on this slide.

16 One of the challenges we faced  
17 here on the Mississippi River is the mouth of  
18 the Mississippi River juts out into the Gulf  
19 of Mexico, probably unlike anywhere else in  
20 the country. When the port closes, it closes  
21 because you get heavy weather in the Gulf of  
22 Mexico. It is not because you are getting

1 heavy weather in New Orleans. And there is a  
2 time delay and that delay is shown when the  
3 Bar Pilots, Captain Rooney and his staff, stop  
4 taking ships in and out of the Mississippi  
5 River because it simply becomes unsafe and it  
6 becomes too rough to board these vessels. No  
7 one can come in or come out and essentially we  
8 shut down access to the Mississippi River.  
9 And this happens typically well in advance of  
10 when we get heavy winds and strong storm  
11 surges in these port complexes upriver.

12 Okay, so some things that we need  
13 to orchestrate based on these weather  
14 predictions and the storm surges that we think  
15 we are going to be getting. We move vessels  
16 and we secure vessels. We collect  
17 information. It is very important to me to  
18 know where things are before the storm and  
19 that is so that we can make decisions on what  
20 to move, if to move, how to secure in place,  
21 and then compare before and after. Do we have  
22 everything after that we had before a storm?

1                   Now in the case of Hurricane  
2           Isaac, this storm changed trajectory,  
3           predicted trajectory, very quickly over a  
4           weekend, which gave us very little time to  
5           effect port movements in order to lower our  
6           risk within the Mississippi River. What we  
7           did do was we moved as many deep draft vessels  
8           upriver as possible away from the vulnerable  
9           areas in the lower Mississippi River that are  
10          more prone to the high winds, that have less  
11          protection from land than you can get upriver.  
12          Unfortunately because of the time crunch we  
13          were under we had 110 deep draft vessels in  
14          the lower Mississippi River at the time that  
15          Hurricane Isaac struck. It is a lot of  
16          vessels but you simply don't have enough time,  
17          given the short time frame to make decisions  
18          that you would like in order to clear as many  
19          vessels out of the Mississippi River as  
20          possible.

21                   We do move as many upriver as  
22          possible and we do a number of things on the

1 Coast Guard side to prevent ships that are at  
2 terminals in safer locations from coming off  
3 those terminals and going downriver to more  
4 vulnerable anchorages. So we do these through  
5 VTS rules, through Captain of the Port orders  
6 in order to put ourselves in the best possible  
7 situation.

8 Now another thing that we do,  
9 which was an agreement that was made with the  
10 towing industry after Hurricane Katrina is we  
11 move all barge fleets from below mile marker  
12 71, which is about 20 miles downriver from the  
13 City of New Orleans up above mile marker 71.  
14 During Katrina we learned the hard way that  
15 these barges are very vulnerable and with  
16 storm surge and high winds upriver, these  
17 fleets break away. They scatter about.  
18 Barges sink. They end up in the batcher, up  
19 on the levee. That is something that we don't  
20 want.

21 So Isaac, for the first time, the  
22 Coast Guard activated this Memorandum of



1 Understanding that we have with the barge  
2 fleeting industry downriver and these barges  
3 were moved upriver and you can see some  
4 pictures of that one of a line tow. I took  
5 that picture from a helicopter as I did my  
6 last storm over-flight. And that just shows  
7 you a massive amount of activity that was  
8 going on to move these barges upriver. We  
9 move about 900. The towing industry moves  
10 about 900 barges upriver for us prior to that  
11 storm. And as a result, we were in a much  
12 better position. We had many fewer barges  
13 that broke away than we saw in Katrina.

14 Another peculiarity that we have  
15 here is we have a lot of canals and we have a  
16 Storm Risk Reduction System at the Army Corps  
17 of Engineers and state overseen levee  
18 districts risk reduction districts have. And  
19 one thing that we learned from Katrina and  
20 Gustav is we have some risk within this outer  
21 wall, this outer levee protection system where  
22 we have canals that cut through. Those canals

1 also have walls and levees that protect the  
2 city from storm surges within the canals. And  
3 what you see there, as a result of this, the  
4 state asked the Coast Guard after Katrina to  
5 clear these canals of all vessel traffic prior  
6 to a storm to eliminate any kind of risk that  
7 might be present when you see surge in these  
8 canals, if we have breakaways of deep drafts,  
9 tow boats, smaller vessels, barges. There is  
10 a threat that these vessels can float up on  
11 this surge, strike a wall, collapse a wall,  
12 and then you get flooding into the city, kind  
13 of like we saw in Hurricane Katrina. A very  
14 high consequence event that the state sought  
15 to eliminate and ask the Coast Guard to do  
16 what we can to do that.

17 As a result, we have constructed  
18 what we call a regulated navigational area in  
19 these canals. And that red on that slide is  
20 the footprint of the regulated navigational  
21 area that I administer during storm season.  
22 So these are areas where the Coast Guard

1 directs the removal of vessels 24 hours in  
2 advance of certain triggers, wind triggers and  
3 predicted storm surge triggers.

4 We also have a provision that  
5 vessels can remain in place if they have a  
6 waiver for the Coast Guard if they can  
7 demonstrate to us that they can implement  
8 severe weather moorings, barges that can spud  
9 down. They can put extra wires on barges and  
10 so on, in order to make sure that they can  
11 handle the potential surge in winds that we  
12 get within this system.

13 This was the first storm where the  
14 Coast Guard has triggered this regulated  
15 navigational area to effect the removal and  
16 the moorings of vessels that are in that  
17 system. And this is a new ball game because  
18 the Army Corps has pretty much completed, they  
19 still have a few more things to do, but for  
20 all intents and purposes they have completed  
21 this risk reduction system, the 14 billion  
22 dollar project, post-Hurricane Katrina in

1 order to further protect the City of New  
2 Orleans and surrounding areas from storm surge  
3 during tropical weather event. And you can  
4 see the examples of those in the photos where  
5 we have the wall that is on the east side of  
6 the intercoastal waterway as it goes through  
7 the risk reduction system and we have the  
8 wall, the west closure complex on the west  
9 side, as the intercoastal waterway heads from  
10 the Algiers and Harvey Canals west towards  
11 Morgan City.

12 So that process went actually  
13 very, very smoothly, considering some of the  
14 angst that we had to go through in order to  
15 get us where we needed to be. But again, here  
16 is an example of where data transforms  
17 information in order to give us knowledge so  
18 we can make the appropriate decisions in order  
19 in this case to keep navigation safe but more  
20 importantly to keep the citizens of the  
21 Greater New Orleans area that are protected by  
22 this risk reduction system, safe from the

1 potential of strikes to the system and then  
2 flooding.

3           The first objective of the Coast  
4 Guard and all of us, all emergency response  
5 organizations, state, federal, and local, is  
6 safety of life. And post-storm that is search  
7 and rescue. One thing that would be very  
8 helpful to us is to increasingly get better  
9 forecasts that integrate together with the  
10 heights of levees and walls so we can better  
11 understand where we might be getting  
12 communities that are going to be deluged,  
13 communities that are going to be flooded.

14           One things that you heard after  
15 Hurricane Isaac is we have got flooding where  
16 we never had it before. You heard it again  
17 and again. The Braithwaite area in South  
18 Plaquemines Parish on the east side of the  
19 Mississippi River got flooded. We got flooded  
20 from Lake Pontchartrain to the west of Lake  
21 Pontchartrain when they said that we have  
22 never really seen that before. If we could

1 have information that helps the Coast Guard  
2 understand and other emergency management  
3 agencies, fire and police, know we need to  
4 preposition resources, small boats, so we can  
5 rescue individuals that haven't evacuated,  
6 that would be very, very helpful. Otherwise,  
7 we are kind of shooting in the dark here.

8 One thing that we advertise or we  
9 tell everyone before a storm hits is there is  
10 going to be a window where we can't do  
11 anything because it is just too dangerous to  
12 do that. But as soon as the storm abates  
13 enough that we can start operating again, if  
14 we can have prepositioned resources where we  
15 need to have them to rescue people, then we  
16 can be a lot better in doing what we are  
17 mandated to do. Safety of life number one.

18 Number two, restoring the  
19 waterway. Captain Lorino, what is the latest  
20 estimate on how much it costs to shut down the  
21 Mississippi River per day, \$280 million?

22 CAPT. LORINO: \$280 million.

1                   CAPT. GAUTIER: About \$280  
2 million, I think LSU did a study, for every  
3 day -- for lost revenue for every day that the  
4 Mississippi River is closed. So it become  
5 paramount that we get this thing reopened and  
6 we get traffic and commerce restored as  
7 quickly as possible at an acceptable safety  
8 level. And that is the key thing that the  
9 Coast Guard and our partners, the pilots and  
10 the ports do, is making sure that we have a  
11 reasonably acceptable safety level that we can  
12 start bringing traffic in and out of the  
13 Mississippi River again.

14                   What we did with Hurricane Isaac  
15 was implemented a plan that NOAA, the pilots,  
16 Army Corps of Engineers, and the Coast Guard  
17 talked about after about a year and a half ago  
18 after Tropical Storm Lee hit us. And that is  
19 really, the objective of this again data  
20 information knowledge is to do what they call  
21 in the urban search and rescue lingo is a  
22 hasty search. Really a quick survey of the

1 waterways. Centerline survey to make sure  
2 that we don't have sunken vessels, barges that  
3 are adrift, vessels that have dragged anchor  
4 that might be T-boning across the sail line  
5 portion of the river, that we don't have any  
6 debris that might be blocking a channel.

7           So in this case, it was an all-  
8 hands event of getting as many vessels on the  
9 water as possible and, in most cases, just  
10 using your depth sounder and your Mark One  
11 eyeballs to see what we were facing post-  
12 storm. So the Bar Pilots got their pilot  
13 vessels out and in the process of getting them  
14 downriver to restore their operations, they  
15 did surveys. The same with the Crescent  
16 Pilots. The Army Corps of Engineers -- the  
17 Army Corps boat is the third one down. The  
18 Army Corps of Engineers got their boat out and  
19 did some surveys as well.

20           The bottom boat is the NOAA survey  
21 vessel. Now because we have so many ports and  
22 the Mississippi River ain't the only river



1 around here, the NOAA vessel surveyed the  
2 channel that went into Port Fourchon, Belle  
3 Pass because Port Fourchon is the number one  
4 offshore oil and gas exploration and  
5 production support port in the country and  
6 that is very important to get up and running  
7 again. So the NOAA survey vessels were tasked  
8 with getting the surveys there and did a  
9 fantastic job for us. Port Fourchon was able  
10 to reopen very quickly so oil and gas could  
11 get their support that they needed to get up  
12 and running again.

13 On the Coast Guard side, we pre-  
14 staged all of our vessels upriver as much for  
15 safety as being ready to do what we need to do  
16 post-storm. They all came downriver and did  
17 a centerline survey. And we had the Coast  
18 Guard Cutter Cypress that followed in from  
19 Houston on the west side of the storm that was  
20 able to then come in and give us some  
21 indication of what we were facing at Southwest  
22 Pass and just as important is to do the post-

1 storm aids to navigation surveys so we could  
2 see what we needed to do to fix ATON just to  
3 make the waterway that much safer.

4 So in this case, it all came  
5 together and I think the capping event was we  
6 were able to fly some of the presidents and  
7 key representatives from the pilots'  
8 organizations in the Coast Guard helicopter  
9 just to get a last look to make sure that we  
10 were okay. And the river was reopened in a  
11 controlled fashion to a shallower draft  
12 vessels first in order to get commerce going  
13 within a 24-hour period. And I think the  
14 benchmark is it continued to about five days.  
15 Given that was a much worse storm and they  
16 really had a mess on their hands with missing  
17 barges and things downriver. So I think we  
18 are getting better at going through this.

19 Now that is a picture of the  
20 Carnival Elation. That was a Carnival cruise  
21 ship that was steaming offshore waiting to  
22 come in and she has a shallow draft and she

1 has probably the best navigational systems of  
2 any vessel that you will see coming into the  
3 Mississippi River. So she was the first ship  
4 in, 24-hours late coming in from her regularly  
5 scheduled arrival into New Orleans but I think  
6 that is pretty darn good in the scheme of  
7 things.

8 But we did have issues. We had 75  
9 vessels that were grounded. So the NOAA data  
10 told us that we got a storm surge of ten feet  
11 within a 24-hour period in the Mississippi  
12 River and the 24 hours after the storm, the  
13 river went down six feet. So you have this  
14 situation you are up, you have high winds, you  
15 get breakaways. We had a particular issue  
16 with deep drafts that would break their stern  
17 lines that were in midstream moorings, that  
18 would swing around. And then the water would  
19 go down and these vessels that stranded  
20 themselves then became high and dry and you  
21 can see this in the photographs.

22 Out of those 75 we had about 40

1 salvage cases, vessels that actually needed to  
2 be salvaged that had a hard time getting off  
3 bottom. So that kept everybody busy for a few  
4 days.

5 Here is an area that I want to  
6 explore more with NOAA. I did not know about  
7 this before the storm but learned about it  
8 since, the remote sensing aerial capability  
9 that you provide. Data, information,  
10 knowledge. We have port assessment teams that  
11 go up before the storm to find out what is  
12 there and what is going to stay. We do this  
13 after the storm to see what is not there  
14 anymore, what has moved and determine is it  
15 going to be a problem.

16 Now this is something I got off  
17 the NOAA's website that shows photographs  
18 immediately after the storm that were taken by  
19 NOAA aircraft. And I chose this particular  
20 one because you see a couple of deep drafts at  
21 anchorage. I think that is Magnolia  
22 anchorage. And you see one of them there that

1 is a little bit closer to the batcher than the  
2 others. Well that vessel is this one, is one  
3 of those there that you see grounded on the  
4 stern.

5 If we can get NOAA to help us, if  
6 it can be done quickly enough and if it can be  
7 processed and brought to our command post  
8 quickly enough, we can get the before and  
9 after. And if we can get folks to look at  
10 these and compare them to see what vessels  
11 have moved and where and if anything is  
12 missing, that is very helpful.

13 And here is another example of  
14 both the ability to know where we are going to  
15 get flooding and get this aerial survey data  
16 to us in a timely manner. This is the  
17 Stolthaven Braithwaite terminal. Braithwaite  
18 got flooded. This terminal saw 12 feet of  
19 water during the height of the storm. Well  
20 those tanks should all be in nice neat rows  
21 and you notice they aren't. That is because  
22 a number of them became buoyant because they

1 had 12 feet of water and they only had a  
2 couple of feet of product in them and they  
3 lifted off of their pads, moved, and then they  
4 set back down as the water receded. As a  
5 result, we had a major lube oil spill. We had  
6 80,000 gallons of octene, a water-soluble  
7 flammable chemical that was lost from one of  
8 these tanks.

9 And we had other issues. We had  
10 the loss of a scrubber system off of a tank  
11 and so we had some toxic gas coming out of  
12 that tank until power could be restored there.  
13 And we had two styrene tanks, 2.4 million  
14 gallons of styrene which was refrigerated  
15 liquid, a liquid that has to stay refrigerated  
16 and stabilized in order not to explode. So  
17 this became a very important thing for us to  
18 manage. And there is the photo on the left  
19 from the helicopter. We also had 150 rail  
20 cars that lifted off of their trucks and then  
21 set down alongside them. Seventy of those had  
22 hazardous materials onboard.

1           The ability to process this  
2 information and gain knowledge so we know  
3 where we need to focus our efforts becomes  
4 very important. From what I have seen from  
5 these products, I think we have yet better  
6 information that NOAA can help us with in  
7 order to do what we need to do.

8           Now this isn't navigation-related  
9 but I wanted to show this to you. This is a  
10 NOAA product. We had 400 oil and HAZMAT  
11 spills incidents after the storm. And this is  
12 typical when you get water where water isn't  
13 usually.

14           This is NOAA product ERMA,  
15 Emergency Management -- I think it is  
16 Emergency Management Response Application that  
17 together with our NOAA scientific support  
18 coordination staff put together. This gives  
19 us the knowledge of what we are facing and  
20 what we need to handle at any given time. And  
21 I just show you some photos from the typical  
22 sorts of oil spills that we got. A lot of

1 offshore oil production, exploration  
2 production areas had been impacted. We had  
3 some wells that leaked. We had tanks that  
4 were lost and that leaked. And then we just  
5 had thousands and thousands of mystery  
6 containers, some of which contained hazardous  
7 materials that had to be fully assessed. And  
8 I am very happy with our NOAA scientific  
9 support staff and how they came together with  
10 these products to help us understand what we  
11 need to face. So this is Hurricane Isaac. I  
12 had the pleasure to sit down with one of my  
13 predecessors Captain Frank Paskewich who was  
14 the Captain of the Port during Katrina and we  
15 talked about Katrina. He had the same issues.  
16 Now he had them in a much bigger scale but  
17 they were the same issues. And I would dare  
18 say that they are facing the same issues in  
19 Sector New York and Sector Long Island Sound  
20 from that storm there in a different sort of  
21 scope. But the same sort of things, same  
22 areas where NOAA helps us in a tremendous way.



1                   And might I just conclude with  
2                   saying, you know, we talk about programs and  
3                   I know that you are here to examine these  
4                   things, but throughout my career I have worked  
5                   with many, many agencies, many federal  
6                   agencies and I have to say that NOAA is tops  
7                   in terms of customer service, in terms of the  
8                   attitude that the individuals bring. This is  
9                   NOAA Corps and civilian staff, everybody, and  
10                  it is Ocean Service, it is Weather Service.  
11                  It is all the different elements of NOAA,  
12                  scientific support staff that I work with.  
13                  They all bring this attitude of customer  
14                  service and together with the Coast Guard  
15                  figure out how can we solve these problems  
16                  more than just about any other agency that I  
17                  have worked with. I am very happy with the  
18                  service that we have gotten. I would say we  
19                  do need a full-time scientific support  
20                  coordinator. It has been two years and I need  
21                  to have somebody from scientific support. We  
22                  are at risk without that individual. I know

1 that is in the works. So I just wanted to say  
2 that to you all and thanks very much for the  
3 opportunity to speak.

4 (Applause.)

5 CHAIR WELLSLAGER: Thank you,  
6 Captain Gautier.

7 MR. KENNEDY: I hope the court  
8 reporter got that last part. Did you get that  
9 all recorded? Not about the scientific  
10 support coordinator but the other.

11 (Laughter.)

12 COURT REPORTER: Yes, sir.

13 CHAIR WELLSLAGER: Our next  
14 speaker we had the pleasure of meeting  
15 yesterday, Chris Bonura, the Director of  
16 Industrial Development, Port of New Orleans.  
17 He is going to talk about the impacts to the  
18 Port of New Orleans from both Panama Canal  
19 expansion and industrial growth.

20 And might I also say thank you  
21 very much for that wonderful tour we had  
22 yesterday. I thoroughly enjoyed that and

1 didn't know a bus could go through a warehouse  
2 quite the way that it did.

3 MR. BONURA: Well, since I have  
4 been preceded and am going to be followed by  
5 some very good navigators, I just want to  
6 point out I have no navigation experience  
7 other than trying to get a bus through a  
8 warehouse. So I will try and keep my comments  
9 to what we see as the trends that are coming  
10 up that are going to affect our growth here in  
11 the Port of New Orleans and how that might,  
12 with the idea of thinking about how we can  
13 prepare NOAA products, just to start thinking  
14 about as we get bigger ships in, larger cruise  
15 ships, larger container ships, how that is  
16 going to affect safety on the waterway and  
17 what kind of continuation of the types of  
18 products that we have now that will aid the  
19 people who get these ships here safely.

20 I am not going to dwell on some of  
21 this because some of it is redundant from what  
22 I told you yesterday but Louisiana has ports

1 all over the state and a lot of them are here  
2 along the Mississippi River, five deep draft  
3 ports. And it is a very complex system. And  
4 it is probably not organized the way most  
5 ports are organized in the sense that we have  
6 the five deep draft ports here on the lower  
7 Mississippi River and four pilot associations  
8 altogether when you also include the U.S.-  
9 flagged ships coming in, in addition to the  
10 foreign-flagged ships.

11 So this was somewhat of a  
12 challenge with the PORTS system and the Port  
13 of New Orleans initially took the lead on it,  
14 in the sense of trying to get the funding  
15 together and to stand up and say hey, we think  
16 this is important. And if there are bills to  
17 pay, we will figure it out as we go along but  
18 we have the agreement with NOAA.

19 But if you were in a state port  
20 authority, you would be able to pass all those  
21 costs on to the shipping lines and we are not  
22 in that situation. We handle about one-fifth

1 of the vessels I would call on the Mississippi  
2 River that use the PORTS system. So it is a  
3 little bit of a unique situation. And we have  
4 come up with a solution in terms of keeping  
5 that PORTS system on stable financial footing  
6 is that the Bar Pilots are going to put this  
7 on the bill. They have been putting it on the  
8 bills for the deep draft navigation.

9 All the ships that come through  
10 the lower Mississippi River have to go through  
11 the Bar Pilots. Most of them. Ninety-nine  
12 percent of them. The U.S.-flagged ones don't  
13 have to. But the lion's share of the deep  
14 draft navigation that comes on the lower  
15 Mississippi River, they get a bill from  
16 Captain Lorino. So that is how we are finding  
17 this and putting it on a long-term basis. And  
18 I really have to applaud Captain Lorino, the  
19 Bar Pilots, the Crescent Pilots, the New  
20 Orleans, Baton Rouge Pilots. And also the  
21 steamship associations and all the different  
22 shipping interests for understanding the

1 importance of keeping this system going and  
2 doing it in a way where there is going to be  
3 a stable source of funding that will keep it  
4 going for the long-term.

5 All right, again, I am not going  
6 to dwell too much on this. You saw it  
7 yesterday. Break bulk cargo and containerized  
8 cargo is really our bread and butter in terms  
9 of cargo ships. And the cruise industry is a  
10 growing portion of our business. If you look  
11 at our cargo operations are about 75 percent  
12 of our revenue. Cruise is growing. It is  
13 about ten percent of our revenue. You know,  
14 the industrial properties and the other parts  
15 of our business is the remainder. So we are  
16 continuing to see some growth in those areas  
17 and we are going to keep plugging away at  
18 that.

19 Now on the cruise ships, what is  
20 really driving the growth is larger ships.  
21 You saw The World that was docked at the Julia  
22 Street Cruise Terminal yesterday. But really

1 what we see in terms of the consistency is our  
2 home-ported cruise ships. On a weekly basis  
3 this time of year, there are four cruise ships  
4 that are home-ported in New Orleans. Two of  
5 them are here year round, that is two Carnival  
6 ships, and Royal Caribbean and Norwegian are  
7 here in the winter cruise season. For obvious  
8 reasons, they don't want to be here during  
9 hurricane season if they have to be here for  
10 half the year.

11 But just over the last few weeks,  
12 we have seen another growth spurt in the  
13 cruise industry in the sense that the Royal  
14 Caribbean ship has been traded out for a  
15 larger ship. I'm sorry. The Royal Caribbean  
16 has the largest ship right now. It is about  
17 1,020 feet long. The Norwegian ship is going  
18 to be traded out for a larger ship that is  
19 about 300 passengers larger. So again, we are  
20 putting more people in an area where we have  
21 some pretty difficult navigation and the  
22 pilots have to keep an eye and have the

1 information available to them to know what  
2 they need to do to accurately and safely get  
3 these vessels into port.

4           The other thing that we have seen  
5 over the years is that our cruise passenger  
6 trend is growing. You know we saw some growth  
7 prior to Hurricane Katrina. It was growing at  
8 a pretty steady pace. That 2006 that you see  
9 there, that is the year of Hurricane Katrina  
10 where it dropped off. We didn't have a full  
11 year of cruise ships. And really what we saw  
12 was in 2005 Katrina hits and it really took --  
13 the cruise ship industry, they plan six months  
14 to a year in advance in terms of where they  
15 are going to make their port calls and doing  
16 their advanced bookings. So it really took a  
17 long time to get that business back up and  
18 running in the Port of New Orleans.

19           The cargo industry came back  
20 almost immediately. As soon as that river was  
21 open and the Coast Guard and the Pilots gave  
22 the cargo ships the go-ahead, they were ready



1 to go and we started seeing cargo moving  
2 immediately.

3 It is a little bit trickier when  
4 you live in a city that had been 80 percent  
5 covered with water to get people to come back  
6 in from a tourism standpoint. That has been  
7 the ongoing challenge but what we have seen is  
8 over the years a steady ramp-up and we are now  
9 exceeding our pre-Katrina levels of passenger  
10 embarkations and disembarkations. In fact by  
11 the end of this year we are expected to hit  
12 more than a million passenger embarkations and  
13 disembarkations.

14 Okay, obviously a very big trend  
15 that is on the horizon that I think all the  
16 ports in the Gulf Coast and on the lower  
17 Eastern Seaboard are keeping a very close eye  
18 on is the Panama Canal expansion project. And  
19 we have to make the investments that are going  
20 to be required in order to stay on top of this  
21 trend. Now there has been a lot of  
22 speculation about how Panama Canal is going to

1 affect the shipping industry and I think, to  
2 some extent, there has been some irrational  
3 exuberance in that case. You have to keep in  
4 mind you are making -- in our case, we are  
5 considering over a 20-, 30-year period making  
6 a half billion dollar investment in our  
7 containerized facilities. You know, you don't  
8 want to over-create capacity but by the same  
9 token you don't want to leave any chips on the  
10 table. So that is really the very tricky  
11 balancing act that I think all the ports in  
12 the Gulf Coast have to make.

13           You have seen some controversy  
14 over that in Gulf Port where the Port Director  
15 resigned really because people had a  
16 misconception about what was going to happen  
17 in terms of the growth there and what could  
18 really go to that port in terms of having a  
19 36-foot channel.

20           We have a 45-foot channel here in  
21 New Orleans, 47 when you consider that we have  
22 some advanced dredging. And we have 45 feet

1 at our container terminal. So we think that  
2 that is going to take care of the additional  
3 business in the short-term. In the long-term  
4 there are some efforts underway that would  
5 deepen the river. And again, I think that is  
6 going to be something that you need to keep an  
7 eye on in terms of the products that NOAA is  
8 providing because the stakes are bigger when  
9 the ships are bigger.

10 Okay, just sort a rundown here of  
11 where the Gulf Ports are. Houston, obviously,  
12 is the leader in the Gulf. New Orleans, we  
13 rank number two. And we are handling about  
14 pretty close to 500,000 containers per year  
15 and our capacity is about 600,000 containers  
16 per year. But with our footprint we could go  
17 a little bit upwards of 1.5 million containers  
18 per year. And you saw some of the new gantry  
19 cranes out there. We have increased the size  
20 of our gantry cranes, the new ones. We reach  
21 out 19 across. So those are Post-Panamax  
22 gantry cranes. And again, that is an

1       indication that we see those ships getting  
2       wider.  Again, we have to keep an eye on the  
3       products that are being provided in terms of  
4       making sure that we can safely navigate those  
5       vessels.

6                   Okay in terms of what we see in  
7       the Panama Canal right now, the Gulf Coast  
8       accounts for about 12 percent of the Panama  
9       Canal traffic.  The East Coast is 54 percent.  
10      So again, we see a very important opportunity.  
11      It is a game-changer but let's keep it all in  
12      perspective in terms of how much impact it is  
13      going to have to the Gulf Coast.  When you  
14      really consider the volumes and kind of  
15      project them out, what we are talking about in  
16      terms of additional Panama Canal trade lane  
17      traffic coming through to the Gulf Coast is  
18      about an additional one and a half million  
19      containers per year spread out over several  
20      different ports.  You know, our goal really is  
21      to reach a million containers per year, say  
22      over the next 15 to 20 years.  You know, we

1 think that that is a pretty good goal to have.  
2 It is ambitious but not overly ambitious and  
3 that is where we are aiming at. Some of that  
4 growth is going to come from the Panama Canal  
5 expansion. Some of it is going to come from  
6 our other trade lanes. So if you look at our  
7 volumes over time, we have seen the container  
8 volumes growing at a pretty steady pace, about  
9 seven to ten to thirteen percent per year.  
10 The break bulk cargo that we do over the last  
11 four or five years, it has been hit by the  
12 recession, but that has been fairly steady  
13 over the last several years. And if the  
14 economy would finally get going, we would see  
15 that increase quite a bit as well. But we see  
16 the Panama Canal as a real opportunity and we  
17 are going after that trade pretty  
18 aggressively.

19 Now you all saw some of this up  
20 close and personal yesterday but just to give  
21 you sort of a birds-eye view of it in how it  
22 all lays out, the red area and a little bit of

1 the green area is where we were yesterday.  
2 And this is where we have our existing  
3 terminal with about a 600,000 container  
4 capacity per year. Now depending on how we  
5 operate, we could probably stretch that number  
6 out a little bit more. But in terms of our  
7 second phase, the green phase that you see  
8 there, that would involve strengthening some  
9 portions of the wharf and moving that little -  
10 - let me see if I can get a pointer over here  
11 -- this little green area here is the movement  
12 of our intermodal rail terminal which is  
13 located right here right now, bringing that  
14 back along the Clarence Henry Truckway. And  
15 that would make room in Phase III for this  
16 very big footprint.

17 Each of these two phases are about  
18 250 million dollars a pop. So what we have  
19 been doing over time is we break out Phase II  
20 into several stages. So part of that work,  
21 one of those stages were the new cranes that  
22 you saw. It was five acres of additional

1 marshaling yard, which is in this area right  
2 here, this green, which has been done already  
3 and is included in that 600,000 container per  
4 year number.

5           Okay, so our next phase of this,  
6 as I mentioned, is the Napoleon Intermodal  
7 Terminal. And we are in the process of  
8 designing this project right now. We received  
9 \$16.5 million in TIGER funds in order to  
10 complete this project. And I think this  
11 project really speaks to what we do as a port.  
12 You know, the lion's share of our cargo in New  
13 Orleans is not going to stay within the State  
14 of Louisiana. There is some very important  
15 cargo, as I mentioned yesterday, the poultry  
16 and the chemical exports that we deal with in  
17 New Orleans that are related to Louisiana  
18 economy but we really position ourselves as  
19 the port for the Mississippi Valley and we  
20 have very close connections with those inland  
21 ports. We have a very tight network of barges  
22 and rail and trucking that get the cargo to

1 and from those inland destinations.

2 And when it comes to moving  
3 containers, there is really no more efficient  
4 way to move a lot of containers in a short  
5 time than intermodal rail. We have -- our  
6 expansion footprint is actually a piece of  
7 property that we bought from the Illinois  
8 Central Railroad and it had a railroad on it  
9 already. And what you see here in this  
10 picture is operations that we have sort of  
11 inherited from the Illinois Central. We have  
12 made some repairs and we are already bringing  
13 in rail in that area. But the TIGER grant is  
14 going to allow us to make this much more  
15 efficient and will allow us to really better  
16 serve those inland customers.

17 Okay, I think another issue that  
18 we have to be mindful of in terms of the  
19 products that NOAA offers is the issues that  
20 we have been having lately with funding. In  
21 New Orleans in the Lower Mississippi River, in  
22 a sense, we have been blessed for so many



1 years, where other ports have had these issues  
2 and we haven't. However, I think the funding  
3 level for the Corps has gotten to such a level  
4 that even on the greatest waterway in the  
5 United States, the Mississippi River, we are  
6 seeing the impact. You know, 30 percent of  
7 the vessel calls in the United States are  
8 being constrained by inadequate channel  
9 dimensions. That is really staggering when  
10 you think about it.

11 I mentioned a little bit yesterday  
12 not just that the depth of the river but the  
13 width of the channel has been affected in  
14 recent years in pretty dramatic ways. And  
15 that is obviously something that the pilots  
16 have to contend with and that we have to keep  
17 a very close eye on.

18 The real big mystery of this whole  
19 thing though is that there is a dedicated  
20 source of funding for harbor maintenance but  
21 only about half of it is spent for its  
22 intended purpose. That is an issue that is

1 really, Sean Duffy, who I see in the audience  
2 here today, he has been fighting pretty hard  
3 on. Congressman Boustany has sponsored some  
4 legislation that would put a lockbox around  
5 that harbor maintenance trust fund. And that  
6 is something that we have been advocating  
7 pretty heavily for and keeping a close eye on.

8           Additionally, I mentioned that  
9 over time as we see these trends going on with  
10 the Panama Canal and the opportunities that  
11 are available. We are looking at ways we  
12 could actually increase the channel of the  
13 Mississippi River. The channel is authorized  
14 to 55 years about 40 years -- 55 feet 40 years  
15 ago but those funds were never appropriated.  
16 Congressman Richmond has sponsored the DREDGE  
17 Act and one of the things that it would do is  
18 to construct the 50-foot channel and also take  
19 some of that material and use it for coastal  
20 restoration and beneficial use.

21           So those are the trends that we  
22 see coming down the line and we thank you so

1 much for coming to New Orleans and taking a  
2 look at our port. And if there is any  
3 questions later on, I would be happy to  
4 address them.

5 (Applause.)

6 CHAIR WELLSLAGER: Thank you,  
7 Chris.

8 Our next speaker, Captain Michael  
9 Lorino is the President of the Associated  
10 Pilots, the Bar Pilots, and he will talk to us  
11 about the challenges for safe navigation and  
12 operations, current and future, for the Lower  
13 Mississippi River.

14 CAPT. LORINO: First of all, thank  
15 you, Mr. Chairman. And Admiral, it is nice to  
16 see you again. And Members of the Commission,  
17 it is a pleasure for the invite to come speak  
18 and listen to everybody.

19 But before I do that, I wanted to  
20 say, Captain Dempsey, it is nice to see you  
21 again. I remember a few trips we made in the  
22 Gulf Outlet on the Lykes Brothers ship. Maybe

1 about four or five years ago I think we did  
2 that. I don't know.

3 MEMBER DEMPSEY: Thank you.

4 CAPT. LORINO: But I've been a  
5 pilot on the river for 33 years and I have  
6 been lucky to be president for the last 13  
7 years. So Captain and I go back a long way  
8 and I have enjoyed it. It is very nice to see  
9 you.

10 But before I get started, I think  
11 it is very important, you know Tim asked me to  
12 speak about a little bit about navigation but  
13 I could not come before this Commission and  
14 just talk about navigation without talking  
15 about NOAA.

16 As I mentioned, NOAA, for the past  
17 13 years that I have been dealing with them,  
18 has moved weather, in my opinion on the river,  
19 into the 21st century by leaps and bounds.  
20 What happens, what is so very important as  
21 Chris said, we have five ports on the  
22 Mississippi River. If you take those five

1 ports and you decided to put them all into one  
2 port, you would have the largest port complex  
3 in the world. In the world. That is how much  
4 traffic and that is how many ships move in and  
5 out of this river system. So when I like to  
6 talk about it, I don't talk just about the  
7 Port of New Orleans, I talk about the river  
8 system because that is the most important  
9 thing to the state and also the economy. But  
10 what you have there which is so vital that  
11 NOAA provides to the industry is when we do  
12 have hurricanes, or we do have a collision or  
13 we do have something, an oil spill, whatever  
14 the case may be, NOAA is the first one, Tim  
15 Osborn is the first one on the phone to me.  
16 "Mike, what can we do?" Now when someone  
17 calls you and says Mike, what can we do, that  
18 is very, very important. And like I said, I  
19 would be remiss if I did not give credit where  
20 credit is due.

21 Let's look at hurricanes. Captain  
22 Gautier said that a few minutes ago. We had

1 over a hundred and some-odd ships in the  
2 river. The Southwest Pass is 125 miles below  
3 New Orleans out in the Gulf. Every single one  
4 of those ships want to wait to the very last  
5 minute to leave this port. And you have to  
6 travel ten to twelve hours to get down there.  
7 You can't do it. You cannot do it.

8           What did we do? As I said, Tim  
9 would call me. We talk privately. We get  
10 people on the phone from the Weather Service  
11 and I start looking at projections. During  
12 Hurricane Isaac, I called Captain Gautier I  
13 think it was on a Friday before the hurricane  
14 arrived. And I said, Pete, it looks like  
15 maybe Monday we are going to have to shut this  
16 place down. But I didn't pull that out of a  
17 hat. I pulled it out of working with Tim,  
18 working with NOAA, working with the experts on  
19 the telephone that would give us the  
20 projections of when we were going to have 18-,  
21 20-foot seas out there aboard ships, when I  
22 had to get my people out, when I had to get my

1 boats out. That allowed industry, which is  
2 very important, to make plans to get those  
3 ships out a few days in advance. So I just  
4 wanted to say that and it is very, very  
5 important.

