U.S. DEPARTMENT OF COMMERCE

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 NATIONAL OCEANIC AND

 ATMOSPHERIC ADMINISTRATION (NOAA)

 HYDROGRAPHIC SERVICES REVIEW PANEL

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 PUBLIC MEETING

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 WEDNESDAY, APRIL 8, 2015

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The Hydrographic Services Review Panel met in the Long Beach Hilton International Conference Room, 701 West Ocean Boulevard, Long Beach, California, at 8:30 a.m., Scott Perkins, Chair, presiding.

MEMBERS PRESENT

SCOTT R. PERKINS, HSRP Chair

WILLIAM HANSON, Vice Chair

ANDY ARMSTRONG\*

LARRY ATKINSON

RADM KENNETH BARBOR

JULIANA BLACKWELL\*

DR. LAWSON W. BRIGHAM

RADM EVELYN FIELDS

ED J. KELLY

DR. FRANK KUDRNA

DR. GARY JEFFRESS

CAROL LOCKHART

DR. DAVID MAUNE

JOYCE E. MILLER

CPTN. SALVATORE RASSELLO

SUSAN SHINGLEDECKER

\* Non-voting members

ALSO PRESENT

REAR ADMIRAL GERD F. GLANG, HSRP Designated

Federal Official

HONORABLE ALAN LOWENTHAL, U.S. House of

Representatives, California's 47th

Congressional District

MICHAEL CHRISTENSEN, Senior Executive Lead,

Supply Chain Optimization, Port of Long

Beach

CAPTAIN JENNIFER F. WILLIAMS, Sector

Commander, Sector Los Angeles Long

Beach, US Coast Guard

MICHAEL ASLAKSEN, Chief, Remote Sensing

Division, National Geodetic Survey, NOAA

GLENN BOLEDOVICH, Chief, NOS Policy and

Constituent Affairs Division

PAUL BRADLEY, Policy Advisor, National Ocean

Service, NOAA

CAPTAIN (sel) RICK BRENNAN, Chief, Coast

Survey Development Laboratory, NOAA

DANA CACCAMISE, Pacific Southwest Regional

Geodetic Advisor, National Ocean

Service, NOAA

RUSSELL CALLENDER, Ph.D., Deputy Assistant

Administrator, National Ocean Service, NOAA

ASHLEY CHAPPELL, IOCM Coordinator, Office of

Coast Survey, NOAA

JEFF FERGUSON, California Navigation

Manager, Office of Coast Survey, NOAA

TIFFANY HOUSE, Project Analyst, Remote

Sensing Division, National Geodetic

Survey, NOAA

AUDRA LUSCHER-AISSAOUI, Resilience Program

Manager, Center for Operational

Oceanographic Products and Services

LYNNE MERSFELDER-LEWIS, HSRP Coordinator

RUSS PROCTOR, Chief, Navigation Services

Division, Office of Coast Survey, NOAA

PETER STONE, Technical Director, Center for

Operational Oceanographic Products

and Services

BIANCA TERRY, Office of Assistant

Administrator, National Ocean Service, NOAA

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 (8:32 a.m.)

CHAIR PERKINS: Good morning.

Well welcome, to the 28th meeting of the Hydrographic Services Review Panel. While the Members have changed since the Panel was formed in 2004, the Panel continues to advise NOAA on its Hydrographic Survey programs, projects, and services.

Good morning, my name is Scott Perkins, and I have the privilege of serving as the elected Chair of the Panel.

We have a whole three days of meetings ahead of us, including many interesting speakers and presentations, updates on NOAA programs, the report on the Long Beach Precise Navigation Project, and interactive breakout sessions on Coastal Intelligence and Coastal Resiliency.

So we have much to do together over the next three days. To help us start this meeting off, it's my privilege to introduce Rear Admiral Glang, the Director of NOAA's Office of Coast Survey, and the designated federal official for the Panel. Admiral.

RADM GLANG: Thank you, Mr. Chair. Good morning, I'm Gerd Glang, Director of Coast Survey, the designated federal official. I'd like to welcome all the Panel Members.

We've got tremendous turnout, I appreciate that. And we have lots of staff to help facilitate and support us throughout the next three days and I welcome out guests, our stakeholders and partners.

Just a quick note on safety, if we have to leave this room for some emergency, it's best to go down the main hallway and down the escalators, but there are alternate exits that are marked exits. So we should have no trouble getting out of here.

And the facilities are just a short walk down the hall on your left, if you hadn't found those yet. So that's all I had for this morning.

CHAIR PERKINS: Great, thank you. Just one note in the meeting. It is a public meeting, it is being recorded. There is a Court Reporter seated at the back of the room. The logistics of his seat in relationship to this table and your name placards, he is not able to see and identify who is speaking by your name placard.

So please try to remember to introduce yourself when you're speaking, for the benefit of the Court Reporter you know, to be able to accurately capture in the transcripts of the meeting, you know who is providing what comment.

You all have an agenda in front of us, but our first order of business is our guest speaker.

RADM GLANG: And some self‑introductions.

CHAIR PERKINS: Oh, I'm sorry, thank you. And self‑introductions of the people at the Panel.

MEMBER JEFFRESS: Hi, I'm Dr. Gary Jeffress, Professor of Geographic Information Science at Texas, A&M University, Corpus Christi.

MEMBER KUDRNA: Frank Kudrna, I'm with AECOM URS Corporation, I serve as the Chief Engineer of the Port of Chicago.

MEMBER BARBOR: Ken Barbor, I'm the Director of Hydrographic Services Research Center at University of Southern Mississippi.

MEMBER FIELDS: I'm Evelyn Fields, and at present I'm retired.

MEMBER BLACKWELL: Morning. I'm Juliana

Blackwell, the Director of NOAA's National Geodetic Survey.

MEMBER BRIGHAM: Morning, I'm Lawson Brigham, Professor at University of Alaska Fairbanks.

MEMBER KELLY: Good morning. Ed Kelly, I'm Executive Director of the Maritime Association of the Port of New York and New Jersey.

MR. BOLEDOVICH: I'm Glenn Boledovich, I'm the Policy Director of the National Ocean Service.

DR. CALLENDER: Good Morning, I'm Russell Callender, I'm the Acting Assistant Administrator of NOAA's Ocean Service.

RADM GLANG: Good morning. Gerd Glang, Director of NOAA's Office of Coast Survey.

CHAIR PERKINS: Good morning, Scott Perkins, I'm the Director of Federal Programs and Surveying and Mapping. I'm headquartered out of Austin, Texas.

VICE‑CHAIR HANSON: I'm Bill Hanson of Great Lakes Dredge and Dock Company.

MEMBER ARMSTRONG: I'm Andy Armstrong, I'm the NOAA Co‑Director of the NOAA‑University of New Hampshire Joint Hydrographic Center.

MEMBER RASSELLO: I'm Captain Salvatore Rassello, Director of Safety of Navigation, Carnival Cruise Lines.

MEMBER SHINGLEDECKER: Susan Shingledecker, Vice‑President, BoatUS, Boat Owners Association of the United States.

MR. STONE: Hello, I'm Peter Stone with the NOS' Center for Operational Oceanographic Products and Services. I'm the Technical Director representing Rich Edwing today.

MEMBER ATKINSON: Morning. I'm Larry Atkinson from Old Dominion University in Norfolk, Virginia.

MEMBER LOCKHART: Carol Lockhart, I'm a woman‑owned small business owner and hydrographer.

MEMBER MILLER: Joyce Miller, Director of Seafloor Data Services at the University of Hawaii.

MEMBER MAUNE: I'm Dave Maune, Senior Remote Sensing Project Manager, of Dewberry Consultants in Fairfax, Virginia.

CHAIR PERKINS: Great and we have on the phone with us, Dr. Larry Mayer, Larry are you here?

(No audible response)

CHAIR PERKINS: Okay, Larry is the Co‑Director of the Center in New Hampshire, Co‑Director with Andy Armstrong.

So good morning distinguished Panel Members. We have three new Panel Members, and we have some re‑appointed Panel Members, so our next agenda item is an official swearing in and the Oath of Office. So new Members and Re‑appointed Members if you'll find your way to the front?

DR. CALLENDER: I'd like you all to stand in front of the flag, if you would?

I'd like you all to raise your right hand please?

(Whereupon, HSRP Members were sworn in)

DR. CALLENDER: Congratulations, thank you.

CHAIR PERKINS: So we have a table at the front of the room with name placards and mics, you know, for our speakers this morning. So if our speakers can find their way to the front of the room and be seated at the appropriate spot at the table please.

Well good morning, Panelists. You know, first on our agenda, it's an honor and a privilege to be able to introduce Congressman Lowenthal.

So Congressman Alan Lowenthal during his two decade tenure as a city councilman, and the California legislature from this region. It's Congressman Lowenthal's dedication to common sense and bi‑partisan solutions that earned him a reputation among his colleagues and constituents as one of the most respected and effective Legislators in both Long Beach and Sacramento.

Congressman Lowenthal is currently the U.S. House of Representatives California, newly created 47th District representative. So without further ado, please join me in welcoming, Congressman Lowenthal.

(Applause)

HON. LOWENTHAL: Thank you. I'm really pleased to be here. You know, you're never too old to learn something. Yesterday, I spent a very important afternoon with some of the people that are here from NOAA, and the Jacobsen Pilot Service going through my port, the Port of Long Beach which I've represented now since being on the city council, and first fought with very contentiously and now become a great, great supporter.

The story of what's happened out here with our ports, is really of a national and international significance. We should all be very, very proud of what California ports have done in terms of leading the world in moving towards new clean technologies, leaning towards a real acceptance of impacts of climate change, and what we can do about it.

So and I've represented this area for so, so long, first on the city council, and the state, now at the federal government. And it's a wonderful district.

But yesterday going through with NOAA and the Jacobsen Pilot Service, as my understanding and how the Ports are changing, and the world is changing in terms of global trade, with new alliances developing and ships getting larger and having more and more of an impact in terms of the size of what we're going to be bringing, it's just a different world that's out there.

And to make that world work, is really what you are all here to, and that's to provide us with the information and hydrographic understanding of, you know, what the depths are, and where we are.

Because it has to be, there can be no mistakes, no mistakes. And I'm proud to say with the partnership between NOAA and the private sector, and both to protect our communities, and to allow this tremendous amount of trade that is going on and to do it in the most positive way.

And so the fact that you are, really are charged with your volunteers who come together to learn, and to provide us with the information is, I'm just really pleased to be here and to support what you do.

So a little bit about, I just already mentioned it, I just want to mention a few things about you know, the importance of safe and efficient ports. And I've mentioned that, we have such a wonderful story out here to tell about that.

And it's a great partnership, and that partnership could not have happened without your input and your ongoing input. Precise navigation, pilot's programs in the ports to make information available. And it's the fact that as boats get bigger, we need more and more real time information and just what you provide.

For me, what you do is also critically important in another way, and that is what are the long term impacts going to be of climate change? And you no longer, even though I believe that the Congress is still in denial about, really grappling with the issue, which it is, we cannot any longer I think out here especially with being a coastal community, I represent this coastal part of where we are right now, in Port of Long Beach and the Long Beach Coast.

We're talking about sea level rise here of two to seven feet by the end of the century. I mean that is staggering for us, staggering for us. You know over the next 85 years to have sea level rise potentially that high with our infrastructure, and impacts upon our communities is just tremendous.

And so I've kind of taken that on more as just kind of as a warning, and you know, not that I really have -- you know I just want to be part of this wave. I don't really think -- and that is that I've taken on the Congress to become the Chair of the Safe Climate Caucus.

And that Safe Climate Caucus really deals with how we're going to educate ourselves and others about what the impacts. And how we've upped climate change are going to be on the nation, and the impacts are so static to me that we just really need to begin to talk about it and try and come up with some kind of rational planning about that.

I'm also on the House Natural Resources Committee. I'm, which I just became a ranking member of the Subcommittee on Energy and Minerals Subcommittee.

And I really think that that to me has become a great learning experience also because it is now allowing me to kind of raise some issues to become much more aware of how do we balance the responsible use of all of our federal lands.

Purposes that Americans really come and treasure their federal lands for recreation, for aesthetics, preservation, fishing, hunting, and balance that with resource development. And that's been the most contentious that last one, is resource development, how we balance it.

And I think that that would lead us hopefully to beginning to have a much more, in the future work with my colleagues, to have a future energy policy that would begin to prioritize what are the fuels of the future. And just start that process of doing that and begin to really kind of set up some of those priorities.

So I look forward to working with you. That's why I'm here, and again I'm just here to, I mean without your input, without your helping on strategic planning, our country is already, you know, we're falling behind in our infrastructure.

But if we don't have the information it's, we're in very serious trouble as a nation. So I really applaud all the work that you do. Thank you.

(Applause)

CHAIR PERKINS: I know the Congressman has a busy schedule today, so if, what we would like to do is entertain questions for the Congressman now before we move on to the following presentations out of respect for your schedule. So with that I'll go first.

And Congressman, can you tell us a little bit about the Freight Infrastructure Reinvestment legislation that you know, that you're working on?

HON. LOWENTHAL: Yes, a little background since you've asked me the question, how much time do I have, an hour?

(Laughter)

HON. LOWENTHAL: I mean come on. CHAIR PERKINS: Our charter doesn't allow for filibusters, but if --

HON. LOWENTHAL: All right. This is not a filibuster, but many of you are not from California I gather. You're really from the rest --

So I have to tell you where I am on this bill and what I'm trying to do on the bill is that -- I was elected to represent this district right here on the city council. And I was a college professor, and this was many years ago. This was in 1992.

And I walked this district from the Port of Long Beach to the Redondo Avenue which is just a couple of miles going towards the east, and you know, right from the ocean up to about 10th Street.

And I would tell people why I was running in 1992, and they all said that's really interesting, Alan why you're running. But will you tell me what's this black soot in the window?

And I kept saying I don't really know what that is, I had the same black soot in my window. And I said, but if you'll elect me, we'll kind of work on a task force and we'll figure out what that black soot is. And we'll start to research the matter, you know.

And that has led me on a 20, if not 23 year now odyssey to find out what that black soot is, which much of it are the particulates from the tremendous concentration of ships, and trains, and trucks. In 1992 we weren't even dealing with some of those issues.

And so in doing that, California made some tremendous strides. People came together to figure out how we can make these ports more efficiently? How we can make them green? How we can keep them open longer? How do we bring them new technology? How do we work together and not have confrontations?

Because there had been for many, many years kind of a hundred year war between some of our ports and the communities. But people began to see that we could change the goals. We could change the goals from one in which environmental protection was thought of as a mitigation, after the decisions were made, to saying that economic development and environmental protection go hand-in-hand and they have to be common goals, common, and have to invest.

And so that led me in the state legislature, which I didn't quite get through, the Governor vetoed it. But a bill which was a container fee in the mid-2000s, which balanced both economic development of the ports, how we could build, invest in infrastructure.

Regional planning and having stakeholders at the table and investing on having those that owned the goods pay for some of the this economic development. And it was a tremendous coalition of people who basically were in support of that.

I actually had bipartisan support in the California legislature. Republicans voted for some, you know a fee, a container fee. And that was just, that was a great, great victory. But the Governor didn't quite sign it.

That gets us now to the ‑‑ and part of the reasons were that it would be very hard for California to do something like that, when in fact the nation, it would just put us at a competitive disadvantage if we were going to charge for every container that came in, a small fee to build an infrastructure and environmental protection. It would put us at a disadvantage.

Fast forward to now, where you know, I'm now in Congress. And I've learned after working in the state legislature for 14 years, working on these issues, I learned that we're going to do the reauthorization.

There's a tremendous amount of momentum to have freight in the discussion because of all the work of advisory committees, and freight coming up to the forefront, and people realizing that you know we have a freight system that's a Rube Goldberg kind of design.

It does, nothing is coordinated, nothing was done to plan it. There's no redundancy, you know we don't know what's going to happen when there are real problems that really hit us in how we move goods throughout the nation.

And so there's a lot of momentum in that direction. And so this just builds upon that. This says, this is a federal bill that says, okay, let's have a sustainable, let's have a system that's designed that we all kind of, based upon all the input of both public and private agencies.

The people that are working on that, its state advisory systems, that were asked for in the last bill but were only voluntary.

Let's set up a system where we will build infrastructure in the country. There will be monies that go to states on a competitive basis. And monies that go to states on a formula basis. And we will pay for that, and it will go through the planning process that I think that is kind of agreed upon now.

How we can kind of get local input into the decision making and keep as much of the decision making in the region as possible, encourage regionalization, and encourage environmental protection, and pay for it with a way which is when any goods are moved in the country, there's a bill for that.

This would be one percent on the people who owned the goods, who pay for the movement of their goods, and throughout the nation. It would generate about $8 billion a year. It would be put into a trust fund for that. It would go for competitive, or that would go for formula, that's our best estimates on how much would be in the fund.

It also has a definitive competitive side, monies been set aside for zero emission projects and so we're kind of proud of that too.

CHAIR PERKINS: Do you have a companion Senate bill that would be introduced, what's the future look like for the bill?

HON. LOWENTHAL: Well, I think trying to get as much support as possible, is right now the, where, we're trying to be part of the discussion at this moment on and focusing on T and I in the House side. And to try to, we do not have yet a Senate companion but I think that's absolutely essential.

I think the real question is going to be that makes this unique, is much of it is where the President is, do we really want a sustainable funding stream?

Are we going to have something that's put into a lock box that's just going for freight infrastructures, going to have a process by which the money is decided, that everybody agrees upon?

And are we going to build the kinds of things or support the kinds of things on an ongoing basis and say it's not going to come out of the national treasury on an ongoing basis. But just like the gasoline tax, it's going to be paid for by the users. And the people who own the goods.

And they're going to get the better system. And they're going to get a system that works. Now they have a system that doesn't work and we all know that. So at least they're going to get something that works, if it can be planned in the right way.

But that's a tough sell at this moment. Right now you know, the feeling of the Congress and for whatever reason, and I'm not even denying that we're so polarized, is that there are just a significant number of people who have such distrust in any funding coming in. There's such distrust because of what they say has been abuses.

Whether that's, I personally don't subscribe to that but I can certainly understand where they're coming from. And it makes it very, very difficult. But I don't think, we don't have people addressing this issue and figuring out how we can have a sustainable funding stream. And how we're going to pay for this.

You know, the President wants to bring in one time monies or a couple years money, and which we should be, a repatriation and I think that's a great, I think that's a great idea.

But I think that we still have to address the issue of a sustainable funding stream, no matter how little, or how much, or what you're going to do, if it's going to be successful. And that's really what I do. I also bring to the table the fact of formula grants. Again I think that we have to maintain the system that we already have.

VICE-CHAIR HANSON: Congressman, if I can dig just a little deeper in the time we have available. In your bill or in your interpretation of infrastructure, does the word infrastructure include the foundational information such as the water elevations, and position of the shoreline and you know the contours of the land?

You know, is that type of information included in that definition of infrastructure? Because that hits closer to home, to this Panel, and the programs on positioning, and navigation, and observation, you know that this part of NOAA's already engaged in.

And that this Panel, this Panel could be advocates, you know for your bill if we have a clearer understanding of --

HON. LOWENTHAL: I need to have my staff, because if it isn't, it should be. So we're talking about the language how it is. It's at 37 pages, so I'm not exactly sure how we've defined that, but I would certainly entertain working with you.

