

StreamBox

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TRANSCRIPT:

>> We're going to get started in four minutes. Checkout is at first break today. If you do need to go down and check out at 11:00 when the break starts, you can do that. Just please make sure that everything is out of your room and that you're not asking for an extension for checkout.

>> Are we ready, amber? It's okay?

Okay. Good morning, everybody. We're going to go ahead and start our public meeting, third day. And we are -- hold on two seconds here. We're going to go around and introduce ourselves. I'm Julie Thomas, senior advises at Sc pi ps ocean institute of oceanography. And I'm chair of the HSRP.

Mary Paige, do you want to go ahead? You never know.

>> Mary Paige Abbott, representing the recreational boating community and reside and work out of Annabel, Florida.

>> Good morning, everyone. QassimAbdullah, UNBC, I'm residing about 70 miles north of here. Thank you.

>> Anuj.

>> Anuj Chopra from ESG plus. I'm also an adjunct at university of Houston. Looking forward to today and a final outcomes from last two days. Learned a lot and looking forward to our discussion to come to some conclusions in our meeting today. Thank you.

>> Great. Alex.

>> Good morning. Alex Cruz, hybrid pilot for the island of Puerto Rico.

>> And co-chair, Sean.

>> Good morning. Sean Duffy. Big (indiscernible) coalition, Louisiana Maritime association, navigation interests on salty Mississippi River.

>> Deanne.

>> Good morning. Deanne Hargrave, working and living in New Hampshire.

>> Ann.

>> Hi. Anne McIntyre from the San Francisco bar pilots, residing in San Francisco.

>> Thank you. Are Tuba or Nicole on this morning, either one? At 10:00?

Let's see. Eric.

>> Good morning. Eric Peace, representing the U.S. flag fleet on the Great Lakes and I reside in Cleveland, Ohio.

>> And Ed Saade had to leave early. So very happy to be. Did I skip you, Nathan? Yes, I did. And Lindsay. Because I didn't --

>> I'm already gone.

>> Okay. Lindsay, you're next.

>> I thought you wanted me to leave already.

>> Lindsay, consultant New Hampshire and Hawaii.

>> And Gary.

>> Gary Thompson, deputy hazard mitigation chief and the chief of North Carolina survey in Clayton, North Carolina.

>> And Nathan.

>> Yeah, good morning. Nathan Wardwell, managing partner at JOA surveys, working and living in Anchorage, Alaska.

>> Derrick.

>> Good morning. Derrick Snowden, acting director and in Maryland.

>> Juliana blackwell, headquartered in Silver Spring, Maryland.

>> I'm Andy Armstrong, NOAA director at NOAA university of New Hampshire in Durham, New Hampshire.

>> Great. So Admiral Evans, happy to share the he meeting to you. Turn it over to you.

>> Thank you, Julie. No comments other than to say that I look forward to our business meeting this morning and discussing issue papers and recommendations.

>> Exactly. That ask what we're going to be doing. Just to give everybody a little bit of an idea because we're going to go out of line a little bit with what is in our there, I thought first we have a few issue papers that we want to go through and finalize those. We can and then talk about new ones. We're going to do some of the planning and engagement in the working groups activities and then we will really nail down some of the recommendations that we want. So let's start with the GeoDESC crisis.

>> Good morning, everyone. We've been at this meeting and the previous meeting, there was discussion about the GeoDESC crisis. It followed up from the paper that was posted on the AGS's web page. It was interesting yesterday during the presentations, that the national Geoadvisory committee's resolution was talked about. And that's why it's important that we publicize this. The morning we document the crisis, the more attention we can get maybe to help us work to alleviate the crisis. So at the last meeting, we had discussion and it was decided to develop an issue paper on this. I want to thank Lindsay and Galen, also Davis Zikowski provided assistance. And folks at Ohio State. So all contributors that helped put this paper together. You've seen the paper. We've sent it out. We have a couple of modifications and revisions. If you can pan down to where the revisions are so we can show you those.

Yeah, they're at the bottom.

The these are, I think Sean had some restrictions. I can't remember where the other restrictions are, but these are the addition e additions to the recommendations that you can review and we can discuss if you support of these revisions.