6 Also very important is after the  
7 storm passes. Most of the time when the storm  
8 passes and they see it is inland, the first  
9 people on the phone are the agents saying  
10 Mike, can we move our ships. Captain Gautier  
11 knows that because I bug him all the time and  
12 say Pete, we have got to get the port open,  
13 but that's all right. But once again, on the  
14 telephone with NOAA, Tim, the information is  
15 invaluable. So I just want to say on that  
16 part of it, which is great, Tim, thank you.  
17 Admiral, you have got a great team. Keep up  
18 the good work. And it is absolutely -- I know  
19 you need more funding. We will get into that  
20 in a few minutes but you deserve a lot more.  
21 That's all I am going to say on that for right  
22 now.

1                   There is also another very  
2                   important part that NOAA provides. Coal is a  
3                   very big commodity that is being exported on  
4                   the Mississippi River today. Now we all know  
5                   commodities go up and down. It might be great  
6                   today. It might be terrible tomorrow. But  
7                   the bottom line is I needed information on an  
8                   area off of Southwest Pass where we were  
9                   looking to do some topping off. Today we load  
10                  to 47 feet. They wanted to load those ships  
11                  to 55 feet. So rather than Tim calling me, I  
12                  actually got a chance to call him and say Tim,  
13                  can you help me with this project?

14                  Within a week, he had his team out  
15                  there. They put a plan together for me and  
16                  that information has already been disseminated  
17                  to industry and people are looking at setting  
18                  up an offshore terminal off of Southwest Pass  
19                  to top off coal. So once again, Tim, thank  
20                  you. NOAA, thank you.

21                  A lot of people don't realize what  
22                  goes on and how it works.



1                   Let's talk about the PORTS system  
2                   for just a minute. As Chris said, the PORTS  
3                   system works very, very well. They needed  
4                   money. We could not let that system  
5                   disappear. As Chris said, what we did was we  
6                   sat down and we said what we would do. Who  
7                   uses the PORTS system: 99.6 percent of the  
8                   ships coming in in the Mississippi River use  
9                   the PORTS system. The other four percent is  
10                  the American-flagged, which you have very  
11                  ships but they still use it. But the bottom  
12                  line is, we said let's let those people that  
13                  are coming in here and getting the benefit of  
14                  the PORTS system, pay for the PORTS system.

15                  So we took that to the Pilot Fee  
16                  Commission, along with the other pilot groups,  
17                  industry. It was an unanimous, unanimous  
18                  support to fund the PORTS system.

19                  So I don't know how it is done in  
20                  other places, Admiral. I don't know how it is  
21                  done but that is something you might want to  
22                  look at and think about.

1                   Funding, I know NOAA does not  
2 receive enough funds. I can damn well tell  
3 you the Corps of Engineers doesn't receive  
4 enough funds because I deal with them every  
5 day and they do a great job and they do a  
6 wonderful job when they have money and they  
7 have equipment. So I am just going to go out  
8 on a limb and say I bet you NOAA doesn't get  
9 enough goddamn money either. So anything I  
10 can do, Admiral or this Commission that you  
11 need from the Bar Pilots, and I am going to go  
12 out on a limb and say Louisiana River Pilot  
13 Association, that you need from us to support  
14 any effort that you have, we will do that.  
15 You just pick up the phone and call me and we  
16 will get it done. That is how important this  
17 project is to us.

18                   When Tim asked me to speak, he  
19 wanted me to talk about navigation. Well I am  
20 going to touch on a little bit about  
21 navigation and show you a few slides that are  
22 very important. And I am going to leave NOAA

1 now and I am going to go to the Corps of  
2 Engineers.

3 As I said, the Corps of Engineers  
4 does a great job. They need money. They need  
5 equipment. And I know Bill Hanson is here and  
6 he will fuss at me sometime when I say there  
7 is not enough equipment but we will get into  
8 that at another time.

9 But anyway, the bottom line is the  
10 Mississippi River system is not like Portland,  
11 not like Columbia River. The Mississippi  
12 River system is its own unique system. Just  
13 last year, the Captain and I were talking  
14 about the highest river since 1937. This was  
15 last year at this time. Today I am standing  
16 up here and I am getting phone calls about no  
17 cargo coming down the Mississippi River  
18 because it is so low. That is the diversity  
19 that you have on this river system.

20 On top of that, we know every year  
21 we are going to have shoaling on the  
22 Mississippi River maybe once, maybe twice,

1 maybe three times. We don't know how bad.  
2 But we do know one thing: the Corps is  
3 underfunded. So what does that mean? That  
4 means that something has to give. We either  
5 are going to get money or we are going to lose  
6 draft. And unfortunately for the last couple  
7 of years, it has been the latter. We have  
8 been losing draft because everything is tight  
9 and I understand that but I still disagree  
10 with it.

11 So what happens when we lose  
12 draft? Everybody in this room probably says  
13 the first thing you look at is you can't take  
14 as much cargo out. It is not as deep. Well  
15 that is absolutely correct. No doubt about  
16 it, that is a key factor. But Chris must have  
17 been sitting at a few of my meetings, too many  
18 meetings that him and I have been together  
19 where he even started talking about width.  
20 Man, I tell you, if somebody from the Port of  
21 New Orleans can start talking about width, I  
22 am getting the message across.

1                   So I am going to touch on a little  
2 bit about that. Or do you want to come give  
3 it, Chris? I'll let you come give this. I  
4 can take a break for a little while. I love  
5 it! I love it!

6                   I am going to go into Southwest  
7 Pass for you. This is the lower end of  
8 Southwest Pass. Where you see the 750, that  
9 is our maximum width that we have in Southwest  
10 Pass, 750 feet by 45 feet in depth. Also,  
11 Chris picked this up very well also. The  
12 Corps, because the river shoals up so much and  
13 so fast, it is not like other ports as I said  
14 a few minutes ago, that the Corps, instead of  
15 dredging to 45 feet, they will dredge to 51  
16 feet so that they get a little extra time to  
17 get equipment and dredges when the channel  
18 starts to shoal up.

19                   So basically the channel is 750  
20 feet by 45, 650 on the lower end and on the  
21 entrance, 600 feet. So I use those just to  
22 show some ships passing and just kind of show

1 you a little bit different here.

2           Okay in that 650-foot part of the  
3 channel that I showed you a few minutes ago,  
4 if everything goes great, and remember, as I  
5 said, we are a busy port. Last year we did  
6 10,700 ships. This year we projected to do  
7 10,812 ships if things go the way they are.  
8 So you have ships running in and out of here  
9 24 hours a day, 365 days. They can't wait for  
10 one-way traffic. They can't wait for this.  
11 They can't wait for that. So if we go to that  
12 650-foot channel and everything is great, we  
13 have 300 feet in-between to pass.

14           Now when you talk about a ship  
15 that may be 900 or 1,000-foot long, 180-foot  
16 wide, 300 feet in-between is not that big --  
17 not that far. Think about it. So that is a  
18 beautiful day.

19           But what happens when you are in  
20 that 750-foot part of the channel that I  
21 showed you and that is reduced because of  
22 shoaling because we don't have those funds,

1 and not only the draft, the depth, but also  
2 the width, what happens when we lose that  
3 width? We go from that 300 feet down to 195  
4 feet on those same two ships. That is a  
5 gigantic reduction, 600 down to 500. Now you  
6 have 100 feet in-between those vessels. That  
7 is nothing at all. You can look almost 100  
8 feet in this room. And how you have these two  
9 ships passing when, as long as everything goes  
10 good, everything is fine.

11           There is a couple of things, and  
12 Captain Dempsey knows what I am getting ready  
13 to say, there is a few other things in here  
14 that play a very important factor that you  
15 don't see. Crew boats, fishing boats, tow  
16 boats, they get involved and get in your way.  
17 So that cuts that part of it down. What  
18 happens when it goes down to 400? Now you  
19 have no safe passing distance. These ships  
20 are right next to each other. We make it. We  
21 get by but it is not your ideal situation and  
22 it should not happen to any port in the United

1 States because there is money being collected  
2 to maintain each port to its full project  
3 dimensions but it is not being used properly.

4 Lets draw in a little wind. The  
5 Captain knows what I'm talking about wind.  
6 Her place was very, very windy where she  
7 worked, one of the toughest spots in the  
8 world. Put a little wind in there. Now, 50  
9 feet. That's not very good.

10 Captain you don't need to look at  
11 these. I'm sorry. You could have went to the  
12 restroom. I forgot to mention that a few  
13 minutes ago.

14 Ten degrees of leeway in a 400  
15 channel, now you do what they call in Houston  
16 the little chicken maneuver, head at each  
17 other and pull off. All of those things work  
18 because pilots are trained to do it. But that  
19 is not the way it should be done. There is a  
20 reason why the channel was not designed for  
21 750 feet and 45 feet: safety. But for some  
22 reason, our government is getting away from



1 that.

2 I talked about Southwest Pass a  
3 minute ago. This is a very -- and I have had  
4 this happen a few times to me in my career.  
5 Sometimes things don't go right on a ship.  
6 The engine goes out, the steering goes out,  
7 somebody goes aground ahead of you, you name  
8 it, it can happen. Well now you have to stop  
9 this large ship. Somebody asked me -- Captain  
10 don't take this personal -- somebody from the  
11 Coast Guard asked me many years ago, Mike, how  
12 come you didn't just put the brakes on?

13 (Laughter.)

14 CAPT. LORINO: Well last time I  
15 was on a ship, I haven't seen a damn brake  
16 pedal one time. I don't know if you have,  
17 Captain Dempsey. But the bottom line is, you  
18 can't do that.

19 In Southwest Pass, it is going to  
20 take four miles to stop that ship, unless I  
21 want to run it aground. Four miles. It is a  
22 long way, ladies and gentlemen. There is a

1 picture of it right there. That is a lot.

2 Now, as I said, you can run it  
3 aground and stop it. What happens when we run  
4 it aground? What happens when we block that  
5 channel? The entire heartland of the United  
6 States is shut down. The entire heartland.  
7 There is no other way to get cargo into the  
8 heartland by ships, other than what you see  
9 right there. That is why it is so imperative  
10 that the Corps gets their money and has the  
11 equipment to do their job. And it bewilders  
12 me why we can't do that.

13 But anyway, as I mentioned, the  
14 Mississippi River, in my opinion, is the  
15 busiest and the greatest water way in the  
16 world. I think Captain Gautier will attest to  
17 this. He has been around the country. He has  
18 been in many ports. But when he came to New  
19 Orleans, his eyes really opened. We do things  
20 just a little bit different here, Pete. But  
21 the bottom line is we have a wonderful  
22 relationship with the Coast Guard. We have a

1 great system. We have a great system with  
2 industry here. Industry works with the  
3 pilots. The pilots work with the industry.  
4 You have the Corps of Engineers and now you  
5 have NOAA, another important factor of this  
6 equation. And as I said a few minutes ago,  
7 Admiral I know there is a lot of people in  
8 NOAA that are in your branch that you handle.  
9 I deal with Tim a lot, personally. He does a  
10 great job and all of your people do a great  
11 job. So I just want to say thank you for the  
12 invite. Thank you for doing a great job. And  
13 it has been my pleasure.

14 (Applause.)

15 CHAIR WELLSLAGER: Thank you,  
16 Captain.

17 Kenneth Graham is our next  
18 speaker. He is from the NOAA National Weather  
19 Service, Meteorologist in Charge, Weather  
20 Forecast Office in the New Orleans/Baton Rouge  
21 area. He will talk about hurricane response  
22 efforts, culmination of NOAA data products for

1 accurate modeling and prediction methods.

2 Ken?

3 MR. GRAHAM: Perfect! Thank you,  
4 Mr. Chairman and thank you for the invitation.  
5 And Tim, thank you for getting me over here  
6 and being able to talk to you today.

7 You know, I wrestled with what to  
8 say today so much because I mean I could have  
9 given a talk on what Suzanne Van Cooten does  
10 at the Lower Mississippi River Forecast Center  
11 because they are the ones that actually do the  
12 forecasts on the Mississippi River. High  
13 flow, low flow, whatever it is, they are the  
14 ones that are coming up with those values. So  
15 we could have given some sort of talk like  
16 that. I could have given a science talk and  
17 talked about storm surge and came up here and  
18 gave all sorts of information about hurricanes  
19 and so forth but the running theme, I  
20 completely changed it because the running  
21 theme here is about impact. And it is  
22 something our office in Slidell is really

1       trying to concentrate on. And you heard it  
2       from the speakers. I mean I wrote down some  
3       notes here about the need for impact services,  
4       decision support. It is about -- the Captain,  
5       you were saying you need more information  
6       about the communities to preposition  
7       information. So it is not so much about hey  
8       Captain, you are going to get ten-foot of  
9       storm surge, good luck to you. No, it is  
10      about here is the impact related to that. So  
11      I took that down.

12                 We also saw on the last slide the  
13      15-knot wind. You know a 15-knot wind  
14      affecting ships on the Mississippi River. And  
15      I am telling you we have a lot of that  
16      information and there is so much more that we  
17      can share.

18                 So we are doing a lot at our  
19      office to shift the paradigm. Our office in  
20      Slidell with the Weather Service is a part of  
21      a NOAA initiative called Weather-Ready Nation.  
22      So what is that? Well I mean you got the

1 terms but here is the real gist of it. We are  
2 trying to change the paradigm of how we do  
3 business at our office.

4 For a lot of years -- we have been  
5 here a while. We opened our doors in 1870 in  
6 the Custom House next door. So if you haven't  
7 seen the Custom House right here on Canal  
8 Street, that was our first office. I am  
9 trying to go through the historical records to  
10 figure out where but knowing a meteorologist,  
11 they were probably on the roof looking at the  
12 weather. So I figure they were on some of the  
13 highest floors of the Custom House.

14 So we started in 1870. Back then  
15 it was basically I am going to look at the  
16 clouds. We will have humid conditions  
17 tomorrow, breezy, maybe a temperature  
18 forecast. And it is interesting we have done  
19 that for many years. And in the Weather  
20 Service even in the last few decades, I have  
21 been doing this for about 20 years in the  
22 Weather Service approximately, and it has

1 always been a situation where tomorrow it will  
2 be 75 degrees, you have got a chance of rain.  
3 I will hit "enter" and my job is done. Does  
4 that make sense? I mean, it has been like  
5 that for a long time. And the reality is now  
6 there is so much more to it. So in trying to  
7 change this paradigm, that type of mentality  
8 is over.

9 And I want to give you this  
10 example. My whole talk here is just throwing  
11 out different ideas to try to get input from  
12 the committee and throw out some challenges  
13 because I think that is what we are about here  
14 today is giving you some things to think  
15 about, giving us some ideas of where we are  
16 going to go forward. The way we used to do  
17 business there is a chance for rain this  
18 afternoon. Now, if you are from here, the  
19 chance for rain means a whole lot of different  
20 things, depending on where you are. So now we  
21 are working to say well the chance of rain is  
22 between 3:00 and 7:00 along I-12 between

1 Slidell and Baton Rouge. Why is that  
2 different? Well it is a major impact  
3 difference because that 3:00 to 7:00 is now  
4 your rush hour. And we could work with the  
5 State Police to say you need to reposition  
6 your assets, different personnel, you need to  
7 talk about overtime hours and that sort of  
8 thing to make sure to get ready for all the  
9 wrecks. Does that make sense? It is a subtle  
10 shift but there is a huge paradigm shift  
11 between what we were doing before and what we  
12 are doing now and where we are going in the  
13 future. And we are working very hard on those  
14 subtleties to be able to give that type of  
15 information out. And that is real and they do  
16 appreciate that.

17 We are actually trying to create  
18 an impact catalog, trying to document these  
19 impacts and try to write those down so we have  
20 that as we are looking at the science and  
21 understanding those impacts. I think that is  
22 going to be very important to document those



1 subtleties. You know from the oil spill,  
2 there was a big difference between seas of  
3 one-foot versus two-feet. Now traditionally,  
4 not a whole lot of difference, right? One-  
5 foot, two-foot, the casual boater or anything  
6 like that we didn't think about that too much.  
7 But that made a big difference, depending on  
8 what you were doing in the response. It made  
9 a big difference whether you all could get a  
10 certain type of boat out or visibility of two  
11 miles that we wouldn't think of too much of a  
12 big deal on possibly an interstate but that  
13 meant certain aircraft couldn't fly. So we  
14 are really trying to get into those impacts  
15 and understand them so we can work with the  
16 communities and understand those trigger  
17 points to be able to do more with that. It is  
18 really critical.

19 With our pilot project at our  
20 office, we are doing other things. We are  
21 getting out of the office. I mean if you go  
22 back the last hundred years, you pretty much

1 sat in front of either a system, whether it  
2 was a teletype and now of course computers and  
3 you put out your product, again, you pressed  
4 enter and went on. That is no longer valid.  
5 That is only part of the process. The other  
6 part is getting out there embedding with those  
7 that you are serving. Being with the Coast  
8 Guard, doing the briefings, getting out there,  
9 being with you, deploying. In Hurricane  
10 Isaac, we actually had seven people deployed  
11 out of the office with the decision-makers.  
12 It is unprecedented for one office to be able  
13 to try that and it works. It really works.

14 We have even taken -- and Tim  
15 knows all about this. He has been at a couple  
16 of our events and support events. We actually  
17 took an old FEMA trailer and built a weather  
18 command center. So we actually take it very  
19 serious about getting out there. And we have  
20 supported DoD at Navy Week and we are going to  
21 be right next to the City of New Orleans and  
22 DHS to be able to support during Super Bowl.

1 So we are going to be right there embedded  
2 with the decision-makers once again because it  
3 is not only about that squall line or that  
4 tropical system or the potential flooding. It  
5 is also the unknown, a terrorist attack or  
6 some unknown that could occur during that  
7 event where guess what, weather is still  
8 everything. So where is the bad stuff going  
9 to go? Where is the plume and we are going to  
10 be working very closely during the Super Bowl  
11 to be able to do this.

12 We are communicating differently  
13 than we have before. We conducted briefings.  
14 We have heard several references to those  
15 briefings. Those aren't by accident. We  
16 really try to coordinate those. We really try  
17 to get the federal state, and local officials  
18 the information that they need. And we  
19 listen. We listen to the input and we change  
20 the briefings based upon that. And every user  
21 is completely different because it is about  
22 the navigation. That is your information.

1       Somebody else is using the information to make  
2       evacuation, somebody else looking at  
3       lifesaving information, property and also  
4       commerce. So we try to get that out there.  
5       Those PowerPoints are available to all those  
6       that we serve. They put them in the EOCs. We  
7       get that out there. It is absolutely,  
8       completely critical.

9               We are also working on some other  
10       things. You know, the realization, and I  
11       always get a little criticism for this because  
12       back in the late '90s I talked about how  
13       everything should be geared towards the  
14       internet and I got a lot of pushback. And  
15       there was one person who even said you need to  
16       slow down on this because it is just a fad.  
17       It is interesting to look back at the '90s.

18               So now what are we talking about?  
19       We are talking -- I make fun of -- I'm not  
20       sure we are going to have websites in five or  
21       ten years. And now I am getting kind of made  
22       fun of for that. It is these apps. It is

1 this magic cloud that I don't fully understand  
2 other than what is up in the sky that I  
3 studied in school. It is information that is  
4 on the go.

5           So we are trying to recognize that  
6 you all aren't always sitting behind a  
7 computer looking at this information. You are  
8 mobile. You are on a barge. You are on a  
9 ship. You are responding on the beach. The  
10 oil spill taught us that people needed  
11 information walking down cleaning up oil on  
12 the beaches. They need this information,  
13 especially heat. That was one of the biggest  
14 -- one of the factors for safety during the  
15 oil spill response when somebody comes down  
16 from Canada and experiences our humidity as  
17 they are working on the beach and they are  
18 keeling over. That happened. It was a big  
19 safety issue for us. So we have developed a  
20 portable website that people are now using,  
21 our emergency managers and others are using on  
22 their cell phones. It is huge. The feedback

1 we are getting, and Tim I don't know if you  
2 are getting any other feedback, but the  
3 feedback we are getting is extremely positive.  
4 Because they don't have a PC with them, they  
5 need it where they are doing the job. So we  
6 are working on that and so far it has been  
7 successful.

8 And I mentioned yesterday a little  
9 bit the mile marker forecast on the  
10 Mississippi River, we have that data in the  
11 database. So we are working hard to be able  
12 to get that out there. We had that all  
13 contained in the office. How do we get it to  
14 you? And the first presentation with the  
15 navigation, we should have a forecast. Put  
16 your mouse right over any parameter in there  
17 and a little forecast pops up. These are the  
18 type of things that we need to be working  
19 together on. That's why I bring so many  
20 challenges here because we still have a lot of  
21 work to do. And then your forecast pops up.

22 And fog. I mentioned yesterday we

1 don't have sensors. And I'm not sure we can  
2 afford sensors every single mile or half mile  
3 but that ship captain or that barge or whoever  
4 it may be can sure tweet us what they see. We  
5 can take that information in real-time and  
6 turn that into real data that we put up. So  
7 that to me is exciting on where we are going.  
8 So I could ramble on forever about that stuff.

9 Pre-storm training. This year  
10 before hurricane season, we hit so hard the  
11 fact that you might not get a lot of notice on  
12 a hurricane. We even gave examples like  
13 Camille where there wasn't a lot of notice.  
14 We gave a lot of examples of previous large  
15 storms where you may not get a lot of notice  
16 on these hurricanes and these big impacts.

17 We also hit very hard in the  
18 preseason about large storms, slow storms  
19 producing so much storm surge. And little did  
20 we know that it came true for us and also came  
21 true for the Northeast. Very similar  
22 situation -- Hurricane Isaac and Sandy. And

1 David you were very close working with the  
2 Sandy issues. We still have a lot of work to  
3 do. The physical science, in my opinion, is  
4 getting pretty good. The forecast was pretty  
5 good for Isaac. The storm surge forecast was,  
6 you know we called for 12-foot. We heard what  
7 we got, we got 12-foot. We forecast five to  
8 eight in Lake Pontchartrain. We got 8.2 at  
9 Mandeville, which was hard for people to  
10 believe because that was forecasting a record,  
11 basically. And the comment came back so often  
12 was how could this be? It is just a category  
13 one. Or how could this be, it is just a  
14 tropical storm? We have some big challenges.  
15 The physical science seems to be, we are on  
16 the right track. There is always room for  
17 improvement. We can do more things.

18 You know I wrote down here one of  
19 the things, I mean the models can always get  
20 better as we get more data. The bathymetry in  
21 Lake Pontchartrain, we love to get things like  
22 that updated where we can get that into the



1 models. So the physical science can always  
2 get better.

3 I wanted to bring up this  
4 challenge. We have a pretty big social  
5 science challenge that we are tackling head-on  
6 here. The locals know how many times did I go  
7 on the Weather Channel and almost begging  
8 people to ignore the category. Ignore the  
9 category, right? Because this is a big storm.  
10 It is a slow storm. It is going to be a big  
11 storm surge. And this is the type of  
12 information we have to tackle.

13 We need help from groups like this  
14 to be able to tackle these challenges and the  
15 education and the interpretation of these  
16 impacts is these small changes. This is tough  
17 science to be able to communicate. Very small  
18 changes in the meteorology have exponential  
19 impact on the ground. A bigger storm or storm  
20 surge. Slow it down. More storm surge. Left  
21 and right takes you in or out of the storm  
22 surge area. Very small, subtle changes. We

1 are talking five or ten miles, a ten-mile  
2 change.

3 We have gone back with several  
4 different scientists and looked back at  
5 Hurricane remember Gustav, right, 2008. About  
6 a 30-mile difference in Hurricane Gustav. And  
7 I think, Captain you and I might have even  
8 talked about this. Only about 30-miles  
9 difference. If you went east about 30 miles,  
10 it could have devastated the City of New  
11 Orleans once again.

12 So subtle differences are  
13 something that it is very tough to be able to  
14 communicate that. So that is something that  
15 we have to look at, be able to teach people  
16 because every storm is different. So we are  
17 working on that. We are working to further  
18 have storm surge warnings. We are working as  
19 an agency to be able to do that. We are  
20 working to be able to try to get people away  
21 from comparing previous storms to current  
22 storms in the Saffir-Simpson scale which we

1 use for wind.

2           We have another challenge social  
3 science-wise that I definitely wanted to bring  
4 up with this group. I always use my neighbor  
5 who is Brent from Chalmette. I always want to  
6 use him because he texted me right in the heat  
7 of the battle. I could be briefing anywhere  
8 from the Governor to higher ups and Brent will  
9 be texting for information. And it was  
10 interesting to watch Brent during Hurricane  
11 Isaac. And I bring this up because with the  
12 world the way it is with technology, there is  
13 so much information that we have. I have  
14 never seen a storm where national news was  
15 breaking into programming because the latest  
16 ETA model or what model, any model, European  
17 model came out. Okay, the new model came out  
18 and takes the storm a different place and they  
19 were breaking into national programming with  
20 that. So it is fascinating to watch how  
21 things have changed with the latest couple  
22 storms. And you can't ignore these things.

1 You have to tackle these head-on.

2           So Brent from Chalmette would call  
3 me and say I see your forecast but the latest  
4 European model takes it to Florida. Think  
5 about that for a second. So now Brent from  
6 Chalmette has to take official information,  
7 model information from what he sees on  
8 television and how other people interpret  
9 where the storm is going to go. That is a lot  
10 of data to absorb, right? That is a big  
11 challenge. I think it is a big challenge that  
12 we have in working with the community to be  
13 able to decipher this stuff. So I always use  
14 Brent as an example.

15           Inundation graphics, we have got  
16 lots of work to do on inundation graphics.  
17 People really want to know how much water they  
18 are going to have at their house. They are  
19 going to want to know how much water is going  
20 to be close to them, how much is going to  
21 affect them.

22           We are doing something different.

1 I mentioned it yesterday. I want to mention  
2 it again. It is how we get information. If  
3 you look at the younger generation for those  
4 that weren't here yesterday, I talked about  
5 the latest hire we had at the office. She was  
6 very shocked that we still use email. That is  
7 my generation's snail mail. Wow. So that is  
8 a huge challenge. Because guess what? Those  
9 that we serve now and in the future, that is  
10 how they will receive information. It is not  
11 going to be the traditional ways of getting  
12 information.

13 My wife's younger sister is 22-  
14 years-old. She doesn't watch television. She  
15 gets her programming on the computer when she  
16 needs it. That is a different ballgame for  
17 us. So we have to look at that. So we are  
18 traditionally for about six decades, we have  
19 brought ham radio operators into our office.  
20 It has been effective. We are going to do  
21 something effort. We have talked to UNO. We  
22 are going to work with Mississippi State and

1 others to bring students in to help us tweet  
2 and Facebook.

3 (Laughter.)

4 CAPT. LORINO: It's true. Think  
5 about that paradigm shift. Again, back to the  
6 Weather-Ready Nation and what our office is  
7 trying to do. The goal is shifting our  
8 business paradigm from that phenomenon to that  
9 actual impact. And if that is how people get  
10 information, you might as well get the people  
11 that are of the right age to be able to share  
12 that because they really know how to tweet and  
13 re-tweet. For a year I thought tweet was part  
14 of a bird noise so it has taken me some time  
15 to gear up to that.

16 There is other projects we are  
17 working on and it is exciting. Definitely  
18 catch Suzanne working on the big challenge  
19 that we have of it is not just a storm surge,  
20 look at the challenges we have here with our  
21 rivers. We have Lake Pontchartrain that you  
22 shove water into the lake and you keep

1 southeast winds, you pile that water up higher  
2 and higher and higher in the west end of the  
3 lake and it spreads out everywhere it wants to  
4 go. Think about this. And then the winds go  
5 away, change direction. All that water  
6 sloshes back to the east end towards the  
7 Rigolets, gets caught up, piled. There is  
8 people around Lake Pontchartrain that don't  
9 even see their storm surge for days after  
10 landfall.

11 That is some of the challenges.  
12 We have heard how unique our river system is.  
13 It is a very unique place where we don't see  
14 that storm surge until days afterwards and  
15 that is very challenging.

16 How about this one? Storm surge  
17 up the Mississippi River. We have storm surge  
18 go up the river to about Red River Landing  
19 past Baton Rouge, we saw levels rise. Think  
20 about that for a second. Okay? That is an  
21 amazing thing. There were people along the  
22 river that I know I have talked to several

1 other people that actually could watch the  
2 water come up. And think about that all the  
3 way to Red River Landing is actually  
4 staggering. So I wanted to bring up some of  
5 these issues. I think there is a lot. And  
6 again, I could go on but for time's sake I  
7 didn't want to. So I thought that was an  
8 appropriate talk to bring some of the  
9 challenges up to the Committee and see if we  
10 can get some conversation going, whether it is  
11 here or later on today and to help us with  
12 some of these challenges. But I can't say  
13 enough that how close we work together out  
14 here through the briefings. We have enough --  
15 we don't have to have a lot of exercises and  
16 drills because we have enough of the real  
17 thing that it happens all the time. There is  
18 always a spill and we get calls from the Coast  
19 Guard. Tim coordinates this. I can't say  
20 enough about Tim's role down here is  
21 absolutely incredible. There is all these  
22 people. Tim is everywhere. You really are



1 and you coordinate these things. So major  
2 hats off and kudos to Tim. But we get calls  
3 all the time about an oil spill. All we need  
4 is a -- think about how products and services  
5 have changed. We are doing more and more of  
6 this. If there is an oil spill or a barge  
7 incident, all we need is a latitude/longitude  
8 and we produce a spot forecast for that  
9 location. So we are doing that more and more.  
10 And that is what we are all about as a 24/7 we  
11 have got somebody right there ready to issue  
12 that forecast.

13 So thank you for the time. I look  
14 forward to the dialogue and again, I  
15 appreciate the invitation.

16 (Applause.)

17 CHAIR WELLSLAGER: Thank you. And  
18 to close with our morning session, we have  
19 Captain David Trent, the President of the Port  
20 of Lake Charles Pilots and he will be  
21 addressing the coastal observation systems:  
22 water levels and PORTS information.

1                   CAPT. TRENT: All right. First  
2 off, I would like to say thank you very much  
3 and thank you to Tim for inviting me over to  
4 address this panel.

5                   After hearing everybody speak  
6 here, I realize that I thought Captain Lorino  
7 was spot on. What has happened and what has  
8 transpired over the last ten or 12 years that  
9 I have been in Lake Charles with our  
10 interactions with NOAA and our relationships  
11 and how we have both grown has led to such  
12 success stories in so many phases, the PORTS  
13 system, hurricane response, interactions with  
14 our National Weather Service office, it just  
15 goes on and on. Tim is always he is  
16 everywhere. I don't know how many times I  
17 have been out on the river at 2:00 in the  
18 morning and I get an email on my phone. I'm  
19 like does this guy sleep? He's everywhere.  
20 We joke about it. He is like the Energizer  
21 bunny or something.

22                   But in all honesty, it is that

1 kind of energy and dynamic in the proactive  
2 approach that he has taken for our area is  
3 from a federal agency, it is hard to believe.  
4 It is almost, you know, think about that,  
5 proactive federal agency. It doesn't usually  
6 go together. And it does, so much to the  
7 effect that I have people come over from Texas  
8 and actually directly ask me and say what do  
9 you guys have going with NOAA? You know? And  
10 I didn't even know what they were talking  
11 about. We just can't believe that out of  
12 Hurricane Rita and Hurricane Ike, you guys are  
13 back up and running at record speed. You  
14 know, moving stuff right away. What is your  
15 secret? You know, they were almost implying  
16 I spent a lot of time taking Tim out to lunch  
17 or something. And I said it is just  
18 communications. You know?

19 I was at a meeting a while back  
20 with the Coast Guard and I thought that  
21 Captain of the Port put it best. You don't  
22 respond to an incident by introducing

1 yourself. That has got to have been done a  
2 long time ago and it is that open line of  
3 communications that allows things to work, is  
4 readily in having the local knowledge of your  
5 area and not looking through the Rolodex  
6 trying to find somebody at NOAA to get your  
7 channel surveyed when he is already emailing,  
8 going the stuff is on the way. And it will be  
9 there and we will get this cleared out as  
10 quick as we can.

11 We moved ships after Rita which  
12 was the second storm a month after Katrina.  
13 Talk about a state being strapped, we moved an  
14 LNG ship six days after the landfall with four  
15 aids to navigation, a Raven laptop with NOAA  
16 charts on it and it was amazing. We didn't  
17 have aids to navigation.

18 So anyway, hats off on that. And  
19 I just wanted -- I think everybody needs to  
20 understand what a great tool it is all the  
21 different information you guys offer, not just  
22 the PORTS system which I have been asked to

1 speak about. I think it is all in this age  
2 far more important than most people ever gave  
3 it credit for.

4 But on that note, I will go on to  
5 the PORTS system, which I -- it's funny.  
6 Captain Grubbs was up here talking about AIS  
7 interface now because we might lose the  
8 internet. And it is a very valid point and I  
9 think it is really neat that it has progressed  
10 to that.

11 I was involved with the very first  
12 port that PORTS was installed in back in 1991.  
13 I was home ported in Tampa. And that was  
14 accessed by the phone and some of the vessels  
15 we didn't even have a cell phone working at  
16 the time so we would call our dispatch. They  
17 would call this little computer-generated  
18 voice number and have to sit through every  
19 station in Tampa Bay, first the tides, then  
20 the currents, then the winds, to get hopefully  
21 that one little spot of information that you  
22 wanted but we thought it was amazing. We

1       couldn't believe it.

2                   Tampa, I don't know if any of you  
3       are familiar, it has got some strict current  
4       regulations -- recommendations on certain  
5       channel passages and to be able to really get  
6       real-time data, we have never had that before  
7       as a mariner. And we ran with it. And now we  
8       are talking about AIS uploads or Raven laptop  
9       interface. I have it on my phone. When I  
10      came to Lake Charles as a pilot, I came from  
11      that environment to apprenticing on that river  
12      saying well where do we get our tide  
13      information from. And you call our dispatch  
14      office. They would call down to the port and  
15      track down a guard. Port police would drive  
16      down to the dock. And somebody, hopefully  
17      with the right tape measure, would nail the  
18      board to a piling and hopefully his flashlight  
19      worked good and he would give you a tide  
20      reading. That was one spot in the port and  
21      that is what we had.

22                   That wasn't that long ago. Okay?

1 I mean, we got PORTS system in Lake Charles in  
2 2009. And we are the 11th largest port in the  
3 nation. We have big tonnage ships. It always  
4 has been. We are a small, manmade channel  
5 through a waterway. I'm not saying anything  
6 because we definitely handled traffic  
7 differently. We don't have the numbers but we  
8 have the tonnage but our channel is 400-foot,  
9 if we are not chronically underfunded on our  
10 dredging, as we always are. This year, I am  
11 down to 300-foot. We move 1100-foot ships in  
12 here, beams of 170 feet. Our standard fare,  
13 our daily fare is 900-foot vessels, 150, 160,  
14 165-foot beams. Obviously, we are one way  
15 with these ships when they are loaded under  
16 these constraints.

17 The under keel clearance is -- the  
18 first question out of every captain's mouth  
19 that comes to our port is pilot, pilot how do  
20 you ascertain this. We have the same kind of  
21 fluff soft bottom. You can get hard  
22 soundings. You can only know water levels and

1 past practices. To say that the PORTS system  
2 is not important for us would be a great  
3 misnomer because we are so skinny on our under  
4 keel clearance. We operate under tide  
5 windows, boarding windows we call them. And  
6 the PORTS system has allowed us to expand  
7 those boarding windows.