VICE-CHAIR HANSON: Great, great. Thank you, sir. Because I think this is --

HON. LOWENTHAL: I think that would be very important to have. Again as I say, I'm saying that after seeing yesterday, just how critical all of this is, you know, we're talking about inches.

We're talking about kind of doing, getting ships through that I just close my eyes and say, no way is that going to happen. No way. And you do it, and without that kind of online information all the time, with things changing it would be a disaster for us. And we're talking about moving almost half the goods of the nation. We're not talking about light weight stuff.

So I really appreciate what you're hearing and I will work with you. Because this is really about all of that, and we need that information. Both land side and you know --

And so I would be very supportive of that, I just don't see how we build a system without taking this into account. And really what I'm trying to do is to get us to think in terms of a system, of how we build it and what's really needed. And how do we protect people while we're doing it?

CHAIR PERKINS: Are there other questions from the Panel?

VICE-CHAIR HANSON: Congressman, again thanks for being here today. And you know your ships, and your ports, and coastal issues over the years is well known and thank you for that.

I actually got to start my career out here in the original Port of Los Angeles deepening back in 1980, so it's been amazing to watch this port complex grow, and truly it does all start with dredging which is our business, because that's what got it kicked off.

But it's been an example actually of how ports develop around the long sea ports. And the importance of port infrastructure to the nation's economy.

But you also mentioned another piece of the puzzle which is the coastal piece, and coastal protection, coastal awareness, coastal adaptation, all those issues that are near and dear to you.

But that's not just a California issue. It's a national issue and we've actually spent a lot of time traveling the country at various meetings listening to many of the same, very similar conversations.

You mentioned sustainable funding. Most of the coastal issues get solved with supplemental emergency appropriations. And it's not a way to manage the system that you speak of.

We know that Congressman Jolly of Florida, in combination with his good friend Patrick Murphy from Florida, have introduced a new Coastal Communities Caucus. I think it has 12 members now trying to draw attention to Congress and to the nation about the national interest and coastal protection, and coastal issues.

And certainly the west coast, and our home area of the Great Lakes, need to be part of that conversation as well. What message do you and your colleagues need to hear from science and engineers to help make the case that the nation needs a coastal policy, coastal investment?

HON. LOWENTHAL: Well first of all you've already just educated me on the fact that there is a new Coastal Caucus. And that from, you know from the leadership coming from Florida to do that. And that that's going to be a vehicle by which members of Congress are going to educate themselves and to learn about things.

And so you need to help to, first of all keep talking about this every place you go, and to every member of Congress about how we can work together. How are we going to educate ourselves on critical issues about sustainability, coastal protection, and multi-use, all the things that we're all about?

You know and that too is a serious issue. And so the more you talk to me, talk to others about it, and urge me to join the Coastal Caucus, if it's a good urging, I --

VICE-CHAIR HANSON: We'll follow up, sir.

HON. LOWENTHAL: I have a little bit of the coast, not a lot, but a very significant part of it, you know. So that's what I would say to do.

And also in terms of the appropriation and the funding, I'll just have to learn more about it, and I'm on the Oceans and Water Subcommittee of Natural Resources, so I can kind of bring it up there and find out what we're doing about it. And whether you know, what are the plans for any kind of sustainable funding these issues? I won't get very far but it's all about planting seeds.

CHAIR PERKINS: Well this Panel has particular expertise from the academics all the way to practitioners, so very much willing and --

HON. LOWENTHAL: Good, I could really --

CHAIR PERKINS: -- actually I think we're all obligated to engage.

Okay, thank you so much for taking the time to join us this morning.

(Applause)

VICE-CHAIR HANSON: I get the privilege to do the intro, Mike if that's okay. I promise not to make it rushed. Mike first off, thanks, I'm glad that your schedule change allowed you to be here today.

It's important since we are in the Port of Long Beach to have the Port Long Beach represented. And Mike, his title currently it's Senior Executive Lead for Supply Chain Optimization. And I'm sure there's a shorter version somewhere.

But I've known Mike for many years. He's been in the area for many years. He spent actually his last, he's just recently with Port of Long Beach as of February. Eight years prior to that he was the Deputy Executive Director of Port of Los Angeles, prior to that spent a lot of time with Parsons and all the while was with supply chain issues.

So Mike knows ports. He knows California, and thanks for joining us today, Mike.

MR. CHRISTENSEN: Thank you very much, Bill, and for that gracious introduction.

And welcome to Long Beach. On behalf of the City of Long Beach and the Long Beach Harbor Department, also known as the Port of Long Beach, we're very glad you're here. We're honored to have you here in this beautiful City of Long Beach talking about such important things.

I think it's important for me as I lead off to recognize the great appreciation and respect that I have for Congressman Lowenthal. And for the leadership he has shown, as he's mentioned 14 years in the legislature, years with the city. I can't think of anyone in Congress that has more knowledge of our area, and of the ports, and the port industry than Congressman Lowenthal.

He's been a great advocate for us on so many things. And just for the record, we do strongly support his proposal to put the funding of the important publicly funded infrastructure associated with the port in a sustainable funding stream.

That's been one of the funding challenges we've faced for years and years, so we're very much supportive of that.

I was very interested in listening to your self-introductions. This is a tremendous group, both in terms of your knowledge and experience, applying to something that's critically important to us.

As you probably know looking at media over the past year or so, the port industry is changing and we have been in the midst of a pretty significant crisis here in the San Pedro Bay ports. You know we move almost half the containerized goods into and out of the United States through this port complex.

And particularly over the past few months, we've been very, very impacted by some tremendous congestion. That's really caused by a number of issues. And even after the labor issue was solved, we find that there are a number of other issues that are leading to congestion.

That's one of my new callings here at the Port of Long Beach is working with a broad reach of experts on this. In fact, the Federal Maritime Commission granted us about a month ago, permission to get into a whole new level of cooperative discussions with the Port of Los Angeles.

So now you have both of the San Pedro Bay ports that are completely engaged in dealing with what is becoming a monumental change in the container shipping and the Pacific trade, actually international trade.

We are dealing with ship sizes that we never thought we would deal with in the time frame that we're seeing. When we look at the 14,000 TEU regular callers now in L.A./Long Beach that we never thought would be here. And we're hearing that the 14,000 TEUs are practice for the 18,000s. The work you're doing becomes even more critical.

Ships that call one month on one of the ports, could call at the other port the next month. The access, the channels, the depths, are critical. Mapping, the approaches, understanding what happens.

I always used to say when I was at the Port of L.A. that the real story of this port complex could not be told unless you were to erect a wall out in the ocean about ten miles, and then pull the plug and drain the bath tub here. And see what is really here.

Our channels, our berths are like the landing strips on a major airport. And just like you can draw an analogy between what's happening in aviation with some of these large aircrafts with the A380s and so forth. And what's happening there, is happening here too.

So the work you're doing is so important, it's so critical to our success -- our safety and success, we very much hope that you have a successful meeting here. You're talking about issues near and dear to us.

Resiliency is important, considering recovery as well. What happens after an event? When you have a port complex that if it were taken down for any length of time, could have a $2 billion per day impact on the economy. I think you can justify the effort that you're putting forward.

I this the Congressman mentioned energy. Energy is a key point. Our Executive Director, or Chief Executive put out a massive sweeping energy initiative here just a month or so ago to create what we call, Energy Island.

Where we would become self-sustainable. We would become a minigrid composed of microgrids that could keep going under almost any condition.

And then dealing with the science, I was encouraged as we heard the self-introductions of the amount of brain power in this room. And we would encourage you to apply science, good science to everything in front of you.

We've seen a lot of let's say, not-so-good science applied, particularly related to sediment and water quality issues. We are the green port, at the Port of Long Beach and we are going to do exactly -- we're going to do everything that is needed to do, to fulfill our environmental stewardship.

At the same time, we would like that to be guided by good science. And we see that sitting around the table here.

So with that again, welcome to Long Beach. We trust that you'll have productive meetings. We would like to offer any assistance that we can give in helping your meetings to be successful. Don't hesitate to contact us. Thank you very much. And good luck on some great meetings.

(Applause)

CHAIR PERKINS: Great. Thank you, Mike. Any questions specifically for Mike? Dr. Kudrna.

MEMBER KUDRNA: Frank Kudrna, clearly getting cargo in and out of the port is a major issue. Highway Trust Fund running out of money, supplying major improvements, how critical is that infrastructure funding in some relief for the trust fund to your port?

MR. CHRISTENSEN: Good question. It's very critical. The Port of Long Beach has a $4 billion capital program right now. And that's stuff that we're funding largely out of our own revenues and our own bonding capacity.

We're pretty much at the limit of what we can fund. Yet as we look at the infrastructure, both the stuff that's kind of beyond our bubble, beyond the immediate terminals that we're responsible for, both on the land side and then also as we look on the water side, we've got to have some method of funding. That's one of the reasons that the Congressman, we're supportive of his legislation.

But also as we look at supply chain, the trails that the supply chain makes throughout the country. When you get a little ways out, there is no funding for the kind of things that have to be done as we see that commerce, both on the road system and on the rail system.

So we are watching very, very closely and very carefully the policy that's set, and the funding that would come through transportation reauthorization.

We've been very active along with Bill and a number of others, in trying to get some other funding streams fixed. Certainly the Harbor Maintenance Trust Fund, getting that to where we could get a full spend on HMTF. Particularly as it would relate to maintenance of channels and also some expanded uses as per the WRDA from last year.

But it comes down to how can we get goods from the origin to distribution center, and then distribution center to the end users? And there are so many choke points on that ribbon on the supply chain that need some sustainable funding.

So we think the first and foremost is to get the policy in place. To get a freight policy as part of the transportation reauthorization, and then find some sustainable funding that would go along with that.

MEMBER MILLER: Joyce Miller, what changes need to be made to the Long Beach Ports in order to handle the larger ships?

MR. CHRISTENSEN: Presently, Long Beach Port is what we'd call big ship ready. We have the 53, 16 metered depth alongside most of our major terminals. We do have some maintenance dredging to do on the main channels, in a couple places. We have sufficient depth for the VLCCs for the most part. But we need to maintain it.

We did have a little bit of a scare last year, and this kind of goes to the issue of both maintenance and also resilience. We had a little scare last year from hurricane storm damage to the breakwater.

And this is a hundred year old structure that's really performed marvelously. I think it's one of the great feats of engineering that we have in our harbor.

But as a non-natural harbor, at least in our current configuration, that breakwater is critical. And it went down, and we had some pretty good breaches. Thanks to our friends at the Corps, we got that put back together in good order. But every one of these issues, both in terms of the maintenance dredging, and then as we continue to work on that breakwater is important.

MEMBER JEFFRESS: Thanks Mike, for your great words of wisdom. I was wondering if you and the Congressman have a strategy to get all the land locked states involved in this discussion?

You know, it's the folks in like Topeka, Kansas that go to Walmart and buy all their underwear, and their clothes, and all that stuff that's manufactured in Southeast Asia, has to come through your port.

And I think they are aware of that. Is there a strategy to get them involved?

MR. CHRISTENSEN: Well I think the first strategy, Dr. Jeffress, is education. I was always interested in an antidote when I was over at L.A. that we were having an outreach, and there was a person in the audience that said, why should we have ports? If I want to get something from China, I just go to Target and buy it.

So that kind of showed that there's a real lack of education as to where those things come from. Both of the ports have activities that do that. So we need to do a better job of educating.

We can trace between the San Pedro Bay ports, impacts to every Congressional District in the United States. And we need to let the folks in Topeka know, that their tennis shoes at the Walmart come through, probably come through L.A./Long Beach.

The other thing is I think embedded in the Congressman's proposal is to utilize the programs like Tiger, and like some of the other existing programs that could fund a project if they needed a grade separation, because they have a lot of container trains going through their community. They would have a way to access that through a competitive process, so that we're putting the money where it needs to go, but having the funding stream that can do that.

So a lot of education on both of those issues I think is the strategy right now.

MEMBER KELLY: Mike, Hello. Ed Kelley, I'm from the Port of New York. In my prior life, I was running one of the top ten container carriers. And part of the problem that we see as carriers, in some of the port community with this type of a plan, is there's an excess of targeting on international containers.

Where are the assessments going to be made against domestic businesses, against things like coal, bulk petroleum products, domestic transportation et cetera?

Because as we mentioned before, for those people who do like to wear underwear in the Midwest, everybody in the United States benefits from international healthy trade. To target this only on container operators, is an undue burden. And I have to mention that the word, trust, does not exist in the Harbor Maintenance Trust Fund.

We have never gotten full accountability of that. We've never gotten the actual monies used for the purposes it was described for. But there is potential for infrastructure development where within what, a mile, of the Alameda Corridor here, which was very successful?

It was targeted, it had a specific purpose. It was a lock box type of a situation. And carriers and other people were very happy to pay into that because they saw an actual end result.

If we have formulas that go to inland states and whatnot, the fear of the international shipping container businesses is that they will be looking to float the infrastructure of the United States on the backs of the carriers. And that's a problem.

What if now Japan, Korean, Germany, all start to decide they're going fund their international or their domestic infrastructure projects on the backs of container carriers?

This is a significant burden and although I agree infrastructure in the United States needs to be revamped, I think we have to really seriously look at who we target for this.

If everybody benefits, why are only certain corporate entities being targeted to fund it? And very frankly, the word trust does not exist, because we've been burned too many times in the past.

So that's the pushback you're going to get from the carrier base and the international commerce people who would be expected to pay this. It needs to be a much broader base. And the United States has never actually developed a national freight policy. And it had never really gone into infrastructure funding in a meaningful way.

We agree it needs to be done. I think the objection and the pushback on this is it's way too simple to say all those container carriers are going to pay us eight billion dollars or more a year.

And much like the security programs, it's going to get spent in places like Wyoming, which you know I really wonder if there's a real terrorist threat there?

I'm from New York, you know, I was in the trade center. You know we kind of know what terrorism is about. We kind of wondering why we're spending money in Wyoming?

And we're just afraid that infrastructure's saddled on a very narrow segment of the total supply chain. It's probably either disproportional or somewhat unfair.

We're in favor of what you're trying to do, I think we're just somewhat suspect of the way it's supposed to be paid for, and who is going to pay for it?

Most of these international carriers at this point, are foreign entities that do not vote, and do not lobby, et cetera. And as we say, we've gotten so good at what we do, people don't even know we do it. They think they're goods from China come from Walmart or Target.

So I think we really need to revisit the issue with perhaps a broader base as far as contribution towards this. And that there's a tremendous number of questions regarding state DOTs and infrastructure, projects, local, municipal, et cetera, and just how this money would be used?

Because as I said, no one trusts anybody who uses the word, "trust fund". Because we've never seen that where we have been assessed these monies, that they've been properly expended. So just a couple of pushbacks.

The other side of the table, we agree entirely with what needs to be done. We just significantly question how it should be funded and by whom?

MR. CHRISTENSEN: Good point. Well you're preaching to the choir on the trust thing. I've been trucking to Washington with Bill for how long? How many years Bill, on trying to get HMT? And get the trust put back in that trust, and we're still not there yet. And we certainly, we're finding we're seeing that there's a little back sliding going on that.

But one of the things that was encouraging and my first question when I heard about the Congressman's legislation, is there a lock box? The answer's yes.

And our definition of a lock box is when that revenue comes in, it does not go out to any other use. So the devil will be in the details. We know the liner shipping companies, I think the last time I saw something like 80 percent are still going to show a loss this year.

That is the big reason behind the move to the big ships, the slot costs and the Trans-Pacific Trade on a 14,000 TEU ship are considerably less. We've seen moves to the alliances as the alliances are formed. That's all to try to get back into the black on the liner shipping companies.

Unfortunately, that's causing ripples through other parts of the supply chain that's caused some impacts on the MTOs, the terminal operators.

There is, the concept behind this bill, is that it goes to the BCOs. When you do look at the very end of that supply chain, you know these added costs are a penny or a fraction of a penny on the cost of that pair of tennis shoes, or that pair of underwear that is going to be used in Topeka.

But the dialogue is starting. We need to hear more from those stakeholders. One of the things we did in this joint port, L.A./Long Beach, as we did our kickoff meeting, is we setup a stakeholder forum. On the 22nd of this month we're going to hear from about 70 of the key stakeholders, including the liner shipping companies.

We also are looking at a bridge agreement with some of the other organizations like OCEMA. And we're looking at being able to have direct dialogue on all kinds of issues including this one.

So we're looking for the sustainable, we think this is the best we've seen so far. Certainly a lot of red flags out there. And we're anxious and very welcome to hear of your concerns and we'll work those concerns until we get them solved.

MEMBER KELLY: Mike, let you in on a secret. Ocean carriers lose money because they don't control their pricing. It's their own fault.

MR. CHRISTENSEN: It's true, and this whole manufacture to distribution center supply chain, which is you know my day job now, is somewhat fractured. And there are all of the elements of this supply chain that are leveraging against each other.

And it's caused some real problems as we've seen in the disruption and the supply chain this year and the congestion. So we're working this issue pretty hard.

And as a Port Authority, we are finding that in this day and age, we can no longer be -- as you probably may or may not understand governance here in the San Pedro Bay ports -- we are parts of the municipal government. We're departments of the cities that we report to.

And as such we have all the responsibilities of a local governmental entity but we're given our property and trust from the states. So under the trust doctrine, which we operate under, we have been basically rent collectors. We've been landlords.

But as Port Authorities -- and I think New Jersey's a little different -- but as a Port Authority here in the west, we're having to take on a different role.

And one of the things we're doing right now is trying to determine what that roles is going to be, to try to fix the supply chain. And to find ways we can become, we can leverage our positions into helping these elements of the supply chain, both the liner shipping companies, and the terminal operators, and the dredge, and the rail, and the state DOTs along with the national transportation interests. Those are all things we're trying to coordinate to fix the supply chain.

And then back to what you're job here is, and what you're doing here, a critical element on the water side. We're not probably on the front burner as far as the media, and as far as the politics of these congestion issues that we have, but you could easily be if it wasn't for the good work you're doing. And we would support that you continue.

CHAIR PERKINS: Great. Thank you, Mike. Appreciate that.

Our next speaker is Captain Jennifer Williams. Captain Williams, is the Commanding Officer for the Port, US Coast Guard Sector, Los Angeles in Long Beach.

Captain Williams is a graduate from the US Merchant Marine Academy in Kings Point, New York. And she also has a Master's degree in Quality Systems and Management. And with that I will turn it over to Captain Williams.

CPTN. WILLIAMS: Thank you, and I just moved because I couldn't see this side of the room. And I didn't think it was right to talk from the corner.

Welcome to the, and I'll say, LA/LB, Los Angeles/Long Beach, I don't think Mike could say that because he's in Long Beach now. But you know the Port of L.A. it's considered the busiest U.S. container port complex. There's 4300 acres, 43 miles of waterfront, 270 berths, and 71 post-Panamax gantry cranes.

And I think that actually that went up because I recall about two months ago, they shipped in a couple new cranes.

And Long Beach is the second busiest container port in the U.S., 3200 acres, 25 miles of waterfront property, 80 berths, and 66 post‑Panamax cranes. Is that right? I'm not sure -- that's about right.

And they're also building new facilities that are completely automated, the Middle Harbor Project, so there's lots of new technologies being implemented in both ports.

The combined port complex, and that's how I look at it from the Coast Guard perspective, I don't see L.A. and I don't see Long Beach, I see it as a combined port complex that we work with on a day-to-day basis.