One deals with the Geospatial modeling grant. And then the other is to work with FGDC. In GAC, I serve on the national Geospatial advisory committee. We provide advice and recommendation to the FGDC. So the more advisory groups that provide that information

then, again, the more attention and more efforts we can see to help alleviate this crisis.

So I'll give you a minute to read through these.

>> Is this the doc, Amber? Or who has -- oh, okay.

>> It's in your member --

>> No, I just wanted you to fix the -- if you could fix that spelling error on intergerity.

>> Integrity.

>> Thank you.

>> Thanks.

>> And galen has some comments.

>> Go ahead, Galen.

>> There's two proposed edits to the bullets. The first one in bold is the proposed edit to bullet number two. So support increased, so the bold license is proposed to replace that second bullet. The next one in bold is proposed to replace bullet four. And then there are a couple of other bullets proposed at the bottom to consider.

>> A quick question about the screen. Do you want me to zoom in or out? Any preferences?

>> Maybe make it a little smaller so we can see it all at one time.

>> See more of it?

>> Yeah. But still can read it.

>> How about that, is that better?

>> Yes.

>> Okay.

>> So I think the action here, after you're done reading this, would be to approve with the modifications that Galen and Gary are proposing. And we can -- yeah?

>> (Indiscernible - no mic.)

>> Of course, yeah. Are you ready to comment now? Yeah. And that was the next thing I was going to ask for, comments.

>> Yeah, yeah, thank you very much. I'm not sure if we want to consider what our discussion a couple of days ago about the classes not geodesy only. It's not fair to the proficient, too. Here, people can understand that only we need geodesicists. I think we should add about surveying as a whole, Geospatial affected by. But surveying and geodesy, the most impacted things. That's my suggestion.

This is very important. Can we share it outside NOAA and the administrators? Say like NSVS, send it to the professional societies? Is it shareable? That's what -- we need just to make a big marketing to help connect GDC and this effort. The American society of (indiscernible). I come from -- I can have it circulated there if we need to, but maybe put it in some journal if possible. I'm not sure. Maybe we can comment on that.

>> Yeah, Qaissim, I appreciate that suggestion because I was thinking the same thing. I don't know the answer. I would need to consult -- it is a public document and I cannot think of anything that's in the HSRP charter that would prevent I'm thinking this through as I think about it. But I think that the -- the panel's purpose is to provide advice to the administrator. It's a public document, so as panel members in your private capacity, any panel member is free to share this public document with any other entity with which they

may be affiliated. Whether, as a panel, officially that could be transmitted to other entities, I guess my -- I don't know the answer to that, but I am not -- I cannot think of any reason why not. Offhand. Unless somebody behind me knows the answer -- the question is whether -- and we can take this off line and get an answer, but the question is if the panel develops a public document, a -- an issue paper on this topic or any topic, in addition to providing that to the administrator, whether they could provide that to professional societies or --

>> They're public documents. They can be shared.

>> So I don't think there's any reason why not.

>> Yeah. They're on the web page.

>> Andy?

>> Thanks. I'm going to swim upstream or go against the flow or something here. I'm concerned about adding surveying and Maritime in with the geodesy crisis. Because I think these are somewhat different in character. This is a shortage of people entering these fields, although in both cases, there are adequate mechanisms existing with Maritime schools and with engineering degree programs to do that. The geodesy crisis, I think, is a particular shortage of small set of people with very specific, highly advanced skills. And I think the problem there is not just there aren't enough people -- well, that's the main problem, but there's not the sort of educational infrastructure. There's not professors. There's not a community of practice. They're just really a small number of people and the risk of losing that whole capability, I think, is present. So my feeling is that the others, we may want to address, but I think we should address geodesy separately.

>> Okay. I know there's lots of comments and we're going to get to you in just one moment. I wanted to make one comment myself. I was thinking last night that what we might do to address this is I also think maybe we can do a similar type paper for the Maritime survey and make it broader workforce. And we could definitely include surveying whatever -- because we've heard it the past few days, it's vessels cat sail or whatever. That's all I was going to go. Let's go.

I know Sean is dying to say something and we'll go to you two over there.