8           When we got to a point not too  
9 long ago where the Port of Lake Charles says  
10 well we can't keep paying for the maintenance.  
11 They approached us. They approached Captain  
12 Lorino. We went to the Fee Commission and the  
13 users. We need maintenance funding. You guys  
14 are the ones that are benefitting from this.  
15 They said well what do you mean? Show us.  
16 Maybe unlike over here, sometimes we can't get  
17 into the same room over in Lake Charles. Some  
18 of my customers. But I said well, this is  
19 what will happen. We will go back to the old  
20 ways where we are going to have to err on the  
21 side of caution and we won't have any data to  
22 back it up. We get a cold front. I start you



1 in now. Prior to 2009, you got started in 12  
2 hours after that. You know? Did the delays  
3 mean anything to you? And they got the  
4 checkbook out. Never looked back. That was  
5 the end of it. Boom!

6 So we funded over the whole state.  
7 We are proud of that, proud of the expansions  
8 and the mechanisms we put in place to keep it  
9 funded.

10 And the whole dynamic range of  
11 where this information has become available  
12 and the interface with the laptops and AIS is  
13 amazing. It really is. And it is a game-  
14 changer for us over there. We really need  
15 that information and we are hamstrung if we  
16 don't get it. It also, of course, those  
17 conditions in the fog under -- in extremis.  
18 Anytime you are in extremis, any other  
19 additional information is always a bonus. It  
20 is tantamount to making the most of what you  
21 are dealing with. And given the budget  
22 restraints we have with dredging, as I said

1 before, is very important. We can't get -- we  
2 are lucky to get half of our dredging funding.  
3 I won't go into dredging again because by the  
4 time Captain Lorino and I get through with  
5 you, you guys will be the deer in the  
6 headlight look. You say that is all I need to  
7 know about dredging. It is very important.  
8 The work in the evolution in the PORTS system,  
9 the evolution in the storm response, as Tim  
10 and I were talking last night, every storm --  
11 you can't drill for a storm like you can learn  
12 from it. And every storm gets better, both on  
13 NOAA's side and on all the other users.

14           You should listen to our  
15 conference calls prior to landfall of these  
16 storms. It is amazing the information that  
17 gets rolled around and the preparation on all  
18 parties that is in place. And that is the  
19 kind of growth that has been around since I  
20 have known Tim. And I think that it is very  
21 important, I hope that nothing ever comes to  
22 light that he is going to change that

1 environment. I hope the funding stays in  
2 place. It runs an interesting train of  
3 thought when you think that we are using one  
4 government agency's growth to help answer for  
5 the shortfall of another government agency in  
6 our decline in dredging.

7 So one is answering the other a  
8 little bit. Hopefully we get them both  
9 operating a little bit more on the same speed.  
10 But that has really been my experience. I  
11 hope it always stays that way and I think you  
12 all have run a good program.

13 Thank you.

14 (Applause.)

15 CHAIR WELLSLAGER: Well thank you  
16 very much. Very interesting presentations.

17 I have had the pleasure of being  
18 at other ports and I can say one thing that I  
19 have learned from speaking and hearing you all  
20 speak, things get done. You don't wait for  
21 something to happen. You take it upon  
22 yourself to move things and react and get

1 things fixed. And hopefully with what we are  
2 hearing here, we can take what we have been  
3 able to learn and make some good  
4 recommendations to keep things going in the  
5 right direction. You have nerves of steel,  
6 being able to work in narrowing channels with  
7 ships that size. Pucker factor is huge. I am  
8 just like oh, my god, I can't imagine  
9 something like that, having worked in smaller  
10 ships. Something the size that you have got  
11 is a daunting task, to say the very least.

12 But I would like to take this  
13 chance to open up to the HSRP panel, any  
14 thoughts or questions they might have to any  
15 of the panel members. Mr. Kennedy, Dave, did  
16 you have?

17 MR. KENNEDY: One thing. There  
18 seems to be a consistent theme throughout all  
19 of these presentations that has to do with  
20 everything from -- that has to do with the  
21 resources, to have what they need here to do  
22 the job the way they want it. Admirable that

1 they are adept in getting the job done  
2 regardless. But there is a tremendous amount  
3 of consistency in what has been done, the  
4 players, at least the federal players that are  
5 at the table and the job they are doing and  
6 the fact that I think in all federal cases,  
7 Coast Guard included, the resources aren't  
8 there. And so I am just struck by the number  
9 of quotes that kind of I pulled out from all  
10 of this that could be used to try and work  
11 with -- and there were offers here of what can  
12 we do to send the word. I think there is  
13 plenty you can do if you haven't done it. And  
14 so I think we ought to try and capture some of  
15 the incredible discussion today, the  
16 identification of the problems, what some of  
17 the feds are doing, and use it in some sort of  
18 an approach to talk to Congress. Certainly  
19 you have some powerful influential folks right  
20 here in the region. I don't know how much  
21 discussion. I would be curious to just hear  
22 from some of you what kind of discussions you

1 have had with the likes of Landrieu or Cochran  
2 or whoever about these issues and their  
3 sympathy and understanding and interest. But  
4 as I said in my speech yesterday, we are  
5 trying to get to the Hill to highlight some of  
6 these issues. I certainly want to take some  
7 of what I have heard with me when I talk to  
8 the Hill. But as we always say, we can talk  
9 to the Hill, they don't pay attention like  
10 they would pay attention to almost everybody  
11 on this panel.

12 So the whole theme of what can we  
13 do to take the issues that you guys have and  
14 some of the praise for the feds that are  
15 underfunded and use that to all of our  
16 benefit.

17 CHAIR WELLSLAGER: Thank you.  
18 Margaret?

19 MS. SPRING: I agree. I was  
20 pulling up some very interesting and nice  
21 quotes and pithy one-liners which we feds  
22 don't do as well as maybe you all do. So

1       thank you for that.   And I second what Kevin  
2       worked on the Hill.   I know that views from  
3       the field are quite welcome.   And I have taken  
4       the point that it is probably worth the feds  
5       working together and talking to Congress to  
6       explain how we work together so there is no  
7       confusion.

8                   One thing that I did want to just  
9       throw out there is that eNavigation and  
10      integration of the informational  
11      infrastructure which is our sort of wonky word  
12      for what you are talking about which is  
13      getting everything together in one place,  
14      there is an eNav initiative through the CMTS  
15      where Coast Guard and NOAA are working  
16      together on pilots.   We have done some pilots.  
17      I think any one of the things I would want to  
18      bring back from this meeting is getting that  
19      moving and maybe some more pilots going.   I  
20      know that we are funding restricted but  
21      stories like bringing some of what we do into  
22      a very cogent and easy to understand benefit

1 is what these kinds of pilots do for us, for  
2 us as a group. And data are hard to explain  
3 but uses are easier. So I think that is  
4 something I am going to bring back from this.

5 CHAIR WELLSLAGER: Thank you.  
6 Frank?

7 MEMBER KUDRNA: This is for  
8 Captain Gautier. I served on a  
9 congressionally-mandated independent peer  
10 review group for the flood protection system  
11 here in New Orleans. And when our group came  
12 down, I remember seeing a barge sitting on top  
13 of a couple houses. And I know it was debated  
14 at the time whether the barge breached the  
15 levee or there was a breach in the barge --  
16 the barge moved through the levee.

17 At the end of our work we  
18 expressed concern to the Corps that breakaway  
19 vessels and barges could severely damage the  
20 system and they said they were going to work  
21 that out with the Coast Guard. And what you  
22 described to us as the movement of barges out



1 of the system and tying and anchoring vessels  
2 more adequately is the response. And we had  
3 discussed either such an option or the option  
4 of some more physical protection that would  
5 better armor the earthen levees in such a way  
6 that a breach wouldn't take place.

7 After one event that you at least  
8 have a data point, do you think your system is  
9 going to do the trick or do you think there is  
10 a need for more armoring in the future?

11 CAPT. GAUTIER: Well that is a  
12 great question, sir. We also have Bob Turner  
13 from the Levee District East here, who has a  
14 big stake in this discussion as well.

15 The system that we have now is  
16 contingent upon perfection, I would say. We  
17 have to be right. There is really no margin  
18 for error. And for the Coast Guard, that puts  
19 a lot of risk on our shoulders. There hasn't  
20 been any armoring or any redesign or any  
21 beefing up of the walls, since the original  
22 design or construction that I am aware of. I

1 have been here a year and a half, which really  
2 leads to us having to evacuate the canals in  
3 time, based on the best information that we  
4 have, hoping for no lock failures, trusting  
5 and helping to coordinate that all westbound  
6 traffic on the Intracoastal Waterway will  
7 clear through the gates and out through into  
8 the river before the storm is upon us, and  
9 that the waivers that we have in place will be  
10 properly executed, if we reach those levels  
11 where we get the water at sufficient height  
12 and we get the possibility for a breakaway.

13 So I mean certainly, and I think  
14 Bob might agree with me, I think there is room  
15 for increasing the robustness of the system to  
16 be able to withstand some strikes. And the  
17 latest conversations have been what happens if  
18 it is not something that is in the water that  
19 the Coast Guard has jurisdiction over. What  
20 happens if it is a large object, a yacht on  
21 land, that then floats up on the storm surge  
22 and then has the potential for striking the

1 wall? The Coast Guard doesn't have  
2 jurisdiction over that. So I think there is  
3 certainly room for those discussions and  
4 improvement, of course, resources being the  
5 critical issue in this case.

6 CHAIR WELLSLAGER: Bill?

7 MEMBER HANSON: Yes, if I can  
8 maybe try to what I see as a little bit of a  
9 loose end here. As David mentioned, we have  
10 got a wonderful offer from some very outspoken  
11 folks who will carry a message. We have had  
12 the privilege of working with them on the  
13 dredging side. And the key there, though, I  
14 found for us was that we had a specific local  
15 message that was also a national issue. We  
16 had yes, dredging is important in Louisiana  
17 but we didn't really make the case for RAMP  
18 until we embraced the needs on the Pacific  
19 Northwest, the Columbia River, the East Coast,  
20 as well as the Great Lakes. And once we  
21 embraced on a national level on a specific  
22 issue, we could build a fairly powerful

1 coalition to carry a specific message.  
2 Carrying a generic message is that we need  
3 more Tim Osborns is probably not going to help  
4 us very much, even though that would solve the  
5 problem.

6 But what can we arm these guys  
7 with is probably something we will have to  
8 talk about a little bit later amongst  
9 ourselves is how do we arm your constituents,  
10 our constituents to also be ambassadors for  
11 what NOAA, the services. Obviously, I think  
12 the thing we heard in the last three is the  
13 response teams between Norfolk, Anchorage, and  
14 here is the response teams what most people  
15 know NOAA for, between the National Weather  
16 Service and the surveys, after-storm surveys.  
17 So what do we do with that? How do we  
18 advocate for that? How do we give these guys  
19 something specific to help us with?

20 CHAIR WELLSLAGER: Gary?

21 MEMBER JEFFRESS: I must say I was  
22 impressed with every single one of your

1 presentations today and really respect your  
2 compliments to NOAA. We really appreciate  
3 that.

4 But I have a question for Captain  
5 Grubbs. I was very impressed with your VTS  
6 system you have. And I was wondering, looking  
7 at the areal images of the barges and the  
8 large footprints that those barge arrays have  
9 on the river, why don't the barge captains  
10 have this software? Is it just too expensive  
11 for them? Is it too much training and effort  
12 for the barge captains to have the same  
13 software?

14 CAPT. GRUBBS: Before I answer  
15 that question, because the answer is simple,  
16 let me just say something. Everybody keeps --  
17 there is an elephant in the room here and they  
18 keep talking around it but maybe you are  
19 talking directly on it. That is funding. You  
20 have to seize the moment. You have to seize.  
21 You can't have lazy people just hoping against  
22 hope that you are going to get money for

1 something.

2 We were successful. I was  
3 successful after the Exxon Valdez because my  
4 congressional delegation thought it was really  
5 that important to our local people to get  
6 involved.

7 Now, I could go back to  
8 Washington, meet Under Secretaries of  
9 Transportation who had never met a mariner in  
10 their life, and told me so, you are the first  
11 one I have ever met, why this is important.  
12 Why is electronic charting important to you?  
13 Why is surveys? And I asked so do you do  
14 lunch? Because in New Orleans -- let's get  
15 out of this office a bit and talk about this.

16 And when a good issue is attached  
17 to a safety issue, you saw Mike Lorino's  
18 presentation, and Sean Duffy didn't give one,  
19 but you listened to Sean Duffy of Big River  
20 Coalition in terms of monies that should be  
21 used for that type. When you seize the  
22 moment, you are a lot more successful. And

1 there is a bunch of people on this panel, I am  
2 sure, know the way into Washington, D.C.

3 Now the answer to that question is  
4 they can't afford it. We can afford it. And  
5 we demand of ourselves and the rest of our  
6 pilots the highest standards and abilities  
7 that we can get. And we intend to give them  
8 the very best equipment that we possibly can.

9 Now but the essence of what we  
10 have, NOAA's electronic chart, their database,  
11 that is available to everybody. AIS is  
12 available to everybody. So there is some form  
13 of it that is what I would call that common  
14 denominator between people that can afford it  
15 and maybe you can't afford the high end of  
16 this but you could afford something just as  
17 accurate. It's just money. The same thing we  
18 are all talking about.

19 MEMBER BARBOR: Ken Barbor. I had  
20 the same question that Gary had and let me try  
21 to rephrase it to get a more specific answer.  
22 And that is, it is enlightened that a tug or

1 a tow does not have an AIS. That is something  
2 obviously SOLAS class is mandated IMO through  
3 Coast Guard but Coast Guard has the ability to  
4 mandate commercial ships.

5 CAPT. GAUTIER: Towing vessels do  
6 have AIS. They may not have the sophisticated  
7 displays that you saw in Captain Grubbs'  
8 presentation but they do. There is a tonnage  
9 requirement over that amount which you have to  
10 have. The Coast Guard has a Notice of  
11 Proposed Rulemaking out that further reduces  
12 the tonnage requirement, as I understand it,  
13 for having AIS. So I don't know what is going  
14 to be in the final rule but I think the effort  
15 is to require more vessels to have AIS. And  
16 having ridden the number of tows, I can tell  
17 you that they love it as well because you can  
18 look around corners and you can't cheat. You  
19 can't say I am going to be at this point at a  
20 certain time and not show up.

21 MEMBER JAY: David Jay. I guess  
22 this is a question for all of you.



1                   We heard from several of you that  
2                   funding for dredging was inadequate. So this  
3                   raises another question is what, if any,  
4                   additions to the PORTS system down here would  
5                   be useful, or needed, effective? You know,  
6                   NOAA funding, in other words, for the NOAA  
7                   side of the operation.

8                   CAPT. GRUBBS: The question was,  
9                   how would PORTS be useful?

10                  MEMBER JAY: No. What if any  
11                  additional equipment, improvements to the  
12                  PORTS system would be useful to you?

13                  CAPT. GRUBBS: Oh. Well again, we  
14                  would like the PORTS system at some point, all  
15                  that information, transmitted via AIS.  
16                  Everybody has got it. I misunderstood the  
17                  question. I thought he was asking about the  
18                  high end but everybody's got AIS.

19                  But to get that information, that  
20                  PORTS information, the bridges, the Greater  
21                  New Orleans Bridge, especially the Huey Long  
22                  Bridge is lower, has been hit through the

1 years and after the Coast Guard investigates  
2 this, we all go away scratching our head. How  
3 the hell can that happen? Did you know how  
4 high the boom of that crane was? Or a ship  
5 hit it one time going down under. It scraped  
6 the undercarriage many years ago. No names  
7 but one of the crew members on the ship was  
8 stowing the boom and just picked it up while  
9 it was transiting the bridge. And he did  
10 scrape the undercarriage of that bridge.

11 So to get all this information and  
12 to get it quickly where it is undeniably that  
13 information that is needed and you don't have  
14 to rely on a telephone that you might not have  
15 and then after a collision, the NTSB and the  
16 Coast Guard says well let me just see who was  
17 on that phone. And what were you talking  
18 about at the time you were transiting that  
19 bridge? So you have got problems there. So  
20 you want this information coming in on your  
21 chart, on your display, via AIS would be a  
22 better way to do it. I wouldn't want to mess

1 up AIS. It is an incredible advancement in  
2 navigation to do that.

3 And I would, I would probably go a  
4 lot further to have complete NOAA Weather  
5 Stations at certain points. We have the NOAA  
6 weather forecast or the weather radar, I  
7 should say. One of our really handy pals  
8 bundle up a lot of extractions from PORTS,  
9 from NOAA, from the Weather Bureau and it is  
10 all on his laptop and they are experimenting  
11 with it. And they can see a cold front, a  
12 weather radar cold front coming through. And  
13 generally speaking if it is a cold front, you  
14 have got southerly winds, blacked out fog down  
15 below. You have got a cold front, northwest  
16 winds 20 to 30, which means there is probably  
17 not rain but clear weather. And you can see  
18 that so you will know where that clear weather  
19 really is.

20 Now that is all internet stuff.

21 But for NOAA to develop a Weather Station and  
22 have that information if it is real water

1 depth like in the Pilottown, Venice area where  
2 it changes a lot or if there is weather in  
3 that particular area that will tell us if it  
4 is blacked out fog or not. Because you can  
5 make it all the way coming down the river,  
6 Mike Lorino said, in 10-12 hours. That is  
7 true. You can be making decisions all along  
8 the river. Is this 48, a 47-footer? Is it  
9 safe to take out? You get together they are  
10 maybe not in blacked out fog. So I have to  
11 turn it around six miles above there and wait  
12 until it clears. And you know, tug location,  
13 water depth, weather information, fog  
14 information. Again, that is Douglas' wish  
15 list but I know that cost money.

16 But when all the pilots and the  
17 Captain of the Port and NOAA get together and  
18 say look, what is essential for safe operation  
19 that can be better identified? You get out of  
20 my Christmas wish list into what is essential  
21 for safe navigation.

22 CAPT. LORINO: You know, one of

1 the things that I think are very important for  
2 us would be a fog sensor at the jetty end of  
3 Southwest Pass. When we get on that ship, we  
4 have no anchorages. They have anchorages  
5 coming down the river. We have no anchorages.  
6 Once you get on that ship, you are on there.  
7 You are going to go on out. So if we could  
8 have a fog sensor on the jetty end or even at  
9 the head of the Pass, that would allow the  
10 pilots -- on the station now, they can look  
11 down because of AIS, see everything in the  
12 Pass, have the weather conditions. Everything  
13 is there. But if we could have the one thing  
14 you asked me about would be a fog sensor at  
15 the head of the Pass and also on the jetty  
16 end. Thank you.

17 CHAIR WELLSLAGER: Rich, did you  
18 say --

19 MR. EDWING: So Rich Edwing with  
20 CO-OPS. I just wanted to follow-up on the  
21 conversation about integration of PORTS and  
22 AIS.

1                   We have actually been working with  
2                   the Coast Guard for several years now to do  
3                   that integration. And that integration has  
4                   actually been developed. It has been tested.  
5                   It has been demonstrated in two locations,  
6                   Tampa Bay and Columbia River. But it has yet  
7                   to be implemented because the funding has not  
8                   been there to implement it.

9                   In areas where there is VTS, my  
10                  understanding is that it is some software  
11                  modifications to the VTS software that would  
12                  allow that to happen and in areas where there  
13                  is not VTS, there would have to be  
14                  transmitters and things established.

15                  We have actually recently been  
16                  having some conversations with the Coast Guard  
17                  about being able to offer that capability  
18                  through the PORTS program. In other words,  
19                  PORTS partner would be able to -- again  
20                  funding would be required -- but be able to  
21                  establish transmitters and so forth to allow  
22                  that integration to happen. And I think this

1 is also a topic that is being looked at under  
2 Margaret's eNavigation committee. So I just  
3 wanted to provide that additional information.

4 CAPT. GRUBBS: Let me get back to  
5 funding just for a moment and we are going to  
6 talk about -- I am going to talk about this  
7 for a second, of placing a dollar sign on the  
8 safe and efficient facilitation of commerce.  
9 And I know the port does it and different  
10 people do it. But this is -- we did this  
11 here. And so I am not going to say it can be  
12 done everywhere. We have people and the  
13 equipment to do it. But that is the passenger  
14 ships. That passenger ship, cruise ship  
15 industry is so important to not just the Port  
16 of New Orleans but all of the vendors, the  
17 people who sell popcorn and cotton candy,  
18 Hurricanes, it is important. People come  
19 here, they stay in the hotels here.

20 Generally in bad weather or  
21 blacked out fog, the moat stuff, the tows  
22 pushing to the bank, the ships, they go to a

1 safe anchorage. Passenger ships are time  
2 sensitive. So we partner with the Port of New  
3 Orleans, the Coast Guard, NOAA because we need  
4 the accuracy of that S57 database and we move  
5 those ships with a Captain of the Port  
6 authorized floating safety zone with using our  
7 VTS partners.

8 Now, that might not sound too much  
9 to people but how many millions and millions  
10 of dollars does that mean to the cruise ship  
11 industry, the Port of New Orleans, all these  
12 hotels and the cotton candy people? Nobody  
13 has put a dollar sign on that. Those ships  
14 get to and from. They take on a bar pilot, we  
15 change out a pilot down in Venice, they go up  
16 the river in blacked out fog, if they think it  
17 is safe. Now those are the very high -- I  
18 hope I am not making Captain -- but he is  
19 learning how not to get nervous lately. Those  
20 are the high-end ships with the high-end  
21 crews, best navigational equipment, two pilots  
22 aboard in consult with one another. How many



1 millions of dollars does that mean? Now we  
2 really haven't put a dollar sign on that  
3 because we probably didn't need to. I mean,  
4 most people, the cruise ship people, they  
5 understand that. The Port of New Orleans  
6 understands that, getting that ship to and  
7 from. Now getting funding for what is  
8 essentially necessary, this database, that  
9 PORTS system, that turn velocity sensor, and  
10 the ability to change GNAF to where it  
11 benefits everybody out here on the move. You  
12 know, to put a dollar sign to that, I think  
13 everybody would be surprised to say oh, my  
14 God. This city, this state, this government  
15 is making a lot of money on our backs and it  
16 is because of this, NOAA right here. That is  
17 part of it. We don't go too far without our  
18 Captain of the Port. We don't go far at all.  
19 We stay right here with him.

20 That is all part of putting it  
21 down. How do you lobby for money? I hope I  
22 am not preaching to a choir. That is not what

1 I intend to do but nobody's done that yet. We  
2 do this safety, loading safety zone. The  
3 other pilots and the other groups might say  
4 you are crazy. They probably told him he was  
5 crazy for authorizing the doggone thing a few  
6 years ago. But you know what? It works  
7 because you have responsible people out there  
8 in the field, in the VTS assessing the  
9 situation every moment of the time.

10 CHAIR WELLSLAGER: Deborah.

11 MEMBER DEMPSEY: Chair, I would  
12 like to assure these stakeholders that we are  
13 getting the message. And I back up what Bill  
14 said and what David has said. We are hearing  
15 the theme about the funding for the dredging.  
16 Scott presented yesterday changing the format  
17 of our meeting going to the mountain. And why  
18 not take some of these stakeholders with us?  
19 And if we do it not on a regional basis but on  
20 a national basis, the message is going to be  
21 pretty big. We are all talking about more  
22 public awareness. You know, let's take the

1 public to them and make them aware.

2 CHAIR WELLSLAGER: It's a good  
3 suggestion.

4 MEMBER DEMPSEY: We are hearing  
5 you.

6 CHAIR WELLSLAGER: Anybody else?  
7 Jeff.

8 MEMBER CAROTHERS: This is Jeff  
9 Carothers.

10 I have been navigating a long  
11 time. I am kind of curious about the Raven  
12 system. I don't want to back off the funding  
13 but I am just wondering -- I never heard it  
14 before. Is it basically used just in this  
15 area? I assume a private company put together  
16 using all the different resources or was it a  
17 government agency?

18 CAPT. GRUBBS: Raven is a company  
19 out of Texas and we don't hold that against  
20 them.

21 (Laughter.)

22 CAPT. GRUBBS: I think they are

1 out of Austin, Texas. But there might about  
2 1200 deep draft pilots in this country. And  
3 there is a number of thousand around the  
4 world. I want to say about three-quarters of  
5 those pilots use Raven and there is other two  
6 companies. One is ARINC.

7 But some of the West Coast pilots  
8 -- this is meters of accuracy because of the  
9 GPS, their GPS. They have Kinematic GPS with  
10 those really big container ships that go into  
11 LA-Long Beach with centimeters of accuracy.

12 So you might not hear about this  
13 at trade shows. At some trade shows you  
14 would, but not generally at trade shows. But  
15 it is available to anybody. It costs a few  
16 bucks but you know, maybe somebody could --  
17 the software in here is incredible. This  
18 software in here is faster and better than  
19 that software in that cruise ship.

20 MEMBER CAROTHERS: Well I like the  
21 idea of the private companies being involved  
22 in this and taking newer products and

1 integrating them like that putting them out  
2 like that. I like that a lot.

3 Yes, that is the nuts bolts of it  
4 to me, what I saw. The presentations were all  
5 excellent. Best probably than any meeting  
6 that I have been to, these presentations.

7 That Raven system out there, when  
8 you taking that ship in, that is the nuts and  
9 bolts there.

10 CHAIR WELLSLAGER: Go ahead,  
11 Carol.

12 MEMBER LOCKHART: I guess -- Carol  
13 Lockhart. This is just a follow-up to the  
14 same discussion and it is more of an  
15 operational question.

16 But you all talked today about  
17 electronic navigation and using the electronic  
18 nautical chart and I am wondering if any of  
19 you still use the Raster Chart or the paper  
20 chart in any operations that you do.

21 CAPT. GRUBBS: No, we don't use  
22 the Raster. We use resurveyed. And it took

1 a long time to get there. That was part of --  
2 I mean I got the money to have this river  
3 resurveyed so I know where it comes from. And  
4 it wasn't a hard battle, I can promise you  
5 that. People in Congress just didn't know  
6 much about e-charting.

7 What I did was I took the NOAAs  
8 and the CORS and brought them to Congress.  
9 They knew where it was. And we attached that  
10 to safety and to VTS New Orleans. If you want  
11 that safety, it is not just the people on the  
12 shore. It is everybody out there on those  
13 ships that need to have that accuracy. So no,  
14 we don't use Raster. I know there is going to  
15 be, there will probably be in NOAA maybe some  
16 argument for what they had but we use only the  
17 S57 electronic chart, the resurveyed stuff.

18 MEMBER LOCKHART: So I guess where  
19 I am going with this is right now we are  
20 talking about doing more with less and right  
21 now we maintain Raster Nautical Charts and the  
22 Electronic Nautical Charts. And I am

1 wondering if NOAA has plans to get rid of  
2 paper and Raster Charts and only maintain  
3 Electronic Nautical Charts at some time in the  
4 future as a way to save money.

5 ADMIRAL GLANG: The short answer  
6 is we are not looking to get rid of the Raster  
7 product because it still is very popular. I  
8 don't have the numbers in front of me but I  
9 think it is somewhere in the order of eight  
10 million Raster Nautical Charts are downloaded  
11 per year and somewhere in the order of ten  
12 million on the Electronic Navigation Charts.

13 The paper chart paradigm is a  
14 little bit different. Those numbers, of  
15 course, go down but there is still a demand  
16 for those. In our traveling, certainly my  
17 traveling and we did this in Anchorage where  
18 we went aboard a couple ships and you talked  
19 to the mariners, I think you are going to find  
20 that the tools that the pilots down here use  
21 and these Raven users are highly specialized  
22 tools that are not the common tool used by the

1 majority of commercial mariners. You are  
2 going to find many commercial ships. And I  
3 have got to be careful with the qualifier  
4 here. I was going to think of -- I was going  
5 to suggest most but I don't know that for a  
6 fact, still rely on paper charts. There is a  
7 slow transition going on now, especially  
8 through the mandation for Electronic  
9 Navigation Charts.

10 But even on the very high end  
11 brand new cruise ships with a fully integrated  
12 Electronic Nautical Chart Systems, the fully  
13 integrated ECDIS systems, you are still going  
14 to find somebody with a paper chart back  
15 there. It is very interesting, this  
16 transition.

17 So we are not in a -- we don't  
18 have any plans right now to eliminate Raster  
19 Nautical Charts. It does present a challenge  
20 from a production perspective because the  
21 Raster Nautical Chart and the Electronic  
22 Nautical Chart essentially are on parallel



1 production paths. So there is a cost there to  
2 do that.

3 CHAIR WELLSLAGER: Just a second.  
4 Susan?

5 MEMBER SHINGLEDECKER: I just  
6 wanted to, from the recreational user  
7 perspective, we like those paper charts. Our  
8 guys don't have the fancy electronics that you  
9 have and I want to keep my guys out of your  
10 way. So there is needs for all ends of the  
11 spectrum. So I am glad to hear they are not  
12 going anywhere.

13 CHAIR WELLSLAGER: Deborah?

14 MEMBER DEMPSEY: The good news,  
15 Carol, is the cost of that paper chart has  
16 really gone up. But it is also a requirement  
17 that these ships coming have those onboard.  
18 We frequently carry them out to the ships  
19 because they don't have them but they have got  
20 to have them onboard. Until that requirement  
21 goes away, the chart can't go away.

22 CHAIR WELLSLAGER: Yes, sir?

1                   CAPT. GRUBBS: I didn't mean to  
2 screw up your entire Raster production.

3                   (Laughter.)

4                   CAPT. GRUBBS: I thought I was  
5 doing so good. I think Pete said I think we  
6 just put NOAA in the garbage can over here.

7                   No, everybody, all the ships carry  
8 paper charts. They even have scanned Raster  
9 Charts. The scanned paper charts and they use  
10 that. There is a big, big difference.

11                   When you saw Mike, Mike Lorino had  
12 an interesting presentation and you are  
13 looking at feet of difference. How accurate  
14 can you be? Well you damn sure better be as  
15 accurate as you can. You can't shut the port  
16 down and say one way traffic because they have  
17 a hundred -- in that one little area I was in  
18 you saw that 170 vessels. They had to go  
19 somewhere. Shut the port down. And I think  
20 I learned this probably from VTS part of the  
21 charge Petros and those guys, you can't just  
22 say everybody stop. That is 170 people say

1       what do you want me to do with these thing?  
2       So you need the most accurate bank-to-bank S57  
3       data base that you can.  There is a place for  
4       yachts and nobody wants to hit yachts.  We  
5       love yachts.  But they don't need, they don't  
6       necessarily need that accuracy to be able to  
7       move those two or three hundred thousand-ton  
8       tankers past one another.  They don't need  
9       that.

10                So for our purposes, this is it.  
11       We need it.  It is essential for their  
12       purposes for the guy coming in from sea.  Most  
13       of the time he doesn't know where in the heck  
14       he is at in the river to begin with.  He will  
15       know what mile marker but he wouldn't know --  
16       it gets so dark out there he wouldn't know.  
17       You can measure it.  It is accurate.

18                So there is a difference between  
19       the needs.  And I didn't mean to kill the  
20       Raster program.

21                       CHAIR WELLSLAGER:  Yes, sir?

22                       CAPT. LORINO:  Mr. Chairman, I

1 would like to respond to Mr. Kennedy's  
2 question about the legislation and the  
3 congressional people. We have -- I have been  
4 meeting with them and had their support for  
5 about the last six or seven years on the  
6 dredging issue, the Harbor Maintenance Trust  
7 Fund, the RAMP. In fact, Monday I will be  
8 meeting with Congressman Steny Hoyer on this  
9 funding issue. But the bottom line is the Big  
10 River Coalition was formed back in 2010 here  
11 in New Orleans. It was born at the Port of  
12 New Orleans on October 1, 2010. And that Big  
13 River Coalition has brought 33 states and as  
14 of right now, 208, I think, Congressmen in  
15 favor of taking care of this Harbor  
16 Maintenance Trust Fund and using it the way it  
17 should be.

18 Now we all know that appropriators  
19 like to appropriate the way they like to  
20 appropriate. But the bottom line is we are  
21 making progress. We thought that would be  
22 done last year. We are working on that issue

1       this year.  There are some new bills coming up  
2       and so if this committee would like me to go  
3       up there, I have been up there numerous times  
4       before all the senate committees talking about  
5       it.  I would be happy to do it.  But we are,  
6       and our congressmen and our senators are  
7       working with us left and right and we have a  
8       lot of support from around the country.  So  
9       that may piggyback into something that may  
10      help NOAA along the way and that will be up to  
11      you ladies and gentlemen to decide what you  
12      all want to do but I just wanted to respond to  
13      that.

14                   MR. KENNEDY:  Thank you very much  
15      for that.  And I am not part of the committee  
16      but the Council.  So they certainly can take  
17      that offer up and use it however they see fit.  
18      But boy I sure hope you guys can crack that  
19      nut.  I am trying to think how many years I  
20      have been talking harbor safety and Harbor  
21      Maintenance Trust Fund and it has been, I  
22      know, 20 or 25 and we keep running at it and

1 never get there. So good luck.

2 CAPT. LORINO: Well you know as  
3 well as I do, the government just takes a  
4 little time. And unfortunately, my wife is  
5 not here so I can say this, you know when I  
6 tell my wife go ahead and keep spending this  
7 money over here and I say don't spend it over  
8 there, she gets a little mad at me now and  
9 then. But the same way with the government.  
10 The government is spending this money and we  
11 just need to do it and get it done. So we are  
12 making --

13 CHAIR WELLSLAGER: Not to break  
14 this chain of communication, but the  
15 transition into the Big River Coalition,  
16 having stated this with Captain Lorino, what  
17 better time? And with Sean here now, I  
18 thought we could take this. And when he is  
19 finished with the presentation, we could  
20 reopen to questions and work with that.

21 So, Mr. Duffy?

22 MR. DUFFY: Thank you and I

1 appreciate it.

2 I want to introduce myself and  
3 tell you how much I have appreciated being to  
4 be involved with this panel. I am Sean Duffy.  
5 I am the Executive Director of the Big River  
6 Coalition and I do wear a lot of hats but they  
7 are all related to that Mississippi River.  
8 The water from that river is in my blood and  
9 in many people's in this room. And what an  
10 excellent. I couldn't help but sit in the  
11 back of the room and one day I am going to  
12 have Captain Gautier do a Bar Pilot  
13 presentation and Captain Lorino do a Coast  
14 Guard presentation. Douglas, you can do the  
15 Port of New Orleans and Chris, I will let you  
16 pick what you want to do but I think we can  
17 all do it.

18 We see each other's presentations.  
19 We really understand each other's issues. And  
20 I met recently with several of you on the  
21 panel and others I know. You know, the  
22 biggest issue that I see and we continue, I

1 have a little bit of banter with someone who -  
2 - of what our biggest issue is. And funding  
3 is right up there. But education is the  
4 biggest problem. It is so hard to educate  
5 people on the importance of ports, the  
6 importance of the Mississippi River.

7 Before the Big River Coalition was  
8 formed, I was in a Congressional office and we  
9 needed dredging money. We needed supplemental  
10 funding. And I was looked at. The  
11 Congressman said, Mr. Duffy what you have is  
12 another Louisiana problem. Well, if you  
13 haven't seen me after a couple of cups of  
14 coffee, I can be a little fiery. So when  
15 somebody told me we had another Louisiana  
16 problem, it wasn't exactly the best news I  
17 ever heard and I wanted to be able to respond  
18 like he wasn't a congressman, but he was.

19 So what I said to him was sir,  
20 what we have is a national crisis. You will  
21 hear a lot of different numbers. One of my  
22 jobs as Executive Director is to try to make



1       sure we get the numbers right. We connect 31  
2       states to international commerce. Thirty-one  
3       states depend on the River. It was through  
4       the Big River Coalition that we learned the  
5       State of Illinois is our largest domestic  
6       trading partner. Illinois representatives  
7       came to us when we were first forming and said  
8       you are so important to us. And with that, I  
9       could go on about the importance in some of  
10      the comments. It was hard yesterday at times  
11      to sit in the back of the room because I  
12      wanted to interject but it was also a neat  
13      perspective to listen. And I will share a  
14      couple of NOAA stories and tell you why we see  
15      and why we are pleased to be here today.