And internationally, it's ranked way up there for container ports. And I think it's like Number 8 or 9 in the world after a couple Chinese ports, and a couple of Korean ports that sort of thing.

So it's really busy and both the Congressman and Mike had mentioned, I think over 50 -- well 40 to 50 percent of the nation's containerized cargo comes through this port complex alone, L.A., Long Beach.

And 50 percent of California's oil comes to this port complex. And that's surprising as well because you know, you don't think of this area as really like a petrochemical. You think Houston, or you know down in the gulf. But 50 percent of California's oil comes through this port complex. It's really important.

I also wanted to mention Port Hueneme, it's a relatively small port, a little north of here. It's still in my area of responsibility. It's up near, well Port Hueneme/Oxnard, it's -- there's a Navy port up there but it's also a commercial port.

And they do a lot of fruit, and they do a lot of cars, you know, high-end cars, that sort of thing get shipped in there. And it's actually on par with the Port of San Diego as far as the business they bring in.

So I try to remind people, don't forget about Port Hueneme. It's a pretty important port up there. I mean it pales in comparison to LA/LB, but it's very important for the nation.

I do want to thank you all for sitting on the Advisory Committee. My work in the Coast Guard, we have a number of advisory committees that we rely on for individual expertise in your fields to help the government, to help NOAA, design policies and regulations.

And sometimes the government is a little bit behind the curve on technology and everything. We spend a lot of time catching up. And it's just the nature of the beast, I mean the industry is always going to be a little bit a step ahead of what's going on in the real world. And the government's catching up with the regulations and policies that we have to implement.

So that's where your role is so critical in making sure that NOAA or the Coast Guard, or any other government agency is doing what they need to do to ensure you know, the integrity of the Maritime Transportation System that we have.

So I represent the Coast Guard obviously. I'm the Captain of the port here, and my area of responsibility basically goes from the San Diego county line, up to the Monterey county line. So there's a couple counties there.

I had mentioned the three main port complexes that we have here, my area. It's a 350 mile coast line and my AOR also extends 200 miles out, which includes the Channel Islands out there.

There's a number of sectors in the Coast Guard 35, that basically situate around major ports. So they all have similar types of missions that I do here. And some of them have more, because we don't do ice-breaking here in the Los Angeles, Long Beach, but we do everything else from search and rescue, drug interdiction, marine safety.

Essentially, our missions focus around safety, marine safety, marine security and environmental protection or stewardship. So those are the basic, you know, that's what drives us to do what we do.

But there's eleven statutory missions the Coast Guard has. You know some are less known than others. Ice-breaking was big this year on the east coast, and I'm sure up in New York, or the northeast, it was very important with all the weather that you had. Thankfully here, I'm not doing that.

But so I have about 500 active duty, reserve, and civilians that work for me in the whole entire AOR. I have nine subunits that help me do, to accomplish the missions, including four patrol boats. I have three small boat stations. One of them is a surf station up in Morro Bay.

And I have a marine safety detachment in Santa Barbara, and an Aids Navigation Team, you know that puts the buoys out and the markers, that sort of thing.

And finally we have a vessel traffic system. It's not a federally run, VTS system that we have. It's actually in a private partnership with the Marine Exchange. So we're co-located with them and we help to manage some of the traffic that goes in and out.

My whole AOR, it's probably important for you guys to know, since you guys focus on coastline and everything, obviously Port of LA/LB, very congestive. You know it's very high density, there's a lot of housing and buildings and that sort of thing in this port.

But if you go up north of Port Hueneme, it's a little bit less populated, and then if you go north of Point Conception, there's nothing up, it's basically nothing up there. It's just beautiful coastline, very environmentally sensitive areas that we have.

So you know, when I look at the AOR, we have three distinct type of terrain, I would say. You know, you've got the big city. And then you've got the little city. And then you got absolutely nothing up there but very, very important to the environment.

Obviously with that big AOR, I have also a lot of Congressional Districts. Obviously, Congressman Rohrabacher is one of the ones that we work with. Congresswoman Hahn, she's in San Pedro, we work closely with her. And then Brownley, up there in Oxnard area. So we do a lot of work with our Congressional folks up there.

In addition, the traditional Coast Guard missions that we do, like search and rescue. We do have our fair share down here and, believe it or not, counterdrug and migrant interdiction.

I think many times people think the Coast Guard does that, you think about Miami, or Key West, down there in the Florida ports. They have a big drug problem.

But here we're so close to the Mexican border, and it was not really an issue up until a couple years ago, because it really was the issue for the sector down in San Diego, because they literally share the border with Mexico.

People were bringing drugs over on little personal water crafts, the waverunners, but they also used these boats called, Pangas. And the Pangas are just open boat, they're just open boats with a couple of outboards on the back of them.

San Diego was getting so good at catching these migrant or drug runners, that the Panga operators decided to go a little bit further north. So that of course affected this area of responsibility, in the L.A. area.

So we're finding you know, unfortunately we really even don't even know how big the problem is. We were finding boats on the shore where they successfully landed the boats and there were remnants of you know, maybe one bale or something like that, or pocket litter and just proof that they were smuggling into our AOR.

But you know, we kind of band together here in this AOR with our local law enforcement and other partners that we had. And we got good at catching these guys. But really all that did was just, it's like squeezing a balloon. They just decided to go further out, off shore and further north.

So now they're going into San Francisco's zone. And let me remind you, these are small, maybe 30 foot boats that are completely open. And they're going 200 miles off shore, and sometime further than what my patrol boats normally patrol in. So these guys are getting good, but they do dangerous stuff out there.

The Captain of the Port, I think maybe many of you have heard that terminology before. That's the designation, the authorities that I'm given as a Sector Commander. And as our other sector commanders, the Captain of the Ports authorities are pretty, they're very broad and very powerful in a way.

And some people recognize it, some people don't because we don't exercise our authorities very often because when we do, it's going to create a lot of problems. But essentially, I have the authority to basically stop a ship from coming in, or stop a ship from leaving port, or shutting down a cargo facility.

There's other branches of the government, or agencies in the government that also have these broad authorities like, Customs Border Protection. They have similar authorities but they can stop cargo from moving, and they stop people from moving. So it's funny, because together we create like this really powerful team. And I work closely with Customs and Border Protection as well.

But again, I say, I don't really exercise those authorities to stop a ship from coming in, or not letting it leave, unless it's under the worst circumstances. It's got to be some major safety concern, or a security concern, or an environmental concern that would drive me to do that because it has ripple effects down the road that really you can't undo.

So you don't just use that authority everyday just because you want to. You really have to have, you have to think about it and you have to maybe come up with alternatives to figure out a way to keep the ships moving, because that's really my goal, is continue to facilitate Maritime Commerce, and it really should be the goal of the whole government, which I think it is.

So you know, we talk about how, what I do here in the Coast Guard, my staff, my sector, subunits, what we do. How do we interact with NOAA? And how does it interact with the work that you guys are tasked with doing?

You know I'm going to talk about one of our, we have a Harbor Safety Committee, and actually NOAA is part of that committee, comes every, we have a local, Jeff's here. And he goes to the meetings that we have quarterly. And then we have subcommittees.

But essentially, the Harbor Safety Committee is responsible for planning the safe navigation and operation of tankers, barges, and other vessels in San Pedro Bay, and the approaches.

So we work with the local, state, and federal level working together to ensure continued safety of the port and the environment. It's a really interesting meeting, and we have representatives, not unlike this Advisory Committee.

We'll have representatives from pilots, from our Marine Exchange, you know, different agencies, different types of operators, the tug boat operators, and the barge operators, and so forth. And they bring forth issues that might be going on in the port.

It might be, we don't think the aids in navigations are working; or we continue to have loss of propulsions due to the type of fuel switching that's going on; or the pilots might have issues that they see from time to time on various ships that they may bring in.

So that's a really important thing. So when you do your work and you kind of recommend policies, you know, you can always think about these things that we do with the industry.

Obviously the Weather Service, that's important. I had mentioned that we do search and rescue all the time. And we actually use NOAA's weather to factor into how we execute a search and rescue case. Whether it be weather, currents, anything like that, it's critical to how we dispatch our units and how long we keep them out there.

I'll mention two that we had, we recently had a big, big win back in September with the person who fell off a boat. And he was with his brother, his brother was driving the boat. And when his brother came into port at Marina del Ray, he noticed that his brother wasn't in the boat anymore.

So he realized, oh my gosh, he must have gone overboard. But he had no idea where. But he just turned the boat around and kind of went in the opposite direction and called the Coast Guard. We have computer systems that design search and rescue patterns based on information that's provided to us.

Of course we input weather, and currents, and all that, wave height, and all that stuff. To make a long story short, this man who fell overboard actually treaded water for seven hours, but we successfully found him. It was such a great case. We found him at literally, it was two minutes before midnight.

You know really bad conditions, the weather wasn't great, it was September, but I remember the weather was bad. We didn't have a full moon. This guy was one lucky guy, I'm telling you. He was extremely lucky.

But you know you probably didn't think that what you do affects what we do when it comes to search and rescue. And I'm here to say that it does. What you do counts. Everything that you do counts.

We also have an Area Contingency Plan which is after Exxon Valdez and the Oil Pollution Act, it required us to have Area Contingency Plans for how we're going to respond to a big oil spill. And NOAA is the trustee in our Area Contingency Plan. You assist us all the time when we have incidents.

We, whether it be scientific coordination, like trying to figure out where the oil's going to drift off to? Or what's going to happen if we burn it? Or what's going to happen if we use chemicals on it to disperse it? That's something that we utilize NOAA for, with the scientists and that sort of thing.

Mike talked about resiliency. We have a Maritime Transportation System Recovery Unit. And also kind of, it's connected with our ACP, or Area Contingency Plan. But basically what that is, is what are we going to do after a big event, like an earthquake, or a hurricane, like Sandy? Or a tsunami or any other disaster that might happen in the port? What are we going to do to make sure, to help us get back into business?

You know, do we need dredging? Do we need to take hazards out of the water? How are we going to do that? And that's something that we all have to come together -- and it's not just a Coast Guard thing. We cannot do it alone. NOAA cannot do it alone. Government really can't do it alone.

We have to call in the Port Authorities, ask for their help. We ask the industry to help as well. Everybody kind of bands together. That's something that we work on constantly. My staff has meetings on that monthly, and we have exercises, we have a big exercise that's going on this summer as well.

The fact that ships are changing, they're getting bigger, and you know wider. And then we have bridges here in the Port of Long Beach that are being reconstructed to allow for you know, higher air draft to come under the bridge.

And you know we're thinking about all these things just to compete with other ports. And it will continue as the Panama Canal's widened, and there's other opportunities the east coast ports might see. But it really affects what we do here, and everywhere.

Climate change, or the Arctic, you know the opening of the Arctic, how's that going to affect shipping routes? How's that going to affect what comes here, or what goes to Maine, for that matter? You know, if they created a new route that, that maybe found a different path to go to the east coast of the United States. How's that affect us?

And the port congestion, I think that was an interesting one. The Coast Guard for the most part, when they were going through the labor negotiation of their contract, and we experienced the backlog of ships, and we had many, many ships at anchor.

I think at the worst point this year, we had approximately 50 ships at anchor off shore. That's not normal for this port. It's normal for maybe the Port of Houston. They usually have 50 a day.

For here we have maybe 10 to 15 on a heavy day. But you know, so we had 50. So we had to create new anchorages, contingency anchorages off shore. I know Oakland had to do the same thing. They did more of like drift boxes outside the Golden Gate Bridge, you know.

The whole west coast was experiencing this, and although the Coast Guard's neutral when it comes to the business side of things and how they are negotiating. In the back of my mind, I was you know, it was very stressful time in the port for everybody. That's all anybody was talking about here.

And of course I'm thinking, okay now we've got all these extra ships out there. Are their anchors going to hold? What happens when we have really bad weather? Are they sitting targets for maybe a security incident?

All these things were -- or an environmental incident, we could have a risk of a collision and then we'd have a bigger, you know maybe environmental incident.

All these things were going through my head. So it was a stressful time despite the fact that really the Coast Guard had no say into like the negotiation parts of it. It was weighing heavily on everybody's mind.

Finally, you know one of the things that also weighing heavily and competing for my time, is cyber security. Cyber security is becoming more and more important. And you're probably thinking, why is she talking about cyber security to us, you know?

But really anything electronic, and we have electronic charts now, and the ships are using a lot of equipment, a lot of technology that could be infiltrated by any kind of cyber attack. It really could impact the whole port, the whole nation really. All the ports.

They shut down, or maybe they got in an accident, this is something that you guys need to factor into the work that you do. It's really become very important for our President to focus on this. And thereby everybody's working on it.

Just last week, I was out of the office but we had a research and development team come down, actually they visited a number of ports which included L.A. and Long Beach. And they rigged their car up with all sorts of antennas and equipment and fancy doodad things.

And they drove around the port to see, is our port vulnerable to some type of cyber attack? They gave a brief-out and I really can't get into all the details, but what I can say, is yes, it's a problem.

There's a lot of people that aren't protecting their technologies that they implement. Whether it be for the cranes, or for the radars, or you know for anything that uses computers. People aren't adequately, or ports and facilities are not adequately you know protecting these things. So we really could have a major incident.

And they were driving by, actually, they actually got on boat as it well and took all the equipment out to the anchorage areas to find out if those ships were protecting themselves adequately. So now we've got an international problem.

So it's not just our U.S. facility operators, it's also the international, the ships that are foreign-flagged. How do you regulate them? How do you mandate something to make sure that they're safe and they're not going to create a new risk for us here, and in our ports?

But essentially that's what we do. I just wanted to give you kind of a snapshot of what the Coast Guard does here, and hopefully I did that.

Again, I thank you for serving on the Advisory Committee. I know it's, you're taking time out of your valuable, your busy schedules, to help us, the government, you know come up with better policies and regulations that kind of make sense. And good luck to all the work that you have this week.

(Applause)

CHAIR PERKINS: Well thank you, Captain Williams. I have a couple questions, do you directly work with, or do you have -- do you attend or participate in the Coast Guard FACA meetings, the NAVSAC and the others?

CPTN. WILLIAMS: Well, when I was at headquarters, I did. But right -- we haven't had any Advisory Committee meetings here, in the Port of L.A. If they did, I would probably attend, but generally I don't participate in those.

CHAIR PERKINS: Okay, and then I have a question for you. You described the large extent, you know of your geographic area of responsibility. So going 200 miles off shore and near 300 miles you know, north, south. And the challenge right with both search and rescue, and with patrol or interdiction there.

How is the Coast Guard looking at utilizing new technology, as in the unmanned aerial vehicle platforms to, you know, do you have, or does the Coast Guard, or do you as the Commander here, do you have a strategy to implement that technology into be -- will it allow you to be effective in executing your mission?

CPTN. WILLIAMS: Yes, absolutely. I think that would, obviously using new technologies would make me more effective in executing my mission. I'm an operational commander, and those types of decisions are generally made at the more senior levels, maybe the headquarters level.

They would decide whether or not they're going to you know, purchase or design new aircraft or unmanned type of vehicles like that. I know with the counterdrug and migrant interdiction operations, they have employed different types of technologies.

But more than that though, what we've done -- because we're actually an arm of the Department of Homeland Security. We've actually combined efforts. You know, they call it Unity of Effort.

The Unity of Effort with other agencies, so Border Patrol is their major team. They've got a lot of equipment. They have the remote technologies where they can send something out. We employ those and they provide us the information.

So instead of us you know, purchasing, and designing, and you know buying new equipment, we ask other agencies whether it be you know the Navy, or the Air Force, or the Border Patrol, we ask to use their equipment and we know where they're patrolling. We ask them to do certain things. We try to coordinate that way.

That's done at a much higher level though. That's not even at my level, it's more, it's got be at a specific area. So the Pacific area controls like the whole west coast, coastline ports and the headquarters level.

There's a lot of intel feeds that go into that as well. And again we share not only, it's not only Coast Guard intelligence, it's all different agencies' intelligence. Because we couldn't afford to do it otherwise.

The Coast Guard's a small agency, small budget. My budget is even smaller locally. But you know they tell me what to do, and I execute the operations. That's how I do it here. I have very limited resources though.

Joyce Miller.

MEMBER MILLER: We've seen in other regions that, especially after disasters you know, everybody works well together, very good regional coordination.

But one issue we've seen in other regions is the inability for various agencies, Coast Guard, EPA, NOAA, DoD, in general, to quickly and efficiently get funds back and forth. Let's say you need a NOAA resource to do something for you, survey your harbor, let's say.

And you know, there's, and NOAA will come in and do it, but there's an inability to cost share in some areas. How does that work here?

CPTN. WILLIAMS: Well, I mean it's the same way here as it is everywhere. So you had mentioned the breach in the breakwall. We had an unexpected storm, it was the end of September last year.

And the breakwater there, we had numerous breaches in the you know huge, these huge boulders, they're like one ton. You know like one or five tons, you know like they're that huge. The waves moved the breakwater and created some holes and everything.

We just immediately worked with our partners here that we could, so Army Corps of Engineers, Colonel Colloton is over there in the L.A. District. And she knew how important is was and many times it's you know, you just kind of hold your breath and hope that you can get emergency funding. And that's exactly what they did. They worked really hard. They got emergency funding. And they were able to start work on that pretty quickly.

But yes, it's the same everywhere. The funding issue is always kind of a rubbing point. You might fall under a certain type of act where you can get money right away, and sometimes you can't. You know we have Pollution Funds Center that we can draw upon, but there's only so much you can take from that.

Generally though, I mean if it's a natural disaster, we can get that type of funding. If it's something that's manmade, and there's a responsible party, we really have to look to the source of you know, the responsible party. Ask them, you need to pay. You've got insurance, that sort of thing.

We had a port fire here in September as well, early September in the Port of L.A. and I mean it was a welding torch. Somebody left a welding torch on, underneath the wharf and created a huge fire. So it was on a facility, and the Port of L.A. even though it was, said they had a tenant, it was basically the tenant's facility that caught on fire.

But the Port of L.A. basically came to the incident and really stepped forward even when, I don't think they had to, but they paid for everything. You know, like okay we need to get the boom out, and make sure that you know this pollution is not going to go over into this area. Yes, all right. We'll hire the oil spill response vessel, and they were out there.

Well we need to get an excavator, and we need a barge that can destroy this remnant of the pier so it doesn't continue to burn. Oh, yes, they hired the barge. They were the ones who stepped forward right away. And without them, I think we probably wouldn't have had better results, you know.

Because really it's the money that helps get the equipment to really attack the problem, and that's what happened in that situation. But that's what we'll just continue to do.

I mean when we have these big events, it's usually what they call, a Unified Command. They have different elements of people in there and we say, well, this is the problem, this is what we need to fix. Okay, how are we going to do it?

And we just kind of brainstorm, or somebody says, all right, I'll step up and we'll pay for that. But, yeah, when you're talking about the U.S. government, it's not easy to get money sometimes. Some of the things we can get back-paid on and, you know, we give them IOUs type of thing and just hope that all the bills get paid. Yeah, it's not easy.

MEMBER BARBOR: Ken Barbor. Three questions. One, I'll jump ahead of Susan and get this in. Obviously, as you look out there, an awful lot of recreational boaters. Clearly that plays heavily into your SAR issues. But what about, you know, navigation, hydrographic sorts of things? How does that play in and are there inadequacies that need to be addressed?