>> So I just want to make something clear from my perspective. And I don't disagree with you at all. For me, what I'm talking about with -- for the impact on navigation is that it's important to the navigation industry that the geodesy gets solved because so many of the metrics that are used in navigating come from geodesy. So I didn't want to make it about a -- my attempt wasn't for navigation issue, but the importance to navigation of geodesy. To highlight that among the other benefits and just keep it geodetic, but I think it's very important on -- on PPU's, on vessels nowadays, you're seeing all this information. I come from the land of datum is very important. Very few people have much of an inkling as to what datums mean still. But it's the highlight of what comes out of the geodetic industry field is very important to navigation decisions.

>> Yeah. I'd like to -- I think I know what Qassim means. For me, the connection between specifically the survey to geodesy and I think as we see that as one of the paths in, that's also underserved and understaffed right now. So that whole pool of people is just not

getting through to geodesy. That's one part.

But I also agree with Andy, we don't want to dilute the message the specific geodesy crisis. I think this one is responding. Gary raised it and those things to say this is the problem now. And what we're really saying in that is NOAA should support it at a higher level those efforts to do that. And I think that's what I would support pretty much the structure of the document now. Because I'm leaving, too, I agree, there's something we should pursue. We should pursue the ongoing -- and I think it's a workforce, but I'd like to see the survey kind of kind of it separated from the Maritime workforce because it relates then to certification. The -- you know, the career prep, you know, progression for people and training, all of that sort of stuff I think is an element that we could do separately that in a separate workshops and maybe a future paper. So I would -- that's kind of a compromise, but I support the paper as it is now specifically to support the geodesy crisis in that. Thanks.

>> Thank you. So two aspects here. It's not only geodesy. It's all related fields. We heard about what's happening in California at Cal Tech. We know what's happening on the north fleet, the shortage because ships could not sail, so it's a larger picture. Second, I believe we discussed this briefly was to include it as -- in S.T.E.M. Because educational system in the U.S. is controlled by ACE and ACUE. We should go to them to ask the detail. NOAA should approach them to ask the detail how to fit this in. Because if it's a S.T.E.M. program, it has much wider reach and acceptability for the students because of the benefits. And there is a nomenclature and setup very different from college courses. So expand it and perhaps consult with both of these organizations and come back and then put that -- that may be a better way to proceed to have results.

Thank you.

>> Yeah, yeah. I -- we -- I think we had this discussion in Puerto Rico, also. But, I mean, I think the issue papers are very directed at a specific crisis of the geodetic crisis. And that term is being used specifically because the other groups are using it. And, I mean, yes, there is a larger workforce issue. I mean, it comes up all over the place. But my concern would be if we incorporate that, we would dilute the message that we're trying to get across with this issue paper. And I think that's what I'm trying to say.

>> Yeah, no, no. I see Andy -- I'm with it, yeah, too. But I think what Sean said, maybe we can just elaborate on the impact of the foundational value of the geodesy as a ripple effect on navigation, on surveying, just to bring a little bit adaptation to that. But to --

>> (Indiscernible - no mic.)

>> Is in there.

>> Survey?

>> Oh, sorry, no. Really reinforce what we're saying, there's a difference between a crisis, which is a immediate response, versus the longer term, how the overall workforce from, you know, S.T.E.M., high school and college and, you know, my opinion about survey schools and all those things. This is specifically the geodesy crisis, I think, that needs to be addressed. So that was my response.

>> Eric.

>> Yeah, I think the -- I think it should be separate. I think there's a well known Maritime issue that everybody knows about, whole of government approach. I don't know if this is well known. And my concern is, I think this needs to be raised at the national security council. I think that this is a national security issue. And that's where we need to make this whole of government approach. We're trying to solve a problem that I think is well beyond our means. So I really think that we should really focus on the geodesy piece of it. And the Maritime piece is a concern of mine. It took three phone call these morning where our ships are sailing ashore, but I think that's a separate issue.

>> Go ahead.