16                 Our education, that is how we  
17      educate Congress, which you know sometimes you  
18      have got to accept the fact that some of them  
19      are slow learners, if you will. But we have  
20      to explain the message. And we are reactive.  
21      We are never proactive and it is all related  
22      to funding. When we have a ship aground, the

1 day before we have been on the phone. We have  
2 had members of the delegation. Captain  
3 Lorino, a lot of times, has the delegation  
4 contacting him directly. And last year we  
5 couldn't get -- we had the Corps dredge and we  
6 were sitting at the dock. A dredge, sorry to  
7 my friend on the panel, he knows who he is,  
8 but a dredge that we depend on in emergency  
9 situations. And we couldn't get it released  
10 from the dock when we needed it in the river.  
11 And the honest truth is you saw Captain  
12 Lorino's presentation. Well at times last  
13 year, they were down to about 120 feet of  
14 channel in some locations.

15 Now the pilots know that area.  
16 They look at the surveys every day. I mean,  
17 surveys are so important to what they do. But  
18 the next morning, a ship went aground. Well  
19 guess what? That is what it took to get the  
20 wheeler down there. That is the kind of  
21 situation that we deal with all the time. We  
22 can't fix it before it is a real problem.

1                   And I have had to explain the  
2                   importance of the river over the years. But  
3                   last year during the high water and we got to  
4                   17 feet because of the spillways being open  
5                   and some of the measures by the Corps and a  
6                   heroic job, I mean, there were predictions  
7                   that the Carrollton gauge was going to go 18  
8                   feet, six inches. I got into a little bit of  
9                   trouble one day when a reporter asked me what  
10                  would you do if the river went to 18 feet, six  
11                  inches. I said, if it is at 17.5 and it is  
12                  going up, I am evacuating. I am going to  
13                  treat that as a major hurricane event because  
14                  I have been on the river, as the pilots were,  
15                  and had seen so many of the problems.

16                  We had people picnicking on levees  
17                  that had never been down to the river. They  
18                  had no idea that the pilots on the vessels  
19                  were talking about what a dangerous place they  
20                  were picnicking in. Because a wake from a  
21                  vessel, a little bit of a boil in the levee  
22                  would really have an impact.

1                   I took my son down to an area over  
2 here, the Moon Walk. You could see it from  
3 the port yesterday, right there in front of  
4 the Saint Louis Cathedral, a shot you have  
5 seen many times on national TV when they come  
6 to New Orleans. And we almost got run over by  
7 about 100 people running. And I know some of  
8 you have heard this story but they all had  
9 their phones out. They were all recording.  
10 Okay, I look. There is a large MSC container  
11 ship going to the Port of New Orleans coming  
12 around the bend. Well the optical illusion  
13 was that that container ship was taller than  
14 the Crescent City connection. So what they  
15 were filming was impending death. They  
16 thought the bridge was going to be taken down  
17 and, of course, many of them were carrying  
18 different varieties of Hand Grenades or the  
19 famous drinks of the French Quarter. So they  
20 were shaking a little bit while they filming  
21 but they were filming.

22                   So my son looks at me and he

1 thinks I know a little bit about the river and  
2 he says, Dad, is it going to be okay? I said,  
3 son, it is going to be fine. There is an air  
4 gap sensor on that bridge that after Katrina  
5 NOAA came to us and said we want to know we  
6 have this funding available. We want to know  
7 what types of sensors you need. And that was  
8 one of our first sensors, the air gap sensors  
9 there and on the Huey P., about ten miles  
10 upriver from that bridge. They were as lowest  
11 control in air draft on the river.

12 So because of that, I said that.  
13 And so my son kind of had a look. He started,  
14 "It's going to be okay." He started telling  
15 people it is going to be okay. Of course,  
16 everybody was filming. And then when that  
17 ship cleared the bridge, they turned around  
18 like, damn! And it is so odd but there is a  
19 lesson there. Okay? That is the kind of  
20 education that we need to be portraying. We  
21 need to be able to capitalize on a high river.  
22 But unfortunately, when we all do our jobs

1 right, guess what? Nobody knows. Nobody  
2 knows when everything goes right. Nobody  
3 knows when Captain Lorino's guys or Captain  
4 Grubbs' or any of the pilot groups' or Captain  
5 Gautier's restrictions save lives, save oil  
6 pollution incidents. Nobody knows that.

7           So what we have to be able to do  
8 is educate. And I will tell you I met with  
9 Mr. Kennedy and some other folks not too long  
10 ago. And because of the response in Sandy, we  
11 figured that NOAA was going to have some  
12 funding issues. There was a lot of funds and  
13 a lot of efforts and a lot of response there.  
14 And we know that is not cheap. And when I  
15 came back and I have told my board, you know,  
16 we have to look at this because NOAA might not  
17 be able to respond as much as they do next  
18 year in hurricane season if we don't help with  
19 funding. Overwhelmingly, everybody said yes.

20           And I will tell you, I have never  
21 really met Ken before but we have our  
22 conference calls and we talk all the time

1 because we have a lot of incidents. But  
2 honestly, there was a call this year and the  
3 Weather Service was a little late. Sorry,  
4 Ken, I know you were busy. They were a little  
5 late. Guess what? You got 100 people or more  
6 on the phone. They don't want to start the  
7 conference call until the National Weather  
8 Service gets on. That is how important that  
9 information is to us.

10 And with that, I would just like  
11 to say once again, thank you. This has been  
12 a wonderful panel. I asked to be able to  
13 speak because I have a board meeting I have to  
14 go to this afternoon and will be unavailable.  
15 I may be back tomorrow. But I wanted to say  
16 thank you. We get it. We know how important  
17 you are. We will do everything we can to help  
18 you with funding. As Captain Lorino said, we  
19 have some trips coming up. Members of our  
20 delegation know how much you mean to us and  
21 how much funding we need. And we are simply  
22 adding that on to our request. Thank you.

1 (Applause.)

2 CHAIR WELLSLAGER: Were there any  
3 questions for Mr. Duffy, by any chance, fiery  
4 speaker that you are?

5 Okay, well I guess that about sums  
6 things up right now. We are a little ahead of  
7 schedule but we didn't get a break during the  
8 presentations and I am sure several of us  
9 would like to get up stretch, get something  
10 done, water, coffee, something. I'm not  
11 really sure.

12 But for those that are visiting,  
13 if you would, please be sure to sign in. We  
14 have again breakout sessions tomorrow and with  
15 the breakout sessions, there will be three  
16 different sessions. There are sheets that I  
17 am going to request that you pick up about  
18 these sessions. There are bullet points that  
19 I would like you to jot some ideas or thoughts  
20 down. And I will collect these at the end of  
21 the day because we will give these to the  
22 facilitators of the breakout sessions tomorrow



1 to kind of guide the panel on the discussions  
2 that they will be having.

3 And if there is nothing else,  
4 thank you very much again for your time and  
5 insightful presentations. I have learned a  
6 great bit and it was very, very, very helpful.

7 I will take this time then --  
8 Kathy, is there anything else?

9 MS. WATSON: No, just to thank  
10 everyone.

11 (Applause.)

12 CHAIR WELLSLAGER: We will  
13 reconvene at one o'clock.

14 (Whereupon, at 11:27 a.m., a lunch  
15 recess was taken.)

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1 A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

2 (1:07 p.m.)

3 CHAIR WELLSLAGER: Welcome back.

4 I hope everybody had a good, fulfilling lunch.

5 It is time for our afternoon stakeholder panel

6 sessions. But before we get into that, for

7 those of you who are new to the afternoon that

8 were not here this morning, if you would

9 please sign in at the back so we have a record

10 of you are being here or not. It would be

11 very helpful.

12 In addition to that, tomorrow we

13 are going to have breakout sessions and there

14 will be one of three groups: they

15 hydrographic surveying, geospatial, tides,

16 currents, and water levels. So if you are

17 interested in sitting in one of those, there

18 are sheets in the back that have information

19 specific to that and they have bullet points

20 that you could jot some notes or ideas or

21 thoughts on to that we will collect at the end

22 of today that the facilitators will use

1 tomorrow to help direct the conversations  
2 while we are having the breakout sessions.  
3 They will start about nine o'clock and last  
4 for a couple of hours.

5 Other than that, this afternoon we  
6 have the Geospatial and Water Level  
7 Stakeholder Panel. We are very fortunate to  
8 have quite a variety of speakers here to  
9 address some very interesting topics. We have  
10 -- well, I tell you what. I am going to ask  
11 you all to -- I mean, please when you come up  
12 to the stage, present us with your name and a  
13 brief history of what you are going to be  
14 doing and where your expertise lie and do  
15 yourself some justice.

16 So without any further do, Mr.  
17 Cliff Mugnier, please.

18 MR. MUGNIER: Good afternoon,  
19 folks. I teach surveying, geodesy, and  
20 photogrammetry at LSU and I have been doing it  
21 for about 12 years. I did it for 20 years  
22 prior to that at the University of New Orleans

1 and I have also been involved in a lot of  
2 geodetic projects worldwide, of particular  
3 interest is with respect to south Louisiana.

4 And what we are interested in  
5 here, more than anything else, are elevations.  
6 And elevations in Louisiana are a moving  
7 target. They change. The area of Louisiana  
8 is primarily a deltaic region and we are  
9 subject to significant subsidence. The  
10 National Geodetic Survey characterizes south  
11 Louisiana as an area of crustal movement. And  
12 with regards to benchmarks, they do what they  
13 can but kind of have to throw up their hands  
14 because of the enormous expense involved in  
15 trying to keep elevations current in Louisiana  
16 because they change.

17 The first leveling surveys through  
18 differential levels were performed by the  
19 Corps of Engineers during the general survey  
20 of the Mississippi River in 1876. And the  
21 Coast and Geodetic Survey, the predecessor of  
22 the National Geodetic Survey, had been

1 monitoring tide gauges along the coast of the  
2 United States, Atlantic, Pacific, and the Gulf  
3 Coast. And the first continental datum for  
4 elevations in the entire world was that  
5 performed by the Coast and Geodetic Survey and  
6 that was the sea level datum of 1929. Since  
7 then, practically every other country in the  
8 world has used the standards and  
9 specifications established by the Coast and  
10 Geodetic Survey to design and implement  
11 national benchmark programs for the rest of  
12 the world. They have followed in the  
13 footsteps of the National Geodetic Survey.

14           When the sea level datum of 29 was  
15 established, it was based on 26 tide gauges  
16 along the Atlantic, Gulf, and Pacific Coasts  
17 and also included tide gauges in Canada and in  
18 Mexico. And this was based on full Metonic  
19 cycles; that is 18.67 years. There was one  
20 tide gauge in Biloxi that had been established  
21 by the Mississippi River Commission and that  
22 gauge was only had 11 years of observations.

1 But that was integral in the designation of  
2 Mean Low Gulf, which is the primary datum for  
3 dredging used on the Mississippi River and  
4 those areas near the Louisiana Coast.

5 Levels in New Orleans pretty much  
6 defined what happened in south Louisiana with  
7 regards to differential leveling first order.  
8 This is three millimeters Route K, which is  
9 extraordinarily precise stuff.

10 Now at the time that some of the  
11 initial surveys were being done, subsidence  
12 wasn't really recognized widespread throughout  
13 the area. Engineers recognized consolidation  
14 of soil with the earthen levees but actual  
15 crustal motion was not realized and the levels  
16 that had been performed prior to 1929 and were  
17 published in an adjustment then were subject  
18 to crustal subsidence. So the benchmarks were  
19 moving down.

20 Coastal and Geodetic Survey came  
21 through in 1935 and established new  
22 benchmarks. They started with the published

1 elevations of benchmarks that had already  
2 subsided. So there was some undue constraint  
3 placed on the new network that represented the  
4 1935 adjustments. In '51 they came through  
5 and did additional observations. And then in  
6 '55 they tied to Morgan City and Mobile,  
7 Alabama. Well, fortunately, Mobile, Alabama  
8 is at the far edges of what we now understand  
9 to be the feathering out of subsidence. But  
10 Morgan City, which is further south than New  
11 Orleans, was subject to significant and is  
12 still subject to significant subsidence. So  
13 by starting at elevations that had previously  
14 been published but had already undergone  
15 significant crustal motion gave additional  
16 strain to a least squares network adjustment  
17 constraining to these elevations.

18           And then in '63 they tied to a  
19 Norco well based on a 1929 value. Norco is  
20 just upstream from the New Orleans Airport and  
21 it is the site of a large oil refinery along  
22 the Mississippi River. And then in '69 they

1 tied to the '63 lines.

2 In '73, they changed the name.

3 They changed the name from the Sea Level Datum  
4 of 1929 to the National Geodetic Vertical  
5 Datum of 1929, NGVD. I tell my students an  
6 easy way to remember the letters is No Good  
7 Venereal Datum for '29. It kind of sears it  
8 into their brains.

9 Well, in 1976 Congress authorized  
10 the funding for the straightening of many of  
11 the bends in the Red River to open it up to  
12 commercial navigation. And in the process of  
13 doing that, the New Orleans District Corps of  
14 Engineers knew that they needed current  
15 elevations. So they came up with funding of  
16 one and a half million dollars to the National  
17 Geodetic Survey and NGS started at Index,  
18 Arkansas and ran first-order levels down the  
19 Red River to Simmesport, Louisiana, which is  
20 if you visualize the shape of Louisiana as a  
21 boot, then Simmesport is like the instep of  
22 the boot. And when they got to Simmesport,



1 then then branched out into two lines. One  
2 went down the Atchafalaya River to Morgan City  
3 and then looped up to metropolitan New Orleans  
4 and the other one went from Simmesport down  
5 the main line of the Mississippi River. When  
6 they got to New Orleans, they connected up,  
7 went to through the metropolitan area and then  
8 went out Highway 90 into the Mississippi Gulf  
9 Coast and then up to Baytown, Mississippi.

10 Well, when they did that, they  
11 found that the levels were unable to be  
12 closed. The observational tolerances they had  
13 were acceptable for first-order leveling but  
14 the values of the benchmarks that were already  
15 in New Orleans they were unable to close into  
16 them because of some significant subsidence.  
17 So as a result of that, they had regional  
18 adjustment after the '76-'77 levels and it was  
19 a theoretical adjustment based on what  
20 National Geodetic Survey thought might have  
21 occurred in the level lines. This was prior  
22 to the observations to establish a new

1 vertical datum, which is the North American  
2 vertical datum of 1988.

3 All of this is of interest to you  
4 folks because the benchmarks on land are what  
5 they use for offsets to determine dredging  
6 depths. So subsidence with respect to  
7 benchmarks is going to affect the accuracy of  
8 dredging for navigability of your hydrographic  
9 activities.

10 In '79 and '80 they had  
11 catastrophic floods in metropolitan New  
12 Orleans due to rainwater. And the local  
13 counties, we call them parishes here, of  
14 Orleans, Jefferson and Plaquemines Parishes  
15 funded NGS to re-observe benchmarks. And the  
16 Corps of Engineers was concerned with the NGS  
17 free adjustment that essentially was a  
18 theoretical paper adjustment. And they found  
19 that the new published elevations were in  
20 conflict with known differences in elevational  
21 benchmarks in the metropolitan area, sometimes  
22 in excess of three feet. So there was

1 something fishy in the corn patch with the  
2 adjustment.

3           Nevertheless, there was not  
4 sufficient funds to re-observe differential  
5 leveling throughout the metropolitan area.  
6 And it has been continuing on in this effect  
7 that NGS is constantly being underfunded from  
8 what they need to be doing to meet the needs  
9 of the south Louisiana community.

10           Deep casement benchmarks were  
11 introduced with the intent of having them more  
12 resistant to subsidence. They were originally  
13 developed by the waterways experiment station  
14 of the Corps of Engineers to prevent movement  
15 of benchmarks due to frost heave in the south  
16 Louisiana area. We have soils that had been  
17 deposited since the last Pleistocene. We call  
18 that the Holocene. And subsidence rates are  
19 well-correlated with the thickness of the  
20 Holocene.

21           In Memphis, Tennessee, we have  
22 found that Memphis is subsiding at a rate of

1 four millimeters a year. The Holocene is near  
2 surface area in Baton Rouge, Louisiana and  
3 Baton Rouge is subsiding at a rate of  
4 approximately six to eight millimeters a year.

5 New Orleans is subsiding at a rate  
6 of ten millimeters a year and near the coast  
7 where the Holocene exceeds several hundred  
8 feet, some areas of subsidence have been  
9 proven to be in excess of 27 millimeters per  
10 year.

11 So the movement of benchmarks is  
12 problematic because first-order differential  
13 leveling costs, on the average, \$1,500 a mile.  
14 And to do reliable first-order leveling for  
15 south Louisiana, we need to start at  
16 Pensacola, Florida, run -- walk the highways  
17 to get into Louisiana and then close out in  
18 Austin, Texas, which is a bit pricey. And we  
19 are unable to justify that amount of expense  
20 currently with Congress.

21 So with the North American  
22 Vertical Datum of '88, they started publishing

1 data in 1990. But no data was available for  
2 south Louisiana because by then it was  
3 recognized to be an area of severe crustal  
4 motion.

5 About that time, the USSR started  
6 going south. There was no more need for ICBMs  
7 and some DoD technology became declassified.  
8 And one of the big things was the FG5 absolute  
9 gravity meter. This thing is good to non-  
10 significant digits. It is about the size of  
11 this podium. It comes with a Suburban and a  
12 geodesist.

13 (Laughter.)

14 MR. MUGNIER: Also at the same  
15 time, because of the expense of first-order  
16 leveling, Congress asked NGS if they had any  
17 bright ideas for getting elevations and re-  
18 observing benchmarks in a more economical  
19 manner. Because the Russian generals and the  
20 U.S. Air Force generals were turning the keys  
21 off at the missile silos and the satellites  
22 were increasing in density for the GPS

1 constellation, NGS started some research using  
2 GPS to determine that third component, the  
3 vertical component. And in a report to  
4 Congress, the National Geodetic Survey  
5 proposed a Height Modernization Program. That  
6 was approved and that is in the process of  
7 being implemented.

8           The problem with using GPS is that  
9 GPS does not provide elevations. GPS provides  
10 something called ellipsoid heights. And  
11 ellipsoid heights have no direct relationship  
12 to elevation. With the declassification of  
13 the absolute gravity meters, the Department of  
14 Defense also declassified the theoretical  
15 mathematical model of the earth's gravity  
16 field. That mathematical model is called the  
17 geoid, G-E-O-I-D. And the geoid is the  
18 Rosetta Stone that allows us to get ellipsoid  
19 heights from GPS and using this mathematical  
20 model we can translate ellipsoid heights into  
21 elevations. Elevations is what we all depend  
22 on. Elevations are what guides us when we

1 consider which way does water run downhill.  
2 Well that is measured according to elevations  
3 and the geoid, the mathematical model of the  
4 earth's gravity field. The problem with the  
5 geoid is it is still not very well known.  
6 Periodically, the National Geodetic Survey  
7 gets additional observations and makes newer  
8 attempts at finding a better and more reliable  
9 model of the earth's gravity field as it fits  
10 in the United States of America. They  
11 continue trying. They continue coming out  
12 with new versions of the geoid and every time  
13 a new version comes out, some things are  
14 improved and we then discover additional  
15 warts. So it is an example of science on the  
16 march but we haven't gotten to the final end  
17 yet.

18           The absolute gravity instrument is  
19 useful because it gives us an independent  
20 check on that third component of vertical.  
21 Instead of latitude and longitude, we get an  
22 idea of how much things are moving vertically

1 with reference to the center of mass of the  
2 earth. The nine significant digits that we  
3 get from FG5 absolute gravity meters gives us  
4 a handle on how much, for instance, New  
5 Orleans is sinking with respect to the center  
6 of the earth. We have observed absolute  
7 gravity in New Orleans in '89 and then  
8 National Geodetic Survey came back in '91.  
9 And as you can see, the numbers increased just  
10 an itty-bitty bit. That itty-bitty bit  
11 represented nine millimeters a year subsidence  
12 rate in metropolitan New Orleans. This is at  
13 the University of New Orleans. That is just  
14 between '89 and '91. Okay, they came back in  
15 '93 and '94 and again people in New Orleans  
16 keep getting heavier and heavier. It's not  
17 just due to crawfish. It is due to crustal  
18 motion.

19 The point to this is is that it is  
20 a consistent movement that has been going on  
21 since time immemorial, since we had land here.  
22 If we look at benchmarks that were established



1 from that first Corps of Engineers survey back  
2 in 1879, many of you who play golf have heard  
3 of the English Turn Golf Course where there is  
4 some big golf match there once a year at  
5 English Turn. Surveyors have gone out for me  
6 and have found benchmarks that were put there  
7 in 1879 and the ground has shrunk away from  
8 the benchmarks to the point where the brass  
9 discs are about three feet out of the ground  
10 and that is representing the approximate  
11 motion of about a centimeter a year, nine to  
12 ten millimeters a year of subsidence. This  
13 has been going on and will continue to.

14 We have subsidence in Louisiana  
15 due to a variety of things. We have  
16 consolidation. We have high organic content  
17 soils that because of dewatering of the near  
18 surface water table the soil will shrink. We  
19 can walk along some houses in Kenner,  
20 Louisiana -- Kenner is the suburb where the  
21 New Orleans Airport is -- and you can walk  
22 along sidewalks and houses built on slabs are

1 up a foot to three feet in the air. You can  
2 look underneath the slab and see the legs of  
3 children playing in the backyard. That is  
4 because the soils have subsided and shrunk  
5 away from that. But the pilings which are  
6 deep-seated and through skin friction are  
7 staying up. People who used to have garages  
8 or carports now board them in because there is  
9 a two- or three-foot step up from the driveway  
10 to the carport. This is common in  
11 metropolitan New Orleans. We find it in  
12 Kenner, near the airport. If you drove in  
13 from the east, you came through the freshwater  
14 marshes in New Orleans east, and the same type  
15 of soils exist throughout the metropolitan  
16 area, this is the Holocene, the high organic  
17 content soils and mucks that have been  
18 deposited since the last ice age.

19 So absolute gravity observations  
20 have been observed in New Orleans and since  
21 the Louisiana spatial reference center was  
22 established about ten years ago, in

1 collaboration with the national geodetic  
2 survey, we have established a number of  
3 continuously operating reference stations  
4 throughout the state of Louisiana. And many  
5 of these have been observed with absolute  
6 gravity. The agencies that have participated  
7 in that to provide us with those observations  
8 have been the National Geodetic Survey, as  
9 well as the National Geospatial Intelligence  
10 Agency.

11 In 2002 on the left-hand column,  
12 these primarily universities throughout the  
13 state and high schools that we have observed  
14 absolute gravity. And then in 2006, many of  
15 these were observed a second time, as you can  
16 see with the little purple indicators. The  
17 elevations, the topography, and the benchmarks  
18 in Louisiana continuously and constantly are  
19 sinking and subsiding. We can't update  
20 elevations based on first-order leveling,  
21 because of the enormous expense involved. NGS  
22 doesn't even have enough personnel to field

1 the field crews that they once were able to,  
2 back in the '30s, the '40s, the '50s and the  
3 '60s. NGS has been cut down to a collection  
4 primarily of scientists in Silver Spring,  
5 Maryland under Juliana, as well as some state  
6 advisors. So NGS needs additional funding to  
7 just provide the basic services necessary for  
8 flood control and elevation references in the  
9 State of Louisiana.

10 This is what we think may be the  
11 answer to improving the geoid. We don't have  
12 that great an idea of the mathematical model  
13 of the earth's gravity field and this is a  
14 portable absolute gravity meter. This is an  
15 A10. This thing doesn't require a suburban or  
16 a geodesists. It just takes a sedan and --

17 When Abraham Lincoln wrote the  
18 emancipation proclamation there was a footnote  
19 where slavery was still allowed as far as  
20 graduate students were concerned.

21 (Laughter.)

22 MR. MUGNIER: And all this really

1 needs is a graduate student, a sedan, and an  
2 A10. This is an absolute gravity instrument  
3 that is intended to be used outdoors. And in  
4 one validation run, the National Geodetic  
5 Survey has used this type of instrument to run  
6 from Corpus Christi, Texas to Austin. And  
7 this instrument was used in conjunction with  
8 a GPS receiver and this other thing, which is  
9 a zenith camera. And a zenith camera is used  
10 at night. It looks straight up, based on  
11 local gravity, and takes a picture of the  
12 stars and it uses a CCD ship to image that.  
13 And with the software that is written in  
14 Switzerland, it recognizes the stars, computes  
15 where they are with respect to the zenith  
16 camera, and then determines where they are  
17 with respect to where they are supposed to be.  
18 And the difference between the two is the  
19 angle or deflection of the vertical, due to  
20 variations in the lumps and bumps and slopes  
21 of the gravity field or the geoid.

22 So GPS receivers, a zenith camera

1 and an A10 gravity meter represent the basic  
2 instrumentation that is needed in Louisiana to  
3 observe a grid approximately according to the  
4 geodesists of NGS, observe on a grid of about  
5 40 kilometers. And by doing that, it is hoped  
6 that that is the final key that will give  
7 south Louisiana and central Louisiana a more  
8 reliable geoid from which flood elevations can  
9 be certified by local land surveyors based on  
10 GPS observations, since differential leveling  
11 is realistically impractical -- is not  
12 practical.

13 In one area in New Orleans East,  
14 the late Professor Roy Dokka set up a couple  
15 of GPS continuously operating reference  
16 stations about 15 feet apart. Our local  
17 United States Senator is Senator Mary  
18 Landrieu. Her father was once a mayor of New  
19 Orleans, Moon Landrieu. And the two stations,  
20 Moon and Mary 15 feet apart. One is on just  
21 a concrete pad, which is a surface mark, and  
22 about 15 feet away there is I think a 700 or

1 800-foot steel well casing that the antenna is  
2 attached to. And this is showing the rate of  
3 subsidence in millimeters over approximately  
4 the past year. And it is showing just a  
5 consistent subsidence rate just at one point  
6 where daily we can look at that and see how  
7 Moon is subsiding with respect to Mary in New  
8 Orleans East. So we have got a daily track on  
9 subsidence, in addition to the periodic  
10 observations that are done with GPS showing  
11 differences in ellipsoid height, which is what  
12 this is, variations in absolute gravity, and  
13 the occasional rare first-order leveling.

14 What I think all of this implies  
15 towards this panel is that when you are  
16 looking for elevation control for dredging to  
17 maintain navigability, you have to come off of  
18 benchmarks. And this is the sort of stuff  
19 that you are going to need for your area of  
20 interest as well.

21 Are there any questions?

22 CHAIR WELLSLAGER: Actually, if we

1       could hold the questions until after everybody  
2       has had a chance to speak, I think that would  
3       be beneficial.

4                   MR. MUGNIER:  Yes, sir.

5                   CHAIR WELLSLAGER:  Thank you,  
6       though.  That was very informative.

7                   (Appause.)

8                   CHAIR WELLSLAGER:  Randy?  Randy  
9       Osborne, were you going to speak next?

10                  MR. OSBORNE:  I'm Randy Osborne.  
11       I run the BRS network for the State of  
12       Louisiana.  It is a network of continually  
13       active reference stations that are monitored  
14       24 hours a day and we use this infrastructure  
15       to monitor subsidence and crustal motion  
16       studies.

17                  (Pause.)

18                  MR. OSBORNE:  And I was honored to  
19       work for a great man, Roy Dokka, and he  
20       basically told me I could do this stuff and I  
21       had no idea what he was talking about.  And he  
22       kind of made it simple for me.  He said this



1 is just waves. We are just taking waves and  
2 we are looking at waves. And I had a  
3 background in audio so I am like oh, you mean  
4 like sound waves? And he was like kind of  
5 sort of.

6 So, I embraced the opportunity to  
7 start using this network software to tie all  
8 this infrastructure that was already in place  
9 to do the science together. And what we ended  
10 up coming up with was not unique. It was just  
11 a tool that was being used all over the world  
12 to provide a network solution for end users to  
13 get active positions in real time. And the  
14 network that we have has 66 active stations  
15 that monitor the GPS positions and then by  
16 tying them into a network solution, they can  
17 get that information in real time as a rover  
18 in the network anywhere with inside the  
19 stations that are located throughout the  
20 state. In one second, they can get a position  
21 that is good to two centimeters horizontal and  
22 four centimeters vertical. By standing there

1 longer periods of time, three to five minutes,  
2 they can get observations that are equal to  
3 about four or five hours of autonomous  
4 positions that have been post-processed. So  
5 it saves them a lot of time and money in the  
6 long-run.

7 So in the wake of that, Roy had  
8 the vision of coming up with a way of making  
9 people be on the same page. And in order to  
10 get on the same page, everybody had to be  
11 playing by the same rules. And so he started  
12 by defining the rules. And one of the rules  
13 was coming up with a push from the legislature  
14 in Louisiana to develop a state statute for  
15 vertical control. And that state statute is  
16 currently in existence. It is state statute  
17 50:173.1 and it says that you basically have  
18 to use NAVD88 as your vertical control. And  
19 NAVD88 is only realizable if you have a good  
20 geoid on top of your ellipsoid measurements.

21 So we are able to measure  
22 ellipsoid heights very accurately down to a

1 centimeter in real-time but what we have a  
2 problem with is this geoid that just came out.  
3 It has different qualities, depending on where  
4 you are at. And one of my colleagues, Josh  
5 Kent, he is here, he did a lot of analysis on  
6 the last geoid and we found discrepancies  
7 between the last geoid and the new geoid to as  
8 much as 70 centimeters in certain areas. So  
9 it is hit and miss, depending on where you are  
10 at. And a lot of the guys that have been  
11 doing this a long time are not comfortable  
12 using the current geoid because the  
13 differences where they are at may be three or  
14 four feet from what they are used to seeing on  
15 the prior geoid. So the real truth is is the  
16 new geoid could be nailing it and giving them  
17 an exact actual measurement that is right  
18 dead-on or it could be anywhere in-between  
19 there and where it used to be.

20 So that is the uncomfort that they  
21 currently have because by law, in Louisiana  
22 they are being required to provide their

1 elevations in NAVD88 and the only way to get  
2 there is to use that geoid.

3           So this is a problem. And NGS has  
4 this geoid problem for the entire continent  
5 and, in certain parts of the continent, this  
6 thing works great. For us, not so much. So  
7 we are kind of an outlier and Cliff  
8 illustrated why it is a big problem. But what  
9 we deal with on a daily basis at Seaport G is  
10 listening to the guys out there doing the work  
11 complaining about how come they can't get an  
12 elevation certificate on a place they went to  
13 last year and it is off by a foot and a half  
14 this year just because the geoid is different.  
15 And so we don't have a good answer for why it  
16 is different, other than the fact we don't  
17 know what the truth is yet. And so we need  
18 more work. We need more funding to get better  
19 answers.

20           And the project that Cliff  
21 illustrated for getting the geoid refined  
22 would help us get there. Because the

1 ellipsoid height is pretty tight. It is down  
2 to probably a centimeter in real-time but the  
3 geoid is where the problem lies right now. We  
4 have a lot of uncertainty in that geoid. And  
5 what it equates to is this is actually the  
6 real-time network in action and I am going to  
7 turn off the station and let you see there is  
8 actually rovers out in the field doing work  
9 right now and each one of these little  
10 antennas you are seeing is somebody doing  
11 surveying. You can even see a guy offshore.  
12 And the reason he is able to do that is  
13 because we have CORS station located on  
14 platforms in the Gulf that keep them inside  
15 the box. So they can work inside the box and  
16 then go up to as much as 70 kilometers outside  
17 the box and still get good information in  
18 real-time. If they are not able to work in  
19 real-time, you see a couple of red antennas,  
20 those guys could be collecting data for post-  
21 processing and they can use this information  
22 that is tracked from each one of these

1 stations after the fact and generate solutions  
2 with those processes. The difference is, you  
3 have to collect a lot more data to do the  
4 post-processing. So that costs you more time  
5 and labor.

6           And the project that Cliff  
7 illustrated for getting the geoid refined  
8 would help us get there. Because the  
9 ellipsoid height is pretty tight. It is down  
10 to probably a centimeter in real-time but the  
11 geoid is where the problem lies right now. We  
12 have a lot of uncertainty in that geoid. And  
13 what it equates to is -- this is actually the  
14 real-time network in action, and I am going to  
15 turn off the stations and let you see there is  
16 actually rovers out in the field doing work  
17 right now, and each one of these little  
18 antennas you are seeing is somebody doing  
19 surveying. You can even see a guy offshore.  
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22 platforms in the Gulf that keep them inside

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7 processing and they can use this information  
8 that is tracked from each one of these  
9 stations after the fact and generate solutions  
10 with those processes. The difference is, you  
11 have to collect a lot more data to do the  
12 post-processing, so that costs you more time  
13 and labor.

14 So what they really want to do is  
15 rely on this real-time solution and the key to  
16 being able to rely on that real-time solution  
17 is having a good geoid model.

18 So that is what we are really here  
19 to talk about is how can we get there from  
20 here and how NGS can get the funding to help  
21 us realize that goal, because we need it by  
22 state law. And the reality of it is: today

1 the guy that is out there doing the work can't  
2 get there from here because he doesn't have  
3 the tools necessary to do it even though the  
4 law says he has to. So that is a difficult  
5 position to be in, if you are a guy out in the  
6 field doing this kind of work and the state  
7 law says you need to be using NAVD88, but you  
8 can't realize it because the tools aren't in  
9 your hands.

10 And that is about all I have. I  
11 will be up here to take questions about the  
12 network if anybody wants to know more about  
13 it. Thank you.

14 (Applause.)

15 CHAIR WELLSLAGER: Thank you,  
16 Randy.

17 The next speaker we have would be  
18 Robert Turner.

19 MR. TURNER: All right. Well,  
20 thank you very much for allowing me to come  
21 here and talk to you all today. As you heard,  
22 my name is Robert Turner. I go by Bob. I am



1 currently the Regional Director for the  
2 Southeast Louisiana Flood Protection Authority  
3 - East.

4 And for those of you who are not  
5 too familiar with this whole thing with levee  
6 districts and levee boards here in Louisiana,  
7 shortly after Katrina it became apparent that  
8 we needed to change the way that we do  
9 business when it came to flood protection,  
10 particularly with regard to things like levee  
11 protection. And we needed to move away from  
12 a very parochial perspective when it came to  
13 flood protection, whereby each individual  
14 little jurisdiction took care of a section of  
15 levee that was contained within their area.  
16 But then no one was looking over the big  
17 picture to see that all those segments, which  
18 are eventually attached, make sure that those  
19 things operated as a system. Because if any  
20 one of those segments or pieces did not work  
21 properly, then obviously the whole system  
22 would not work properly and someone was bound

1 to flood.

2 And so back in 2007, the Southeast  
3 Louisiana Flood Protection Authority came into  
4 being. They are the governing board now for  
5 the three active levee districts on the East  
6 Bank of the Mississippi River in the  
7 metropolitan New Orleans area. So that is St.  
8 Bernard Parish, Orleans Parish, and Jefferson  
9 Parish, and again, all on the East Bank. And  
10 we have a sister authority, the Southeast  
11 Louisiana Flood Protection Authority - West  
12 that is on the West Bank.

13 My background, I am a professional  
14 engineer by trade, registered here in  
15 Louisiana. And basically, started out in the  
16 consulting business too many years ago to tell  
17 you exactly when. And I spent some time as a  
18 public work director in one of the parishes  
19 and then ultimately wound up as a director of  
20 a levee district and then finally here, where  
21 I am at today, as a regional director. So I  
22 have a little bit of experience when it comes

1 to some issues that are dealing with levees.  
2 And the thing that I am going to talk about  
3 today is this whole elevation issue with  
4 respect to this new system that we have.

5 And our responsibility involves  
6 the East Bank of the river and particularly  
7 about 200 miles of levees that are contained  
8 within our jurisdictional area that formed the  
9 East Bank side of the Hurricane Storm Damage  
10 Risk Reduction System and provide other types  
11 of protection, for instance, interior drainage  
12 protection with some of those levees as well.

13 I suspect that most of you all  
14 know that the bigger part of this system is  
15 being constructed by the U.S. Army Corps of  
16 Engineers, the entire system to the tune of  
17 about \$14 billion or so, of which the State of  
18 Louisiana and perhaps even the local levee  
19 districts will have to participate to the tune  
20 of about 30 percent of the cost of that  
21 original construction. But nonetheless, the  
22 majority of that is being borne by the U.S.

1 taxpayers.