Second question is, you know, there's a port you didn't mention. Seal Beach. How does that play? Are there inadequacies or things in terms of water levels, aids to navigation or the like that we might need to focus on?

And then the third is we have frequently in these panels, as we go around the country, the topic of virtual aids to navigation come up. And I don't know whether that is an issue here that is raising its head, or is something that we've got well in hand? Thank you.

CPTN. WILLIAMS: Thanks, Admiral. For the recreational vessels inadequacies to be addressed, I've not heard of recreational vessel complaining. They haven't come to the Coast Guard.

I mean, I think, do we have a representative of, like -- so we have recreational boating rep? Okay. And then I would imagine they would probably voice those concerns to their local harbormasters.

I have not -- I could always bring it back to my waterways staff, and just you know scout that out. But, off the top of my head, I would say that I've not heard of any issues with recreational craft.

And then for Seal Beach, same thing with that. I mean, that's the Navy. The Navy probably would be the one voicing that to either the Army Corps, or that sort of thing.

With the virtual aids in navigation, that's really a very hot topic in San Francisco right now, because they've been able to kind of pilot, or beta test, some of the virtual aids. The eNAV system that they're doing up there.

From what I understand, it's been very successful. And I would say the mariners from the deep draft vessels like it. And probably from the recreational side, they probably don't like it as much.

And I know that there was one public meeting not too long ago, I'm not sure if we had good participation from the recreational boaters, but it was a listening session I think it was for them to discuss eNaviagation.

I think in general, the recreational boaters, they like to have their lighthouse. They like to have something that they can see. And frankly, I do too. I think it's good to have a mix or a balance of both. Because not everybody's going to have, you know, a sophisticated GPS system on their boat. They might just be, you know, a simple sailor that, you know, maybe dead reckons and needs the visual aids. I think that's still important.

But it costs the Coast Guard money to maintain all of these aids. And, you know, we have a budget that we're focusing on, you know, getting new cutters. And that's where a lot of our money is being focused, so we're looking at places to reduce in other areas.

And aids to navigation is always one of those ones, for the Coast Guard, that if we can reduce aids, we will. You know, we have, you know, years ago a lot of things were privatized and that helped a lot. And so now we're in the same boat. We've changed a couple things, couple buoys, even in the LA area, in the recent number of years.

And I don't think it has affected casualty rates by reducing them. And that's something that we would always look at. Number one concern would be, you know, the safety of the navigation. Making sure that we're not creating a bigger problem.

If we can use eNAV without, you know, elevating casualty rates, I think that's the way to go. But I think you're always going to have a population that's going to need the visual aids as well. So I really think there needs to be balance.

CHAIR PERKINS: Great. Thank you. Go ahead, Captain.

MEMBER RASSELLO: Captain Williams, yes. I'm very interested in the safety of navigation. You mentioned that we are going through this transition now from the old traditional way of navigation into e-navigation. What's the role of the Coast Guard into this transition, which I think is very sensitive for the shipping industry as well as for safety for Coast Guard?

CPTN. WILLIAMS: So, again, at the local level, the Los Angeles level, I don't really have much impact into developing those polices. But at our Washington D.C. office, we have a waterways directorate. It's run by -- oh gosh what's his name? Gary Rasicot. Mr. Gary Rasicot. And he's active with International Maritime Organization. And the e-navigation system is something that would fall under his program.

But it's definitely something that they're considering and pushing and testing throughout various parts of the country. One of the places is San Francisco, that they've employed some of the e-navigation, the virtual aids, I guess is what they're calling it, Virtual Aids Navigation. So the big ships can see it. The ones that have the sophisticated radars, they can see it. And they love it.

You know, the other thing that I think you have worry about, and I mentioned it just briefly, was the cyber part of it. So, what happens if we have a cyber attack and you have no more aids? You know, does that affect the safe navigation of those ships getting into port? Inside a port, I would say probably not, because we require our pilots to bring the ships in --

MEMBER RASSELLO: That's what I want to get the point. We are end users as navigators, so we end up with an electronic navigation when we pick up the pilot, that's finished the electronic, and we are in the hand of the harbor pilot, which has no clue of electronic navigation whatsoever.

Those pilots, when they renew the licenses, do they go through certain courses in training to update to electronic navigation? Because we need to continue and finish our voyage in electronic format. And then we shutdown the system, we stop the ship outside if we have no visual, right?

CPTN. WILLIAMS: Right.

MEMBER RASSELLO: And we have a bit of problems with Houston and Galveston, because the fog, right?

CPTN. WILLIAMS: Right.

MEMBER RASSELLO: Which causes the ship to sit outside sometimes for days. Well, if you sit a cargo ship outside for days, it's not a major problem. But if it's a cruise ship outside with thousands of people on board, it's a concern for the ships and for the people and for the airports, everything. Everything shut down because there are over 3,000 people waiting to get on the boat, on the ship.

CPTN. WILLIAMS: Yes, that's right. Well, I don't control when the Port of Houston is shutdown due to fog, but based on a couple of the incidents that have happened over the past couple months, that's a prudent thing to do at times.

But I know the pilots here, they have continuing education all the time. You know, I think Jacobsen Pilot is going to be here today, right? Or tomorrow it's on the agenda.

You know, and they're a different organization, so they kind of pilot ships, actually in the entire port complex of both Long Beach and LA. And then they also have another smaller group of pilots over in the Port of LA and they only pilot ships in the Port of LA. I know that they have continuing education as well when they renew their licenses.

MEMBER RASSELLO: The same issue.

CPTN. WILLIAMS: Right. You know, the Port of Long Beach, I've actually underway with Jacobsen Pilot for one of their morning runs. And they bring their own equipment on board, their own computers and their antennas, and they set up the antennas on the bridge wings.

But I believe, too, that even if they didn't have those computers with them, they're still well versed in the port. I mean, when they take their examination, they know every depth, every nuance about the port that's necessary so they could safely bring the ship in. Same is true up there in San Francisco. But, yeah, it's always a concern and now --

CHAIR PERKINS: Jennifer, I apologize but to keep us on schedule --

CPTN. WILLIAMS: I went over time, huh? What a surprise.

CHAIR PERKINS: Well, I think it's Michael. I'm the one who's supposed to keep better track of that.

CPTN. WILLIAMS: Okay.

CHAIR PERKINS: This is the exact type of dialogue that we'd hoped to have in these meetings. And so I invite you, if you can, to participate with us throughout the next two days.

There are breakout sessions and other opportunities where we can continue this dialogue.

But in respect to the rest of the agenda, we have gone through our break. So, if we can hold the break to five minutes, because I realize we had coffee and had a short recess before we convened the session. So, if we can be back here and reconvene at 10:15, you know, great.

CPTN. WILLIAMS: So, I just wanted to say one thing, though. I won't be able to stay, but Lieutenant Commander Brandon Link is on my staff, and he will be staying for the duration of your committee meetings. And his focus is in waterways, and so, Captain, if you wanted to talk to him and ask him questions or task him with something, go right ahead.

CHAIR PERKINS: Great. Thank you very much.

(Whereupon, the above‑entitled matter went off the record at 10:07 a.m. and resumed at 10:19 a.m.)

MR. STONE: We'll officially reconvene the meeting. And it's my pleasure to welcome Dr. Callender.

DR. CALLENDER: Thanks, Scott. So, once again, I really do appreciate the opportunity to be here today. It's always good to connect with the Panel and I learn a lot every time I come and interact with you.

My remarks today really are about focusing on continuing the dialogue about where NOAA seeks your analysis and your advice and to spend some time to respond to your efforts so far.

And, frankly, a big reason why I wanted to be here today was to once again say thank you. You've heard that several times this morning, but I really do appreciate your time, your expertise, your passion for the work. And we really do appreciate what you're doing. And I think we've made a lot of progress on multiple fronts since our conversation in Charleston.

So, my goal for the time we have today is to really start the conversation for the rest of the time that we have here over the next few days to build on the strong recommendations you gave to us last time.

It's not my expectation that you will provide a new set of strategic level recommendations every time we meet. We can't realistically do that every six months. That would be, as Admiral Glang told me, a heart over rudder command that I think it's worthwhile to avoid. But instead I think it's going to be really useful to spend our time digging in a little bit deeper into the high quality recommendations that you gave us the last time.

And so my conversation today, my presentation, will explore with you our strategy for moving forward and outline some of these areas, kind of tee up the conversation.

Today I'll start by sharing some thoughts about where NOS, the National Ocean Service, is headed with respect to coastal resilience.

Glenn Boledovich, chief policy advisor for the Ocean Service, will talk about the FY16 budget in a fair bit of detail. So I'm not really going to dive into that too much. But one piece that I will mention is that it was very clear in the '16 budget request from the President this year that resilience was a very large priority. And so we'll talk about how we can better integrate what we do in terms of foundational information with these priorities in resilience.

I'll also talk a little bit about the data and needs for work in the Arctic. And finally I'll tee up some questions that I think can help drive the focus over the next couple of days.

So, one of the fundamental messages I want to get across is really pretty simple. And we heard about it this morning. Scott teed up the question for Representative Lowenthal. And fundamentally I want to get the message across that the foundational data that we produce is critical to inform and build and support community resilience.

What do we mean when we say resilience? There's tons of definitions out there. We tend to use one that the President has put out, but I'll paraphrase it. Basically, resilience is defined as the ability to prepare, respond, recover, and adapt to some kind of disruption due to challenging conditions, be it major storm events, be it chronic flooding, what have you.

At NOAA we think about resilience in three fundamental dimensions. An ecological dimension, a social dimension, and the economic aspects of resilience. And the latter is, I think, really where the HSRP could provide us some good advice.

Community resilience is dynamic and coastal decision-makers are requesting our support for monitoring and tracking changing conditions through resilience indicators and climate outlooks. On the West Coast, the challenges are somewhat unique. Communities face threats from earthquakes. Tsunamis. Although tsunamis are not a huge issue in Southern California as I understand it, but certainly further up the coast. Challenges of drought, challenges of sea level rise.

When a community looks to examine and understand the challenges around sea level rise, some of the core coastal intelligence that the Ocean Service provides gives them the information that they need to make decisions, such as water level information, the coastal bathymetry, LIDAR data, topographic and land elevation data, and aerial photography.

Clearly, then, navigation observations and positioning programs provide costal intelligence that supports the resilience of coastal communities as well as the resilience of marine transportation infrastructure.

You've heard me talk about coastal intelligence before. Essentially what I'm referring to is information that allows communities, businesses, and individuals to make more informed decisions. Fundamentally, we can't improve resilience without foundational information that informs our decision-making tools, et cetera.

By foundational data, it's really about the framework data that we need to build tools for making decisions, which includes datums, water levels, water level information, land elevations, bathymetry, et cetera.

I'll use the clean version of the shorthand from Admiral Glang. Great quote, I thought. He says, "We can't make smart decisions about resilience without coastal intelligence." And he can tell you about the slightly less clean version later.

So, let me talk a little more about foundational data as a starting point for coastal resilience. One of the challenges that we have -- and we really do the need the help and feedback and thoughts from the Panel -- is how to do a better job communicating that connection between the coastal intelligence, the foundational information that we provide, and resilience?

If resilience is a high priority for the administration, it's gaining momentum in Congress as well, we've got to make the connections with the foundational information. I heard that over and over when I was on the Hill pitching the '16 President's budget request, when I met with a variety of constituents.

Over the last month or so I had probably 20 presentations. And I heard over and over on the Hill, you know, we need to make sure that we don't support resilience at the expense of the core missions that have.

And so making that connection more effectively between foundational information and resilience, and messaging that, is where I think it would be really useful to have some of your thoughts.

If you recall, in Charleston, Margaret Davidson keyed up the comments about the need for enhanced shallow water bathymetry and tying that to resilience. And so I think , you know, we heard that loud and clear, your recommendations, as well.

I also want to note that I had the privilege of meeting with Lieutenant General Bostick, the Army Corps' Commanding General, about a month ago. And I was frankly a little bit surprised that he was really interested in making additional connections with NOAA on the resilience front. And so clearly providing the foundational data, the datums, water levels is critical to the Corps.

And there's been a committee by NOAA leadership and General Bostick to continue that dialogue on a more routine basis. And so I think we've got an opportunity there to help influence and have that conversation with the Army Corps as well.

Let me continue on with a little bit more about some examples of foundational data. And, Juliana, just wave your hands if I butcher all of this. She gives me stuff that I marginally understand, so we'll see how well I do here.

So, one of the areas that you've heard about that the National Geodetic Survey is focusing on is Gravity for the Redefinition of the American Vertical Datum, or GRAV-D. When the GRAV-D project is completed, the airborne gravity data will be used to develop a new American vertical datum in 2022. And I'd be willing to bet that we're be talking about this at every HSRP meeting between now and then.

As many of you know, the current vertical datum that we have contains errors of 16 inches to six feet relative to sea level. Completion of the GRAV-D project will allow surveyors, scientists, and others to employ GPS to determine more accurate and precise elevations than are currently possible with less time and less effort.

Estimated economic benefits of this project are pretty high, ranging from an estimated $522 million in annual economic benefits, with approximately $240 million saved from an improved flood plain mapping alone.

NGS plans to release the new vertical datum, called the geopotential datum, and also a new horizontal data datum, called the geometric datum, also in 2022. These datums will provide an accurate geospatial reference frame from which all mapping activities will be derived. These datums will replace the NAD 83 and the NAVD 88 with more accurate positioning and a lower error rate.

One of the other types of foundational data that we've seen some improvements on is in topobathy LIDAR. And there's a topobathy LIDAR imagine on the left side from Cape Charles, Virginia.

NGS was able to upgrade its LIDAR capacity and capability to the topobathy system with the Sandy supplemental funding. And also allowed for contracting of some of this data collection as well.

This provides seamless coverage between the shoreline and shallow water. And NGS will continue to do the hard work to coordinate topobathy and LIDAR collection activities with the Army Corps, the Geological Survey, the Interagency Committee on Ocean and Coastal Mapping, and the Interagency National Digital Elevation Program.

Part of the rational for the coordination, clearly, is to save time and effort. But it's also to ensure that the data meets shared standards for multiple uses. And if you look at the image on the left, you can see the little square rectangular shapes. Those are clam aquaculture beds. So these kind of data are really useful for things like, not only the navigation requirement, coastal zone permitting, commerce, as well as benthic habitat mapping. So it's a lot of information you can get from these kinds of data.

The other thing I'd like to mention is foundational CORS. CORS are Continuously Operating Reference Station in the bottom right.

These foundation CORS are needed to better connect the National Spatial Reference System to the International Terrestrial Reference Frame.

To support future requirements and to prepare for the transition to this new datums that I mentioned, NGS is establishing a small number of ultra-stabile foundation CORS. They'll expect to establish one to two foundation CORS per year and oversee the installation of a minimum of eighth of these foundational CORS stations in the Continental US, with additional sites constructed in Alaska, Hawaii, US territories and select foreign countries.

And, finally, I want to make a quick pitch for the 2015 Geospatial Summit, which will be held next week in Crystal City. During the summit, NGS will be briefing stakeholders on the current projects and future plans, including the release and transition of the new datums in 2022. And the last Geospatial Summit was held in 2010.

So, let me switch gears a little bit and transition to how some of our regional work shows the connection between coastal resilience and coastal intelligence. This is an image from the Port of Los Angeles.

There's a great need, as we've heard and I think you're all aware, for more comprehensive and up-to-date navigational services, such as charts, water levels, wave conditions, to help larger and larger ships safely and efficiently enter ports like LA-Long Beach and deliver their cargo.

We heard from Captain Williams this morning about the impact of these two ports, being the two busiest ports in the United States, and combined being the eight or ninth busiest port complex by container volume around the world.

One effort that I want to at least tee up and share with you is the Precise Navigation project that's underway now focused on the LA Long Beach area. What is Precise Navigation? Basically, it's the ability and the desire to improve navigation in four dimensions: X, Y, Z coordinates as well as time.

So, fundamentally, we're trying to prove more accurate, more timely information to these larger ships. They need additional information to be able to get into these ports with tighter and tighter clearances.

For this project, which was part of the National Ocean Service Priorities Roadmap, ultimately this is going to help us understand the decisions that mariners are trying to make, how they're accessing NOAA navigation and positioning information, and frankly whether this information is meeting their needs or not. It's a great example of partnering at multiple levels, leveraging data and expertise.

In this case, great partnerships between the Weather Service, between the Ocean Service, between Southern California IOOS and the US IOOS program, and between our internal family, between CO-OPS and NGS. Also key partnerships with the Port of Long Beach and with the Jacobsen pilots.

So, the development of the data stream, such as the Nearshore Wave Prediction System or wave model, water levels, and high resolution bathymetry, is going to fuel an underkeel decision support tool and improve the decision context of the Precise Navigation systems. Both the underkeel clearance tool development and the precise pilot systems are products of commercial companies.

Let me move on to a little bit about our work in the Arctic. I like this image. This is an image of the Chukchi Sea from a small NOAA survey vessel taken in 2013. It's kind of a lonely picture.

Clearly, the Arctic is a priority for this administration. And we're faced with a very difficult challenge of balancing the needs for enhanced Arctic navigation, and other activities in the Arctic, and competing priorities in the rest of the US.

For the Ocean Service, there's growing demand for surveys and new modern charts in the Arctic. We're doing this much as we can with the limited resources that we can and we're working very carefully to prioritize the work.

There's also demand for enhanced water level information in the Arctic. Through a partnership with the Weather Service, we're adding one gauge. One gauge. I talked to my colleagues in Alaska and, you know, they beg us for more water level information. But it's a start.

You know, we're also looking to develop and deploy new technologies, such as GPS tide buoys, to better inform hydro surveys in Arctic waters.

In FY15, in this year, NOAA ships Fairweather and Rainier will be coordinating with the coast guard to start a multi-year project that will survey areas for the planned Arctic Transfer Route. And these ships are scheduled, knock on wood, to depart Kodiak, Alaska on June 8th.

So, let me transition to the Panel's most recent recommendations and touch on some of those aspects and where NOS is heading with respect to our priorities. Before I do that, again, I want to thank you for the input, the time and effort on the last report and offer some thoughts and questions from NOAA on your input.

I'll also highlight the challenge that I know you're working through. And that's to be able to continually synthesize and learn about issues on a regional scale, and really how to translate that into recommendations that we cannot also use regionally, but we can also use nationally. I know that's difficult, but I think that's important for a program like the Ocean Service who does have that national footprint.

So, there's a few areas where we do want your advice. First of all, there's prioritization and development of criteria on bathymetry and other data needs. You've called out the needs for shallow water coastal bathymetry to support inundation modeling in coastal resilience.

Again, our Nav, Obs and Positioning programs are national programs with national mandates, and their missions span all US coastal waters. In the case of the NGS, all of the United States lands and waters. And clearly our priority is serving maritime users. The question I want to tee up for the Panel is, what are the criteria that we should consider in determining national charting priorities in balancing the needs of maritime users with the needs for enhanced coastal bathymetry to support resilience?

Our program serves both needs, but your views would be very useful and valuable about how we can balance those needs with our limited resources.

For US Arctic charting, we've heard your comments and your concerns regarding Arctic charting and we're going to be asking the Panel for your view on what criteria we should consider to determine charting priorities within the US Arctic, and what criteria might be balanced among our priorities in Alaska and the other US regions that our programs serve.

As I've noted in the presentation, and we heard this morning, we recognize that improved coastal resilience depends on foundational data, observations and products produced by NGS, CO-OPS and Coast Survey.

We're asking your view on how we can better tell that story, how we can better communicate what we provide in terms of coastal intelligence, the foundational information that supports coastal resilience.

A couple more issues I'd like to tee up. We're looking to you, the Panel, as one key avenue to help us better understand the needs of our regional and national stakeholders. I have two questions for you, specifically, to better understand our stakeholder needs.

What are the ways in which our programs good at engaging stakeholders? What are the best practices that you see? Candidly, I think the Nav Managers are one of the national treasures that we have because they make a lot of those connections. But I'd certainly like to hear your input in terms of what do we do well.

And secondly, how can we better connect and strengthen our relationships with these stakeholders?

And I do have one area, one final ask, if you will, for feedback from the Panel. We're looking for additional counsel on the next steps for our Precise Navigation efforts. Again, what kind of criteria do we need to consider to select the next ports where we focus our attentions in terms of Precise Navigation? Criteria in the past has been focused on tonnage or nature of material or navigation challenges. What are the busiest ports? What are those ports that are at greatest risk and where can see the greatest risk reduction and efficiency gains by enhancing and employing Precise Navigation? Fundamentally, how do we prioritize those questions.

So, in conclusion, I do want to say that I think we're making progress. This is my third HSRP. I've seen a lot of interesting conversations, a lot of passionate conversations.

And, you know, I think we're tightening up how we operate. I think we're trying to tighten up at least how we work with the Panel, how we solicit your feedback, and how we actually respond to your feedback.

And, again, I want to thank you for all of that effort that you've put out there. You know, in addition, I want to note that, you know, we've asked for "higher level, more strategic recommendations." And you responded. And it's been great. What this means, though, is it takes more time and effort on our side to be able to respond and to produce sort of a thoughtful dialogue back and forth with you to deal with these strategic recommendations. It's harder.

So if we're not responding quickly it's not that we're not interested, it's just that, you know, we're struggling, too, to be able to respond in a way that really furthers the dialogue. And that's why I wanted to dig a little bit deeper in terms of some of the recommendations you've provided, certainly, since the Charleston meeting. And how can we dig deeper into those.

So, let me summarize very quickly those questions that I put out there. Six questions. How does coastal intelligence enhance and make coastal resilience better? How do we leverage Ocean Service foundational data moving forward supporting resilience?

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

The next question. What criteria should we consider to determine charting priorities with the US Arctic and how do we balance those needs with our other charting priorities in the US?

Next question. What are the ways that we are good at engaging stakeholders and how can we better connect with those stakeholders?

And finally, what are the criteria we need to consider when we select the next ports for precise navigation efforts? How do we prioritize that?

So, I was actually hoping to be able to circle back and hear the end of the conversations on Friday. But I actually do have to get back. But I will be calling Admiral Glang on Saturday and harassing him to try to get a better sense of how this went. So, fair warning Gerd.

So I'm looking forward to the meeting. I'm looking forward to the dialogue and the conversations. I think the breakout sessions look like they're going to help us address these questions. And, you know, I hope this a rewarding experience for you on the Panel. It certainly is for me to be able to learn and engage with you. And, frankly, this helps me to do a better job representing the Nav, Obs and Positioning programs on the Hill and with constituents. So, with that, I say thank you.

So do you want to do questions or do you want to go to Glenn? Or how do you want to do this now?

CHAIR PERKINS: I think we should do questions. We have a little luxury, I believe, in this schedule.

DR. CALLENDER: Okay.

CHAIR PERKINS: We've got 90 minutes, you know, scheduled for lunch. So I think we are probably all willing to try to do lunch in less than that 90-minute time block so that we can spend the time here. Which is, you know, why we have you here.

DR. CALLENDER: I'll be here all today, I'll be here through, I think, at least half of tomorrow.

CHAIR PERKINS: Great. You know, very encouraging remarks. And thank you for the feedback. And I'm sure I can speak for the rest of the Panel, drafting those Charleston recommendations, you know, was quite a process on this and getting the feedback, you know, on that. So, that's good. I mean, I'm glad that we're providing a meaningful and beneficial service there.

You mentioned having an opportunity to engage with General Bostick.

DR. CALLENDER: Yes.

CHAIR PERKINS: And, you know, this issue of the lingering, now approaching two full calendar years to get a new MOA in place, you know, with the Army Corps. This Panel has spoken to that in our recommendations.

What can we collectively do, Dr. Callender, to improve on that? You know, taking two years, right, to get that contractual arrangement in place is unacceptable for both sides of the table.

You know, there's actually a real survey need not being met by that agreement not being in place. Maritime Administration just went through a procurement for hydrographic surveys of a lay-berth in Orange, Texas. So we've got Maritime Administration going out to the marketplace trying to procure bathymetric surveys, when both Army Corps and NOAA have hydrographic survey contracts already in place to provide that exact service. So there's a disconnect there.

When we engage Maritime Administration about that, you know, it's impossible for them to do a simple money transfer and access the existing hydrographic survey contracts that the taxpayers have already put in place. And so this is a real problem impacting, you know, real agencies and real people.

And two years is, you know, I mean, I guess, you know, we have to renew the charter every two years. I would certainly think and MOA could get executed in that timeframe. So we're not going to, you know, I guess, as a Panel, right, we're going to keep asking.

DR. CALLENDER: I think that's a reasonable question. Two years is too long. I agree with you completely. You know, and frankly doing MOAs is painful to get through. You know, what I got out of the meeting -- General Bostick, General Peabody was there as well. One of the issues that was teed up was the interest in getting this MOA done.

So, I think it's something that it is certainly on his radar screen now as a result of that conversation. There was a desire to continue that high level dialogue on a routine basis. I'm not sure when the last time we actually had that level of conversation. Clearly, what we did talk about is that there is that enhanced need for better coordination across the agencies.

We both realize, although we think they're rolling in money, you know, neither one of us frankly really is. And so I think there's a good opportunity to leverage and push and get this moving.

I can't promise how long something like that's going to take, but it's at least in the conversation at those senior levels. And you certainly have my commitment to continue to push and do what I can to move this through.

CHAIR PERKINS: Yes, Joyce.

MEMBER MILLER: Yes, Joyce Miller. I have a related question. I noted I sat in Dr. Sullivan's budget briefing.

DR. CALLENDER: Yes.

MEMBER MILLER: And she got to what she called Appendix 1. And there's some very interesting, and I'd say encouraging, NOAA cost recovery language in that. And I don't want to read it, it's relatively long, but in order to carry out responsibilities, NOAA is authorized to enter into grants and cooperative agreements with, use on a non-reimbursable basis, land services, equipment, receive and expend funds made available on a consensual basis, a federal agency, state or subdivision, local government, tribal government, territory, et cetera. Can you explain what this is?

And there was also under there, I will say, a paragraph about availability for new vessel construction funds. And I thought that also was encouraging. And she addressed it briefly but, perhaps, are you familiar with this appendix?

DR. CALLENDER: I'm actually not. Is that part of a proposal or is that something that was --

MEMBER MILLER: No, that's the Blue Book. That's the '16 Blue Book.

DR. CALLENDER: I'll see if Glenn could maybe answer this.

MR. BOLEDOVICH: So, the appropriations committee the past several years has provided language to NOAA. Many of our statutes for many of our programs have language about who we can talk to, who we can take money from or give money to. And it's been kind of hit or miss. This kind of the magic language that, in terms of agreements that we have, it authorizes the scope of those, for us to receive funds and to give funds, and it broadens it across the entire agency instead of program by program. And appropriators have inserted that language into our appropriations bill for the past several years. And it's been a great help in terms of our ability to enter into agreements with other entities.

MEMBER MILLER: So that's going into the bill now or it's --

MR. BOLEDOVICH: No, it's been. We've been given that authority, broad authority, into our appropriations bill.

MEMBER MILLER: How does that affect regional partnerships and such, then?

MR. BOLEDOVICH: It means we have clear authority to enter into those agreements and to exchange resources. And whether it's sharing of a building, in concrete sources or others. So it broadens what are pretty strict rules about what a federal agency can do in terms of working with others. And it says clearly, NOAA, you have some pretty broad authority here to work with others.

DR. CALLENDER: So, Glenn's a lawyer. I'm not, so maybe I can explain it in terms at least I would get. What we've basically got is language that we would then put into a funding instrument that gives us that approval to do it. It doesn't speed up an MOU, it provides additional authority versus the Economy Act, which is what we typically use, which is frankly tenuous in a lot of these instruments to move money back and forth. It just gives us a little bit better authorization. It doesn't make it any faster, it doesn't make MOUs get put together quicker or money move fast. It just gives us that legal authority to do it.

MR. BOLEDOVICH: That's correct.

DR. CALLENDER: Because, you know, I've been in places where I've tried to get money from other agencies. You know, I've tried to do this back and forth. And I recognize it's painful. And it's something that we are trying to push hard to NOAA. But we don't have a solution to make it easy at this point yet. This helps.

CHAIR PERKINS: Carol.

MEMBER LOCKHART: Carol Lockhart. This may be less of a question, more of a comment. I really appreciate the directness of the six questions you've given us to think over. And I'm hoping that it can help us focus the Panel over the next few days. And I'm sure that's your intention with those.

With that said, it may be useful to have those six questions directly in our face for most of the week.

DR. CALLENDER: We can do that.

MEMBER LOCKHART: So I'm wondering if we can either write them on the white board or write them when we have blank time in between presentations and at the breaks have them on the power point so that we can focus our attentions specifically on those questions.

I know some of them, or almost all of them, were captured in some of the documentation we were given to read ahead of time, but I think having that stuff constantly as a reminder of where to focus our attention during the meetings might be very useful.

DR. CALLENDER: Sure, Carol, happy to do that. We can do that right after this conversation.

CHAIR PERKINS: Gary.

MEMBER JEFFRESS: Gary Jeffress. Russell, I really appreciate the feedback you're giving us from the administration of NOS. I encourage you to do more of that.

I want to try answer those first two questions you asked from my point of view. Just to kick off the dialogue.

DR. CALLENDER: Sure.

MEMBER JEFFRESS: You asked, what is the good stuff that you do, right? And I think that the core of what NOAA does, and the National Ocean Service in particular, is you provide great data and information which is scientifically rigorous to the point where it's totally accepted by the public, and more importantly, is accepted by the courts. It's accurate and it's dependable and reliable.

And I especially like the way that a lot of it now is in real time. Because that's the way society is going is like instantaneous gratification and instantaneous data and information.

And so that leads me into, how can you get even closer to your users. And I think the way to go right now, and we've done a bit of a research on the data that we've been collected in Texas with the Texas Coastal Ocean Observation Network, which is following your example in terms of the science and the real-time data and the quality of it.

Is to integrate that in smartphone apps. Which means you actually got to use the same high integrity of scientific data, but integrate it and display it in a really simple format so that the public can understand.

And for example, just a couple weeks ago I downloaded a new app that's free. It's called Waze. It's for navigation on land. It's for directions.

And this software is just like a navigation software, but it's got a social component where you can actually provide information. Like what speed you're going. And sort of ways gives an indication of what the traffic conditions are where you are.

You can actually report incidents. Like traffic problems or there's a police presence in a certain area. You can report that directly back.

But have that sort of system for coastal navigation. Where boaters can use this to figure out where they are.

But they can also report back in real time, what's happening where they are. If there's an incident or an oil spill.

It's like a social media for navigation. It already exists for the land base navigation.

So there's one way you can really get back to your users in a very significant way.

DR. CALLENDER: I mean essentially every smartphone user out there is a data point, data collection, et cetera.

One of the challenges that we, not challenges, one of the opportunities I think we have in NOAA is there's what's called a NOAA partnership policy. This was originally put in place to deal with the growth of the weather industry.

So there's, you know, trying to find that balance between the authoritative data that we do provide to those rigorous standards to a smartphone application or a commercial application. You know, trying to find that balance is really key.

And, you know, that policy is -- it's not just a weather policy, it's across the board. And so I think we're going towards those kind of systems, but we've got to do it in a smart way.

No pun to the smartphone. We've got to do it in a smart way. And we've got to do it in such a way that essentially stipulates private industry versus competing for it potentially.

So we're kind of working through that. I think the weather service, we can learn a lot from them in terms of how they did that. And their interactions with industry.

But I think that's, you know, that's a way, no pun intended again, of the future.

CHAIR PERKINS: Lawson.

MEMBER BRIGHAM: Yes. Thank you, Russ, for including Arctic in the dialogue. I chair this Arctic and Emerging Priorities working group here.

And of course the challenge for us, and for you all, is how do we take our national arctic documents and translate that into a reality in the budget. But the documents, all of them, mention charting the Arctic as a high priority.

Now when I mention ice breakers, they don't mention observing systems, they don't mention a lot of stuff.

DR. CALLENDER: Right.

MEMBER BRIGHAM: But they do mention who's charting the Arctic and all of the data that's necessary. Geospatial data.

So how do we, the HSRP and how do you all, translate that very definite and direct national priority to the budget? So it has to be done internal.

But it's very obvious to all of us that work in Arctic, that none of this can be done with no new money. You're already teasing out possibilities and actually surveying, but how does the Arctic compare with LA and Charleston and New York, et cetera?

So huge issues. We'll try to give you our best advice. But probably one will be to, it has to be new money, for some of this frontier.

DR. CALLENDER: Absolutely. I mean that's the fundamental challenge. I mean as you guys all know, it's hugely difficult majestically and expensive to operate up there. And to get ships up there.

And, you know, if you'll look at, and Glenn will walk through this a little bit in detail, you look at the '16 budget requests, there's $1.3 million of a request for the Arctic. And it's about spill response. It's not about the charting side of the House, if you will.

It's literally a drop in the bucket in terms of what's needed. And, you know, we've, you know, I think there's been some level of frustration with national level priorities. You know, clearly pointing towards the Arctic.

And the fact that moving requests to the President's budget process doesn't yield requests for the Arctic.

So it's, you know, what I've seen, and you guys have probably seen this for years as well, is you got to keep banging away at it. You've got to, you know, after you put a proposal together that goes, try to work through the President's budget and the Hill, it might take five or six years of constant attention before you actually going to get results out of the other end.

You know, clearly with the pressure that congress is facing now as well, I mean even I've heard from democrats and senator probe saying that all new proposals are suspect. You know, how do we fund our current activities.

So there's no easy way to do it. We've got to get new funds and we've got to make some hard decisions, absent those new funds.

So no good answer, but we'll, you know, work together on it.

MEMBER BRIGHAM: I'm sorry, can --

CHAIR PERKINS: Yes, you can respond.

MEMBER BRIGHAM: Yes, I think also there's this myth and reality of whether we're talking about global trade routes or the reality that we're offshore today and have leases and a great US Government investment and return on it. And that investment in leases in areas that are marine.

So I think it gets confused that we're talking about global trade routes decades from now, rather than the reality that it's today we're operating and in the near term decade.

So we have to make this -- cut through the myths of the new Arctic and say what we have now and what we're doing now and what are our needs now for observing systems, charting, et cetera.

CHAIR PERKINS: Okay. Ken.

MEMBER BARBOR: Yes, I -- when I look back over the recommendations we've had, again Susan has complied pretty well, yes, we can look back to, I think it was a Boston meeting or a Portland meeting when there was some rock in Scot's Bay that the Panel highlighted and it got surveyed.

You know, so that's an immediate gratification. And now we're, you know, rightly so shifting. Because that's a Nav manager issue, it's not a Panel issue.

Rightly shifting to a strategic view. But we are wrestling, internally, with how we manage those sorts of recommendations. And as you say, us giving them to you complicates your business because they are big.

But us trying to figure out what the heck's going on also. How are you responding other than, you know, a feel good thank you very much, that is an important issue for us too.

You know, what progress is being made and how is that being directed. And whether that's an internal issue we need to really, well it is an internal issue the Panel needs to come to grips with. But it's also an external issue that we need to, you know, be on the same sheet.

DR. CALLENDER: Yes, I agree. I think it just points out the need for a continual feedback loop.

You know, so that, you know, it's not just letters and responses going back and forth, but it's more of a continual engagement. And I, you know, I think from talking to Admiral Glang, I think that's the intent.

But yes, clearly the challenge of us asking you harder questions means that it's harder for us. But I think that's the point of working together on these.

CHAIR PERKINS: Thank you. Joyce, last question and then we'll move on to the budget briefing --

MEMBER MILLER: Joyce Miller. I noticed that you said, when you saying the ships going into the Arctic this year, knock on wood.

DR. CALLENDER: Yes.

MEMBER MILLER: And I note that Admiral Glang last year told us that the Fairweather and the Rainier didn't survey last year.

I was talking with a young Lieutenant JG NOAA Officer who had been on the Fairweather, she was very, very concerned that she felt she got no hydrographic training in two years because the Fairweather didn't sail.

Now this isn't future money, this is money you've got. And I've been NOAA, worked with NOAA a longtime and I understand the NMAO and all, and certainly not the intricacies, but how can NOS get its ships out reliably so that -- I mean we're missing surveying in the Arctic again this year, the ships are delayed.

How can you guys push this to get the ships out? Because it doesn't happen just there, it happens out in Hawaii and, you know, there's lack of a lot of resources.

(Off microphone comment)

MEMBER MILLER: No, no. This has been my topic for a long time.

DR. CALLENDER: So we lost approximately 40 percent of our hydrodays this year. Is that number right? Admiral, close?

RDML GLANG: That sounds about right.

DR. CALLENDER: And, you know, the challenge that, and I'm, you know, I'm not -- I want to be very careful, and I'm not speaking for NMAO on this, but one of the fundamental challenges they had was simply the inability to keep engineers onboard the ships. Ships were ready to go, they didn't have the engineers.

Because you could get better pay, better berth, better hours, better schedules in the private sector. And, you know, we even tried to work with Admiral Lopez and Admiral Score on some solutions for that, but, you know, that's something that we can't control in NOS.

We can certainly push it and influence it, but that's one of the challenges of operating this fleet. Is basically getting the ships out there to do the work.

You know, the training aspects, we can absolutely work on that. I hear you. We can take that back for an action.

MEMBER MILLER: Well is this something that we should consider, you know, putting in a recommendation to the administrator. Because it's NOAA. It's not an NOS issue, it's an overall NOAA issue.

DR. CALLENDER: I don't want to put words in the Panel's mouth, but certainly expressing, you know, concerns for the inability to maintain the hydrodays that we have, much less increase them, I think it's worth certainly bringing up.

CHAIR PERKINS: Very good. Good dialogue. Thank you, Dr. Callender.

DR. CALLENDER: We're going to switch places so he's more in the center here. Or in the hot seat.

MR. BOLEDOVICH: Yes, switching to the hot seat.

DR. CALLENDER: So our next speaker is Glenn Boledovich. He's policy director for the National Ocean Service.

And Glenn is a familiar face to the HSRP. And we're glad to see you and excited to hear about what is and isn't possible in the upcoming budget.

MR. BOLEDOVICH: Okay. Yes, we're going to talk about a few things today. So I'm glad to be here.

In case you're wondering, in recent meetings of the Panel, it would have been one of my staffers here. Paul Bradley's been staffed to this Panel for several years.

We've had some change in staffing. And prior to Paul, and prior to me being the director of the policy group in NOS headquarters, the navigation portfolio is bailiwick.