2           However, once the system is  
3 complete and as it is being completed in  
4 segments, the federal government turns that  
5 over to us, to our levee districts and to the  
6 Authority East. And we are then charged with  
7 operating and maintaining that system. Two  
8 very important words there, operating and  
9 maintaining. And I am going to talk a little  
10 bit about that in a minute as it relates to  
11 elevation.

12           But this morning I was here and I  
13 saw the Captain of the Port, Captain Gautier,  
14 talking a little bit about some of the risks  
15 associated with the system. The gentleman  
16 over here asked him a question about the Inner  
17 Harbor Navigation Canal Area and his response  
18 was very interesting. It is clear to me that  
19 he now understands the risks associated with  
20 providing flood protection in this area and  
21 that it is a coordinated effort amongst  
22 various agencies and partners.

1                   And what he said was, you know, we  
2                   have to achieve operational excellence in  
3                   order for us to be successful in our flood-  
4                   fighting activities. Not just flood-fighting  
5                   excellence. I think what he said was we had  
6                   to achieve operational perfection. Okay? And  
7                   that is a pretty lofty goal when it comes  
8                   right down to it and we really have to strive  
9                   to do that in order for us to be able to do  
10                  the best that we can.

11                  Now we know we can't achieve  
12                  perfection. And there are certain things we  
13                  are always going to be at risk for. But there  
14                  are other things that we can do to get a  
15                  little bit closer to the mark and one of those  
16                  things has to do with the way that we operate  
17                  the system and the way that we maintain the  
18                  system.

19                  The operational part, you know, we  
20                  use the words "operation and maintenance"  
21                  together so many times in the levee business  
22                  that people forget what the difference is.

1 But the operational part is when we actually  
2 start going out and doing things in advance of  
3 and during an event. Whereas, with the  
4 maintenance side of things, maintenance is  
5 just the day-to-day activities that take  
6 place, the inspections, the repairs and things  
7 like that. But the operational part are the  
8 things that we have to go out and do in  
9 response to something that Mother Nature is  
10 sending our way. And so it is critical for us  
11 to be able to react in the right way so that  
12 we can put our resources where they need to be  
13 and so that we don't require things to happen  
14 that is going to create a great deal of  
15 inconvenience and expense to the nation or to  
16 us locally that we don't necessarily have to  
17 do if the event doesn't call for it.

18 And so in order for us to have a  
19 pretty good idea of how we have to react to an  
20 event, this whole idea of elevation is  
21 extremely important.

22 The trigger points that we use to

1 tell the navigation people, "Okay, it is time  
2 to leave, you have to get out of the Inner  
3 Harbor Navigation Canal Corridor, nothing else  
4 can come in." It is based on water surface  
5 elevations, primarily. And even more so than  
6 that, it is based on forecast water surface  
7 elevations. Okay, so you have got a little  
8 bit more of uncertainty there. So you have  
9 got the uncertainty of what the actual  
10 elevation is at any point in time but now you  
11 are trying to forecast that out into time.  
12 You have got to be able to err on the side of  
13 conservatism but at the same time, be  
14 reasonable in your approach in how you go  
15 about requiring these big changes that occur  
16 in the system.

17           Also you have to, once certain  
18 elevations are met from the water surface  
19 elevation perspective, you have to take  
20 certain actions within the system. The  
21 navigation gates have to be closed to close  
22 off waterways. Flood gates along the levees

1 and flood walls have to be closed, starting  
2 with the lower elevations and then working  
3 your way up. Various parts of the system have  
4 to monitored more closely. All of these  
5 things are important. And so it is extremely  
6 important for us to understand what the  
7 relationship is between the elevations of the  
8 water surfaces that are occurring as an event  
9 approaches and the elevation of the system  
10 itself and the various components of that  
11 system.

12 One of the problems that we have  
13 had recently and really came to light in  
14 Tropical Storm Isaac was this whole idea of  
15 being able to know what is happening in the  
16 system as a storm approaches, and as a storm  
17 is upon us, and as the storm is leaving. When  
18 we go through and we take a look at the  
19 various things that we did to react to that  
20 storm, one thing that we relied on heavily was  
21 the actual real-time water surface elevations  
22 that were available to us through either NOAA



1 or the U.S. Army Corps of Engineers and the  
2 various websites that were out there that  
3 track that and report that out. And we make  
4 decisions based upon what is coming out of  
5 that.

6           There is a couple of problems,  
7 however, that have come to light and because  
8 now our system is much more complex than it  
9 has ever been and because we have to place  
10 more and more reliance on the availability of  
11 this data and the accuracy of this data, we  
12 are now finding out that things need to be  
13 changed. Certain things need to be changed.

14           And why is that? Well, we had  
15 some gauges that were measuring various water  
16 surface elevations in the system that, in some  
17 cases, went out completely 12, maybe 24 hours  
18 before the storm ever came. So we lost that  
19 ability to monitor that water surface  
20 elevation remotely. And what that required in  
21 some cases was somebody strapping on a  
22 raincoat and a life jacket and driving out in

1 the storm to go take a look at a staff gauge  
2 somewhere.

3 The other thing that we found was  
4 that some gauges were reporting information,  
5 but it wasn't accurate. And so we started  
6 getting, for instance, I think it was on the  
7 17th Street Canal, we started getting  
8 elevations in that indicated, wow, the water  
9 is getting way too high out there. Maybe they  
10 need to stop pumping. And it generated a  
11 whole series of calls to the Corps of  
12 Engineers and to the Sewerage and Water Board  
13 and what is going on. Come to find out,  
14 everything was fine but the gauges were  
15 telling us that everything wasn't. And, you  
16 know, just the opposite could have happened.  
17 We could have been looking at the gauges  
18 thinking that everything was fine but really  
19 it wasn't.

20 And so it is extremely important  
21 that we have a system that can accurately and  
22 dependably give us the information we need

1 during a storm event. And it has to be  
2 related so that the gauge information, the  
3 gauge datums or the zero points for the  
4 various gauges throughout the system are all  
5 at the same zero point so that when it is  
6 reading two foot here and one foot over here,  
7 I know the water is falling in that direction.  
8 And it also has to be related to the elevation  
9 of the flood protection system itself. And  
10 that is why we have taken the step of saying  
11 any work that is being done in our system, it  
12 has to be done on the NAVD88 datum so that we  
13 are consistent in that approach.

14 In addition to that, however, with  
15 regards to these gauges, we have opened up  
16 some dialogue with Tim and the National  
17 Weather Service and with the State of  
18 Louisiana and others to try to figure out a  
19 way to harden some of these gauges in very  
20 strategic locations. We see this as an  
21 extremely important component of us being able  
22 to successfully operate this system in the

1 future. So that is one of the big things that  
2 we are looking to do.

3 I'm not going to talk about too  
4 much else here because I have one of our  
5 Commissioners here, Mr. Estopinal. He is  
6 going to follow up right behind me. So,  
7 Steve, do you want to come on up?

8 (Applause.)

9 CHAIR WELLSLAGER: You want to use  
10 this mic?

11 MR. ESTOPINAL: Oh, I could  
12 probably project to this room fairly easily.

13 CHAIR WELLSLAGER: Actually, the  
14 court reporter needs you to speak into the  
15 mic.

16 MR. ESTOPINAL: The court reporter  
17 needs the mic? Okay, I will stay as close to  
18 the mic as I can. I have a mobile here. It's  
19 show time, folks.

20 My name is Steve Estopinal. I am  
21 originally from St. Bernard Parish. I am a  
22 civil engineer land surveyor and I have been

1 struggling with the non-conformity of vertical  
2 datum in south Louisiana for five decades  
3 right about. Right about.

4           You know, one fellow was talking  
5 about his friend from Chalmette. Yes, you  
6 know they are known as Chalmettiens. I lived  
7 in Violet. I was a Violatien. That is  
8 exactly right. And I am here for comic  
9 relief, because I think we need a lot of comic  
10 relief.

11           We are going to talk about  
12 rectifying the CORS network. We have some of  
13 the greatest science in the world when it  
14 comes to determining ellipsoidal heights: the  
15 position of a place in reference to the center  
16 of the earth.

17           But after Katrina, which is why I  
18 don't live in St. Bernard anymore, by the way,  
19 we have a performance evaluation. It was done  
20 by the Corps of Engineers. A very interesting  
21 read. I like this because of what is on the  
22 picture on the cover there. And I have got to

1 admit, that is not a real good depiction of  
2 what actually happened. What actually  
3 happened was a lot worse.

4 We also have another document that  
5 I think if you ever get a chance to read, this  
6 is done by Woody Gagliano. I met Woody  
7 Gagliano in the '70s when he came to my office  
8 to talk to me about the problems we were  
9 having with non-conformity of vertical datum.

10 Here is a geological study of  
11 south Louisiana showing all the faults. And  
12 you can see there are a lot of fault lines  
13 running. There is a lot of places where there  
14 is changes in elevation. There are a lot of  
15 salt domes, where there is differences in  
16 density of the surface of the material. It  
17 looks pretty complex. It looks pretty bad.  
18 But really the truth is a lot worse than that.

19 Traditionally, we controlled our  
20 elevations -- and I am at the cutting edge of  
21 the application of vertical datum, land  
22 surveying. And we would rely upon benchmarks

1 because we didn't know how the world was and  
2 the National Geodetic Surveys would give us  
3 these marks and we would measure from them.  
4 You notice that this brass marker is a little  
5 dented right here? When they are really hit  
6 real good, they will fold over. And my son  
7 had a name for that. He would say it was a  
8 taco. So when he called up and he said, "Dad,  
9 I have got a mark out here, but it is a taco,"  
10 he meant it is one that got beaten up so much  
11 that the brass had actually folded around the  
12 top of the mark.

13 But this is traditionally what we  
14 do. And you can see that there is a  
15 difference between the mark and the surface.  
16 And you can say, well, that is the result of  
17 subsidence. Yes, but the truth is really  
18 worse than that because this mark is also  
19 going down. So this difference here is just  
20 the difference in the subsidence from the  
21 surface to the deep rod mark. The actual  
22 elevation is going down even more. And we had

1 hopes that GPS technology would get us away  
2 from this non-conformancy of datum. We  
3 thought, "This is it. It is satellite. It is  
4 rocket science. It is going to cure us of all  
5 our problems."

6 Well, we started discovering some  
7 things. We started discovering that,  
8 depending upon what ellipsoid was applied or  
9 when they change the geoid, we started getting  
10 different elevations. There is changes. If  
11 we went to mark and we measured it under 99  
12 geoid, it was here, 2003 here, 2009. What we  
13 are trying to get to, we are trying to get to  
14 that old thing back in 1929 we used to call a  
15 sea level. That means equipotential  
16 gravitational surface. Right, that is the  
17 gold standard. If we had that equipotential  
18 gravitational surface, if we know where it is  
19 -- and water doesn't have a problem knowing  
20 where it is, water figures out gravity real  
21 good. If we can figure that out, then maybe  
22 we can predict, apply some of these wonderful



1 predictions to real-time situations.

2           And this is a little thing showing  
3 -- it is hard to present this in a way that  
4 doesn't make you kind of glaze over. The  
5 ellipsoid is a theoretical surface that the  
6 satellites do a real good job of defining  
7 where it is. They can tell us where this is.  
8 Centimeter level. This is the surface of the  
9 earth, the topography. We know where that is.  
10 We are standing on it. The big fly in the  
11 ointment is this, the geoid. And the geoid is  
12 what we call our datum. We would like that  
13 geoid to be an equipotential surface. We  
14 would like it to be where the water wants to  
15 be because that is what we are concerned  
16 about. The problem is finding out where that  
17 geoid is. And it has been very difficult,  
18 because essentially there is a whole lot of  
19 problems with figuring out.

20           Here is the equipotential surface.  
21 That is where the water would get. That is  
22 where we want our scientists to concentrate

1 on. That is where we are interested at the  
2 levee board. We want to know on the levees  
3 where this water is going. And NGS and their  
4 geoids have tried to duplicate where that is  
5 with geoid `99, geoid 2003, geoid 2009, et  
6 cetera, et cetera, ad infinitum, ad nauseum.  
7 That is all the Latin I know. We will have to  
8 go to something else.

9 All right. What brought this  
10 light to me was at the Southeast Louisiana  
11 Flood Protection Authority. We had a  
12 construction known as the Great Wall of St.  
13 Bernard. How many people have seen the Great  
14 Wall of St. Bernard? It is fantastic. It is  
15 one of the engineering feats of the world.  
16 And a lot of people spent a lot of their money  
17 to put that wall down here to protect  
18 Southeast Louisiana. That whole wall which is  
19 like 23 miles -- when I say something wrong,  
20 Bob, you correct me.

21 It was all based upon one  
22 controlled benchmark called TED that the Corps

1 of Engineers established out there. And I am  
2 the last guy to be critical of the Corps of  
3 Engineers, but to have 23 miles of levee based  
4 upon one benchmark seemed to be unwise. But  
5 it doesn't matter. It is what happened.

6 One of the things we noticed that  
7 when the Great Wall of St. Bernard met up with  
8 the surge barrier, there was a differential of  
9 about four and a half inches vertical. They  
10 didn't meet. Okay. What kind of problem that  
11 is, I don't know. Initially, there was a lot  
12 of screaming and running around in small  
13 circles, things like that. But then things  
14 settled down and the Corps finally decided oh,  
15 no, everything is fine. It's okay.

16 But we decided that we were going  
17 to verify that elevation. You know, we are  
18 the Flood Authority. That is part of our  
19 responsibility. So we hired our own surveyors  
20 to go out there and they did static  
21 observations, showing the values that were  
22 shown for TED and they were very consistent.

1 And I'm thinking, well, you know, that is not  
2 bad.

3 So then we used real-time network,  
4 C4G, and then this is a commercial vendor.  
5 And we got four and a half inches different.  
6 All right, well, maybe that is a problem.

7 So then we looked at the values  
8 for TED and we noticed the small print. You  
9 know, everybody should read the small print.  
10 Believe me, read the small print. The  
11 standard deviation for the value associated to  
12 that mark was plus or minus one decimeter.  
13 That standard deviation for that mark was plus  
14 or minus one decimeter. How much is one  
15 decimeter? About four inches. All right?  
16 And that is the standard deviation. That  
17 means 32 percent of the chances are it is  
18 outside of that. As a surveyor, what I am  
19 responsible for when I do the work, I have to  
20 do it with a 95 percent confidence level.  
21 That is two standard deviations. And yet here  
22 we had I don't know how many billions of

1 dollars. I don't know. It is like Monopoly  
2 money. It really doesn't mean anything  
3 anymore. And it was all based upon something  
4 where the standard deviation was one  
5 decimeter. And we are over here talking  
6 about, we are worrying about surge miles and  
7 whether it is going to go over and whether we  
8 are going to close the gate at 1.0. No, maybe  
9 we ought to close it at 1.2.

10 That is crazy. We are already  
11 outside of that with our standard deviation.  
12 So then maybe we do some refining and stuff  
13 like that but it got worse than that.

14 What happened then was we came in  
15 with geoid 2012, which was supposed to be a  
16 refinement of the geoid and it probably was.  
17 It was a refinement of the geoid. And 2012  
18 had a lot of differences from 2009. Well, we  
19 are okay. We are used to these changes. In  
20 the surveying profession, we are used to  
21 changes and vertical changes in benchmark  
22 values all the time. They would change from

1 one geoid to one ellipsoid. It is like being  
2 nibbled to death by a duck. I mean, it is  
3 just all these little change, change, changes.

4 And as soon as 2012 came out, LSU  
5 went out to a couple of sites that had gravity  
6 readings and they found some significant  
7 difference. That one speaker talked about,  
8 what, 70 centimeters? That is 0.7 meters.  
9 All right? Well, that was how much one was  
10 above or was below. I forget. There was  
11 another one that was 0.3 in the other  
12 direction. Let me see, 0.3, 0.7, that is a  
13 meter differential. A meter differential in  
14 the vertical datum within the same state on  
15 the same toe of the same boot. A significant  
16 problem. A significant problem. And we are  
17 here. We are going to try and protect the  
18 City of New Orleans from flooding and we are  
19 negotiating on whether we should close it at  
20 water elevation of 1.0 or 1.2. It is insane.

21 We need to have a better grip on  
22 this vertical datum. We have to have more

1 information so that NGS can give us a good  
2 geoid, a geoid that is really close to that  
3 equipotential gravitational surface that water  
4 knows about without having to ask anybody.

5           There is also a whole bunch of  
6 coastal restoration projects going on. I  
7 threw this little slide in there simply to  
8 show you how everything can be effected by not  
9 having a good grip on the geoid, by not having  
10 good information on that equipotential  
11 gravitational surface that we all need to have  
12 in order to plan things.

13           Let's say we had at year zero all  
14 the science -- and we have got some of the  
15 best scientists in the world examining our  
16 coastal region and planning coastal  
17 restoration projects. These guys are really  
18 into it. I mean, they know their stuff. So  
19 they go out and they measure it. They measure  
20 the surface of the water and they get the tide  
21 gauge readings. And they say all right, this  
22 coastal restoration surface we have to put

1 that new surface in at 1.2. A couple of  
2 square miles of surface. Right? We have got  
3 to have it at 1.2 so the grass will grow, so  
4 the birds will lay their eggs, so the fish  
5 will swim and all is right with the world.

6 Five years later when they go in  
7 to build the project, the benchmark that they  
8 related all their information on to collect  
9 the data has moved down. So you say, "What is  
10 the big deal? We will just go ahead and get  
11 another value on the mark." Well, let me see.  
12 This was done with geoid '99, this was done  
13 with geoid 2009. How do you relate those  
14 changes and what are those changes? And are  
15 those changes consistent?

16 We talked about Moon and Mary and  
17 how they are settling the differential rates  
18 in the University of New Orleans. Is it 19  
19 millimeters a year?

20 MR. MUGNIER: Nine a year.

21 MR. ESTOPINAL: Nine a year, okay.

22 That is only at New Orleans.



1           You saw Woody Gagliano's little  
2 chart there. That's not the same everywhere.  
3 It might be moving that fast down in the City  
4 of New Orleans -- I mean, over at the  
5 University of New Orleans but I tell you what,  
6 it is moving at a different rate in Venice and  
7 I don't mean Venice, Italy. All right? It is  
8 really trucking down there.

9           And so these changes are all  
10 convoluted until we have a pollution of data.  
11 And these scientists are trying to build a  
12 coastal restoration project when the data  
13 coming in is already polluted beyond belief.  
14 So they go out and they build their project  
15 and they build it on the benchmark and they  
16 revise the values of the benchmark and still  
17 the project comes in too low. And what do you  
18 have? You have a failed restoration project  
19 and you have got another \$12, 13 million just  
20 thrown away, washed away, turned into  
21 nothingness because we don't have a good  
22 vertical datum.

1                   So what am I here asking for?  
2           Well, we need to have a Louisiana geoid  
3           developed where we can put in marks across the  
4           state, add up 40 clicks spread -- 40  
5           kilometers, 40 clicks. We put these marks in.  
6           We do positional readings on them so we can  
7           get good GPS positions, we can get good  
8           ellipsoidal heights on them. We put gravity  
9           meters on them so we can get good gravity  
10          readings. We put the zenith camera on them so  
11          we can get a good idea of where these gravity  
12          lines are leaning because we have got salt  
13          domes all over the place. And one thing about  
14          a salt dome is, it is nowhere near as dense as  
15          anything else. And so it distorts your  
16          vertical.

17                   So this geoid that we had that was  
18          working real good across the rest of the  
19          country gets warped here. Of course it is  
20          even worse than that because that geoid is  
21          also tied into surface marks and so it has  
22          been constrained. So it is not even fitting

1 bad well.

2 It is hard to explain it, other  
3 than to say is what we would like to do is  
4 have a program of establishing good control  
5 across the state of Louisiana where we can get  
6 good absolute gravity meter reading so we can  
7 develop that good geoid which really actually  
8 follows the equipotential surface, so that  
9 when our scientists do scientific studies,  
10 when our coastal restorations projects do  
11 coastal restoration studies, and when our  
12 flood gates are closed at a certain elevation,  
13 it is all working off of good, solid science  
14 that is repeatable, that is dependable, and is  
15 based upon the real world and that is it.

16 And I think I am the last guy?  
17 No, I am next to last. Okay. Thank you very  
18 much.

19 CHAIR WELLSLAGER: I think our  
20 next speaker is Henri Boulet.

21 MR. BOULET: Henri Boulet. Good  
22 afternoon. Can you hear me, everyone? Okay.

1                   My name is Henri Boulet. I am  
2                   from southwest of New Orleans, about 60 miles  
3                   from a Parish called Lafourche, which is along  
4                   the Bayou Lafourche distributary that goes all  
5                   the way up from the Mississippi River at  
6                   Donaldsonville down to the Gulf of Mexico.

7                   And Tim asked me to talk a little  
8                   bit about how our community, which is very  
9                   rural, has utilized some of the resiliency  
10                  programs that NOAA has offered to determine  
11                  sea level trends right along the coast and  
12                  subsidence and how it is impacting our  
13                  community.

14                 I am Director of the Louisiana  
15                 Highway One Coalition, which is a road that  
16                 followed Bayou Lafourche going down to the  
17                 coast and we are working on securing that  
18                 highway because it is just at about two feet  
19                 above sea level. So you can imagine when a  
20                 hurricane gets into the Gulf all the way down  
21                 by Cancun, we are already seeing higher tides  
22                 that impact a very important highway to the

1 nation.

2 And that highway leads down to  
3 Port Fourchon. And here you can really see  
4 the areas of the highway we are trying to  
5 raise is from the last levee community where  
6 there is a U.S. Corps levee at Golden Meadow  
7 coming down 19 miles to Port Fourchon, which  
8 is right on the Gulf.

9 And Port Fourchon supports  
10 anywhere from 16 to 18 percent of the nation's  
11 daily energy needs. It not only services most  
12 of the deepwater activity in the U.S. Gulf of  
13 Mexico, both in the east and west and central  
14 gulf, it also supports LOOP, which is 18 miles  
15 offshore, which is the Louisiana Offshore Oil  
16 Port. And it is the only offshore oil port  
17 the nation has that is capable of unloading  
18 the very large crude carriers, a million  
19 barrels of oil a day.

20 So basically, they dock offshore  
21 and a pipeline pumps it in 18 miles to  
22 Fourchon. There is a booster station at

1 Fourchon which builds up that pressure to get  
2 the oil further north to salt domes under the  
3 ground, and then eventually it goes up to  
4 refineries all along the river. And LOOP is  
5 connected to 50 percent of the nation's  
6 refineries.

7 So LA-1 is very important to the  
8 nation. This is our poster child picture of  
9 how it looks from that levee up in Golden  
10 Meadow for 19 miles south during a hurricane.  
11 And this was during Hurricane Rita.

12 Obviously, the road is anywhere from one to  
13 four feet under water. Our concern in the  
14 community is that we never know if we are  
15 going to have a road still there after the  
16 stormwaters recede. It all depends on how  
17 quick the water comes up. If the water comes  
18 up slow and those waves just eat at the  
19 roadbed, we could have the entire road wash  
20 out, which would really present some problems  
21 for us and it would certainly present some  
22 cascading economic impacts for the entire

1 nation as the energy markets would respond to  
2 Fourchon not being available to reactivate all  
3 of the energy in the Gulf that gets shut down  
4 before the hurricanes make landfall.

5 This is how it looked this summer,  
6 that same view, just with a Category One  
7 hurricane, Hurricane Isaac. And what we  
8 learned from Hurricane Isaac is even these  
9 milder storms are shutting our road down for  
10 longer and longer periods of time. That is  
11 because our road, like the discussion has been  
12 much earlier, is subsiding at a great rate. It  
13 is also subsiding at nine millimeters at year.

14 What we have noticed through  
15 storms that have closed down the road is that  
16 since Katrina coming down all the way to  
17 Isaac, our road closures have been getting  
18 longer and longer. Why? Because that road  
19 has obviously sank a little bit more. It  
20 takes longer for that storm surge to go away  
21 that built up against that levee. And the day  
22 after the hurricanes, LOOP is wanting to get

1 back in business. The oil companies are  
2 wanting to get back to Fourchon because the  
3 refineries are running shard and you are  
4 seeing prices go up all over the nation. So  
5 everyone is calling and saying, "When is LA-1  
6 going to be open?" It all depends on how the  
7 storm came in, how quick the winds die off and  
8 the water recedes back into the Gulf of  
9 Mexico.

10 But what we also noticed this  
11 summer for the first time is how many areas in  
12 our road really got gashed. We have never had  
13 this type of destruction. We had 21 washout  
14 spots in the road that we have never had  
15 before. And I believe that is an indication  
16 that there is less wetlands between the Gulf  
17 of Mexico and the road itself to be a barrier  
18 and slow down that destructive wave action.  
19 So we just had waves beating into it. You may  
20 recall that Isaac kind of slowed down as it  
21 approached Grand Isle and that was the worst-  
22 case scenario for us.



1                   So 13,000 tons had to be hauled in  
2                   to repair the road. They just kind of did a  
3                   temporary repair. It is going to get some new  
4                   shoulders on it come February before next  
5                   hurricane season, because the states realized  
6                   that maybe with the shoulders being  
7                   blacktopped that will be additional protection  
8                   for the roadbed itself, under the two lane  
9                   which carries the vehicles.

10                   This is just another photo to show  
11                   that it actually in some places went all the  
12                   way to the centerline.

13                   Now this is actually south of Port  
14                   Fourchon where the road continues on to Grand  
15                   Isle, where the road really took a beating.  
16                   So for quite a while in Grand Isle, you could  
17                   only get in and out at very limited times  
18                   during daylight. The state had to close it.  
19                   They had to monitor traffic. But now it is  
20                   all back open.

21                   The reason again LA-1 is so  
22                   important is because America's busiest

1 intermodal energy port sits at the bottom of  
2 Bayou Lafourche right on the Gulf. That is  
3 Port Fourchon.

4           What you are looking at here is  
5 about two billion dollars of dock  
6 infrastructure. And at any time, you might  
7 have another billion dollars in vessels that  
8 are in the port. And you know, you have the  
9 Walmarts of the offshore industry with  
10 facilities that boats can back up under and  
11 can concurrently load groceries, waters,  
12 special fuels, drilling muds, pipes,  
13 everything you need to sustain life on one of  
14 these rigs that may have 250 people on it.  
15 And the efficiencies you get with that is that  
16 if you are having to lease these boats for  
17 \$30,000 a day, you certainly want that boat to  
18 be able to go into a port that in eight hours  
19 can concurrently load everything you need,  
20 rather than going to another port where the  
21 boat has to go to the public water dock or a  
22 pipe-loading dock or a mud-loading dock and

1 what not. That extra hours you spend at other  
2 ports may cost you 20 grand just on that one  
3 boat for one day. So when you multiply it  
4 times a fleet of 400 vessels servicing the  
5 deepwater Gulf, the efficiencies you get by  
6 utilizing Fourchon is tremendous and  
7 eventually that gets passed on to us as  
8 consumers because it is a little bit more of  
9 an efficient operation to service that  
10 offshore facility.

11 Fourchon is continuing to expand  
12 with new technology in the deepwater. They  
13 are building a new 7,000-foot slip here. And  
14 basically they dredge in open water and create  
15 the slip and they just pump the material in  
16 the sides to create the docks. And then they  
17 build industrial-type bulkheads that cost  
18 about \$7,000 per foot to construct.

19 They already have much of this  
20 leased out and they are two years away from  
21 bulkheading it. But there is, as I said, the  
22 technology is changing in the Gulf and there

1 have been some tremendous discoveries of  
2 domestic energy out there.

3 As a community, we know we need to  
4 protect Port Fourchon, besides securing the  
5 road that goes to it. And we are starting to  
6 -- Fourchon is right here, actually, and the  
7 bayou and Highway 1 comes down. The state and  
8 the Corps are going to begin building a  
9 headland project. That is a 13-mile dune  
10 along the coast. The port has done some  
11 interesting things in using old grain barges  
12 and providing breakwaters that have worked  
13 very effectively to protect the port right on  
14 the Gulf. In fact, when you fly over it in a  
15 helicopter and you see where the breakwaters  
16 are, you can see the beach comes out to that  
17 point. And where the breakwaters are not, it  
18 is just massive open water beyond that. So  
19 they are trying to protect the port in the  
20 most efficient way that they can.

21 The road also, as I mentioned,  
22 leads to Grand Isle, which on a weekend can

1 have anywhere from 20 to 25,000 people on it  
2 who go down to Louisiana's only inhabited  
3 barrier island. It plays a tremendous role in  
4 our offshore fishing industry. It also serves  
5 as a base for a few offshore companies. But  
6 the only way in and out to Grand Isle is  
7 again, LA-1. So LA-1 not only is important  
8 for this nation's energy security but it is an  
9 evacuation route as well for residents or  
10 workers at the port and for up to 10,000  
11 offshore workers.

12 And you know the challenge, when  
13 these storms come in, that the oil companies  
14 have to gauge is getting their people flown  
15 into Fourchon to get their cars, drive it  
16 north on LA-1 before the road is inundated to  
17 the point that the saltwater just comes into  
18 their cars and they get trapped.

19 We have had some storms where the  
20 evacuation was a little late. People just had  
21 to be flown further in and we had several  
22 hundred cars that didn't make it out and

1 unfortunately were ruined by saltwater.

2           You know when we tell our story in  
3 Washington, we felt we needed a federally  
4 authored study to have the government  
5 understand the criticality of Louisiana  
6 Highway 1. So the Homeland Security sent down  
7 a crew from their NISAC lab out of New Mexico,  
8 and that is the National Infrastructure  
9 Simulation Analysis Center, and they have  
10 these economists that say, "What if this road  
11 got washed out and we couldn't get to Port  
12 Fourchon for 90 days?" Because it would take  
13 90 days to build another road capable of  
14 handling 600 18-wheelers a day that go to  
15 Fourchon to bring commodities for the offshore  
16 drilling industry. What would that cost the  
17 nation? How would the energy market react?

18           Oil companies, what would you do  
19 if your road got washed out? Well the Shells,  
20 the BPs, the Chevrans said, look, you know if  
21 that kind of storm came in that did Katrina or  
22 Rita damage and additionally washed out LA-1,

1 we would just shut down all our exploration  
2 and repair the rigs that may have been damaged  
3 during the storm because we are under BOEMRE's  
4 eye to get those structures repaired so there  
5 are no leaks, of course, and there are no  
6 spills. But what that does is that would put  
7 off exploration and royalties to the federal  
8 government ten years down the road for quite  
9 some time.

10 Because when you are exploring and  
11 you lease these leases in the Gulf, it may  
12 take ten years for Shell to get the first drop  
13 of oil out of a lease that they have. And the  
14 government is counting on these royalties down  
15 the road, so it backs up royalties.

16 Basically, they said there would be a \$7.8  
17 billion loss of GDP if we had Louisiana  
18 Highway 1 shut down for 90 days. And you  
19 know, that is from a reduction in 160 million  
20 barrels of oil and 320 billion cubic feet of  
21 natural gas.

22 And you know, they looked at all

1 the other ports and say well, some people say,  
2 "Well, move Fourchon. Go further inland."  
3 Well, you just can't move \$2 billion of  
4 infrastructure. You know, no coastal city has  
5 that kind of money to invest right now. You  
6 know, the environmentalists would scream and  
7 say, well, we don't want all those boats at  
8 our port or coming further inland. And  
9 besides, there is only 25 percent of the crane  
10 capacity at Fourchon in all the other ports  
11 combined along the coast. You need a certain  
12 type of crane capacity to service oil and gas.  
13 It is not a container-type crane. You need a  
14 certain type of cranes that can load drill  
15 pipe, specialized containers and what not.

16 We also engaged NOAA to do an  
17 inundation study of LA-1. And really looking  
18 at with subsidence occurring in our area at  
19 about 9.24 millimeters a year and looking at  
20 the elevation of LA-1, and it has some low  
21 spots, but when the low spots get inundated,  
22 state police say, "We are closing it." It is



1 just too dangerous, because you can't tell  
2 where the road is and where the marsh is and  
3 vehicles would just drive off at an alarming  
4 rate.

5 So they looked at the lowest five  
6 percent elevation of the road, and I really  
7 want to compliment Tim Osborn and Steven Gill  
8 at your CO-OPS division for saying, okay, we  
9 have to get this out of the lowest five  
10 percent from the state, from the most recent  
11 technology that they have, and then we will  
12 tell you from our tidal station at Grand Isle  
13 how much of that road will be underwater as a  
14 percentage of time by the year 2030 and by the  
15 year 2050. They also did 2100. But even by  
16 2027, which is not far away, LA-1, just from  
17 high tides, will be closed six percent of the  
18 time. Now that is no hurricane shutdowns. So  
19 that is going to be closures where we are  
20 going to have 18-wheelers backed up in the  
21 city of Golden Meadow waiting to go down to  
22 Fourchon because of high tides. Okay? They

1 said you really need to get your road built  
2 before 2050 because by then the old highway  
3 that is at two feet above sea level is going  
4 to be closed 55 percent of the time.

5 So we used this data in Washington  
6 to try to educate members of the Commerce  
7 Committee, Energy Committee, all the relative  
8 House committees, to support building and  
9 completing the elevated highway. We have also  
10 benefited by the newest GPS surveying  
11 equipment that has looked at LA-1 and what  
12 they have discovered is that we have lost an  
13 entire foot in the last 20 years. So that is  
14 pretty substantial and that is probably  
15 because Bayou Lafourche, when it was an  
16 operating distributary of the Mississippi,  
17 before it was cut off from the Mississippi  
18 would have sediments deposited every year.  
19 When the river flooded, Bayou Lafourche would  
20 flood. And now that that has been cut off, we  
21 too are drawing out and just compacting and so  
22 we are sinking at that same rate of a foot

1 every 20 years.

2 And that kind of goes in line with  
3 what you all may have discussed, the Entergy  
4 \$4 million study which looked at Entergy's  
5 infrastructure along the coast. And their  
6 conclusions basically said, yes, we are going  
7 to have a meter of sea level rise by 2100. We  
8 are going to see, of course, higher  
9 temperatures in the Gulf of Mexico, intense  
10 storms and everything is pretty well  
11 clarified. Now it is a matter of seeing how  
12 we are going to deal with this, how we are  
13 going to finance the hardening of our  
14 infrastructure.

15 We have also really benefitted  
16 from the National Hurricane Center's work with  
17 our community and the National Weather  
18 Service. And, you know, Tim asked them just  
19 to look at LA-1, look at Port Fourchon and to  
20 model out what kind of water elevations we  
21 would have for a typical tropical storm coming  
22 in now. And after they modeled thousands of

1 storms, they said, "What you need to know is  
2 that on average you are going to have three  
3 feet, 2.8, 2.9." And this is that levee area,  
4 so this is the area we are concerned with.  
5 But when you have 2.9 feet of water and your  
6 highway is only at 2.2, that means you had  
7 better plan early at getting people out. You  
8 know, the people that live in Grand Isle who  
9 are residents, people who are flying in from  
10 offshore who are coming to Fourchon to pick up  
11 thousands of cars, you have got to get them  
12 out early, too, before the road is simply  
13 impassable.

14 Kind of good news on our project  
15 is that we have half of the 19 miles of needed  
16 bridge built. We started building from the  
17 coast in Port Fourchon going north and it  
18 includes a new Leeville bridge over Bayou  
19 Lafourche. We crossed over from the east side  
20 to the west side here, but we are still  
21 challenged at trying to raise \$320 million to  
22 build the last eight miles that will go north

1 and cross over the U.S. Corps levee up in  
2 Golden Meadow. We have had to bring in the  
3 Corps with the state and negotiate how will  
4 this roadway cross over the levee, a Corps  
5 levee that the Corps is in agreement with. And  
6 knowing if Congress ever approves our levee  
7 system, getting funding to protect us from the  
8 100-year storm, it would have to be built up  
9 to 26 feet, like New Orleans' levees. Right  
10 now we have 50-year protection down there. So  
11 we are at a 13-foot high levee. I think 15  
12 now. They have just raised it a little bit.

13 But anyway, end result, we are  
14 going to cross over that levee at 28 feet, so  
15 that if we do get congressional money to raise  
16 the levee at a future date, it won't be an  
17 issue. And we are trying to plan ahead for  
18 that.