So I do know when I was there when the HSRP was created and it's my pleasure to be back talking to you folks again today. We are working on a permanent replacement for Paul. Just so you know. But meanwhile we're kind of spreading the work around a little bit.

But anyways, it's my pleasure to be here today. I'd like to add my thanks to everyone else's for your fine work as well.

I know we have several new members and I know members have varying degrees of expertise regarding the budget process in congress. So for those of you who know most of this kind of stuff already, bear with me a little bit as I try to maybe bring some other folks up to speed in some of the remarks that I make.

So let me kind of get started here. So these are the things I'm going to talk about today.

There was an election, we have a new Congress. A 114th Congress. So people often refer to it as the Congress in generic terms, but actually they sit for two years at a time.

Every time the House representative comes up for election, every two years, there's a new House elected and that's called the Congress. That two year period.

So it just kicked off in January, and they have two years. And that's kind of their clock for moving legislation.

They do appropriations and funding every year. But in terms of moving legislation, anything not passed in two years dies and has to be started anew. So that's how kind of the process works up there on the Hill.

I'm going to talk a little bit about some of the changes that happened on the Hill. Just -- and some background just on our statutory authorities, things that are under the prevue of this Panel.

And then kind of just a real point overview of our strategy. And then a little bit about the budget. A little bit of work that I've been working on with FEMA.

The issue of responding to disasters has come up already this morning. I was charged, sometime ago, to pursue the idea of Pre-Scripted Mission Assignments with FEMA. I'll gladly give you an update on that.

And then just briefly on the charter renewal, which I think we're going to discuss later actually in the administrative section. But I'll touch on that briefly.

So going to Congress. So a new action. The big thing to happen was the senate flip.

The Republicans took the majority. And the Republicans also bolstered their majority in the House.

I always start with appropriations committees because these are the people who give us our money as opposed to authorizing committees. Which pass laws, like the HSIA and such.

These people actually say how much you're going to get to run those programs each year.

And in the House, at the top, there wasn't much change. And at the subcommittee level, the only change is John Culberson, is another chair of our subcommittee. So the Commerce, Justice, Science and Related Agencies Subcommittee is our subcommittee.

And by the way, just so you know, the House and the Senate isn't the only committees that are parallel. They're the exact same in each chamber.

Is the appropriation committee and its subcommittees. The authorizing committees vary quite a bit. But here they match up one for one, so they can negotiate those funding levels.

So John Culberson, he's from the Houston area, he's the new chair of our subcommittee.

On the Senate side, Senator Cochran is back to chair. The Senate appropriations committee.

You may have heard that Senator Mikulski is retiring end of this Congress. But meanwhile she holds the chair or ranking member of the full committee and our subcommittee. She continues to have a strong interest.

And Senator Shelby from Alabama is, again, our subcommittee chair. So that's not -- he's very familiar with our programs. We're very familiar with the staff on the Hill and everything. So we're hopeful those relationships will go well.

That's about it on that. So these are kind of the changes that are authorized in our appropriations committee.

And our authorizing committees, this is where the bigger change has been in the House. Most of NOAA's wet side program, including these programs, fall under the nature resources committee. And there's obviously a change of leadership there.

With representative official from Utah having the full chair. And the few changes there.

But the bigger changes that happened with the committee was in the subcommittee structure. And this is kind of historical observation I would make.

When I first came to Washington DC, in the House of Representatives, there was a full committee. The Merchant Marine and Fisheries Committee was dedicated the ocean issues.

In 1994 that changed. And there was an Ocean and Fisheries Subcommittee under the Natural Resources Committee. But now that committee has been abolished.

And now oceans have been put under Water and Power. Under the new Congress that just started in January.

And this is more the, you know, water power type folks. You know, long standing committee. Subcommittee of the House. So I'm not quite sure how that's going to work.

And furthermore, not quite all of our programs were put under there. Our Coastal Zone Management programs were put under the Energy and Mineral Resources program.

So the HSIA is under the Water and Power subcommittee. That's a committee with jurisdiction.

The other big change in the House. The Nature Resources committee has created a separate new subcommittee that doesn't have jurisdictions over subject matter, just oversight in investigations. So this is kind of a common pattern with several committees in the House.

The House of Science committee did the same thing. So these would be providing some oversight.

And some of the issues are going to be interested in investigating, based on the releases they've provided. Is the Coastal Zone Management Act and its relationship to energy development, offshore energy development.

Federal mapping programs was raised. Kind of the assumption, the overlap between programs across agencies is pretty persistent in Congress. And it's back again. And we'll expect to see some legislation reintroduce this section.

And of course the President's National Ocean Policy continues to be of interest. It was an interest of the committee of last Congress and again this Congress. So this is some of the topics here.

So anyway, the main point here is our programs fall under the Water, Power and Ocean subcommittee. You can see the Chairman, John Fleming, from Arizona there.

The Ranking Member Jared Huffman from California and Northern California. Just north of the Bay area up to the Oregon border. So we'll see what this Congress brings.

There hasn't been a lot of interest expressed specifically in the programs. Or the reauthorization of the Hydrographic Service Improvement Act. In the past, you know, they acted, its authorization needs should be reauthorized since 2012.

Congressman Young has been champion for this legislation since its conception. Don Young of Alaska. And typically he will submit a bill. But so far he has not.

By the way, Representative Lowenthal is on the Water, Power and subcommittee that has jurisdiction over these programs. So he's a member of that subcommittee as well as a full committee.

Just for a point of interest. There's other NOAA programs that are under the House Science committee, but it's mostly the weather side.

But it's always struck me as interesting that the House Transportation and Infrastructure Committee, and specifically the committee on Coast Guard and Marine Transportation, always has an interest in these programs, but has no jurisdiction. Has no official jurisdiction.

The jurisdiction of the House Transportation committee over at NOAA, they have jurisdictions over water and oil pollution. So our Office of Response and Restoration and the Oil Pollution Act has some jurisdiction.

But they're -- there's a lot of staff there that we talk to, but technically they have no jurisdiction. So there would never be a hearing in front of this committee, specifically about these programs.

Our Senate committee has been, of course the change in the leadership. So Senator Thune is on the chair of the full committee. Senator Bill Nelson of Florida is the ranking member.

And then the subcommittee that has jurisdiction over our programs, Senator Rubio from Florida and Senator Booker from New Jersey is the ranking member. Senator Rubio is the chair. So that's the big change on the Senate side.

What I have sent out to the Panel is a much more detailed document telling you who all the members are on all these subcommittees.

That's a document that NOAA produces that tracks every year. It's about a 26 page document. So I didn't print it out. But we can make that information available.

So I think I sent it. It should have been put on at least the Google site or the site you guys share. As well as some of the basic authorities for the programs here.

So we're not quite sure where the Senate subcommittee is going, but one area they're showing interest in is vessel discharge legislation and not directly on point with the jurisdiction of this Panel.

And a couple other topics there. Weather legislation in fisheries, the National Fisheries Act, the Magnuson-Stevens Act is always a hot topic. And it's due to be reauthorized.

As well weather legislation. Both in the House and Senate has been of interest lately. So that seems to be where their focus is right now.

So this slide just kind of outlines there, especially for maybe the new Panel members, but kind of what the laws that covers, has the govern, and provide the jurisdiction for this Panel.

The Coast and Geodetic Survey Act is kind of the long standing organic authority for these programs. Goes back to the 1940's.

And in 1998, rather than messing with that law or tampering with that law, Congress passed a new law called the Hydrographic Services Improvement Act, which references back to this earlier law. But kind of leaves that law intact.

And it's the Hydrographic Services Improvement Act, specifically the amendments of 2002, that created this Panel and created the jurisdiction and the prevue of this Panel. And it's outlined in that act.

So it basically says, this section creates the hydrographic services review panel and the stuff you have jurisdictions over is section so and so of this act. And those are the things that fall under the prevue of the Panel's review and consideration.

And no surprise, it's basically about the programs and activities of the three offices that are represented here from NOAA.

So the Ocean and Coastal Mapping Integration Act is a law that was passed in 2008. It's part of the much larger piece of legislation on various land-use laws and stuff and natural resources laws.

This act basically says, federal agencies, you should coordinate together on ocean and coastal mapping. And NOAA, you should do so as well internally.

And this is the whole integrated ocean and coastal mapping program that Ashley will be talking to you about.

And in my view, it's been quite a success. When these ideas come up that the federal mapping efforts are very uncoordinated, I would say because of, not just this law, but because of interagency efforts that even preceded this law.

The Sandy response was a perfect example of how well agencies worked together. And I think the wet side, or the ocean and coastal side, some other folks who maybe learned from that.

Because I thought the cooperation was actually very well done. The coordination for all the shoreline mapping between FEMA, the Army Corps and NOAA was exemplary.

Certainly way ahead of some of what the perception is, I think, in the public. Or at least in other areas.

In terms of the legislation that may come up this Congress, you know, you guys could also let me know areas of freight transportation and freight movement and supply chain. Because that's something that my office would cover a lot.

But if you folks have an interest in that, let me know. We can certainly kind of keep tabs on that.

There was a geospatial data act introduced in March. A little bit more relevant to the work of this committee.

It's -- we don't know that this legislation is going to move very far, but it basically is about management of datum and datums for the federal geographic data committee.

It doesn't go program by program. It just kind of re-authorizes how agencies cooperate and work together through the Federal Geographic Data Committee.

The Digital Coast Act was a legislation that was introduced last Congress that did not pass. We expect it to be introduced again.

But that's kind of the extent of the kind of interest that we've seen in programs related to this Panel at this point.

So in terms of our legislative strategy, our outreach strategy for Congress, it's noting very surprising here. We want to strengthen the good relationships we have, we want to build new ones.

Our kind of approach for that is greater in-district opportunities. For example, the tour that we did with Representative Lowenthal in the vessel with the pilots, with a constituent and a partner, way more effect than going to his office and meeting with him and talking about our programs.

When Jacobsen Pilots talk about the value of our programs, it's very impactful.

And so that was kind of the opportunities of what we're looking for and to build upon this year.

In addition to funding opportunities, that would be maybe some contracts for these programs, but also grants. We give away a lot of money. About a quarter of our budget is given away in grants for the Ocean Service.

And again, just trying to highlight that and the impact on the districts and the members a little bit better. And then of course continuing to build one-on-one relationships.

So now I'd like to segue over into a little bit of budget. So this is the overall NOAA budget.

You see the National Ocean Service there. Basically about ten percent of the NOAA budget. Hasn't been a big shift there this year.

And overall the President's request had quite a few inquiries. And this is kind of the dilemma that Congress is having, is that the President made some conscious decisions to increase investments in areas that exceeded some existing caps. And Congress is still working within those caps.

So when all -- when Russell said all increases are suspect, said anything over those caps is like, well, they should be the view of many Congress offset. And the president did not, he exceeded the caps. He went over and above.

So here's the NOS budget trends over the past several years. You can see a rather large jump in this year.

That jump did not translate directly to the programs under this group. And this is our primary reason why Russell, well it's a primary reason I won't speak for my boss, but why the resiliency question is so important for this Panel. Because those increases, as you'll see, are very relevant to resilience.

More specifically, for these programs, similar kind of projection. Except the swell is not quite as high on the far side.

The blue bar in the middle, that's the Sandy supplemental money that we got. We got quite a few resources there for our Navigation, Observations and Positioning programs. And those funds have been expended.

So the trends are kind of similar. In 2013 was the big sequester year. And then '14 and '15 Congress, they passed the law forgiving them from the sequester for two years. For two years. So it's over.

So in '16 technically the sequester is back. So it means no matter what Congress does, there's going to be an additional whack taken off the top of that.

Unless there's some relief provided from the sequester. So we'll see where that goes in this Congress.

Nobody is quite sure, but frankly many of the appropriations are saying, you know, these budget things are a bit ambitious and it's going to be a tough year. They're expecting, especially with a new majority in the Senate, they don't expect the fiscal noose to get looser this year. If anything, potentially tighter.

So the investments in the National Ocean Service are, almost virtually all in the area of resilience. And this is kind of the game in town right now.

The President's budget made a deliberate investment in these areas, consistent with kind of the White House's Climate Adaptation Strategies and Climate Action Program.

And the big chunk of the money, $45 million, was put into our budget for grants. This is grants through coastal states. For them to develop and implement resilience plans.

Now this would be including communities like Long Beach. We met with the major yesterday. He was very interested in this idea.

And the notion is that these grants would be regional and very much partnership based. And that port a maritime communities, whether large or small, are certainly open to be a partner in proposing these grants.

So the notion is people would come together across the region, whether it's several states, through their coastal zone programs, maybe with sea grant programs and others, to kind of come together with a proposal that's kind of dynamic and innovative for how, that we can kind of get some seed money into supporting coastal resilience.

Because ultimately, you know, the decisions are made. What to develop and what to do on the coast is not a federal decision. It's a local land-use law. Local and state land-use law. So that's where that investment is.

The ecosystem-based solutions for resilience of $5 million there is this idea of nature based infrastructure that we can't build a seawall everywhere, as communities are threatened.

We're going to need some alternatives. Some natural solutions for communities. And there's not a lot of good science on that, and this investment is to kind of trigger that and move that along.

It's a lot of work with the Army Corps in this area. The Army Corps has an effort called SAGE, Systems Approach to Geomorphic Engineering, that they're just kind of getting up online. And it's the same kind of a notion.

That, you know, from really hard infrastructure to totally green infrastructure. There's things that are in between and we need to start looking at those. And most of importantly, the value of those and whether they work or not.

The investment for capacity to respond to extreme events. That is more of an internal investment to increase our capacity to support coastal communities.

So this is basically the internal funding of the coastal resilience grants. This is to provide us some infrastructure to continue to provide tools and services in support of coastal service resilience. Including some coastal intelligence tools.

The AmeriCorps Community Resilience Initiative Training, built on an activity that was started in California. And it was some good success and they put that into our budget for that.

The rest, the competitive research, this is mostly for harmful algae blooms, our coastal science centers. And then Russell already talked about the Arctic spill preparedness.

So this is mostly for Office of Response and Restoration to work with the coast guard and others, on Arctic spill preparedness. In light of proposed development up there.

So kind of the biggest takeaway here is where's the money going? It's going to the resilience. And so it's no surprise at all.

We're concerned that we need to better articulate how these programs can promote resilience. Because they didn't get funded here. That's the message.

And I think there's a strong argument to be made. And I don't -- what would be really useful is for somebody, like this Panel, not so much to make a strong recommendation, but to articulate how these programs can advance these national goals of increasing the resilience of communities.

So it's basically a second mission, beyond our traditional navigation and positioning mission, to support this idea. And, you know, when I walk around and talk to folks, it's amazing how many local communities want this same kind of data.

Mayors now want to know what an inch of water looks like. Or what two inches of water look like.

The accuracy of these programs is now all of a sudden high in demand. Maybe ten years ago they want kind of pretty pictures of land cover and stuff along their coast, but now with these flooding issues and these reoccurring flooding issues, it's become important. And I think these programs have a lot to offer.

And it would kind of help, I think us a lot, if an independent panel could help explain that. So, Russell, can I talk to you about?

So that's kind of my two cents on that. It would be, I think it would be really useful to us as we rollout a budget and talk to people and say, well our panel said these are the five ways that these programs can support resilience in the coast. Or elsewhere for that matter.

So we talked about FEMA Pre-Scripted Mission Assignments. So this has been a bit of a struggle.

We talked a little bit about how long it takes to get an agreement with the Army Corps of Engineers. Well apparently it takes like two years to get a Pre-Scripted Mission Assignment from FEMA. Because this has been a tough go.

A Pre-Scripted Mission Assignment, just so to give you guys an idea what's going on here, you know, a mission assignment is a formal document issued by FEMA to direct other federal agencies to complete specific tasks in response to a Stafford Act Declaration by the President. When disasters happen.

So excuse me while I read some of this little introductory material here. Because this is kind of terms of art here.

Mission assignments can be provided in anticipation of or in response to a Presidential declaration. Agencies can be directed to perform work with or without reimbursement.

The mission assignment identifies basically the statement of work, the funds, the points of contact and the projected completion or end date. Once a mission assignment is approved, it becomes the actually obligating document.

So the idea of post Sandy world that we are living in, is FEMA also has these things called Pre-Scripted Mission Assignments. And these are kind of designed in order for FEMA and other agencies who have developed, to facilitate rapid response in standardized statements work.

So in areas where you might provide services in response, let's not recreate the wheel every time by having to do a brand new mission assignment. Let's have a Pre-Scripted one in the library kind of ready to go and then all you have to do is add what the location is. And so a specific clause for that.

So it's basically meant to grease the skids and to facilitate that. And FEMA keeps kind of a library of these.

And the National Weather Service in NOAA has some of these. And we did not at the Ocean Service.

So we went to FEMA, we talked to them and we had a mixed success. We took a series of them to FEMA, one was fairly close to advisor. What are the things that we already have FEMA concerning an event. The weather service will immediately dispatch a meteorologist under a mission assignment.

And we thought maybe a similar thing for a coastal advisor would be helpful for a coastal event. Kind of that person to kind of advice in the suite of program to cross NOAA that the weather service -- that are not in the weather service.

Five others that we had were initially denied. And those are mostly the programs under the prevue of this Panel. You know, hydrography, LIDAR and aerial mapping, geodesy and then oil spill science and marine debris.

FEMA declined these Pre-Scripted Mission Assignments saying it's not really your job to do this. We're not going to fund you to do it, there's no double-dipping allowed here is basically the reply that we got.

And of course our response was, you know, they said it's already a mission, you already have expertise. I said, well of course we do.

But our mission isn't to respond to your Stafford Act Declaration of disasters. I got to haul my people off surveying whether it's in the Arctic or California, to respond to this disaster in the Gulf and there's a cost there.

It's not a lot of cost. It's a cost of moving some people and some equipment and housing them while they do this mission for maybe up to a week to help get a port reopened, right.

So we went back and forth with FEMA for some time. Fortunately, in the mass Reauthorization of the Hydrographic Services Improvement Act, Congress actually provided authority for these programs.

So where appropriate, these programs that are before the Panel, may acquire hydrographic data and hydrographic services to save and protect life and property and support the resumption of commerce in response to emergencies, natural and man-made disasters and homeland security and maritime demand and awareness needs.

Which will seem to fall right into FEMAs hands. They are already authorized to do this. But it says, including obtaining mission assignments.

Congress added those words in its great wisdom and we use them to the max. And was the cornerstone of our appeal.

And so now I'm happy to report that we have this one approved and the five have been resubmitted and FEMA is reviewing them. We're anticipating approval.

The only final catch in this is when FEMA said, okay, we'll reconsider for these other five. Is that they limited them to what they call BFA. Which basically means the state has to ask for the assistance and the state has to be willing to provide a cost share.

In other words, FEMAs not quite foreseeing the situation where fed to fed support would be provided for these. We have some concerns with that, but we're going to take what we can take.

If we can get these out of FEMA right now. But the idea that they couldn't imagine a circumstance where FEMA and other federal agency, like the coast guard, might need a port survey so they can reopen it, they just wouldn't go there with us on this, so.

And we're continuing to work with them and negotiate these. Our goal is to have these five, even with the state restriction in place by hurricane season this year, our goal was to have these in place by last hurricane season just so you're aware of the timeline we've been working on here.

But meanwhile, we're trying to establish a relationship with FEMA as well. So it's been kind of tough, there's been some bumps in the road.

And we're trying to make for a healthier long-term relationship there as best we can. So that's kind of the update and the status of that effort.

And finally I want to talk a little bit about the charter renewal since that will be coming through my office for approval and we're on kind of a tight timeline. It expires here coming up in September.

Review is required at the department level. So we need to kind of get this moving. As you folks know we've -- these things can take some time.

So it's an administrative process primary lead by Admiral Glang in the DFO. My group will provide lead on policy support.

There's no formal role articulated for the charter and for the Panel. It's an opportunity for the Panel to review and provide its views to the DFO.

And that's exactly what talked about this morning. That we're going to talk about in the administrative section, what those might be and what we might do about it.

And then of course one of the areas that's come up, is the issue of subcommittees and subcommittee jurisdiction and that kind of stuff. So I think we're going to reserve that conversation for the administrative session when we talk about that.

So that's about the extent of my remarks. I'm happy to entertain any questions. And I know we're running a little bit late. So we can entertain those questions perhaps over lunch as well. Be happy to answer any of them now.

CHAIR PERKINS: Thank you, Glenn. And congratulations on the small progress with FEMA on the Pre-Scripted Mission Assignments. That's really good news. Don't let up.

MR. BOLEDOVICH: I have no intentions of backing down.

(Off microphone comment)

MR. BOLEDOVICH: -- just went all the way up. So this final status, we had a briefing with Dr. Sullivan on this matter. And there's been issues.

She has some meetings coming up with FEMA and there will be a lot of interacting with FEMA leading up to hurricane season. And so we have support all the way up the chain there. And they're going to continue to work that.

So I think we -- we just had a briefing with her and Holly last week. We got a lot of good support from leadership to exert leaders.

We're sending some top down pressure on the bureaucrats in FEMA they're giving us because the folks at the very top are talking the same language. The head of FEMA saying we love you guys at NOAA, we want your services. We should mission assign you. And then we got into the trenches here going, bureaucrat to bureaucrat and we kind of got bumpier.

CHAIR PERKINS: Yes.

MR. BOLEDOVICH: We're trying to iron those out.

CHAIR PERKINS: It's more than hurricanes though. You know --

MR. BOLEDOVICH: Absolutely.

CHAIR PERKINS: -- it's the seasonal flooding, it's the tornado responses. There's a variety of other stakeholders, you know, in that.

So the strategy, how do we get support from weather service, you know, and how do we get support from FEMA at the regional level or from the state emergency response, you know, or the Adjutant General National Guard side of the House?

MR. BOLEDOVICH: Well so the strategy --

CHAIR PERKINS: It just seems --

MR. BOLEDOVICH: Our strategy was to get these Pre-Scripted Mission Assignments in place and then go through out navigation managers and other.

And we talked to the regional FEMA people saying, hey, look at these cool things we have in place now. We can provide all these services to you. But the struggle has been getting them in place initially.

But so the whole outreach plan to how sell these and make people aware of them, is kind of the next phase. Which has been put off by how long it's taking to get these in place.

But we've thought about. Because most of the action is at the regional level. They have a right to declare, to trigger a mission assignment at the local and regional level. FEMA does. It does not have to be done in Washington.

CHAIR PERKINS: Yes. Thank you.

VICE-CHAIR HANSON: Glenn, if I could. Because both you and Dr. Callender mentioned outreach and one of your last comments you mentioned states. And certainly states, in terms of FEMA, haven't declared their need for it.

We have approached the states on a lot of different levels recently to challenge governors that they do have a role in research and infrastructure investment, all that. Even on federal projects. Because it's their economies that get impacted and it's their votes that really come into play.

Can you talk a little bit about how you, how NOS, relates to states? How do you -- have any outreach with them and whether it's through NGA or coastal states organization or --

MR. BOLEDOVICH: Yes.

VICE-CHAIR HANSON: -- are there opportunities there?

MR. BOLEDOVICH: I was afraid of my boss a little bit, but I think me and Russell had 19 meetings in a two and a half week period during a budget rollout. And that included talking to many of these organizations.

And including the coastal state organization. It's a key outreach for us. Those are all the coastal states that are part of the coastal zone management program. As well as others.

DR. CALLENDER: Yes. And we've been trying really hard to build that relationship with coastal states organization. Also with the NERRS Association, which also has representation at the state level.

As well as enhancing our relationship with the sea grant program, which isn't in the Ocean Service, but certainly partners with us in many areas on the ground.

And so that's kind of been our focus, is hitting these major associations that have representation. Not only at the state level, but in DC.

VICE-CHAIR HANSON: Yes, I just -- if I can just add two cents worth there. Because there's two organizations I would maybe put on the list there and maybe we can help with that.

Obviously American Shore and Beach. Glenn, we talked about this morning. A new direction, new executive director. I think we are going to see a different chance of dynamics there.

But also the National Governors Association has proven to have some interest in infrastructure. They're very bureaucratic, but at the same time they do have a big voice.

And they're kind of sponges right. So when it comes to issues like this, I think they would be good partners.

DR. CALLENDER: Those are great suggestions. I mean really what we're trying to do is enhance the relationships across the board.

It's a more of the relevant kinds of associations that have that larger representation, that we hit the better. Thank you.

CHAIR PERKINS: Yes, Frank.

MEMBER KUDRNA: Glenn, that was very good. Thank you. Here is a Panel, any federal advisory panel.

Most of what we hear is, you need to spend more money on this. And various topics come in and there's always a greater need for a whole series of things that are presented to us along the way.

And, you know, where you described the President's budget and the sequester side of the congressional guidelines. The likelihood it is something in the middle or numbers might be smaller before it's all over with the next budget.

And Russ asked us for priorities, but it might be priorities with a smaller number in the future that show up. And one of the things we discussed was, you presented to us and discussed outreach.

Early in the HSRP's history, a most wanted top ten list was developed that was not an individual view of a member, but a product developed outlining the needs and benefits of HSRP activities. That was enormously effective with congress.

And we're going to discuss further subcommittees. And one of them that was proposed at the last meeting was an engagement committee that would discuss such a topic. Maybe revising something like that or some product that would specifically address the issues of HSRP.

Rather than -- I know you're restricted to talk about the big picture budget as opposed to the details at HSRP, can you comment on whether that would be effective or useful to be able to communicate a document like that?

MR. BOLEDOVICH: I agree the ten most wanted was a very valuable tool. I read such much that we actually did a second version 2, 2.0 of it.

And this is kind of what I was referring to earlier. That having something like that from the Panel to take out and say, what, this isn't us talking, this is our Panel, let's recommend these things.

And have that document from you folks is a very powerful tool. It's as powerful as having Tom Jacobsen talk to Representative Lowenthal about the value of our programs, when our Panel says those type of things and articulates. And prioritizes. And say, if you can make these investments.

And I think those are some of the things that Russell has kind of highlighted in the six questions. As I kind of, for round two, there's some areas where we think that these programs can contribute and maybe need investment that are kind of out there for your consideration.

And so instead of more of a straight recommendation, it's like, well we've done this work and we've found these things, these are the greatest needs in these programs. If someone is going to invest in these, this is what we think should be done.

It was very helpful. It's an arrow in the quiver for sure for our outreach.

CHAIR PERKINS: Thank you.

MR. BOLEDOVICH: That's different than the question of the Panel. I didn't throw an outreach we've -- I think the attorneys have to talk to you about and how much can you guys do.

As individuals, of course you're free to talk to anybody. But in terms of wearing the panel's banner and going to march onto the Hill or something, that always raises big concerns with all them lawyers.

CHAIR PERKINS: Susan.

MEMBER SHINGLEDECKER: That gets exactly at my question. I clearly see. And what you pointed out with the funding with resilience and funding is going to resilience and how can we better make the case for how these programs contribute to resilience and how can we message that.

And I guess my question is, help me understand who we need to be messaging that to. It seems it needs to be more than just the administrator in our letter, so who do we need to and who do you want us to message to and who can we message to. And then in what form is that messaging going to be most effective.

I've heard mixed signals on -- I've heard no, we don't want another ten most wanted and then I've heard that the ten most wanted was effective. Maybe we need to just to call it something else, I don't know.

But, so who are we talking to and what mechanism would be most effective so that we can target our efforts that way?

MR. BOLEDOVICH: So my first kind of request would be to get that information out there. Because whether it's done in -- and leave some of the messaging to us to find those audiences, you know.

This is what our advisory committee recommended. Do you really want to know what's needed in these programs, we can promote those when we go to the Congress, which we did. And like I said, it was very helpful.

In terms of the role with the Panel and doing the outreach directly to those groups or what those groups are, I would have to go back to the lawyers. In terms of the Panel taking an active role in conducting outreach, I think it's a totally different question.

But, in terms of those Panel's recommendations to NOAA being used in effective outreach by the Agency, that is something I can solicit and ask you for right now. And it would be very helpful.

Because it's very helpful to have a group of independent esteemed scientists and experts articulate the needs of our agency. There's a lot more than me talking.

Like I say, this is what the Panel said, you know. And it helps us in the budgeting process through the department, through OMB, all along the way.

I can say, here's another, you know, letter. Or, you know, we get other letters. The American Association of Port Authorities writes a letter every year on behalf of these programs for their budget.

You know, but I think we need to be a little bit careful and I'll need to get the lawyers involved if we're talking about an active role for the Panel in, especially on the budget side of things where everyone gets really, really sensitive. Trust me.

MEMBER SHINGLEDECKER: Okay.

CHAIR PERKINS: Cool.

MR. BOLEDOVICH: I'm willing to investigate that and look into it some, but I think people are really leery in that.

CHAIR PERKINS: Glenn, would it, you know, top ten list version one, version two, would it be possible to get an assessment of which of those recommendations in those top ten lists, were ever enacted?

Can you, you know, I mean if we're going to take on that task and we're going to do it again, before we engage in it I would like to have that data. So if there have been 20 things put in that report, which of them were actually successful and able to be enacted? So that we can look at that as the best practices.

MR. BOLEDOVICH: I would -- I can certainly take a look at that. But I would, you know, I work in the policy shop, you're kind of like a policy advisory committee.

It's really hard to trace back the actions that you do to a result sometimes. It's pretty gentle. It goes through a lot of things.

But I can tell those recommendations. Certainly, at least sustains support for certain programs whether, I can probably give an example with the PORTS system that had helped us to expand those and justify those programs.

Did it get us full funding for them, no. But it helped at least garner some support.

But like I said, I've been in the policy world a long time. And it's just hard sometimes.

I wouldn't measure yourself by such direct outcomes of your -- your recommendations can live for a long, long time. And I don't know.

I guess for me it's really hard to say, well it's because of this action. Because I talked to this congressman or made this statement or I wrote this White Paper that something ultimately happened. But five years later, well there's been some progress in this area, in this field.

And I think without that voice, there's going to be no progress. And I think the voice of this Panel just contributes and bolsters that. And it's another voice that kind of helps move an issue along, no matter what it might be.

The Arctic's a key one. I mean we basically have a whole new coast opening up with no funding. And it's not just NOAA. It's the Army Corps, it's the coast guard.

We're all sitting here going, you know, we can't abandon our missions in the lower 48, and yet what are we going to do.

So just articulating the need and the urgency of it and continuing to be a voice in that, you know, together with others. The coast guard advisory committees are hopefully doing the same thing and we're going to move this rock along over some period of years.

So I'm kind of an incrementalist when it comes to Washington and inside the beltway itself. So that's kind of my approach.

Because it's really, I would have no ego left if I had to try to draw a connection between everything I've tried to work for in an accomplishment. It's really hard.

CHAIR PERKINS: Great, thank you. We have 30 minutes until the scheduled public comment period. So I just want to say that we will take the public comment period on time, on schedule. Out of courtesy to our public attendees.

Lunch will be served at 12:30, because that is a contractual arrangement that was made with the facility. So what that means is we have three presentations in 30 minutes in front of us.

So with that, thank you, Dr. Callender, thank you, Glenn.

(Pause)

CHAIR PERKINS: Yes. Yes. And we can engage in discussion with the Tri-Service representatives throughout lunch as well.

MR. STONE: Okay, good morning. I'm Peter Stone with CO-OPS. I'd like to -- first thing I'll do is I'd like to send a message from Rich Edwing, our director, who sends his regrets for not being here. And he's looking forward to hearing the output from the group.

I know I'm already going to meet with him first thing Monday morning to go through the activities that happened these three days.

So saying that, my presentation was going to be on, was going to be on CO-OPS strategic view and how it relates to NOS's strategic view. I'm going to cut that down to basically just talking about some of the activities that we have going on in this year going forward.

So I'm going to be missing some slides, so please bear with me on this. I'm going to be here the whole time, so please --

Okay, so that's the -- this is the NOS priorities from their plan. From their strategic plan.

This was done slightly after the CO-OPS strategic plan was done. This is the CO-OPS strategic plan.

We have four strategic goals in it. Customer service, integrated observing systems, advance products and services, human capital infrastructure.

And I'm just -- those are them. I'm going to just talk about our activities in each one of those goals this year coming up.

So the first one was customer service. This is, again, some of the objectives. The presentation that's in your briefing and some of the projects we've had in the past years.

But going forward, this is what we have on tap right now. One of the things that we're looking at right now is the website. Our website review.

We've contracted with a company 4C Survey and Analytics. We are actively looking through that data to see how we can improve bringing our data products to the customer.

We get very high scores in customer satisfaction. One of the things we're kind of looking at is navigation of our site. Making sure that when people come on the site, the first timer users, can get the information that they need.

I think that's one of the things that we're finding out from these analyticals. So we're actually actively using that.

Second thing we're using -- another thing is water level training. One of the themes you're going to have through here is, in the CO-OPS, is working more and more with partners.

All right. One of that is providing training, scaling up our training, providing new training modules for that.

The other thing, the last one on here is the expansion of the collaboration of NOAA data centers. All right.

NOAA -- CO-OPS hasn't traditionally archived its data with the NOAA data centers. We're going to start doing that later this year into next year. And hope they'll provide another source of dissemination for products on that.

So we're helping to shed the load a little bit in terms of not everybody having to come to us. They can come to the NOAA data centers and they will help provide some of the products, especially when it comes down to coastal resilience.

All right. So this is the second one. Again, the objectives I'm not going to go through. But some of the projects we have coming up with integrated observing system, we have four new ports coming online this year. Or early next year.

Port Fouchon, Morgan City, Savannah, Matagorda Bay. We have several enhancements coming on online.

Houston-Galveston has an additional meter coming on. Narragansett Bay and Chesapeake Bay. We hope to get visibility sensors in.

We also, and Dr. Callender addressed this, we have a number of partnerships coming in. Our weather service partnership.

We're actually installing two gauges for the weather service. One in Alaska, one in Louisiana.

We have a big partnership with the National Estuarine Research Reserve, which Audra can talk to you. That's a resilience work.

And then we're starting a partnership with the US Geological Survey. And that's a huge -- that potentially has a huge way that we can multiply our observing system. They have a number of observation systems in the coastal environment.

We're working with them to bring them up to our standards. Coordinate together and hopefully down the road we'll start working very closely with them.

The National Park Service is another partnership that we're working on. Again, that gets into the kind of conservation based -- placed-based conservation and resilience work that we do.

Also this year we're starting the infusion of the next generation of water level sensors. The microwave water level sensors.

This year we're scheduled to get ten out of the 150 odd sensors in place. And we're actively working on the Arctic bottom-mounted pressure gauge.

Which we, again, with all the talk of the Arctic, we're trying to figure out what's the best way to, you know, install systems. Observing systems in the Arctic for the long-term.

So advanced products and services. Again, some of the -- under that goal this year we have going on, we have upgrades to our hydrogen modeling up in Lake Erie.

And another thing of modeling is a very rapidly increasing area of focus of CO-OPS. But we're also looking at the expertise out in the community.

The academic community especially has a lot of expertise running the hydrodynamic models. And we've developed a policy of how we can work with our partners, take their model data on an operational level and display it.

And we've already started initial discussions with Alan Blumberg of Stevens Institute to look at taking his model, from the New York Harbor and Long Island Sound and Hudson River, and bringing that into our operational environment. And that way we can retire our model of the same area.

Another project we have coming on is in the Tampa Bay Marine Channel. It's a partnership with the weather service.

We're really excited about this one. Trying to integrate the weather service forecast information and the CO-OPS information, other partner information, into single display.

So that people don't have to have -- to check the weather service site, they don't have to check CO-OPS, they don't have to check multiple sites. This is kind of, again, and what we kind of see in a Precision Navigation portion of this.

We are working on the NOAA rip tide forecasts. Which I won't go into since that's not purview to this.

We're also working on coastal inundation dashboard. We've talked about resilience.

We're developing a website product that will be integrating a lot of our real time systems and a lot of other people's systems and focus at the inundation. Coastal inundation both in real time and we see this as kind of a next follow on generation to our Storm Quicklook Product.

And we're increasing the work we're doing in Landmark Inundation Network. Which is basically providing information to global communities that they can understand in terms of storm.

So when we they say that there's going to be three to five feet of flooding, what does that mean. What does that mean for my property, my piece of land right there. And so we're trying to change that technical jargon into real actionable information.

All right. So the last one is human capital and infrastructure. One of the things, the hallmark of this is that we know, at least for CO-OPS, all right, we can't get good title oceanographers and datums experts in the community, okay.

We do have to do -- what we do is not -- there's not a huge market. We have to bring those people onboard and train them. And so we've spent a lot of time building training modules, in-house training, to bring those people up to speed.

So we're doing work on that. We also, the improvements, the reliable operating systems, our internal product management system. So every project that we do, we look at ways to improve that project the next time we come around to do that. So we're always in the self-improvement technology.

And then the last couple of this, R&D sandbox. Again, that's an R&D thing. We are trying to -- did I, no.

Did I miss one? Yes. Okay. Okay, so we are working on improving our R&D function. Okay.

And then we're also working on the web services. And we're using -- kind of building our web services in such a way that they're actually a service oriented architecture.

And then we're providing services to other computers and we're receiving services. So again, integrating with other partners to deliver effective data.

And I'm probably using more than my ten minutes of time and I apologize.

MEMBER BLACKWELL: You're right on.

MR. STONE: I'm right on, okay.

MEMBER BLACKWELL: No time for questions.

MR. STONE: No time for questions, but I will be here.

MEMBER BLACKWELL: Okay, Juliana Blackwell. I'm going to run through this quickly also.

The idea is to give you a glimpse of where we're going with some of the activities in support of the NGS ten year strategic plan, touch upon some of the past HSRP recommendations and some of the efforts that we've accomplished in responding to those recommendations. And also highlight some of the activities that are ongoing in the California region.

First, just a refresher that the NGS ten year plan, which we adopted at the beginning of 2013, has five term goals. Four of them are programmatic in a sense and one is more of an enterprise goal.

First one is support the users of the National Spatial Reference System. This is maintaining what we have.

This is if things were cut or if things were, you know, in really bad shape, budgeting, we would want to make sure that we are at least maintaining the programs of data and the products that we have currently.

Ideally we want to continue to focus more on modernizing. Goal two, modernize and improve the National Spatial Reference Systems.

So a lot of the activities I'm going to touch upon are how we're making it better and then how do we maintain that in the future. As we continue to adopt new technologies and better ways of doing business.

Third one is expand the NSRS stakeholder base for develop and enable our workforce with a supportive environment. And again, the enterprise goal.