19 What we have built, we are making  
20 sure that it can withstand those 100-year  
21 storm surge forces. FEMA down in this area in  
22 Leeville, this is the new Leeville Bridge

1 going over Bayou Lafourche right here. That  
2 is the top of the bridge. They said, look,  
3 you know, the new FEMA flood maps for your  
4 area said you would get a surge of 14 feet and  
5 the state said, well, look, we are going to  
6 make sure that the bridge minimally on most of  
7 it clears 17 feet. So the bottom of the  
8 bridge structure clears 17. Your tires  
9 actually ride at 22. And we wanted to do that  
10 to make sure that when that storm surge of 14  
11 comes in, you generally have some wave action  
12 on top of that, that the structure wouldn't  
13 get impacted by that wave action.

14 And they said look, we also want  
15 to make sure that it can withstand collisions  
16 from boats that might get loose at Fourchon  
17 and float into the bridge structure. Because  
18 Federal Highways was conscious that that barge  
19 went through the levee by the Industrial Canal  
20 in New Orleans and they said, you know, with  
21 all the marine activity you have, we want to  
22 make sure that's not an issue here.

1                   So some of these pilings go 160-  
2                   180 feet down to make sure we reach the sand  
3                   levels that could withstand those forces for  
4                   the structure itself.

5                   And from Leeville, we just opened  
6                   last year this section for about \$150 million  
7                   and that goes down to Port Fourchon. Here you  
8                   can see some of the fishing camps. The port  
9                   is a little bit more this way. And this is  
10                  the LOOP booster station. But our community  
11                  is tolling itself for all of this. We knew  
12                  that if we wanted to preserve the 2,000 jobs  
13                  at Port Fourchon and we would be asking our  
14                  state for money and the federal government for  
15                  money, that we would have to chip in  
16                  ourselves.

17                  We always show everyone how the  
18                  new structure performs in relation to the old  
19                  structure. And this was when Ike was passing  
20                  about 160 miles offshore and going for a Texas  
21                  landfall. It was still pushing a lot of water  
22                  inland. In fact, we had some of the highest

1 water for Ike than we had for any storm.

2 At that time, we had about 400  
3 utility trucks repairing the Gustav damage  
4 from three weeks before. Gustav hit Fourchon  
5 head-on. And it was moving very, very fast.  
6 It didn't do a whole lot of damage. The port  
7 is pretty resilient, but a lot of the power  
8 poles were down and they were repairing that.  
9 And they actually lost one power truck that  
10 day when evacuating. There were a lot of out  
11 of town drivers and they just weren't real  
12 sure about where the road was versus the  
13 wetlands.

14 So we have kind of put in \$370  
15 million into the project from different  
16 sources. The biggest source has been bonds  
17 our community sold, and we took out a federal  
18 TIFIA loan, which is Transportation  
19 Infrastructure Finance and Innovation Act.  
20 And our tolls for 30 years are going to pay  
21 back the private bonds we sold, then it is  
22 going to pay back the TIFIA loan to the U.S.



1 Department of Transportation.

2           You know we wanted to use the  
3 newest kind of tolling system. And I know you  
4 all are from all over the country, so we are  
5 using open road tolling. That way, we don't  
6 have to pay attendants and have a staff of 18  
7 people to keep up toll lines and all of that  
8 stuff. So it makes it -- by law, every penny  
9 of our tolls go to the bonds. Nothing goes to  
10 the structure. The state has agreed it is  
11 going to maintain the structure for the life  
12 as just part of its state maintenance program.

13           And our challenge in building the  
14 rest out, the 320 million starting up at  
15 Golden Meadow where the levee is, we are going  
16 to have to break it up because there is not  
17 even a federal program that we can apply to to  
18 get money to build this right now. All of the  
19 stimulus monies have been expended. I don't  
20 know that the U.S. Department of  
21 Transportation will have any more programs  
22 with the cutbacks coming out of Washington.

1                   And it is kind of interesting.  
2           You know, we will meet with the Interior  
3           Department and they say well LA-1 is  
4           absolutely vital to servicing the deepwater  
5           Gulf of Mexico and we will go to Congress and  
6           say it really needs to be built but we have no  
7           money. And go to Homeland Security and  
8           Homeland will say it is absolutely vital. It  
9           is on our critical asset prioritization list  
10          but we have no money to help you. Go to the  
11          Department of Energy. And the Department of  
12          Energy says it is absolutely vital. We  
13          monitor it for every hurricane and monitor  
14          LOOP and what is going on with the flow of oil  
15          but we can't help you. Go to the Department  
16          of Transportation. And the Department of  
17          Transportation says sorry, you are not part of  
18          the interstate system. We really have no  
19          obligation.

20                   So you know, our goal needs to be  
21           try to get these agencies, including NOAA when  
22           the Department of Transportation values future

1 grant programs to go and say we all have a  
2 working stake here, five federal agencies that  
3 need a functioning and secure highway for the  
4 betterment of the nation's energy security and  
5 we would recommend you fund it.

6           So we are going to try to get 45  
7 million. We are going to build our first leg  
8 and that would allow us to back up 18-wheelers  
9 and deliver piling for cranes that are going  
10 to be mounted on temporary pilings. In our  
11 environmental impact study we agreed with all  
12 the environmental agencies to build this in  
13 the most environmentally friendly manner with  
14 end-on construction. In fact, I have a photo  
15 of how that is built. That is how we built  
16 the southern leg of it. So basically they  
17 come in with temporary pilings. They put  
18 tracks on it similar to a train track and then  
19 cranes continue building down and other cranes  
20 build the highway under the actual cranes.  
21 And all of that comes up when you are done and  
22 you are left with a structure. The benefit is

1 you don't have to dig a construction canal for  
2 miles that would bring in more salt water  
3 intrusion into our coast. I mean, we don't  
4 want that. So we are happy to build it this  
5 way, it is just very expensive. It is \$40  
6 million per mile and we have eight miles left  
7 to build.

8           And as a coalition, I kind of look  
9 at all the funding opportunities that we  
10 possibly can. We are, of course, asking our  
11 own state to make this investment. We are  
12 even getting the oil companies to contribute.  
13 We actually had a six million dollar match on  
14 the last federal grant application because the  
15 U.S. Department of Transportation said you  
16 know the oil companies are making a killing.  
17 They ought to help with this road that is  
18 eventually going to help them. So the six  
19 million dollar match didn't win us any TIGER  
20 funds.

21           We are looking, though, at RESTORE  
22 Act monies. And as you know, the RESTORE Act

1 allows for some investment of infrastructure,  
2 if it has been agreed upon by that particular  
3 state. We are looking at U.S. Department of  
4 Transportation projects of national and  
5 regional significant future grant rounds but  
6 those will probably only be 500 million for  
7 the nation. Well that is ten million per  
8 state. That is nothing. We would need three-  
9 fifths of the nation's entire allotment just  
10 to finish this.

11 We are looking at future OCS  
12 royalty-sharing funds because in 2006 there  
13 was federal legislation that says that the  
14 federal government will share some of the  
15 royalty funds with the Gulf Coast states and  
16 we are looking at any future energy and job  
17 tack bills, too. I mean, there has been some  
18 talk about maybe opening up other areas of the  
19 OCS, since we can drill safely. And having  
20 those monies maybe go to an infrastructure  
21 fund that all 50 states can apply to. So that  
22 could win some support, I think, throughout

1 Congress.

2           And you know, we try to keep all  
3 key people just informed on the vulnerability  
4 of LA-1. Lisa Murkowski has been down there  
5 quite a bit. She and Senator Landrieu have  
6 similar issues, being coastal states, they  
7 both have oil production off of them. And she  
8 was at a discussion earlier this year talking  
9 about climate change. So I am encouraged when  
10 even Republicans are talking about climate  
11 change. And she has been to Fourchon several  
12 times. She knows it needs to be looked at and  
13 we appreciate her speaking up for it.

14           We also know it is all about  
15 planning for the future. Planning  
16 infrastructure that can withstand climate  
17 change, future storm surges. And Nancy Sutley  
18 with Federal Adaptation Strategy has talked  
19 about that, about making sure that knowing  
20 things are going to look very different, we  
21 have to plan for that.

22           Now we realize between our levee

1 system in Golden Meadow and the 19 miles going  
2 down the Fourchon that Port Fourchon may be  
3 Fourchon Island in the future because our  
4 wetlands in-between are disappearing. So  
5 again, we have to plan for a very strong  
6 elevated highway that can service this nation  
7 for years to come.

8 And I just wanted to close out. I  
9 mentioned to Margaret on the break the  
10 conference said they wanted us to identify if  
11 there were any outstanding issues with our  
12 communities that NOAA can maybe help on. And  
13 as we are southwest of the city, Bayou  
14 Lafourche is in-between two of the nation's  
15 most quickly disappearing basins, the  
16 Barataria Basin and the Atchafalaya Basin.  
17 And our most efficient tools we think to  
18 restore those wetlands will be fresh water  
19 diversions. Because fresh water builds these  
20 lakes that have died from salt water intrusion  
21 and gets them flourishing again. Flotons  
22 material grows in them. It becomes decayed

1 matter in winter and it starts a process of  
2 bringing that back to life.

3 We have been trying to get Davis  
4 Pond operated at a greater level than 30  
5 percent of its capacity for years. And we  
6 have struggled with that. But now the Corps  
7 back in 2007 in the WRDA bill we were able to  
8 get them money funded to look at changing how  
9 it is operated. And the issues that has come  
10 up at the public hearings quite often is that  
11 National Marine Fisheries says well you know  
12 if we put too much fresh water, then it is  
13 going to change the fisheries, the salt water  
14 fisheries, in particular, the oysters that  
15 have come further up in the basin than they  
16 were 75 years ago. Well they have only come  
17 further up because our marshes are dying. It  
18 is converted to open water and we are getting  
19 salt water.

20 So I think we just need help from  
21 NOAA leadership looking at how strong does  
22 National Marine Fisheries' comments matter.



1 If you are talking about well we are just  
2 going to keep it the same and let everything  
3 die off or are we going to rebuild those  
4 wetlands with fresh water? We have to decide  
5 if we value the fisheries over the  
6 sustainability of communities that need the  
7 wetlands rebuilt.

8 And you know, those fisheries are  
9 going to change. Davis Pond has made some  
10 changes in the Barataria Basin. Right at the  
11 beginning of it, it has turned to a great  
12 fresh water fishing area. People are catching  
13 incredible bass, crabs, you name it. So  
14 certainly we have to trade off some things.

15 But we would just ask NOAA to look  
16 at that very hard as we move forward with  
17 Louisiana's coastal plan and whatnot. This  
18 just kind of shows how the fresh water  
19 diversion comes in and they know that salt  
20 water lines were going to be pushed further  
21 south of 15 parts per thousand when the  
22 structure was opening but it is only run at 30

1 percent. So we have to move beyond just  
2 saying we are just going to keep it the same  
3 because of some of the fisheries issues. As  
4 a society we need to say we need to value the  
5 culture and the communities' long-term  
6 sustainability maybe over some select  
7 fishermen. And look you know, we could  
8 relocate those oyster leases further south  
9 right on the coast down by Grand Isle where  
10 they were 75 years ago. You never had oysters  
11 that far in.

12 So to me, it is common sense but I  
13 know it is tough to move things. We are  
14 having the same type of issue with National  
15 Marine Fisheries on the west side of Bayou  
16 Lafourche and I have a picture of that  
17 project, I think. Well, I don't.

18 But anyway, it is just something  
19 we would like you all to consider. And I am  
20 happy to answer any questions but I want to  
21 thank NOAA for partnering with our community.  
22 We are very rural. We are not incorporated.

1 We would never have been able to get the  
2 resources to do the inundation study that CO-  
3 OPS did, that CO-OPS partnered with Homeland  
4 Security to do on LA-1.

5 And I also, on behalf of Fort  
6 Fourchon, the Executive Director wants me to  
7 thank NOAA for their post-storm activities of  
8 coming in and surveying the channels so that  
9 commerce could get back up and running. I  
10 mean, they were down there I think a day after  
11 Isaac. Tim drove the road and couldn't see  
12 where the road was but he knows it by heart.  
13 Thank you all for all you do for our  
14 community.

15 (Applause.)

16 CHAIR WELLSLAGER: And finally,  
17 Dr. Mitchell.

18 DR. MITCHELL: My name is Jim  
19 Mitchell. I am the IT GIS Manager at the  
20 Louisiana Department of Transportation and  
21 Development. Oh, you've got my first slide up  
22 already. I was going to go to my title

1 screen. Oh well, we will forget that part.

2 Anyways, our Department is  
3 responsible, according to Louisiana Revised  
4 Statute 48:36 for the Louisiana Topographic  
5 Mapping Program as well as the Geodatabase of  
6 Louisiana and Geographic Names Authority. So  
7 my approach here, my discussion today is going  
8 to be primarily about how I use GIS data. And  
9 Tim gave me the title, so I had to figure out  
10 some lessons learned.

11 I have been working -- well, let's  
12 go back to the background a little bit more.  
13 My Ph.D. is from Duke University in hydrologic  
14 modeling. I went from there to the Kansas  
15 Geological Survey in Lawrence, Kansas at the  
16 University. I did a lot of groundwater  
17 modeling and hydrologic modeling there. From  
18 there I went to the Department of Natural  
19 Resources in Louisiana, where I worked in the  
20 GIS Lab. And then after that I was at the  
21 Department of -- well it was the Institute for  
22 Environmental Studies at LSU in the

1 Environmental Planning and Management Program  
2 as a professor. Most of this work that I have  
3 done in the past has really been hydrology.  
4 So a lot of this stuff is kind of second  
5 nature to me, although my primary  
6 responsibilities now are geographic  
7 information systems and the use of geographic  
8 information systems we are going to talk about  
9 today relate to emergency operations and  
10 response kind of stuff with the Department.

11 My background in that regard goes  
12 back to I guess 2002 was my first hurricane  
13 season in the Department. Hurricane Isidore,  
14 Hurricane Lili, that is what I cut my teeth  
15 on. Every year we had hurricane drills and  
16 destroyed New Orleans. So when it came time  
17 for Katrina, we executed the largest  
18 evacuation of a major metropolitan area in  
19 history with our contra flow operation, moving  
20 almost four million people out of New Orleans  
21 before the storm. So we are going to talk a  
22 little bit about roads and elevations and some

1 of those experiences.

2 All right, so where is zero and  
3 where did it come from is really the essence  
4 of the problem here when we are talking about  
5 roads and elevations and how we assess risk  
6 and make decisions for emergency operations.

7 Oh yes, another thing by the way,  
8 it was my team that worked on all of the maps  
9 and the development of the emergency  
10 evacuation plan for Louisiana. So the various  
11 phases for moving people, there is a half a  
12 million people -- well, when we did the plan  
13 it was maybe a little bit more. Excuse me,  
14 50,000 people south of the Intracoastal  
15 Waterway living in -- 50,000 households,  
16 excuse me. There is a million between the  
17 Intracoastal Waterway and I-10 and there is  
18 another million in the Lake Pontchartrain  
19 Basin itself. So we used a lot of geographic  
20 information, systems information to do those  
21 analyses and put together that evacuation  
22 plan. Again, we were really very successful.

1                   But the issue with zero has always  
2                   intrigued me. There is all kinds of zeros  
3                   floating around in datasets. I am using data.  
4                   So you know in an emergency, you don't have a  
5                   whole lot of time to read through all the  
6                   information about the data. I am trying to  
7                   get data where I can find it. Hopefully, it  
8                   is good data. We have to do some kind  
9                   assessment on the quality of the data. But I  
10                  have got datums. We have talked about NGVD29,  
11                  NAVD88. We have got ellipsoids and geoids and  
12                  spheroids and all that kind of stuff. And we  
13                  have got a whole bunch of engineers and  
14                  surveyors that grow up and learned about  
15                  benchmarks and all they think about are  
16                  benchmarks.

17                         So how do we reconcile all that  
18                         stuff when I am looking at data and I have  
19                         decision-makers that are asking me about when  
20                         a road is going to flood or some other  
21                         operationally-significant situation.

22                         Until we understand that, we are

1 in the dark. We really don't know whether a  
2 road is going to flood. I get questions like  
3 find out for me how much of the road is going  
4 to be three-inches deep, six-inches deep,  
5 nine-inches deep, three-inch increments up to  
6 two feet and then every foot after that. And  
7 if we don't know where zero is, we really  
8 can't answer those kinds of questions.

9 So the issue of getting road  
10 elevations is -- did we get to the right place  
11 here. I'm sorry. I'm switching all over the  
12 place on this thing. All right.

13 So road elevations and topics  
14 related to that are really important issues  
15 for us because we talked about it in some of  
16 the earlier presentations. We need to make a  
17 decision on when this road can be opened for  
18 an evacuation, when do we shut it down for an  
19 evacuation. We have thousands of people down  
20 on Grand Isle for the Tarpon Rodeo and we got  
21 a tropical storm somewhere in the Gulf, maybe  
22 headed this way, maybe not. How do we make



1 those kind of decisions? When do we alert the  
2 local officials? When do we work with the  
3 state police? Of course when we have got the  
4 big storms and stuff, we have got the whole  
5 issues of contra flow.

6 This is the LA-1 corridor we  
7 talked about. So we have surveyed information  
8 along the highway that we have collected. We  
9 know the road elevations on a series of points  
10 that are maybe ten, fifteen, twenty feet  
11 apart. If we know the elevation of the water  
12 that is expected to be on that piece of  
13 highway, we can make a decision. And it is  
14 not, again, just the elevation but when that  
15 elevation is going to be reached.

16 So this is the bridge is down  
17 here. We run across it to Grand Isle over  
18 here. And all these people that are on this  
19 island are going to have to go out through  
20 here. All the Port Fourchon folks, which have  
21 a little bit higher elevation here, are going  
22 to have to get across. And everybody goes up

1 through Golden Meadow and hopefully gets to  
2 high ground in time not to have to deal with  
3 cars being inundated or loss of life or other  
4 issues that are really very important.

5 And we are in the process of doing  
6 these things, working with the guys at NOAA,  
7 on the phone with Tim getting emails and  
8 messages from Tim. I have spent a number of  
9 long nights talking with people like Will  
10 Schaffer and Stephen Baig who are now retired.  
11 But I worked with storm surge modeling and  
12 storm tracks and that kind of stuff, trying to  
13 figure out where we make our next move. We  
14 are doing all that stuff well ahead of the  
15 storm and we are working with forecasts.

16 Well, we will get to the next  
17 slide here, I think. All right. So, how do  
18 we determine whether a road is going to be  
19 flooded? What is the risk on this road? We  
20 got the road elevations. We have tide gauges  
21 and we have stream gauges in some of the  
22 different water bodies. Remember, think about

1 that map. You have got these stretches of  
2 elevated areas going down through the marsh.  
3 Surrounding them are bodies of water. So  
4 there are a number of devices that monitor  
5 these things out there. USGS stream gauges,  
6 NOAA tide gauges, Corps type things.

7 We also have as a storm starts to  
8 focus on what it is going to be, we have the  
9 MOMs, the mother of all MEOWs. That is sort  
10 of the worst-case scenarios you might get. So  
11 we know what we think the storm speed might  
12 be, fast or slow. We may have an idea of what  
13 the timing is. So whether it is a high tide  
14 or low tide kind of thing, we have an idea of  
15 the category of the storm they expect when it  
16 is coming and we can start planning on what  
17 kind of inundation we might experience.

18 The MEOWs, the maximum extent of  
19 water, those are, again, pre-calculated data.  
20 Those are a little bit more focused on a  
21 particular type of storm and storm condition.  
22 So as we get a little bit more idea as we are

1 coming in, we are not getting real-time  
2 forecasts of what is going to happen but we  
3 have an idea of what kind of storm we are  
4 going to get so we can get an idea of what  
5 kind of flooding we are going to get from  
6 these.

7           And by the way, as I went back and  
8 looked at some of these things for the Isaac  
9 storm, the big category one storm that nobody  
10 thought was going to flood a whole heck of a  
11 lot, and in fact the MOMs showed that a lot of  
12 the areas that got flooded that nobody thought  
13 it would ever flood in a category one storm,  
14 were floodable areas. So these are very  
15 useful tools that we have before we have any  
16 real information about a storm.

17           And of course, then when we get  
18 the operational forecasts that come in as the  
19 storm is actually reaching the window of time  
20 when we are working on this stuff and then we  
21 have got wave action. So how high is that  
22 storm? Army talked about it. We have got a

1        tide sitting on top of that. We have got a  
2        storm surge sitting on top of that. We have  
3        got some wave action. And that is going to  
4        give us an idea of what is happening in terms  
5        of the risk to the road.

6                    But all these things to make this  
7        work have to be in the same reference frame.  
8        And the problems that we run into all the time  
9        in trying to use data in real time, making  
10       real-time decisions during an emergency  
11       operation is that tide gauges and stream  
12       gauges might be sitting in NGVD29.

13                   Some of the MOMs and MEOWs, I  
14        think they are moving. Everything now will be  
15        NAVD88 by next hurricane season. I think we  
16        had one left in 29 this year. So we have got  
17        issues of things aren't quite matched up in  
18        terms of datums.

19                   During Isaac we had an issue where  
20        the Pearl River was crossing I-10. The Pearl  
21        River is the border between Mississippi and  
22        Louisiana. There were some issues north of

1 that, where there was a potential lock and dam  
2 breach. We had water approaching the I-10  
3 abutments. They wanted to build a berm high  
4 enough to make sure that we had enough  
5 protection on that so that I-10 would not get  
6 flooded by the Pearl River and they are asking  
7 me for elevations. You know, I get a call on  
8 a Saturday night, "Hey, how high is that  
9 road?"

10 So we have some of that survey  
11 data and we go out and get that and we find  
12 out that the survey data is an ellipsoid  
13 height, so they are minus 20. I know that  
14 road ain't minus 20. That road has got to be  
15 at least above sea level because it is not  
16 flooded all the time. So we had to go in and  
17 do some manipulations and calculations and try  
18 to address that.

19 The gauge that they were looking  
20 at upstream from the USGS was in NGVD29 and we  
21 actually found some sort of a CO-OPS gauge  
22 that NOAA and the local parish had actually on

1 the bridge structure that we were concerned  
2 about and started talking to the engineers  
3 from the parish and I am getting elevations  
4 from that in real-time over the internet.  
5 Really cool stuff -- important stuff. But the  
6 numbers were just a little off in terms of the  
7 numbers that I expected to have in that area.  
8 And when I asked the people from Saint Tammany  
9 Parish well what is the datum, all they could  
10 tell me is well, it is geoid `09. Well, that  
11 is actually really not a datum and all of my  
12 stuff is in NAVD88.

13 So one of the things here is that  
14 all of our elevations -- I think we get lesson  
15 number one here. Where are we? Lesson number  
16 one is it is all about elevation. Okay? I  
17 borrowed that phrase from the presidential  
18 campaign of 20 years ago. It is elevation.  
19 I need to know an elevation. I need  
20 everything in elevations. I need them in the  
21 same datums. I don't need to spend a lot of  
22 time trying to figure these things out when I

1 get a call on Saturday evening and the guy is  
2 saying I need to build a berm in the next hour  
3 or two before the river rises high enough to  
4 flood the interstate. I need to know this  
5 stuff now. So I need to get elevation  
6 information for storm surges. I need to get  
7 elevation information from real-time sensors.  
8 I need to get elevation information from all  
9 the federal agencies and state agencies that  
10 are collecting data all in the same datum, so  
11 I don't have to play this mix and match game  
12 that goes on.

13 Information on flood depth is  
14 useless to me. We ran into this during the  
15 Atchafalaya flood in 2011. The Corps of  
16 Engineers provided everybody with a nice GIS  
17 data set of flood depth. I can't take flood  
18 depth and compare it against my road  
19 elevations and find out what the actual depth  
20 is going to be on that road because the flood  
21 depth sits on top of my road. It has no  
22 datum. So the information that comes out to



1 me, operationally, I need to have elevation  
2 data. The flood depth and above-ground level  
3 type information is useless to me.

4 It might be useful to tell the  
5 public that well, this area is going to be  
6 five feet deep in water. Well if that guy is  
7 sitting on a ten-foot high local high, he is  
8 going to be out of the water. If he is in a  
9 local low spot, he is going to be ten-feet  
10 deep. So above-ground is not a very useful  
11 thing for operational purposes at all and I  
12 really think it is marginally useful for the  
13 general public. And then of course the whole  
14 issue of processing the data. The data needs  
15 to be ready to use. It needs to be actionable  
16 data.

17 So I want to talk now about some  
18 of the geospatial data that we have to deal  
19 with because it is not just the forecast  
20 coming in but I have got to have something to  
21 throw the forecast on top of in my GIS to do  
22 the analysis. And this is an example of some

1 of the discrepancies in the data that exists.  
2 This is southwest of the mouth of Mississippi  
3 River, Shell Island. Some of you may  
4 recognize that location. The stuff in blue  
5 here is water. Right, blue is always water on  
6 a map so that is easy.

7 The stuff in orange are what the  
8 NOAA T-sheets show as land. It is really now  
9 water. So the NOAA T-sheets are showing us  
10 land here that really doesn't exist.

11 And you see some of the red stuff  
12 up in here, that is the National Hydrography  
13 dataset, which is the official hydrography  
14 data that is collected and maintained by the  
15 U.S. Geological Survey. Actually we are the  
16 ones, the state are the ones that are  
17 collecting and updating that and the database  
18 is maintained by the U.S. Geological Survey.  
19 That is the red stuff up there.

20 So there is a major discrepancy in  
21 the data that we see on our maps and what is  
22 really out there on the ground.

1                   Here is another example of the  
2                   same thing. The yellow polygons that you see  
3                   here would be mapped as land in I think that  
4                   is the USGS -- there is a line graph, a  
5                   100,000k product. The imagery behind it is  
6                   probably about ten years old now and you can  
7                   see those features just really don't match  
8                   now. It is probably worse. But those are the  
9                   kind of data that get put into our geographic  
10                  information systems and that analysts are  
11                  using to try to analyze whether coastal  
12                  restoration projects are working or what needs  
13                  to happen in a particular area in terms of  
14                  restoration, what is going on in terms of  
15                  flooding, what is going on in terms of  
16                  planning, channels, all kinds of things.

17                  All that stuff, if it is built on  
18                  old data -- the average map in Louisiana --  
19                  the average quad map in Louisiana is something  
20                  like 22 or 23 years old and they are just  
21                  getting older because the USGS isn't replacing  
22                  them but people continue to use those.

1 All right, so the key here is that  
2 I am going to use this information to do a  
3 geospatial analysis and it is just not good  
4 enough to support the kind of applications  
5 that I have to answer some decision-maker's  
6 question.

7 All right so, lesson number two.  
8 Maps and pictures, imagery are static things.  
9 The world changes. As soon as you take that  
10 picture or as soon as you make that map,  
11 something happens. Highways are terrible.  
12 Roads are terrible. People are building roads  
13 all the time. People are changing roads all  
14 the time. But the natural environment is  
15 dynamic also. So we get a storm that comes  
16 through. We have so many features. I have  
17 been working with Tim and Meredith Washington  
18 at NOAA on trying to look at features on  
19 navigation charts that are no longer there.  
20 Things have changed in the coastline but they  
21 haven't changed on the maps. So if we are  
22 using old maps, we are not seeing what is out

1       there.  So we are going to execute search and  
2       rescue activities.  We are going to execute  
3       recovery activities.  I got a question, when  
4       the Deepwater Horizon came out, from our  
5       operations folks.  Well, how many miles of  
6       coastline do we have?  You know, we need to  
7       calculate something about how much damage or  
8       whatever.  I had numbers that ranged from 396  
9       miles, that was the one I think the governor  
10      was using, to 23,000 miles, depending on how  
11      you defined what the coastline was.  And that  
12      just changes all the time.

13                So GIS data is a little better, if  
14      it is kept up-to-date.  But a lot of that GIS  
15      data came off of a lot of the old maps.  That  
16      is just an issue that we have to deal with.  
17      You get a lot of aerial photography and  
18      imagery during storm events and emergencies.  
19      But you know what?  It is just a picture.  All  
20      I can do with my GIS in that picture is tell  
21      you how much red, green, and blue there is on  
22      any dot.  I can't tell you that that dot is a

1 road, a high spot, a low spot, a tree, water,  
2 anything else, until some kind of analysis is  
3 done. And there is an awful lot of analysis  
4 to be done to turn picture information,  
5 imagery information into actual data.

6           The next lesson: practice makes  
7 perfect. So we do drills. Again, we did  
8 drills. We destroyed New Orleans for four  
9 years in a row before Katrina ever hit and  
10 that helped us develop all of our data flow  
11 skills. I put together websites. We had the  
12 whole storm approaching. We had the tracks.  
13 We had the wind rings. We had all of that  
14 information so it was just like a real-live  
15 storm event.

16           And I should give NOAA some kudos.  
17 During hurricane season starting, actually it  
18 was a little bit earlier this year, but the  
19 first of June all the way through the end of  
20 this week, every morning I checked the  
21 tropical weather outlook. I look at what is  
22 happening. If there are things that are going

1 on with something that is going to affect  
2 Louisiana or the Gulf, I will send a message  
3 out to, I don't know, about 300 people are on  
4 my list now to tell them hey, just be aware  
5 that there is stuff going on. If an event  
6 actually happens, if a storm comes up, a  
7 tropical depression, I am looking at HURREVAC.  
8 I'm pulling in the HURREVAC information and I  
9 am following the storm tracks. I am providing  
10 that information as graphical links to people  
11 that include folks all over state government,  
12 the private sector, people even outside of  
13 Louisiana that are interested in this stuff.  
14 And all of that situational awareness stuff  
15 contributes to responding and being aware that  
16 stuff is going on.

17 The drills are really important,  
18 again, for developing all of those workflows  
19 and understanding what works and what doesn't.  
20 You need to involve everybody in these drills  
21 so that you have the whole process worked out.  
22 The decision-makers need to know where their

1 data is going to come from. The people that  
2 are handling the data need to know where the  
3 data is going to go. They need to find the  
4 data. They need to be able to work on these  
5 things together.

6           And another really important part  
7 of it, when we used to do our drills -- we  
8 actually haven't done a drill, by the way,  
9 since Katrina. But all of our drills before  
10 Katrina we had the Coast Guard in there, the  
11 state police, GOHSEP, all the people that had  
12 a role to play were all invited to participate  
13 in this thing, Port Fourchon including, by the  
14 way. And we would do this thing all over the  
15 web. So it would be like a live fire kind of  
16 situation and we would script the whole thing  
17 out. And we brought Jay Grimes in, the local  
18 weather guy, right? And he was our master of  
19 ceremonies. He was sort of here is the next  
20 step in this process and we sort of take a  
21 whole day and run through the thing.

22           So it is really important to



1       involve all the different agencies that are  
2       doing work that contribute to your emergency  
3       response so that you can work out all those  
4       little things about how you trade data back  
5       and forth. We have so many better ways to do  
6       this today than we did ten years ago when I  
7       first started this stuff.

8                       We are talking about emergencies.  
9       Really, they are fascinating things. I was  
10       never involved in this stuff as a missionless  
11       academic when I was at LSU. You know, we just  
12       got to watch it and talk about how we could  
13       make it better or how we could get a grant to  
14       fix something. But in an emergency operation,  
15       you have all this stuff that has to go on.  
16       You find these gaps in data. We need this  
17       stuff. We need that stuff. We don't have it.  
18       How do we get it? You know, it could be  
19       anything from road elevations to where do I  
20       find sand and gravel pits because I am going  
21       to have to start mixing cement to fix things.

22                       On the other side, you get just a

1 load of information that you can't even  
2 handle. There is so much imagery coming down.  
3 There are so many -- Katrina -- we finally  
4 called the place that we were putting all the  
5 Katrina data just the trash heap because it  
6 was just a place on the internet that was just  
7 full of stuff so you couldn't find anything.  
8 So there is a whole bunch of issues on both  
9 ends of that continuum. It is fascinating  
10 actually.

11 But there is a huge gap between  
12 the data sources that you have and the  
13 decision-makers that you need to get something  
14 done to solve a problem that they are  
15 addressing at some high level, whether it is  
16 do we call contra flow? Do we evacuate this  
17 place? Do we close this road? Do we close  
18 this bridge? All those kind of things.

19 The decision-makers, they want  
20 answers. They don't want to analyze data.  
21 That is just a real key. So again, the drills  
22 help some of this stuff to work out some of

1 those questions.

2                   What's so funny? I am interested  
3 in your opinion of the accuracy.

4                   MR. ESTOPINAL: My favorite quote  
5 is Will Rogers, the great philosopher, who  
6 said that the trouble ain't the things that we  
7 don't know, it is the things that we do know  
8 that just ain't so.

9                   DR. MITCHELL: That's real good  
10 because GIS rule number one, I taught my  
11 students this when I was a professor, day one:  
12 everything you know is wrong. Because you  
13 know, you take this data. You think it is  
14 correct. You think the elevation is one  
15 thing. It is something else. You think it is  
16 accurate. Well, it was collected ten years  
17 ago, so it is a foot off. Whatever.

18                   So you need to be aware that there  
19 is inaccuracies, whether it is inherent  
20 inaccuracy or just inherent variability in the  
21 data that you are using to feed to the  
22 decision-makers. So just be aware of that.

1 You can't just give a number sometimes. You  
2 have got to say well, the guy that asked me  
3 for three-inch increments of flood depth on a  
4 road, come on, give me a break. I can't give  
5 you that. We were talking earlier, you can  
6 get four inches of accuracy on a GPS. So you  
7 have got the accuracy of the road. You have  
8 got the accuracy of the forecast. It is just  
9 crazy to try to expect that kind of precision.

10 GIS rule number two, just there is  
11 a thousand ways to process data in a GIS. You  
12 don't know how this data has been handled.  
13 You don't know whether they used the right  
14 transformation to go from one datum to  
15 another. It is like chain of possession. All  
16 of this kind of stuff is important to just be  
17 aware of and just understand what is going on  
18 with the data so that you can make a  
19 determination whether this really solves the  
20 problem or not. You are being asked by the  
21 decision-makers, who don't understand any of  
22 this stuff.

1                   And then number three, I kind of  
2                   stole that from someplace else but the bottom  
3                   line is there is just data everywhere. But it  
4                   isn't necessarily the data that you want to  
5                   have. It is in the wrong format. It doesn't  
6                   have enough spatial accuracy. It is ten years  
7                   old or 15 years old, whatever. All that kind  
8                   of stuff happens all the time. Data is just  
9                   messy stuff.

10                   So I come now from years of  
11                   experience with what I call my 5A data  
12                   standard. Okay? And this is what we need to  
13                   be thinking about as we are producing data and  
14                   also as we are consuming data. The data needs  
15                   to be accurate. It needs to be accurate in  
16                   space. It needs to be accurate in time. It  
17                   needs to be accurate in terms of the  
18                   measurements. Is one foot enough for what you  
19                   are doing or do you need six inches or three  
20                   inches or whatever? All of those kind of  
21                   things figure into the concept of accuracy.

22                   You know I mean one of the most

1 important ones is is this thing coming from  
2 somebody that knows what they are talking  
3 about. Is it authoritative? I have no  
4 problem with getting stuff from NOAA and  
5 feeling that it is authoritative. I have  
6 trouble when the guys at LSU do a storm surge  
7 forecast and they send the people that I have  
8 to support some storm surge forecast  
9 information and I don't have any idea how they  
10 put it together, what their basic assumptions  
11 are, what their underlying data are, anything  
12 else. Okay, so I want to have an  
13 authoritative source for the data that my  
14 people are using. If nothing else, I can  
15 always blame it on NOAA, right?

16 It has to be actionable. Okay? I  
17 don't need to be doing a whole bunch of data  
18 manipulations. I don't have to be changing  
19 units and I don't have to be projecting and  
20 re-projecting and messing with the data all  
21 the time just to be able to use this data to  
22 answer a question from a decision-maker that

1       wants a decision an hour ago. So it has to be  
2       actionable data. It has to be accessible. It  
3       has to be discoverable. You have to be able  
4       to find this stuff.