Just improving organizational and administrative functionality. Which is always a -- something that we want to keep foremost.

All right, one of the major signature outcomes of the NGS ten year plan is the release of the two new datums in 2022. Russell talked about this earlier.

And this is where a lot of our effort is ongoing right now. We'll continue to be both on an outreach side as well as on the scientific geodesy side to get this accomplished.

Both of these datums will replace NAD 83 and NAVD 88. The bottom line is, that with GPS today, everybody's using that for positioning everything.

And we want to be able to provide the most accurate framework possible for all geospatial positioning. And to be able to utilize the datums and apply GPS technology so that you can get the best position, and elevation.

And really it's the elevation component that is most challenging at this point because it's elevation relative to local mean sea level. And where is water going to flow. And that's the challenge here.

The GNSS that's up here, that is GPS plus other systems that other countries have adopted for positioning. Galileo, GLONASS. All these things that are internationally being used for positioning.

So we're thinking not just from the US based GPS system, but how are we going to continue to adopt information from other satellite systems that are available.

The key thing that we've heard from our stakeholders is, just, you know, make sure that you have tools available that will help us transform between new and old datums and be able to take our old information and put it into, you know, what is equal to in the new datums in the future.

So that is a key objective of providing the datums and ensuring that our stakeholders come with us. Not get left behind.

What's the big impact here? The new datums are going to change latitude and longitude and ellipsoid height, which is what you get out of GPS, by one to two meters.

Okay, so there is a change. Is it significant, it depends. It depends on what your application is and what you're looking to accomplish with your work.

So we have a variety of stakeholders trying to address those who are very concerned at this. As well as just educate those who are not quite so aware but need to be aware that things are changing.

From the vertical perspective, the heights that a lot of surveying engineering communities are using are going to change. Anywhere, you know, from zero change to, you know, one meter.

And in Alaska I would say we're going to have two meter change. But they know they've been off for awhile anyway.

So I think everybody is looking forward to having more accurate information to do their positioning from. But making sure that folks are, you know, preparing for that and not surprised by it is one of our big outreach goals for the next several years.

The next slide shows what we're currently doing from an outreach perspective. We've got a number of YouTube videos that we've created in the past year talking about geodetic datums.

We recommend that everyone from our acting AA to our kids at home watch these datums.

DR. CALLENDER: And I did and I finally got it.

MEMBER BLACKWELL: And watch them over and over. They're very short, three to four minutes.

We also have a new web page that's out that talks about the new datums. And has frequently asked questions available.

We're having the Geospatial Summit next week. As Russell pointed out, that's going to be in Crystal City, Virginia.

So a lot of inside the beltway folks. As well as a lot of surveyors who will be attending the National Society of Professional Surveyors meeting will be present. And so we invite you to take a look at the information that we have available there.

In addition, some of the other activities that we continue to support in advance, are having regular meetings. We currently have a monthly Height Mod meeting where we have guest speakers.

We're going to change that into a NGS web, monthly webinar. Where we focus on different subject topics and have a guest speaker and invite the public to call in and to listen in.

That would be something I think that would be ideal to communicate to the HSRP members. Tell them what's coming up so that they can dial in if they want to and hear more about a particular topic related to NGS.

We're working through the federal geographic data committee. And as I mentioned, the National Society of Professional Surveyors. Holding regular meetings, updating them, getting other feds particular onboard with the changes that are coming.

A lot of the things that we're doing, as far as presentations, such as this presentation and others that we're giving all across the country, are made available on our website. So there's a link here, that you probably can't see very well.

But on the NGS website we've got a number of presentations in our library. And we are posting a lot of online learning modules and webinars that we keep, after we have them we post them online. So if you're not able to make them real time, you can follow-up and check them out later.

Social media, I'm not going to say much about other than we are playing in the NOS social media activities. But we do not have anything currently for NGS. But that's something that will come in the future.

From a scientific geodesy perspective, the work that's being done to enable us to have these new datums revolves, particular around the GRAV-D project, airborne gravity collection, collecting all across the country, using that to create a new model which will become the new geo potential datum.

The idea is that in most places in the United States we will be able to achieve a two centimeter accuracy, relative to sea level with that new model/datum that will come out of that.

For us right now in the collection phase, the green boxes have all been collected and processed and released for a lot of other scientists that want to take a look at that data.

Areas that are in blue are under processing right now. Will be released soon.

Yellow is that it's a partial collect. Which means we've got to continue in that area to finish that block.

And then another number of projects are planned. We will be doing some work in Alaska this year.

We missed that last year because of issues that we had with getting aircraft in the right time of the year to do that work. But we're at 40 percent, little over 40 percent completion right now and on track to have this done so that we can rollout the datums in 2022.

Just briefly, what are -- so once we get some of that data collected we're providing experimental geoid models to start to give the surveying and the scientific community an opportunity to see what the changes are in those areas that we've already collected. So they can start to see, you know, what the impact is going to be.

It's an estimate, but it is something that will allow people not to be surprised, you know, in seven years. But to say, okay, I see where the changes or what the magnitude of the change is going to be. And this is primarily on the vertical side for the geoid model.

CORS, Russell also mentioned this. NGS manages over 1,900 -- manages the data from over 1,900 CORS.

Many of these are owned by the 200 partnering agencies, government, academic and private organizations. But these become the framework of the NSRS. That give the constant positioning information that the people can use for their surveying and mapping projects.

The picture on the left here is the CORS that are available in California. I don't have time to go into a lot of details but I'd be happy to talk to you about that more later.

Foundation CORS is a little bit different. That is something that is much more specific to the geodesy side.

Not just necessarily the users of CORS data in general, but something that would be NGS owned and operated that would tie into the international community and make sure that as we do things more and more on a global basis, that we are relative and tied into the international global geodetic reference frame.

So the picture on the bottom here is one of our prototype, big ant. Big antennas that we've established as the first one of its kind here in the US.

It's three meters across and it's the biggest antenna yet. It's not portable obviously, but it's something that we are testing out to see if that is going to give us the kind of results that we want for our foundation CORS station.

Let's see, time check. All right, so what I'm going to do is mention a few other things related to the work that we're doing with CO-OPS here for the International Great Lakes datum.

We are working on this together so that we can produce a new Great Lakes datum. And somewhere in the 20, I think it's called 2020 is the datum name, but it probably will not be released until 2023 or a little bit after that.

There are a number of slides I have on coastal mapping, which I don't have time to go through. But I do want to say, California's shoreline is in pretty good shape. There are details here.

There are a number of other specifics that Mike Aslaksen provided. And he is going to have an opportunity tomorrow to speak to you and give you some more details on the Sandy contract update, where the data is for that.

And also talk about some of the other areas that we're investigating as far as topobathy and satellite-derived bathymetry data and how we're using that for the future.

And quickly, VDatum. A lot of you have heard about the VDatum tool. This is something we continue to modernize and update.

And we want to be able to say that we are currently updating areas here. We're going to expect that we're going to have a update for the entire West Coast in 2019.

We've got a number of partnerships that I can be happy to talk to you about at lunchtime so that you can see how we are making progress. And we do have some MOAs in place.

I also want to mention that I am the NOAA representative on the FEMA Technical Mapping Advisory Council. I'd be happy to talk to you about that offline. That's another federal advisory group that meets every two months.

And last of the slides, an update on the NGS workforces. This is something that the Panel was very interested in hearing about the decline in the number of geodesists that we had onboard and the inability to hire.

Since July of last year we've hired six geodesists. We've got ten more geodesists recruitment in progress. Which means we expect to have them onboard in the next few months.

And we're also going through a training opportunity to send current employees back to school to get a non-thesis Master of Science Degree in Geodetic Science at Ohio State University.

I'm pleased to say that we have one of our new hires here with us. Dana Caccamise, who is the new Pacific Southwest Regional Geodetic Advisor. If you haven't had a chance to meet him, please do so in the next couple of days. Dana, happy that you're here.

And lastly, we are transitioning to a regional advisor program. So if you're in a state that does not currently have an advisor, by 2017 you will have an advisor assigned to you.

Because we're going forward with making sure that we have an advisor that we can continue to do outreach and education for all states. Not just those that were previously cost shared from the state's perspective. Thank you.

CHAIR PERKINS: Thank you, Juliana. And thank you for consolidating and compressing the information. My apologies on losing control of the schedule.

RDML GLANG: I didn't think I'd be doing a lightning talk, but I am. So I'm up here in my capacity as the director of the Office of coast survey. And that concludes my presentation.

(Laughter)

So coast survey has also developed a new strategic plan, but I've given you a hard copy so I can skip about 68 of my slides.

Lynne, can you jump me to Slide 17? Oh, Rick can. Somebody.

17. So if you go through our strategic plan you'll see my four priority focus areas are on, be the experts, transform our charting program, innovate hydrography and change navigation.

And I'm happy to talk with you more about that, but for each of those objectives there's a detailed implementation plan. And we have a long series of activities.

What I'm going to do is talk about what's going on in FY15, to whet your appetite. At the high level we have performance measures, as do all the programs in NOS. And, Russell, I believe these are part of your scorecard.

So at the high level we have also a GPRA goal, which is the Government Performance and Results Act. And that's to reduce the hydrographic survey backlog in navigationally significant areas.

So we're about 2,500 there as our target. It's a little bit reduced from last year where we had planned on 2,800, but for a variety of reasons we only reached about 78 percent of our goal.

A subset of that is what we plan to acquire, accomplish in the Arctic this coming year. And then we'll plan to process a 110 surveys coming through our pipeline.

Last year we got about 116 of a planned goal of 120 surveys done. And chart validation last year was also 11. And we were able to get all 11 of those done.

New for this year is all of our hydrographic survey plans are available to the public in what's called an Esri story map. So I invite you to look at that. The URL's on the slide.

And this tells a little bit of a story of why we're surveying and who's doing the survey work. It's a much more convenient format to share the story.

In Charleston, I talked to you about our transition to ENC First and the significant impact that's having. We're basically turning our production line around frontwards to backwards.

We're putting our development of ENCs, Electronic Navigational Charts, first. And part of that effort is keyed around building out our database for our chart products.

So we've got the Pacific Region done. We're moving through the California Region. I think that's done. Next up is Alaska Region.

So bottom line, is by the end of the year we should have all new ENCs for Alaska new additions and Puerto Rico. And those will all be loaded into the database and published as they come available.

Publishing the ENCs is tied closely to then, afterwards publishing the raster nautical charts and the keys to keep those as synchronized as carefully as possible.

And then what you don't know is there's a lot of retraining of personnel going on. So all those folks who specialized in raster charts, are being retrained in ENCs.

When we rebuilt our production teams they're now geographically based. So we have both -- each team is responsible for both types of products. So a lot of the raster folks are new to ENC compilation.

We've got two new boats for the navigation response teams that we're expecting to be delivered in early May and going through delivery and field testing by June and July. So we're pretty excited about that.

Internationally, it's been a really good year for us. As most of you know we're very active in our leadership role through the International Hydrographic Organization. That's a collaborative effort where we lead with NGA and Navy.

But for this year we had the opportunity that came up, and we've been putting this in for multiple years, to actually engage in a bilateral discussion with Cuba. So we sent a delegation to Cuba for the first time in 50 years. And that was very successful.

Of course we've had relationships with the Cuban hydrographer through our regional hydrographic commission down there, but here is a chance to sort of, in a sanctioned discussion, focus on some specifics about improving navigation between -- in the waters between the US and Cuba. So we're pretty excited about this.

Autonomous technologies, we've got a variety of efforts, but we have a multi-year effort to integrate our REMUS 600 AUV into the operations of our SWATH vessel, the Ferdinand Hassler, based out of Newcastle.

This year we're really -- so last year we kind of ran the traps on operationalizing. How do you get this things on and off the ship safety, what's our concept of operations.

This year the focus really is on getting the data to be certified to meet the hydrographic standards coming out of that AUV. A lot of work has gone into that.

We're working with UNH. And the exciting part was that the researchers at UNH, and in collaboration with LEIDOS, one of our other contractors, were able to present a paper that showed the data we're collecting from this handmade charting standards. So that's pretty exciting.

External partnerships. Our navigation managers do a tremendous job now with knowing that this is a focus. So we have a most recent example where we're collaborating with Coastal Carolina University.

Basically we're providing them with our standards and with some sort of high level guidance. They're going to go do some mapping work, which is being funded by BOEM.

We stand to get about 138 square nautical miles for this year of chart quality hydrographic data. So we're pretty excited about that.

It's not necessarily in a place where we have navigationally critical requirements, but nevertheless it does add to our total effort to improve the charts.

And then lastly we've already talked about the memorandum of agreement with the Army Corps. So we actually have this thing drafted. We've had a variety of meetings with the Army Corps.

My goal for coast survey is to have this in place by the summer. And for bureaucratic reasons we have to have our memorandum of agreement submitted to NOS by the end of May, in order to have it -- the window closes for the year. The fiscal year.

So we're pretty motivated. I've got one person who's doing this. And he's motivated to get it done because he's being taken away from me and has to go back to sea. So we're going to keep chipping away at this.

We're at the same time working with other NOS programs to identify their opportunities.

You know, at the high level the Army Corps is interested in a NOAA Army Corps memorandum of agreement. I don't really care about that. I can't move the whole damn NOAA organization to do an MOA. What I care about is me, so that's my focus. But we'll bring along the other programs.

So there you go. Lightning talk.

CHAIR PERKINS: Thank you, Admiral. Well we are right at the scheduled start time for public comment period. So if we can defer questions for the Tri-Service directors.

And I will turn around and look to the public gallery and see if there is anyone interested in making public comment at this point.

MR. COWAN: Okay. My name is Jeff Cowan. I work for the State of California. The Office of Oil Spill Prevention and Response.

And I'm here -- I became interested in the prevention aspect that comes out in your thing. And I'm somewhat interested in.

But first I'd like to thank NOAA for all the charts that I used over the years. And especially the NWS, National Weather Service.

I literally lived by those charts. They helped me quite extensively going across the pond.

My typical -- I stay in the Pacific, so I'm very familiar with the Japanese Coast, the Chinese Coast and the West Coast of North America.

Anyways, with my experience bringing ships into California, Oregon, Washington, Alaska, I am particularly interested or alerted or concerned with the over reliance upon GPS. I think Admiral Gerd and I went over this at the Transport Research Board.

But my concern is that the GPS system can be compromised. And we have no backup in the United States.

A lot of things depend on the GPS system here. Not just for ships offshore but for timing. The automated ATMs you use. That timing comes from the GPS or the GNSS.

And another thing I think about is that, okay, let's say our GPS satellite system is compromised, do you think the Russians, do you think they're going to let us get a hold of that or maybe the Chinese? They're our good friends, right.

Now the answer is, is eLORAN. I don't know why somebody doesn't come up with this. The coast guard, they kind of shied away. But they have a system where they could put in, what is it, 14 stations around this country.

This could be a co-primary system to GPS. The datum. You can't pick up GPS under the water. You can't pick up GPS underground and you can't pick it up in an urban canyons.

Now GPS goes out, these virtual aids to navigation are going to be totally worthless. Which kind of goes hand in hand with the physical aids to navigation.

That the coast guard -- oh, I'm on the Navigation Safety Advisory Council by the way. And we just passed a resolution on physical aids to navigation.

But they're going to be using this virtual aids to navigation to supplant the physical aids. And they're going to be using GPS datum or GPS signals, to put the virtual aids out or synthetic aids.

The NAVSAC came out and we endorse the synthetic aids as an enhancement to physical aids. But the placement of those, AISs and everything, is going to be based on GPS.

Now I know you guys can't afford it, the coast guard doesn't want to afford it. I've heard several different programs.

One guy said, oh, $14 million to establish eLORAN. $10 million a year thereafter to keep it going. Or another fellow said, $200 million over 20 years.

Well there's another pundit that came out says, well that is too cheap. That doesn't cost enough so it must not be important.

So where does NOAA stand on eLORAN? I'm sorry for the long diatribe, but I believe it's important.

CHAIR PERKINS: Great, thank you Jeff. And I'll just, as background, both Admiral Glang and I attended and provided testimony to the House subcommittee on transportation, Congressman Duncan Hunter from California's hearing.

And eLORAN and the funding of it was a significant part of that congressional hearing. And Congressman Hunter has put in an appropriations request.

Last I read and saw in the public space was in the neighborhood of $1.5 million to try and jumpstart, you know, an eLORAN continuity program. Admiral, do you have any more current information than that?

RDML GLANG: So I'm sorry, I don't have an update on that. But for NOAA I think it's important that for safe navigation purposes that we do have alternatives to GPS.

As we all know, mariners should not rely on one positioning source alone. And I think I may have said that at that TRB meeting.

So I totally get you. It is a bit out of my ballpark, but maybe Juliana would like to comment on the robustness of GPS. Am I putting you on the spot or --

MEMBER BLACKWELL: Yes. Yes to you putting me on the spot, but that's okay, I'll comment anyway.

I think there's a lot of concern by stakeholders and the federal government about, you know, not having a backup system, okay. It's been discussed at very high levels.

There is an office called the Space-Based Positioning Navigation and Timing. There's a national executive committee for that office. There's a national coordination office.

If you go to gps.gov you will find out a lot of detailed information about what's being done at the federal level in support of GPS and the things that are happening across the federal agencies.

I can't comment specifically on NOAA's opinion on eLORAN and the funding and things like that, but I can say that NGS and the offices supported by NOS and under NOAA, have an opportunity to provide our feedback to issues that are, and questions that are asked by this P&T Office, to all federal agencies.

And we participate. And NGS actually has had individuals on staff at the National Coordination Office. We have a representative from NOAA who's staffed on there right now. But not from NOS.

And we stay engaged in the variety of issues that come up related to GPS. And alternate systems.

But it is something that is getting a lot of attention. I know there are complementary systems that are being looked at, just from the meeting and stuff that I've been engaged.

But we're really not the organization to comment on the questions that you've posed. I think that's at a much higher level.

And even commenting from NOAA perspective I think is not quite appropriate. Because I don't think we have, you know, I don't think we have that available to us today to answer that question.

CHAIR PERKINS: Yes, Jeff, you know, it's not the domain of the HSRP to advise specifically on eLORAN. But, you know, there's, you know, with a simple Goggle search, Duncan Hunter from California in February of 2015 is on record of asking for a fast track solution to eLORAN implementation.

So I would advise -- okay. But, you know, we appreciate your comments. We can't advise on it directly.

MR. COWAN: I was also on Garamendi's Maritime Advisory Board too.

CHAIR PERKINS: Great. Are there others in the gallery for public comment? Okay, great.

Well I believe then that would conclude --

MEMBER ARMSTRONG: Anyone online?

CHAIR PERKINS: Oh, thank you, Andy. Is there anyone online that has called in via the online phone bridge?

Okay. Great, hearing none it is exactly 12:30 p.m. So I think I've got us back on schedule. Lawson, did --

MEMBER BRIGHAM: Oh, just this morning when Representative Lowenthal, he opened the door for us to interact with he and his staff. So there's an opportunity there.

I know that NOAA has, yesterday, obviously met with him in continuously, but maybe we can interact with him.

CHAIR PERKINS: Yes, good suggestion. We should plot a strategy to engage with Representative Lowenthal's staff.

Great. With that, we will break for lunch.

(Whereupon, the above-entitled matter went off the record at 12:31 p.m.)