5               So when you are putting together,  
6       when you are doing your drills, that kind of  
7       stuff, you need to make sure that you sort of  
8       looked at everything, have everything at hand  
9       that you can use that you think you might use.  
10      And if you don't have it at hand, you need to  
11      be able to know where to get it from.

12              And then the simplest way to deal  
13      with affordable is it's all free. And I have  
14      no problem with NOAA on that one either. I  
15      have no opportunity in the middle of an  
16      emergency to go through the state purchasing  
17      process to buy data. It just ain't there.

18              So that is my 5A data standard and  
19      I think it is just really important to be  
20      thinking about those kind of things.

21              I think that having an idea of how  
22      good your data are is so, so important. We

1 are often confronted with the idea that well,  
2 hey, we got the data; it is good, let's use  
3 it. And that gets us into more trouble than  
4 it is worth. So the idea that the best  
5 available data is doing to solve my problem,  
6 sometimes you have to go to the decision-  
7 makers and say you know, we really don't have  
8 any data that will do that. And when I  
9 hammered away at the Atchafalaya flood data  
10 and realized after a while that there is no  
11 way I am going to get flood elevations on the  
12 roads from this stuff, I had to tell the guy,  
13 our Assistant Secretary, it is just not there.  
14 And sometimes that just has to happen. We  
15 have to all be responsible for making sure  
16 that that information is -- the reliability  
17 and usability of that information is all  
18 accounted for. Thank you.

19 (Applause.)

20 CHAIR WELLSLAGER: Thank you very  
21 much. Elevation is everything. You are  
22 right. Louisiana is flat. I can see how



1 issues, especially with the geoid model when  
2 it is applied to the ellipsoid can cause  
3 problems when one geoid model might not work  
4 with the other and you have got variations in  
5 elevations.

6 I guess my first question is to  
7 Cliff and that is, with all the gravity data  
8 that you are capturing, is there any  
9 processing of that? And how is it actually  
10 placed into a data set that is useable? And  
11 then is it sent to NGS so that they will be  
12 able to refine that and add that to your area  
13 here in Louisiana so the geoid model can be  
14 refined?

15 MR. MUGNIER: We're not currently  
16 capturing any gravity data. The last time we  
17 were was when I was with the University of New  
18 Orleans and this was back in the middle '80s,  
19 --

20 CHAIR WELLSLAGER: Okay.

21 MR. MUGNIER: -- and all of the  
22 data then was done to NGS second-order

1 standards. It was blue-booked and it was  
2 submitted to NGS and it was adjusted then in  
3 their database. But that was essentially  
4 relative gravity at benchmarks in metropolitan  
5 New Orleans.

6 Juliana has a point.

7 CHAIR WELLSLAGER: Juliana.

8 MS. BLACKWELL: Just related to  
9 the gravity, I am sure you have heard of the  
10 GRAV-D mission, Gravity for the Redefinition  
11 of the American Vertical Datum. And just so  
12 the panel knows and the other stakeholders  
13 here, NGS does recognize that there are  
14 problems not only in Louisiana but in a  
15 variety of areas across the country with  
16 NAVD88. That is the current vertical datum  
17 for the United States. And in some areas,  
18 particularly in Alaska, it is off by up to two  
19 meters.

20 So approximately four years ago,  
21 NGS began with a pilot project to collect  
22 airborne gravity to use that as the basis for

1 a new vertical datum and that project is  
2 called GRAV-D and that is to help better  
3 define zero uniformly across the country, as  
4 well as our territories, and be able to use  
5 that to establish the vertical datum of the  
6 future. We expect that that will be completed  
7 in the year 2022 with the current funding that  
8 we have available to us for this project.

9 Now I don't know if you are aware  
10 or not that there are areas that have been  
11 flown with this GRAV-D mission and coastal  
12 Louisiana is one of those areas. Because this  
13 is an effort across the country, it is not  
14 something that is going to be released as a  
15 final product until the vertical datum is  
16 complete. But there are data sets available  
17 now that meet, I think, your 5A criteria that  
18 are available on our internet website that are  
19 free, that can be looked at. But again, this  
20 is airborne gravity. What we are going to do  
21 next is make some beta geoid models for users  
22 to be able to then take and apply and see how

1 they fit with the current situation in their  
2 area.

3           So it is going to be an iterative  
4 process and it is something that we are  
5 currently, I believe we have got about 24  
6 percent of the country that has the airborne  
7 gravity already collected because we recognize  
8 that doing it the old way of leveling  
9 benchmarks isn't going to cut it. We can't  
10 afford it. We don't have time for it.

11 Airborne gravity is a better way to accomplish  
12 a more seamless way of collecting information  
13 for gravity to create a better vertical datum.

14           Now that said, you are also going  
15 to need terrestrial ground-truthing of that  
16 data. So there are datasets that are being  
17 collected now and will be collected in the  
18 future on the ground to make sure that the  
19 gravity that we are collecting from an  
20 airborne platform does sync up with the  
21 measurements that you would collect if you  
22 were on the ground doing it.

1                   So I think there are great  
2 opportunities to do things like the spacing  
3 that you were talking about here with A-10s  
4 and different types of gravity collection to  
5 make sure that Louisiana is well-covered with  
6 terrestrial as well as airborne gravity.

7                   So that is a lot of technical  
8 stuff but please take away from that that we  
9 are trying to make much a better vertical  
10 datum not only here, but everywhere, and we do  
11 think that this going to -- it is  
12 accomplishable to get to a two-centimeter  
13 improvement, two-centimeter accuracy for the  
14 vertical in the coastal areas. So that is  
15 probably realistically what we can do with the  
16 technology that we have today and hope that we  
17 can continue to refine that perhaps even  
18 before we are completed with the next vertical  
19 datum. But at this point in time, we think a  
20 two-centimeter accuracy is very achievable and  
21 that will be certainly much better than what  
22 NAVD88 has given us for the last several

1 years.

2                   So I would like you to keep that  
3 in mind when you talk about doing the gravity  
4 collection and how -- that we are making an  
5 effort and we do think that this is a more  
6 efficient way to improve the vertical for  
7 coastal areas. Thank you.

8                   MR. MUGNIER: The problem is is  
9 that is ten years' away and we have got people  
10 who need flood elevations today.

11                   I understand that there are some  
12 open dates for the gravity program that  
13 possibly could be moved to Louisiana, if the  
14 priorities were set.

15                   MS. BLACKWELL: Again this is  
16 Juliana.

17                   Granted what I said is it is ten  
18 years' out with the current funding. It could  
19 be longer if the funding is no longer there.  
20 So again, there is always caveats to it. If  
21 there were more funding we could get it done  
22 probably sooner.

1                   And so we are looking for  
2                   opportunities for partnerships. We are  
3                   looking for opportunities to release interim  
4                   products that will help people in a nearer  
5                   term than ten years from now. But we are not  
6                   going to release something for people to test  
7                   until we are confident of the accuracy of what  
8                   we are accomplishing with the mission itself.

9                   So the data sets are out there.  
10                  If there are folks in universities or other  
11                  places that want to take a look at airborne  
12                  gravity and do some work with that, we can  
13                  certainly have those conversations with our  
14                  experts at NGS and be able to share that. The  
15                  data is available to be able to discuss the  
16                  data and have people look at it and see what  
17                  they can do with it now, rather than waiting  
18                  years down the road.

19                  In the meantime, there are again  
20                  geoid models that are out there that we feel  
21                  are improvements to what has been done in the  
22                  past. Because the data has been used in

1 previous models, the marks have moved, the  
2 efforts are to make geoid models better and  
3 better. Now they may not match up with what  
4 you had before but you can certainly go back  
5 and use the older geoid models but you really  
6 need to use more data, rather than less, and  
7 newer data rather than older data to confirm  
8 the elevations.

9 So we can continue to work with  
10 trying to find the best solution for the coast  
11 here and in other places where subsidence is  
12 an issue but it is not an easy answer. But we  
13 will continue to work with you the best we  
14 can.

15 CHAIR WELLSLAGER: Juliana, I have  
16 I guess a question. Matt Wellslager.

17 For partnerships, are there any  
18 types of MOAs or MOUs written up where things  
19 might be able to be done with NGS through, say  
20 LSU, or someone within Louisiana to help  
21 accelerate this?

22 MS. BLACKWELL: Currently, we have



1 some MOAs, MOUs, kind of interchangeable, with  
2 other federal agencies where we are working  
3 with different platforms from different  
4 federal agencies in partnership with NGA,  
5 Bureau of Land Management. It just depends on  
6 the area and the opportunities that others are  
7 using airborne platforms for collection of  
8 other types of datasets. So USGS, BLM, NGA,  
9 NRL, these are all other feds that we have  
10 been working with.

11 We can certainly look into  
12 opportunities for other state-federal  
13 partnerships as well, whether it is sharing of  
14 an airplane that has the proper requirements  
15 to collect airborne gravity from or other  
16 sorts of funding opportunities. So we are  
17 open to all those discussions and we have had  
18 success in doing it. But again, a lot of it  
19 is very location-specific. So we don't have  
20 the blanket partnership to do things across  
21 the nation with another entity but we will  
22 still keep trying to work with FEMA and other

1 federal groups to see if there are  
2 opportunities for a broader partnership for  
3 the country.

4 CHAIR WELLSLAGER: Anybody else  
5 have any other questions for our panel?

6 Well again, thank you very much.  
7 I appreciate your time spent here. If you are  
8 free tomorrow, you have an open invitation to  
9 come and we can actually address some of this  
10 a bit further with the breakout sessions that  
11 will be held tomorrow morning from about 9:15  
12 to 11:00. And these will be used, once again,  
13 to help create some of the recommendations  
14 that we will be giving to NOAA administration.  
15 And something like this could be a very  
16 beneficial topic of conversation if we were  
17 able to pursue things tomorrow.

18 And with that, Kathy do you have  
19 anything?

20 MS. WATSON: No, take a break.

21 CHAIR WELLSLAGER: No. We are due  
22 for a 30-minute break. So I think it is time

1 to get up and stretch our legs a little bit  
2 and get something. Let's meet back here at  
3 four o'clock.

4 (Whereupon, the foregoing  
5 proceeding went off the record at  
6 3:34 p.m. and went back on the  
7 record at 4:15 p.m.)

8 CHAIR WELLSLAGER: Okay, it is  
9 4:15, a little bit later than when I said we  
10 would get started back up but time for some  
11 panel discussions and deliberations.

12 We have had some interesting talks  
13 today. We have discovered that elevations are  
14 critical, geospatial information is vital. We  
15 have problems with dredging and narrow  
16 channels. I have learned that we more than  
17 likely will have individuals joining us when  
18 we have our meeting up in Silver Spring from  
19 our first stakeholder panels and possibly one  
20 or two from our second, as well, to help  
21 address things with the other invited members  
22 of the meeting that we have when we have our

1 spring meeting up in Silver Spring location.

2 Are there any points or thoughts  
3 or information that anybody here would like to  
4 address at this point in time that they have  
5 heard today or they think needs to be  
6 addressed?

7 Don't everybody speak up at once!  
8 Okay, Bill, thank you.

9 MEMBER HANSON: Matt, just real  
10 quick as an add-on to Silver Spring and having  
11 folks come. We can get similar-level folks  
12 from other parts of the country to support and  
13 echo what you have heard here. Part of the  
14 RAMP Coalition for the Harbor Maintenance  
15 Trust Fund has been the very same people that  
16 have noted to me that I was on the NOAA panel  
17 and gave me a laundry list of things they  
18 would like to see NOAA do. So it is much the  
19 same group of folks. And so I think there is  
20 a lot of sharing we can do with that.

21 CHAIR WELLSLAGER: That is good to  
22 know.

1           Scott and I were talking earlier  
2           and this has been the first panel meeting that  
3           I have seen where we have gotten the wealth of  
4           information that we have had. This has really  
5           been kind of an eye-opening situation. And we  
6           have gotten a groundswell going.

7           I think it has been great having  
8           both Kennedy and Margaret here. And they have  
9           made statements and they seem to be very happy  
10          and excited about some of the things that we  
11          have addressed and topics that we seem to want  
12          to push forward with.

13          So following up with something  
14          exactly what you are talking about, I think  
15          will only help foster that growth and we will  
16          definitely follow-up with that. I heartily  
17          recommend doing that.

18                 Frank.

19                 MEMBER KUDRNA: I was going to  
20          follow-up on the discussion of Juliana's  
21          technology that she was describing. And I  
22          know resources are needed to do everything but

1 this seems like a really pressing area that  
2 could have enormous benefits from the  
3 information you are talking about. And maybe  
4 NOAA could consider making this a prioritized  
5 test project to demonstrate how effective that  
6 technology is and to get some of that  
7 information into place. Because these folks  
8 are going to have another one, one of these  
9 days, and it would be enormously effective,  
10 and maybe to help partner them with FEMA that  
11 should be really interested in this.

12 MS. BLACKWELL: Frank, I just want  
13 to let you know that, like I said to the  
14 stakeholder panel, there has been data  
15 collected in this area. It hasn't been turned  
16 into another model yet but it is something  
17 that we plan to do. The data was collected a  
18 few years ago. With Alaska being a priority,  
19 we have been collecting in Alaska as well and  
20 have over half of the state there collected.

21 And so our goal is to have interim  
22 products that people can utilize for the near-

1 term and not have to wait ten years to do  
2 things. But we need to ground-truth it but we  
3 are not going to have the full thing  
4 collected.

5 So even if we finish collecting  
6 the Gulf of Mexico, we are not going to be  
7 able to deliver a new vertical datum until we  
8 have everything flown for the United States.  
9 We can't do it piecemeal. It has to be done  
10 as one new datum.

11 But we will have interim products  
12 available for the stakeholders here and others  
13 to be able to apply to their data, you know,  
14 beta models that they can apply to their data  
15 to see how it fits and to make determinations  
16 based of that more recent airborne GRAV-D.

17 So on our website -- and I talked  
18 to the gentlemen after the fact and asked them  
19 if they were aware of it and they said well  
20 yes, but I am not quite sure that they  
21 understood that we are working on making these  
22 things available to them sooner rather than

1 later. It is just not going to be a complete  
2 product for several years to come.

3 We do realize it is a high-  
4 priority area, like I said, just like Alaska  
5 is, too. So we are trying to get those areas  
6 first so we at least have something initial to  
7 utilize and to share with our constituents  
8 sooner rather than later. And then leave the  
9 central part of the United States as the last  
10 area because that seems to be the less  
11 critical. We want to get the coastline done  
12 first.

13 MEMBER KUDRNA: Well maybe a  
14 meeting where you would explain the potential  
15 uses to them or help Louisiana understand how  
16 they could take the products you currently  
17 have available and use those I think might be  
18 effective. Because as we said earlier, we  
19 can't just go down the list and ask for more  
20 money for everything around in this budget  
21 environment that we have.

22 CHAIR WELLSLAGER: Scott, did you



1 want to say something?

2 VICE CHAIR PERKINS: Juliana, this  
3 is Scott Perkins. Is it a lack of money or is  
4 it a lack of platforms and gravity sensors?  
5 What would be -- to get the project done in  
6 advance of 2020, what would it really take to  
7 accelerate the schedule?

8 MS. BLACKWELL: It all comes down  
9 to money. Because if you want to have more  
10 platforms and you want to have more sensors,  
11 you need to pay for those things.

12 So currently, we have two airborne  
13 gravity meters. We are working with a number  
14 of platforms, federal platforms, as well as  
15 there is NOAA assets and there is some other  
16 federal agency platforms that we are using  
17 through our MOA, MOU. We are also contracting  
18 out to do data collection. This year we are  
19 looking at doing not only data collection  
20 through third-party surveyors, but also data  
21 processing. So that is going to be the next  
22 step.

1                   But the limiting -- the limits are  
2 based on how much funds we have available to  
3 put towards this effort.

4                   CHAIR WELLSLAGER: I have got a  
5 question, Juliana. I'm sorry. Go ahead.

6                   MEMBER DEMPSEY: Juliana, why  
7 can't an area be released without the whole  
8 country being released?

9                   MS. BLACKWELL: An area can --  
10 datasets have already been released. But the  
11 data then has to be turned into what they were  
12 talking about, these geoid models. Those can  
13 be done. They haven't been done yet because  
14 we have been focused on processing the data  
15 that we have already collected.

16                   Now that we have caught up with a  
17 lot of that data processing, that will then  
18 get handed over to the geoid team that will  
19 start creating beta geoid models for the area.  
20 So that can be done. And I expect that in  
21 FY13 we will start to see those regional geoid  
22 products available. But that, again, is going

1 to be a model.

2                   What we are talking about  
3 completing in 2022 time frame is a whole new  
4 vertical datum. It will no longer be NAVD88  
5 as the vertical datum. It will be a new named  
6 vertical datum that will encompass all of this  
7 airborne gravity that has been collected, so  
8 that it is all seamlessly tied together and  
9 not disparate datasets and disparate models  
10 but everything that gets put together into a  
11 truly national vertical datum.

12                   But between now and 2022, there  
13 will be, again, these regional beta models  
14 available for people to utilize to help them  
15 in their everyday needs.

16                   So again, 2013 will be the first  
17 year that we will start to produce those beta  
18 models for the Gulf.

19                   Again, this was one of the areas,  
20 one of the earliest areas that were collected.  
21 But because we had a backlog and we are trying  
22 to meet data collection, we focused on data

1 collection before we were able to finish  
2 processing the data that was collected  
3 originally. So we are playing catch-up. And  
4 now that we have a different process and  
5 different platforms going, I think we are in  
6 that next stage to create those beta models  
7 this coming year.

8 CHAIR WELLSLAGER: Jeff, go ahead.

9 MEMBER CAROTHERS: This is Jeff  
10 Carothers.

11 I am just curious how CO-OPS and  
12 Gary, you guys handle it. I mean you got tide  
13 gauges in these subsidence areas. I wonder  
14 how you adjust those. They have got to be  
15 just somehow for subsidence.

16 MR. EDWING: Yes, Rich Edwing with  
17 CO-OPS.

18 So just as some general  
19 background, we do have to adjust tidal datums  
20 once every 25 years or so for general sea  
21 level rise. You know, we make adjustments and  
22 it is based upon a 19-year tidal epic which

1 aligns with that Metonic cycle you heard about  
2 earlier. However, there are some areas and  
3 not just in Louisiana where either because  
4 land is either subsiding quickly or rising  
5 quickly up in Alaska, we have actually gone to  
6 some five-year datum updates. Because when we  
7 do the 20-year update, we kind of pick a point  
8 in the center to set the datums at, mean sea  
9 level. But things are changing so quickly in  
10 some of these areas, that kind of becomes  
11 irrelevant pretty quickly.

12 So there are some special areas  
13 where we have, we kind of publish a special  
14 five-year tidal datum update every five years.

15 MEMBER JEFFRESS: I would just add  
16 to that, if you look at let's say Galveston  
17 where we have a subsidence sea level rise net  
18 of 6.6 millimeters a year, that is a very  
19 linear trend over the last hundred years. And  
20 so if you take a 19-year record with that  
21 slope, the average which is going to compute  
22 mean sea level is going to lie between the two

1 extremes, so the beginning of the 19-year and  
2 the end of the 19-year. So the average is  
3 actually going to be than what the actual sea  
4 level is and hence, the five-year update.

5 But even if you use the five-year  
6 update, that sea level trend is going on, your  
7 mean sea level is still going to be not like  
8 it is at present because it is going to an  
9 average of five years, so it is at least two  
10 and a half years' old.

11 CHAIR WELLSLAGER: Juliana, I've  
12 got a question for you.

13 Is the entire state of Louisiana  
14 encountering the problems of subsidence or is  
15 it in the lower sections of this area? And  
16 the reason why I am asking, South Carolina is  
17 one of the last of a dying breed, I realize.  
18 We are doing height mod surveys. But you need  
19 to kind of ground control what you have got  
20 for geoid models. And having a passive  
21 network gives you that opportunity but with  
22 the amount of change that we seem to hear that

1 is taking place right now, setting a passive  
2 control network of any size in a year, two  
3 years' time is going to be questionable,  
4 possibly. And I just don't know what steps  
5 they might be able to do to check this new  
6 data release of the Louisiana area if they  
7 don't do height mod surveys.

8 MS. BLACKWELL: This is Juliana.  
9 They have been doing height modernization  
10 surveys. And the area in question in  
11 particular of the subsidence region is  
12 probably the lower one-third of Louisiana.  
13 And as you go up past Interstate 10 and  
14 further north, that starts to drop off. So  
15 the significant area of interest is I-10 and  
16 below.

17 Starting in 2004 and then repeated  
18 in 2007 or 2008, there have been GPS surveys  
19 done on some of these old existing marks to  
20 update the elevations using GPS. And then to  
21 use estimated subsidence rates to help try to  
22 improve the information about the heights and

1       what is happening along this southern third of  
2       Louisiana.

3                       And so we have been working with  
4       LSU and other entities within the state to try  
5       to bring the elevations up to the best -- in  
6       the best possible way without re-leveling  
7       across the state.  Because as soon as you  
8       finish re-leveling it is going to change.

9                       So at least having, let's say  
10       every three or four years going back to the  
11       same marks and re-surveying them using GPS,  
12       using common standards and methodologies, will  
13       give you an idea of how much those heights are  
14       changing relative to the ellipsoid, the GPS  
15       heights that you are going to get.

16                      So that is the current way and the  
17       way that Louisiana has utilized their height  
18       modernization funds and program is to put in  
19       a GPS network, the C4G network, the CORS  
20       stations is to use CORS as the baseline, the  
21       established starting points for their heights.

22                      So that is the direction that they



1 should have gone and they have gone but then  
2 the idea is you need to go back and re-measure  
3 marks that are in a subsidence area to see  
4 what their rates are and that is going to take  
5 time to build that information as to what is  
6 really happening, especially if your GPS  
7 heights are not accurate to more than one to  
8 two centimeters. So you can go out there and  
9 collect data but you have got to do this  
10 repeatedly over time, just like with the tide  
11 gauges to see what the trends are. You can't  
12 just do it one year and be done with it. You  
13 have got to keep going out there and re-  
14 measuring it and do this in a systematic way,  
15 which is why our partners in Louisiana need to  
16 continue this effort. And we have tools and  
17 opportunities for them to continue with height  
18 modernization surveys but the data have to be  
19 collected and it has to be looked at in a  
20 rigorous way to try to improve the  
21 understanding of what is actually happening.

22 And each mark and each area is

1 different. These are variable rates of  
2 subsidence. It is not something that you can  
3 say everything is going at two centimeters or  
4 one centimeter or half a centimeter. You can  
5 go ten meters away and you will have something  
6 different because you don't know exactly what  
7 is happening geologically underneath that. So  
8 it is not an easy place to survey.

9 CHAIR WELLSLAGER: And I wasn't  
10 trying to --

11 MS. BLACKWELL: The GPS really is  
12 the way to go but it is going to take a lot of  
13 effort and a lot of repeatability, as well as  
14 an improved geoid model. The idea is once  
15 there is a better geoid model from GRAV-D,  
16 then you can go down there and you can just  
17 take your GPS measurement and you will get a  
18 height that is relative to local sea level and  
19 know that repeatedly you are getting that  
20 accurate information but we are not quite  
21 there yet.

22 CHAIR WELLSLAGER: Gary.

1                   MEMBER JEFFRESS: Another thing  
2 we've started and I know CO-OPS has started,  
3 too, is co-locating CORS stations with tide  
4 gauges. And we have three in Texas already  
5 and we have plans for at least another two.  
6 So you can actually measure subsidence and sea  
7 level rise at the same time.

8                   CHAIR WELLSLAGER: Yes, Lawson?

9                   MEMBER BRIGHAM: Lawson Brigham.  
10 Two things. One is about one topic discussed  
11 this morning. And then the second thing I had  
12 was about our D.C. Silver Spring meeting. So  
13 I don't know if you want to talk about that.

14                   But the thing I took one very  
15 focused issue, was the lack of a fog sensor at  
16 the entrance to the Mississippi River. It  
17 seemed like a couple of the pilots mentioned  
18 that as an issue. And I don't know what that  
19 entails or whether actually the sensors should  
20 go on the end of the opening of the  
21 Mississippi or on one of these bridges.

22                   So I wonder what -- maybe Rich

1 could comment about that.

2 MR. EDWING: Yes, the visibility  
3 sensor -- Rich Edwing with CO-OPS.

4 The visibility sensors were  
5 developed for the PORTS program. It was one  
6 of the two remaining highest priority  
7 parameters that people were asking for was  
8 visibility and waves. And we deliver waves  
9 through an Army Corps of Engineers  
10 partnership.

11 But anyway, so if they want to ask  
12 for it through the PORTS program, that is how  
13 I provide it. I don't have any base-funded  
14 visibility sensors out there. They are just  
15 out there through the PORTS program.

16 MEMBER BRIGHAM: Well, they should  
17 ask.

18 MR. EDWING: They should ask and  
19 come with a check. They have to have the  
20 funds for the establishment of that and the  
21 maintenance of that sensor.

22 MEMBER BRIGHAM: Do you want to

1 talk about D.C.? Yes, I mean I think if we --  
2 you keep saying Silver Spring and I keep  
3 thinking about D.C. and I think they are kind  
4 of the same place but different. I actually  
5 think we should meet at least one day on the  
6 Hill, if that is possible with this panel,  
7 with maybe the Ports Caucus and the CMTS and  
8 I don't know, whoever else is dealing with  
9 these issues. But we in the senior leadership  
10 with NOAA should meet with staffers actually  
11 on the Hill for a day. I mean it doesn't have  
12 to be all three days. We would never get  
13 their time -- or an afternoon or whatever.

14 But I suggest that we actually  
15 physically meet with them, with the staffers  
16 on the Hill, if the administrator is  
17 comfortable with that.

18 CHAIR WELLSLAGER: Well, I will  
19 have to ask Kathy. I couldn't agree with you  
20 more. And the proximity would make it far  
21 easier for them and less of a reason why they  
22 say they can't make it if it is on the Hill.

1 But I guess the one question I have is are  
2 there facilities at the Commerce meeting  
3 downtown where we might be able to do a two-  
4 day meeting, per se?

5 MS. WATSON: Yes. Yes, there is.  
6 There is conference rooms there at Commerce  
7 where we could get those reserved. We just  
8 have to know in advance.

9 CHAIR WELLSLAGER: Okay.

10 MS. WATSON: And there is other  
11 federal agencies that if we can't get  
12 Commerce, there is a few others that we could  
13 use, too.

14 CHAIR WELLSLAGER: Lawson?

15 MEMBER BRIGHAM: Yes, I would just  
16 add it seemed like David and Margaret, when we  
17 had the little discussion about D.C., were  
18 comfortable with that. But it is all up to  
19 the administrator whether she thinks the panel  
20 -- can we do that. And if we can't do that,  
21 can some of us meet with staffers with or  
22 without NOAA handlers or supervisors or

1 colleagues. I mean, I don't know. Can we  
2 have dialogue with staffers not altogether?  
3 Is that an option if we can't have them  
4 actually meeting together with the staffers  
5 and the senior NOAA leadership, then who can  
6 we meet with? I mean it is a question for me.

7 CHAIR WELLSLAGER: That would  
8 probably be something we need to bring up to  
9 the General Council and check with them to see  
10 if that could be done. I'm not saying that is  
11 not a bad idea. It is probably an outstanding  
12 idea and it would be one where we would  
13 probably have a greater luck of being able to  
14 meet. But first off, let's see if we can do  
15 something like that legally.

16 David.

17 MEMBER JAY: Yes, Rich, a question  
18 for you. David Jay here.

19 Not to put you on the spot but I  
20 was noticing with the air gap data when we  
21 were trying to get those through Hurricane  
22 Sandy, the air gap sensors do not display the

1 way tide gauges and other assets do. I mean,  
2 I know they aren't tide gauges but you can't  
3 get the archived data. You can't display for  
4 arbitrary time periods and that sort of thing.  
5 Is this because they are new sensors or is  
6 there some systematic reason for this?

7 MR. EDWING: Rich Edwing. I think  
8 we can get you that data if you are interested  
9 in it. We may not make it available on the  
10 website because we probably just didn't think  
11 beyond what is being displayed in real-time  
12 that there might be much interest. It is not  
13 water level data, per se, although you could  
14 look at it that way.

15 MEMBER JAY: I mean, it seems like  
16 why not treat it as water level data?

17 MR. EDWING: Well I could  
18 certainly take that back and look into it and  
19 I will get back to you.

20 MEMBER JAY: All right, thanks.

21 CHAIR WELLSLAGER: Okay, Jon.

22 MR. DASLER: I was just going to



1 provide some historical perspective. But  
2 Scott Rainey when he was chair, they did go to  
3 the Hill before. I mean they didn't take the  
4 whole panel but the chair and they took a few  
5 people and they testified on the Hill and they  
6 also went around and met with staffers. So  
7 there is some precedence for that. But yes,  
8 I don't think you would want to take everybody  
9 going around to talk to staffers. You would  
10 probably want to select a smaller subset.

11 CHAIR WELLSLAGER: Great, thank  
12 you.

13 Frank?

14 MEMBER KUDRNA: The other FACAS I  
15 served on did also. The Sea Grant Review  
16 Panel routinely had their executive committee.  
17 They didn't do the whole panel go on the Hill,  
18 talk go the Appropriations Committee, talk to  
19 the Authorizing Committees, talk about things  
20 both in terms of appropriations and then in  
21 terms of reauthorization.

22 The Science Advisory Board, every

1 time there was a report, the leadership and  
2 the chair of the working group were required  
3 by NOAA to go on the Hill and they set up  
4 appointments for them to take their report to  
5 the appropriate committees on the Hill. So  
6 there is precedent for it.

7 CHAIR WELLSLAGER: Interesting.

8 Scott?

9 VICE CHAIR PERKINS: Is there  
10 consensus or agreement that meeting on the  
11 Hill in the Rayburn Building would be a  
12 positive step? I mean, I think we have got to  
13 actually start getting down to the grass  
14 roots. So we are in agreement in Washington,  
15 not Silver Spring and then location. So it  
16 may be one day in the administration building  
17 and one day on the Hill. Because one, we  
18 won't get the room in the Rayburn building for  
19 two days. I'm pretty sure of that. But I  
20 think we can get a meeting room in the Rayburn  
21 Building which is centrally located for the  
22 House side of Congress.

1                   Anyone in opposition to that  
2 strategy?

3                   CHAIR WELLSLAGER: No.

4                   VICE CHAIR PERKINS: Great. So  
5 then I think the next order of business is  
6 then looking at the calendar and at least  
7 targeting some dates. Congress is typically  
8 in session the first three weeks of March.  
9 You can pretty much count on that. I mean,  
10 2013 congressional calendar, I don't have a  
11 copy of it. I'm not sure they have released  
12 an official one. Craig, have you seen  
13 anything?

14                   But I mean with that basic  
15 assumption, the Science Advisory Board is  
16 meeting on March 3rd and 4th in D.C. So it  
17 has been suggested that we try to perhaps do  
18 a meeting concurrently or consecutively with  
19 another FACA. So the Science Advisory Board  
20 would be, at least they have a scheduled date.  
21 We don't know where they are meeting but we  
22 know their dates. That is on their website.

1 So how is that first week of March?

2 CHAIR WELLSLAGER: March 3rd is a  
3 Sunday.

4 VICE CHAIR PERKINS: Yes, it must  
5 be the 4th and 5th then. I am doing it from  
6 memory, which is dangerous.

7 Anyone have any objections to the  
8 first week of March? Okay.

9 CHAIR WELLSLAGER: As it stands, I  
10 don't. Not right now. But I don't know what  
11 my calendar is, either.

12 VICE CHAIR PERKINS: Yes, I don't  
13 know what mine is either. But I mean at least  
14 we have got to try to move forward in some  
15 fashion.

16 CHAIR WELLSLAGER: I know Joyce  
17 had wanted to try to do something but she is  
18 going to be out. What does the calendar for -  
19 - and this is going to be moving it up by six  
20 weeks but I think she mentioned something  
21 about the middle of April. She was going to  
22 be on a cruise and she was very interested in

1       trying to do the meeting, if it worked out,  
2       and then suggested something about April.  
3       Would that be too late to try to meet with --  
4       have our meeting?

5                   ADMIRAL GLANG:   Gerd Glang.  If  
6       you want the driver to be an opportunity to  
7       interact with the Hill, then that is how you  
8       should probably adjust your calendar for the  
9       meeting.  And that may mean Joyce isn't  
10      available.  So I guess we have to start  
11      somewhere with what is important,  
12      notwithstanding the fact we first need to  
13      check into how much of this interaction can we  
14      actually do.

15                   The point is to make the panel  
16      available during an opportunity when they can  
17      interact with the Hill.

18                   CHAIR WELLSLAGER:  Which it is.

19                   ADMIRAL GLANG:  Then that should  
20      probably be the thing that --

21                   CHAIR WELLSLAGER:  The focus.

22                   ADMIRAL GLANG:  -- the focus.

1 CHAIR WELLSLAGER: So be it. All  
2 right.

3 Well then, if we are going to be  
4 meeting on the Hill and on the other -- I  
5 don't know. Where is the Rayburn Building?  
6 Is that the Hill?

7 VICE CHAIR PERKINS: Yes.

8 CHAIR WELLSLAGER: Okay. Sorry, I  
9 ended up in that neck of the woods. But I  
10 think there is only one out there.

11 We are going to definitely need to  
12 sit and have some definite talking points. So  
13 before this, and this is something that Lawson  
14 had brought up before, we really need to come  
15 up as a committee with a list of priorities.  
16 And those priorities should include things  
17 that we have talked about, i.e., stratifying,  
18 if you want to use that term, the ten most  
19 wanted and conceptually changing the paradigm  
20 so that we can, instead of asking for more  
21 money, define ways of improving things within  
22 NOS and NOAA and come up with five topics.

1 That way, that should be something we could do  
2 and, at the same time, if there were other  
3 things that we have discussed today or  
4 yesterday or, for that matter, from Alaska  
5 that need to be readdressed, we should also  
6 come up with those.

7 And I think this, I mean, we  
8 haven't had a chance to really think about it  
9 right now but I am going to throw the seeds  
10 out because now if we know we are going to the  
11 Hill and we know that we are going to be  
12 trying to sell two very influential people  
13 things that NOAA does and outreach for NOAA,  
14 what would be the best way to do this? And I  
15 want you to think about that.

16 Tomorrow we will have time in the  
17 afternoon, after probably about two o'clock on  
18 to really put some thoughts and pen to paper  
19 and come up with ideas. And that would be for  
20 the recommendations of this meeting but even  
21 more so for thoughts and ideas of what we are  
22 going to be doing on the Hill in the next

1 meeting because March is right around the  
2 corner. It is going to be here before we know  
3 it. And we are putting rubber to the road.  
4 So everybody is going to have to put some  
5 thought into coming up with some ideas. We  
6 will combine those together and hit the  
7 talking points.

8 MEMBER JAY: David Jay. Don't we  
9 need to communicate with some of our  
10 stakeholders so that they are up there with  
11 us? They certainly generously offered to do  
12 so today.

13 CHAIR WELLSLAGER: Yes, we can do  
14 that. And I had collectively talked to three  
15 or four different people. And I asked Tim if  
16 he would mind being a point of contact since  
17 he knows the people and he had no problem with  
18 that. Collectively, they had no problems if  
19 they had a week, maybe two weeks' prior notice  
20 of coming up. They could rearrange schedules  
21 that way. Henri might have a little bit  
22 harder time but if we can nail down some



1       dates, I'm sure he could probably work on  
2       getting up and making himself available to  
3       work with us as well.

4                   CHAIR WELLSLAGER:  Bill.

5                   MEMBER HANSON:  Bill Hanson.  Yes,  
6       it is very convenient.  March, there is  
7       another March madness besides the basketball.  
8       It is the descent upon D.C. during the budget  
9       season and during appropriations season.  So  
10      the guys that we will have there, the folks  
11      you saw today from around the country are all  
12      making their treks to D.C. between mid-  
13      February and early April multiple times.  They  
14      would love to be there for something specific  
15      and focused like this would be.  So this would  
16      be a fairly large event for most people.

17                   CHAIR WELLSLAGER:  Andy?

18                   MR. ARMSTRONG:  Andy Armstrong.  I  
19      just would like to make an observation that a  
20      lot of what I heard on the panel in terms of  
21      funding was related to spending the Harbor  
22      Maintenance Trust Fund on what it was intended

1 for. And reading between the lines, that  
2 sounds to me like dredging.

3 So I would say we need to be sure  
4 that we understand the message that we are  
5 trying to send about funding that we don't end  
6 up promoting the use of the Harbor Maintenance  
7 Trust Fund and then find out that it is not  
8 going to solve any of the problems that this  
9 panel is dedicated to solving. I think that  
10 there needs to be some discussion about that  
11 with constituents because we may end up on the  
12 wrong side of that issue, if we are not  
13 careful.

14 CHAIR WELLSLAGER: Ken?

15 MEMBER BARBOR: No, I agree with  
16 Andy and to a larger -- I mean, Henri's  
17 presentation was compelling but I'm not sure  
18 I saw hydrographic services in there. And you  
19 can say I agree with the same thing.

20 Yes, dredging is an important  
21 aspect that leads into hydrographic services.  
22 Whatever money comes there doesn't land in any

1 of the NOAA pockets. Not that it is not a  
2 good thing.

3 CHAIR WELLSLAGER: And those  
4 things, funds are more of an issue for the  
5 Army Corps of Engineers in the maintenance of  
6 the channels and the dredging there.

7 For whatever it is worth, we had  
8 collectively people, if they didn't say it one  
9 time, they said it six times, we will be glad  
10 to go up and try to do whatever we can to help  
11 out. So okay, I tried to run with it. I  
12 fumbled but, hey, we can pick it up and try  
13 doing something else.

14 Jeff.

15 MEMBER CAROTHERS: Yes, Jeff  
16 Carothers. I also agree with Andy. We don't  
17 want to get into a similar conversation here  
18 about infringing on the Corps' mandates. But  
19 I think this whole electronic navigation and  
20 something that they are bringing in Corps data  
21 into. So maybe it is an opportunity to say  
22 yes, the Corps is doing their thing but we are

1 going to really focus on PORTS and electronic  
2 navigation but we are going to use Corps data  
3 to help supplement the areas that show all the  
4 water.

5 So I don't think we should totally  
6 discount it but like I said, I don't think we  
7 should be getting into the dredging business.

8 CHAIR WELLSLAGER: Well and again,  
9 this is what we should be doing, talking about  
10 things and coming up with ideas. And it is  
11 good to head-bone like this because without  
12 that, we would be sending the wrong message.  
13 And we don't want to do that. We can't afford  
14 to do that. We are going up for a specific  
15 mission. So let's make sure we have got what  
16 we want to talk about ready when we do that.  
17 I agree 100 percent.

18 Evelyn.

19 MEMBER FIELDS: I agree with what  
20 has been said but I also heard things that are  
21 related to what we are interested in in that  
22 they are talking about the cooperation that

1 they get with NOAA or from NOAA especially  
2 during emergency times, hurricanes, whatever.  
3 I heard the group talking a lot about that  
4 interaction in addition to the Corps  
5 activities for dredging and so forth.

6 So I would think that we would be  
7 focused in on those activities as opposed to -  
8 - and their support on those activities as  
9 opposed to the dredging, as Andy said. But I  
10 don't want us to forget that they talked about  
11 more than just dredging. I mean, that was  
12 certainly a lot but they talked about a whole  
13 lot of other things, too. At least that is  
14 what I heard.

15 CHAIR WELLSLAGER: No, I agree.  
16 Sorry, Bill.

17 Frank.

18 MEMBER HANSON: No, just the  
19 inflection.

20 CHAIR WELLSLAGER: Sorry, Bill.

21 MEMBER HANSON: It's dredging, not  
22 dredging.

1                   MEMBER KUDRNA: Matt, let me try a  
2 theme for this when we go to Washington. And  
3 Randy Lyon who is the head of the division  
4 that handles the budget examiners for NOAA  
5 once told me, we are not in the business of  
6 making numbers bigger. We are in the business  
7 of making numbers smaller, which is what the  
8 framework is in Washington.

9                   But I think we could tie together  
10 a number of the things that we are going to  
11 look at in the top five into a theme that, in  
12 terms of ports and waterways, a number of  
13 things are going to occur. Panamax vessels  
14 are going to be coming in. Ports are spending  
15 billions of dollars in terms of preparing for  
16 that activity. There needs to be charting,  
17 mapping, dredging, in order to accommodate  
18 these activities. The Northern Passage is  
19 coming after that and there is a need for  
20 those kinds of things in that particular  
21 direction and they all relate to jobs and  
22 economic activity for the country. And in

1 order to fully achieve those, certain things  
2 need to be done.

3 And then it doesn't sound like you  
4 are just whining for more money. You are  
5 talking about the benefits that are going to  
6 occur to the country for both jobs and  
7 employment and economic activity that the  
8 country is trying to spur on and get out of.  
9 And then you can go and you can talk about a  
10 reduced top ten list into five and you could  
11 talk about the need for mapping, charting,  
12 dredging, and those kinds of things we are  
13 collectively talking about not only here but  
14 in Alaska and the other ports.

15 CHAIR WELLSLAGER: I like that.  
16 Court reporter, did you get that? Can you  
17 reproduce that real quick? Very good.

18 Jeff.

19 MEMBER CAROTHERS: Jeff Carothers  
20 again. I agree with Frank there. I think in  
21 this climate right now if you can show NOAA is  
22 somehow creating jobs in the private sector

1 that would be a big, big sale.

2 One of the things I asked about  
3 this Raven system because I hadn't heard about  
4 it before. And it is a private company that  
5 created jobs, developed the software to take  
6 NOAA products in and make it useable for the  
7 end user. So maybe we could focus a little  
8 bit on those things.

9 I know it was Rich or Admiral that  
10 said now that they have been working on a unit  
11 that takes the AIS and electronic navigation  
12 into one unit or something like that. But to  
13 me that is something that NOAA can provide for  
14 stuff the AIS has provided by commercial  
15 industry. A commercial company developed this  
16 device. We set the standards for what the  
17 device could do but put it out for a  
18 commercial company to develop it.

19 Anyway, the point is if we could  
20 show NOAA is taking the money and creating  
21 jobs, I think that would be a big sale right  
22 now.



1 CHAIR WELLSLAGER: Rich.

2 MR. EDWING: Yes, just following  
3 up on that. Part of integrating PORTS data  
4 into AIS is there is a black box that sits on  
5 the ship's bridge. And there is a chicken or  
6 an egg sort of thing where even though it is  
7 capable of taking in this data, there was  
8 still some firmware and software that had to  
9 be developed. And it had to be developed by  
10 Raven or ARINC, and I forget who the third  
11 manufacturer is. And in Tampa Bay it was  
12 ARINC that stepped up and did some  
13 development.

14 And the idea is if we start  
15 getting this data out there, the other  
16 manufacturers or commercial entities will step  
17 up and not just do the application to get it  
18 in there but then start doing all sorts of  
19 other value-added applications.

20 So if we can kind of get the  
21 spigot going here, I think a lot of that is  
22 going to happen.

1                   MEMBER CAROTHERS: Yes, that is  
2 what we need to get the point I think we need  
3 to get across.

4                   MR. EDWING: Right.

5                   MEMBER CAROTHERS: You know, hey,  
6 we are using these products. It's generating  
7 jobs and the whole country is going to  
8 benefit.

9                   MEMBER DEMPSEY: Along with what  
10 Frank just said about the theme of the  
11 benefits, you know, is the idea of public  
12 awareness. I think that can be incorporated  
13 in the same thing -- outreach and education.  
14 Public awareness is going to lead to more  
15 funds.

16                   CHAIR WELLSLAGER: All right.  
17 Yes, please.

18                   ADMIRAL GLANG: Gerd Glang. Mr.  
19 Chair, have you thought more about the  
20 planning working group, that topic that was  
21 brought up yesterday, and possibly leveraging  
22 the working groups between an ad hoc group in

1 the next day? There are a couple of things  
2 going on that I hear. One is start thinking  
3 about producing what the output of this  
4 meeting might look like. And then the second  
5 piece is start thinking about what we want to  
6 do at the next meeting in March. And maybe  
7 one way to do that is just throw together or  
8 use some of the existing ad hoc working groups  
9 or a couple folks, draft it, and then bring  
10 that back to the next session of the panel  
11 tomorrow for the next group discussion. I'm  
12 just throwing that out as a suggestion.

13 Sometimes it is easier to have  
14 something in front of you and take it apart,  
15 rather than to try and build it from scratch  
16 as a group is what I am suggesting.

17 CHAIR WELLSLAGER: Right.

18 ADMIRAL GLANG: But that would  
19 require a few folks to spend a little time on  
20 it tonight.

21 CHAIR WELLSLAGER: Well no, I had  
22 not thought about that but that is a good

1 idea.

2 ADMIRAL GLANG: It is just sort of  
3 a first draft and then tomorrow maybe we are  
4 warmed up a little bit more because we will  
5 have a chance to have gone through and  
6 incorporate what we hear at the breakout  
7 sessions as well. So, just kind of do a  
8 little time management.

9 CHAIR WELLSLAGER: Right.  
10 Actually, that is a very good idea. And  
11 seeing what you had actually written here,  
12 Frank, would you be -- would possibly you and  
13 Evelyn and Deborah, would you mind working,  
14 since the three of you all had thought about  
15 this and try to spend maybe 30 minutes tonight  
16 coming up with a brief set of ideas that we  
17 might be able to use for the D.C. meeting?  
18 And we could address those tomorrow with what  
19 we are talking about as well from things that  
20 would be generated.

21 And Jeff, if you would like to sit  
22 in with that as well and your ideas with the

1 Raven, I think that would be very beneficial.

2 Nothing robust but just some  
3 ideas. I think that would be outstanding and  
4 quite helpful.

5 Good idea. Thank you! That is  
6 what the DFO is for, right? You have done it  
7 once or twice without having to reinvent the  
8 wheel.

9 Well we have got about 15 minutes  
10 before we need to have our public discussion.  
11 I have got one other question and I am going  
12 to address it to Rich because I have heard a  
13 couple of different things.

14 PORTS. When somebody wants to  
15 start a PORTS system, they come to you with a  
16 check or money and they pay for this piece of  
17 equipment that is going to go out or set of  
18 pieces of equipment that are going to go out  
19 into a harbor and be used for oceanographic  
20 readings, calculations, things that will then  
21 be sent to ship as they are coming into port.  
22 Correct?

1 MR. EDWING: Well, I would say  
2 before we get to the check part, they come to  
3 us with some problems and requirements. Okay?  
4 And we sit down with them. And then once we  
5 get past some initial discussions, we usually  
6 then kind of have a local stakeholder meeting  
7 to see what is really needed in an area, where  
8 you need more current meters, or tide gauges,  
9 or air gaps, or whatever. And then we can  
10 provide some cost estimates and they can see  
11 how much they want to -- how much they can  
12 afford, so to speak.

13 And then once they can come back  
14 to us and say yes, we can identify this level  
15 of funding, then we have to enter into a  
16 memorandum of understanding, an agreement.  
17 And then once that is in place, that is when  
18 the money, the funds can be transferred to buy  
19 equipment to fund maintenance contracts and  
20 things like that.

21 CHAIR WELLSLAGER: So that being  
22 said, then it is the issue of the initial

1 purchase and then the maintenance contracts  
2 would follow.

3 I have heard here, and I have  
4 heard in Houston/Galveston -- correct me if I  
5 am wrong but Portsmouth has a PORTS system, do  
6 they not? Do you have one that you work with  
7 in Columbia River? How is that funded for  
8 maintenance, do you know?

9 COURT REPORTER: Could you turn on  
10 the mike, please?

11 MEMBER DEMPSEY: Excuse me.  
12 Probably through the Port of Portland and they  
13 probably get it through FEES.

14 CHAIR WELLSLAGER: Well and that  
15 is where I am going with this. Tampa, I don't  
16 think, has a maintenance program, do they?

17 MR. EDWING: Yes, they do have a  
18 maintenance program. They have a consortium  
19 that raises the funds and they actually, they  
20 pass the funds to a Dr. Mark Luther, who is  
21 attached to the Florida State University. He  
22 does all the maintenance for them to the

1 standards that we provide.

2 CHAIR WELLSLAGER: Okay. Well,  
3 earlier on there was -- I am pre-dating myself  
4 now -- three, four, five years ago the idea  
5 was to try to get funding from the federal  
6 government to do the maintenance for PORTS.  
7 And I know of at least two or three letters of  
8 recommendation that something like that was  
9 written in.

10 And I am hearing about what is  
11 going on there, what they are doing here,  
12 obviously what is being done in Tampa. Would  
13 not a recommendation instead to say NOAA  
14 administration be one that it would be advised  
15 for the ports to collect some kind of a tax  
16 based on pilotage? Or wordsmith it however  
17 you could, but by doing something like that it  
18 is not going to cost the port any money. They  
19 are going to collect it from the ships coming  
20 in and they could use that as a system for  
21 maintenance. Is that something -- and I am  
22 throwing this out. I'm not sure, but is that



1 something that we, as an HSRP panel could make  
2 as a statement, as a recommendation?

3 Because the money is there and  
4 this could finally be something that would  
5 just lay to rest the idea of the funding for  
6 maintenance. And if we could sell that to the  
7 Hill, we could also say, look at the benefits  
8 from this because safety issues -- I can't  
9 think of anything right now. I'm tired. But  
10 the idea would be there are a lot of benefits  
11 that you would have if the PORTS systems were  
12 up and running at the various ports. And if  
13 what it takes is a maintenance plan and that  
14 has been the straw breaker, well, we are also  
15 saying this is how you could do it and it  
16 would be the recommendation of collecting a  
17 pilotage fee that would be passed off from the  
18 ship to the port and then the port could then  
19 turn around and use the money for the  
20 maintenance of a PORTS system.

21 Bill?

22 MEMBER HANSON: Yes, Matt, I think

1 one of the things we have tried to do since I  
2 have been part of the panel is identify what  
3 it is that NOAA, NOS does well and how to push  
4 for that without talking about how it gets  
5 funded and that kind of thing. Maybe a  
6 compiling of how it is done in different  
7 places because each port is completely  
8 different. They have different management and  
9 different schemes.

10 But going to the Hill and saying  
11 this program only works if you fund it is kind  
12 of a hypocritical message. We are engineers,  
13 scientists, geeks. We have got products we  
14 think our stakeholders can use and we really  
15 don't care who pays for it.

16 And if the message is, it only  
17 works if there are federal dollars, I don't  
18 think that is a very good message for us to  
19 present. And whether the states pay for it,  
20 the ports pay for it, the pilots pay for it,  
21 if it is a good product, then that is why NOAA  
22 should be researching and producing these

1 types of products.

2 MEMBER JAY: I guess I would  
3 comment in a slightly different vein. I think  
4 one of the issues may be about doing a case-  
5 by-case basis is that everybody is reluctant  
6 to raise the costs in their port. So anything  
7 that costs more money is a bad thing that they  
8 have to pass on to the customer.

9 Whereas, I mean something along  
10 the lines of the Harbor Maintenance Trust  
11 Fund, everybody pays into that, all ships  
12 coming in. We actually do have some wording  
13 in the strategic effectiveness draft document,  
14 which I don't think we have ever reviewed as  
15 a group, suggesting that possibility. Even if  
16 the Harbor Maintenance Fund is not being used  
17 as intended now, is it a model?

18 MR. ARMSTRONG: I think I heard  
19 you say that we would suggest that Congress  
20 require the ports to collect a fee to pay for  
21 a PORTS system everywhere. And I am not sure  
22 that --

1                   CHAIR WELLSLAGER: No. If that is  
2 what I said, that is not what I was trying to  
3 say. What I was insinuating or trying to  
4 state was instead of getting funding from  
5 Congress or from NOAA to fund these things,  
6 instead it would be something that would be --  
7 the funding mechanism would be created from  
8 collecting a tax, if you will, based on the  
9 ships coming in and exiting and using that tax  
10 money or pilotage fee, or wordsmith it the way  
11 that you want to, but somehow collecting the  
12 fee from the ships, since they are using the  
13 PORTS system and placing that fee towards the  
14 maintenance of a PORTS system. Not getting  
15 the Congress to pay for something. I think in  
16 the past that is what we had been trying to  
17 say should be done but instead I am saying no,  
18 that is not what we want to do. Instead, why  
19 can't we put the burden on to the port of  
20 choice to have them collect the money and by  
21 doing that, they can pay for the maintenance.

22                   And what I am in essence saying is

1 HSRP could make the stance we recommend the  
2 use of the PORTS system. It is beneficial and  
3 can be shown to be beneficial by a variety of  
4 different ways but, and maybe this isn't  
5 something we should say now that I am thinking  
6 about it out loud, but by doing this it would  
7 be something that we throw the onus of the  
8 support back onto the shoulders onto the  
9 actual port itself, instead of trying to get  
10 the federal government to pay for the  
11 maintenance.

12 So thinking about loud sometimes  
13 that is when I find out, well, maybe it isn't  
14 such a good idea but it was a thought that I  
15 had for a moment.

16 MEMBER DEMPSEY: User base, you  
17 know, what does one of these things cost?

18 MR. EDWING: Well, it really  
19 depends on the size of the port. I mean we  
20 have some ports that are not much more than a  
21 water level station with a couple of  
22 meteorological sensors to ones that are

1 multiple. So it can range from \$100,000 to a  
2 million easily. So it just really depends on  
3 the size. Again, every port is different, so  
4 they have different needs.

5 MEMBER CAROTHERS: It sounds like  
6 an education problem. You know, the pilots  
7 here got used to it and now they can't live  
8 without it. So they are willing to pay for  
9 it. And I was talking to Captain here today.  
10 The real users of the system are the pilots in  
11 most ports. It is not the ship owners. But  
12 the pilots have to use it to do their job. So  
13 they should be able to charge for paying for  
14 something they need to do their job with.  
15 That is what makes sense to me.

16 VICE CHAIR PERKINS: Food for  
17 thought. Maybe we are looking at this at  
18 perhaps a micro level and the focus on ports  
19 is just one piece. I mean, the new NOS tag  
20 line is Positioning America for the Future.  
21 We have a universal problem, which is a lack  
22 of funding for the programs that are essential

1 to be able to provide Positioning America for  
2 the Future. So whether it is GRAV-D or  
3 whether it is PORTSp, you know, we can go down  
4 the list but the problem is universal.

5 So just food for thought, maybe we  
6 should be talking about a positioning user fee  
7 that is ubiquitous and could collect revenue  
8 similar to what the fishing license in the  
9 marine, you know, sales tax item does.

10 Could this group put forward a  
11 message to the Hill about the benefit of a  
12 positioning user fee, one cent for every GPS-  
13 enabled device that is sold? And then that  
14 revenue could come through and fund all of  
15 these programs, potentially. And then there  
16 would be a body put in place that would decide  
17 who gets how much of the pie, what slice.

18 I mean how many spatially-enabled  
19 devices will be sold in the next five years?  
20 And ten cents a device? A dollar a device?  
21 We could solve our own problem relatively  
22 easily and you are not asking for a

1 Congressional spend then. You are asking for  
2 good governance.

3 Pardon me, Ken?

4 MEMBER BARBOR: What would Grover  
5 Norquist say about that?

6 (Laughter.)

7 MEMBER BARBOR: I think that is --

8 VICE CHAIR PERKINS: It works for  
9 the sport fishing industry. I mean it raises  
10 funds and it protects habitat and estuary and  
11 it has been in place for decades. And the  
12 sportsmen love it and they pay it gladly and  
13 they advocate for the continuation of it. You  
14 know, Ducks Unlimited and on down the list.  
15 These programs for the users, you know,  
16 embrace them, work. And we have got a big  
17 user base out there. We can have people come  
18 in here and talk to us all day. We have got  
19 other users that would help advocate for this.

20 MEMBER CAROTHERS: The only  
21 problem with that I see is it collect the fee,  
22 and it is going to drop in the general fund.



1 I guarantee it.

2 MEMBER KUDRNA: I guess my  
3 preference would be to show the benefits of  
4 these programs and the need and initially be  
5 silent on exactly how you fund it. Because if  
6 you lay one thing out, you are going to get  
7 opponents to it immediately because that is  
8 the taxing method you suggested.

9 And the other thing I was going to  
10 suggest is maybe our committee that just got  
11 this new assignment would maybe meet for  
12 breakfast at 7:30 tomorrow, take some notes,  
13 and we will sit at a table and work something  
14 up for the group tomorrow morning.

15 I had one other comment. Scott  
16 suggested the idea that we think about doing  
17 something associated with a cruise. And Matt  
18 and I talked and he said that there was some  
19 heartburn in the past because being on a  
20 cruise you are going to the Bahamas or  
21 something and it wouldn't be American. And I  
22 called a little while ago the Executive

1 Director of our Great Lakes IOOS Regional  
2 Association and we have cruise ships on the  
3 Great Lakes. And the Great Lakes have some  
4 real issues right now with low water levels.  
5 And they are smaller vessels and they are tied  
6 to environmental education programs that they  
7 do on the vessels themselves. And we could  
8 probably, when we do a three-day meeting, we  
9 could do something one way, in one direction  
10 or the other, you know Chicago-Detroit,  
11 Cleveland-New York or something, and get to  
12 experience the cruise side of the issue, the  
13 recreational boating side of the issue that  
14 has severe problems with low water, and stay  
15 entirely within the United States and probably  
16 make some arrangements to do that pretty  
17 economically.

18 CHAIR WELLSLAGER: I like it! It  
19 would be crazy to say no. Logistically  
20 though, Kathy, I have to look to you since you  
21 have kind of gone through this in the past.  
22 What would be involved in the logistics of

1       trying to organize something like that?

2                   MS. WATSON: Well, if the cruise  
3 ship industry wants to sponsor the meeting,  
4 there should be no problem.

5                   MEMBER KUDRNA: Well, we'll have  
6 to work on that.

7                   MS. WATSON: But if you are  
8 expecting the federal government appropriated  
9 funds to pay for that, I don't think that  
10 would go very well.

11                   MEMBER KUDRNA: Well, I guess we  
12 pay for our hotels right now. So something  
13 equivalent to what the hotel per diem in three  
14 cities might be able to negotiated with the  
15 cruise line or something.

16                   MS. WATSON: Yes, your per diem,  
17 yes, could be covered through HSRP.

18                   MEMBER KUDRNA: Yes, per diem and  
19 the hotel equivalency. That might do it.

20                   MS. WATSON: But the other meeting  
21 logistic stuff, that is very difficult. You  
22 have to be careful with that. You know, the

1 perception of appropriated funds.

2 MEMBER KUDRNA: Understood. But  
3 as I say, I have been working for years to try  
4 get NOAA to figure out where the Great Lakes  
5 are and this would help along those lines,  
6 too.

7 MS. WATSON: Well actually, Frank,  
8 the HSRP was in the Great Lakes --

9 MEMBER KUDRNA: They were?

10 MS. WATSON: -- back in 2009, the  
11 fall of 2009. And Matt, you were there.  
12 Correct?

13 CHAIR WELLSLAGER: Yes.

14 MS. WATSON: Right, in Duluth.  
15 And there is information on the HSRP website  
16 on the presentations and --

17 MEMBER KUDRNA: Okay.

18 MS. WATSON: -- information that  
19 was discussed back then. So I would suggest  
20 going to that area and reviewing it.

21 MEMBER KUDRNA: All right. I will  
22 see if I can get some information, some

1 potential contacts, if you agree Mr. Chairman.

2 CHAIR WELLSLAGER: I mean if you  
3 don't mind doing the footwork, by all means.  
4 Anything I think would be beneficial to have.

5 It is a quarter past. All right,  
6 is there anyone here that would like to take  
7 a moment and address the panel from the public  
8 comment period? Mr. Dasler.

9 MR. DASLER: Jon Dasler. Since  
10 you are talking about PORTS, I just again  
11 wanted to add some historical significance  
12 from the HSRP perspective, because this has  
13 been going on since HSRP started back in 2002,  
14 ten years ago.

15 So we had a meeting in San  
16 Francisco and it was shortly after the Cosco  
17 Busan incident in 2008. And Captain Korwatch  
18 at San Francisco Marine Exchange said the  
19 Marine Exchange actually funds the ports  
20 operations there. And although the PORTS  
21 system brought a lot of attention to the PORTS  
22 system, there were some problems with faulty

1 sensors. I mean the Marine Exchange wasn't  
2 really able to maintain funding. Some of the  
3 current meters weren't operational. The Cosco  
4 Busan, the leading cause of that was not only  
5 just fog but was also currents, tidal currents  
6 at the time. And I think it was raised at  
7 that time to really move PORTS forward. You  
8 really, somehow, you need to have a funding  
9 base for that. And it really isn't fair to  
10 stand up a PORTS system and then say here you  
11 go, you have to maintain it.

12 And I think even CO-OPS raised  
13 issues, especially from a tidal perspective,  
14 you can't just have anybody go do maintenance  
15 on a tide station. There is a lot of criteria  
16 that needs to be done for that.

17 So I would just encourage, as  
18 PORTS are pushed forward and there needs to be  
19 a more stable base for that. I guess we have  
20 been arguing this for ten years on how that is  
21 going to happen. And if that can go through  
22 that but like the Pilots Exchange said, we

1 can't afford this anymore and we are not going  
2 to be able to maintain it. And it was falling  
3 by the wayside and then you have the Cosco  
4 Busan incident happen.

5 I guess I wouldn't take that off  
6 the table. I mean if a pilotage fee is going  
7 to work or getting some stable maintenance to  
8 it. Because you can spend all this money on  
9 the installation of a big system like that but  
10 if you can't properly maintain it, it can do  
11 more harm than good because people think it is  
12 going to work and then it doesn't.

13 MR. EDWING: Rich Edwing. So what  
14 happened now in San Francisco with that system  
15 was originally established with some funds  
16 from the state, I think it is OSPR, Oil Spill  
17 Prevention something to prevent oil spills.  
18 But over the years when their funding -- they  
19 had funded the establishment but never really  
20 provided any funds to maintain. And when  
21 Cosco Busan happened, really that port just  
22 withered down to just a federal

1 infrastructure. Our NWLON stations were  
2 operating. The current meters had all stopped  
3 operating at that point. They couldn't keep  
4 them going and they would have been very  
5 helpful during that oil spill. It wouldn't  
6 have prevented the oil spill but it would have  
7 certainly improved the response.

8           So now of course after that oil  
9 spill, they have got a new influx of funding  
10 and now they have expanded that PORTS out  
11 again and reestablished the sensors that had  
12 gone down and I think they added others. But  
13 I am not so sure how stable their maintenance  
14 funding is. So they could be going into  
15 another cycle. So I appreciate your point,  
16 Jon.

17           CHAIR WELLSLAGER: Admiral?

18           ADMIRAL GLANG: Gerd Glang. I  
19 just wanted to recognize Win Ellington from  
20 Senator Cochran's Office from Mississippi.  
21 Win, this is your opportunity if you wanted to  
22 provide any --



1 MR. ELLINGTON: I'll be here  
2 tomorrow.

3 ADMIRAL GLANG: You will be here  
4 tomorrow as well? If you don't want to wait  
5 to the end of the day tomorrow, though, to  
6 provide comment, please let us know.

7 MR. ELLINGTON: I'm just very glad  
8 to be here. Thank you all.

9 CHAIR WELLSLAGER: Anybody else  
10 from the public? And I guess that would be  
11 it. Regular conversation, Dave?

12 I think with what we have got with  
13 the committees for tomorrow, it was going to  
14 be meeting in the breakfast. We have got  
15 Evelyn, Frank, and Jeff, and Deborah. So they  
16 were going to put that together.

17 ADMIRAL GLANG: And which  
18 committee is that? What is the expected  
19 outcome -- output?

20 CHAIR WELLSLAGER: The output?  
21 No, this is the one for the planning  
22 subcommittee that is going to be coming up in

1 the Washington, D.C. area.

2 ADMIRAL GLANG: Okay.

3 MEMBER DEMPSEY: The Admiral is  
4 welcome to join us.

5 ADMIRAL GLANG: I just want to  
6 make sure that our little ad hoc working  
7 groups and subcommittees have a purpose. I  
8 want to make sure that we come away at the end  
9 of this meeting with a clear product and a  
10 clear direction where we are going. Because  
11 Matt is going to have pick up the pieces and  
12 Kathy will beat him up if we don't get the  
13 letter out.

14 MS. WATSON: Absolutely.

15 MEMBER FIELDS: I thought that was  
16 the recommendation or the suggestion was to  
17 have a second group that put together a first  
18 draft of recommendations, based on what we  
19 have done up until now or what has been done  
20 up until now.

21 CHAIR WELLSLAGER: And that is the  
22 other ad hoc committee that Admiral Gland had

1 mentioned that we should create as well.

2           Would you like to work with that?  
3 Say again? The second ad hoc committee, Gary,  
4 could I get you to help out with that? And  
5 Scott?

6           VICE CHAIR PERKINS: Sure.

7           CHAIR WELLSLAGER: And Lawson, how  
8 would you like to -- that's right. Frank,  
9 could I get you to -- I'm sorry. Ken, I'm  
10 looking at you and thinking Frank. My bad.

11           So we have those that we can meet  
12 together and discuss what we could put  
13 together for a draft. Very good. So that  
14 should take care of that.

15           Yes, ma'am?

16           MS. WATSON: Matt, let me clarify  
17 this. So there is two ad hoc groups. One is  
18 a planning ad hoc group, which is Carothers,  
19 Dempsey, Fields, Kudrna. Correct?

20           CHAIR WELLSLAGER: That is correct.

21           MS. WATSON: That is to prepare  
22 for the March meeting.

1 CHAIR WELLSLAGER: Yes.

2 MS. WATSON: Okay and what is the  
3 other ad hoc group?

4 CHAIR WELLSLAGER: The second ad  
5 hoc group would be the drafting subcommittee.  
6 And that would include the Chair, Vice-chair,  
7 Dr. Jeffress, and Ken Barbor.

8 MS. WATSON: And the purpose of  
9 that one is?

10 CHAIR WELLSLAGER: To come up with  
11 the recommendations for the letter to NOAA  
12 administration from this meeting.

13 MS. WATSON: Excellent. Okay,  
14 great. Thank you.

15 CHAIR WELLSLAGER: Yes.

16 MS. WATSON: Okay and Matt, one  
17 other thing. Could you please share to the  
18 panel about tomorrow morning, where the breaks  
19 are, the stakeholder breakouts?

20 CHAIR WELLSLAGER: Yes. The  
21 breakout -- you know, they are upstairs almost  
22 directly above us. Correct?

1 MS. WATSON: Right.

2 CHAIR WELLSLAGER: Because I never  
3 actually got the tour. You told me when we  
4 got here and I -

5 MS. WATSON: Right. Okay, the  
6 Chair volunteered panel members, one person to  
7 serve as a facilitator for each breakout  
8 session and one person to serve as a scribe.  
9 So for the hydrographic charting, I believe it  
10 is Bill Hanson. The geodesy, I'm not for sure  
11 who the facilitator -- I don't have it in  
12 front of me. And then of course -- and then  
13 the tides current water levels.

14 And there are meeting spaces,  
15 meeting rooms on M2, which you just go to the  
16 elevator and come down the same hallway here.  
17 And it is actually on the agenda which room  
18 you are going to be in. And there is flip  
19 charts in there for you to use to capture the  
20 issues, recommendations, opportunities, or  
21 whatever.

22 MEMBER CAROTHERS: Do we know who

1 is on these breakouts?

2 CHAIR WELLSLAGER: As a matter of  
3 fact, we do. Funny you should ask. What I  
4 have got now set up for the hydrographic  
5 surveying, it is going to be facilitated by  
6 Bill Hanson. The scribe, if she is feeling  
7 better was going to be Joyce Miller. Then I  
8 was asking Evelyn and Frank to sit in on that  
9 panel discussion.

10 For geospatial, we have got the  
11 facilitator as Gary Jeffress and Carol was  
12 going to be our scribe there. Lawson and Jeff  
13 Carothers were going to sit in on that.

14 The tide currents and water levels  
15 was going to be Ken as the facilitator, Ken  
16 Barbor and Susan was going to be our scribe.  
17 And David Jay and Captain Dempsey, Deborah  
18 Dempsey were going to sit in on that.

19 And I think that covered  
20 everything. Myself and Scott were going to go  
21 from different ones to check and see how  
22 things were going. And that pretty much, I

1 think, covered everybody in here.

2 Yes?

3 MEMBER DEMPSEY: Excuse me, Chair.

4 I'm confused not about the breakout sessions  
5 but so there is a committee meeting tomorrow  
6 to do the first draft of recommendations for  
7 our letter to NOAA?

8 CHAIR WELLSLAGER: That is an ad  
9 hoc committee that I am going to be working on  
10 tomorrow, yes.

11 MEMBER DEMPSEY: Is that the top  
12 five or the top ten?

13 CHAIR WELLSLAGER: No, no, no.  
14 This is going to be the letter of  
15 recommendations that is going to come from  
16 this meeting going to NOAA administration.

17 MEMBER DEMPSEY: Okay, the top  
18 five, top ten is going to come out of our ad  
19 hoc committee?

20 CHAIR WELLSLAGER: Yes.

21 MEMBER DEMPSEY: Okay.

22 CHAIR WELLSLAGER: Yes.

1 MEMBER DEMPSEY: Thank you.

2 CHAIR WELLSLAGER: Yes, sir?

3 MEMBER BRIGHAM: You know, when we  
4 talked about this -- Lawson Brigham. When you  
5 talked about this planning meeting, you were  
6 actually going to be on it. But I really  
7 recommend that the vice-chair or the chair be  
8 on the planning committee for the next  
9 meeting. I mean, I hate to volunteer you guys  
10 but I just think it -- just because you are  
11 going to create this meeting with the NOAA  
12 staff later, that maybe you ought to be right  
13 there at the beginning. Sorry to volunteer  
14 you guys but, it just seems sensible to me.

15 CHAIR WELLSLAGER: I agree.

16 VICE CHAIR PERKINS: Point well  
17 made. I think having the committee get  
18 together and maybe get the ball rolling. But  
19 you are absolutely right, they can't go  
20 forward without Matt, as the Chair, or myself.  
21 That is correct.

22 One small correction. I had said



1 Science Advisory Board for March 4 and 5. And  
2 it is the Sea Grant Advisory Board, not  
3 Science Advisory Board. It is the Sea Grant  
4 group that would could dovetail with, if we  
5 chose to.

6 MEMBER CAROTHERS: Can I suggest  
7 maybe that you guys break up tomorrow, I  
8 guess?

9 VICE CHAIR PERKINS: Yes. In the  
10 afternoon?

11 MEMBER CAROTHERS: Yes.

12 VICE CHAIR PERKINS: Yes, that is  
13 correct. That was in the intent. We have  
14 three stakeholder groups and so Matt and I  
15 were going to tag team and see if we couldn't  
16 help facilitate and keep the conversation  
17 moving along, as opposed to in Anchorage where  
18 we were each captive in one.

19 CHAIR WELLSLAGER: That's what  
20 happened last year up in Anchorage. I stayed  
21 in one --

22 COURT REPORTER: Would you turn on

1 the mike, please?

2 CHAIR WELLSLAGER: Sorry. The  
3 idea was to instead of staying in just one,  
4 being able to move around and interacting with  
5 all three. That was something I missed out on  
6 last time. I wanted to have the opportunity.

7 And Frank, if you don't mind, I  
8 would like to sit in with you all tomorrow  
9 morning. That would be a good idea.

10 Dinner, 6:30 downstairs in the  
11 lobby, Kathy? For those interested in going  
12 out someplace, if you don't have plans. So  
13 others will, if they want but for now I think  
14 the meeting is over. And we will adjourn  
15 tomorrow morning at eight o'clock. No, wait -  
16 - 8:30, I think. Correct? Breakfast is at  
17 7:30 and the meeting starts at eight. All  
18 right, thank you very much.

19 (Whereupon, at 5:27 p.m., the  
20 foregoing proceeding was adjourned  
21 to reconvene at 8:30 a.m. on  
22 Thursday, November 29, 2012.)

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C E R T I F I C A T E

This is to certify that the foregoing transcript

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Review Panel

Before: DOC/NOAA

Date: 11-28-12

Place: New Orleans, LA

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