>> I think this is a really good conversation. And I think it helps just from my perspective as DFO, it's helpful to connect this issue to the core navigation services mandate of this -- of this body. And I think, you know, the comments that are -- the edits that Sean has proposed are on point. What I would propose for the panel to consider is actually pulling those from the recommendation section and perhaps recasting them and putting them right in the first paragraph. The relevance of this, of this geodesy crisis to navigation services. Among the -- not conclusive, but among the many impacts of navigation services and, you know, Eric, as you pointed out, the national security, the economic impacts of that, I think we could -- without diluting the focus on geodesy, we can make it very relevant to the work of this panel and the work of the programs by doing that, by taking Sean's comments and perhaps recasting them slightly and promoting them to the top of the paper.

>> Can I ask, NGS is affected the most. What does Juliana think about this in her --

>> I was just waiting to have the last word, so thanks for -- thank you. Thank you. And so I guess this is it.

I would really like to have it just focused on geodesy. It flows with the geodesy community of practice which we heard about keeps it focused. Again, it's really looking at building the academic network that is needed in this country in order to get more people into this. And, again, I wholly degree with trying to do something with the Maritime industry or surveying aspect, but let's keep it out of this issue assessment, if you would.

Thank you.

>> Yeah, I agree. I think we need to focus on geodesy and understand about the survey. And so I would recommend that a paper be developed on the survey and then if non NGAC -- HSRP members are allowed to assist, I would be glad to assist.

>> Actually, don't forget you're on until December. This isn't your last meeting.

>> So I've got to get it written by December.

>> I reminded Ed this morning, because he's always good about those bullets for recommendations. And I said, don't forget, you're here until December.

>> So I think this should be two, one on the Maritime and one on surveying. And that way, like this one, you can focus on that subject on the paper.

>> Qassim, are you okay with that?

Okay. Galen, any more to say on it?

>> No. I think we just need to make an agreement on the --

>> Clean it up?

>> Yeah. And I will say there is a request given uncertainty for next week, if we can make a decision today, it would be good because there are folks that would like to distribute this to things that are going to be happening in the near future.

>> We're getting there.

Anuj.

>> Both of them are perfect in that space, but would still request that if we can ask NOAA to -- in the action plan to include going to ACE and ACUE to getting the right format to be actionable. Otherwise, it may not be actionable.

>> Are you -- are you recommending that as a recommendation in the letter? A letter of recommendation to NOAA? Is that what you're saying? Or are you saying that we should include it in here?

>> I'm saying --

>> I missed it. Sorry.

>> I'm saying in that letter for the recommendation for these two, though include that we request to bring it into a format as acceptable to ACE and ACUE and in the S.T.E.M. program so that it's actionable. Point is, we may decide on something and get this recommendation letter. It may not have any impact because the education system nomenclature and structure is a little different. And they followed that structure.

If we include this -- take their help and do it and they'll willingly do that, the association of, you know, of college educators and association of college and university educators, then it will be in a format which is acceptable and get into the streamline of education fairly easily. Does that --

>> Gary, Galen, are you following as far as -- not for this -- not for this paper. Okay. Sorry. I was trying to apply it to this paper.

Let's focus on this paper for right now.

Yes, Juliana? Maybe what I can do is follow up with Brad Piece and following what Anuj is saying requesting that it be something they can consider in that activity that they're doing. Because there's a number of things that the whole community is working on together and, again, it's much bigger than just NGS. So on if you would be amenable to that, I can pass it to them and see if that's something that they would want to take on.

Okay. So why don't -- we need to clean it up. We need to -- yeah, fix all of those ideas there. I guess --

>> So regarding that community of practice, does that need to be referred to in here? It's sort of generally referred -- no, it doesn't. Okay.

>> So is the panel comfortable voting on this paper, this topic for a cleaned up version if we rotate it back to -- go ahead and clean it up and then gale sxn Gary can do that? And then send it back out to the panel? And, of course, if there is any questions, problems, at that time or edits, let us know.

But why don't we go ahead and vote on passing this paper so that we can move forward with it, particularly since we don't know if we will have these government workers around much. Today.

Gary, is that okay, then, if we clean it up and then circulate it one more time and Juliana will follow up with Brad and make sure it's --

>> You need a motion?

>> Yes.

>> I move that we accept the geodesy crisis issues paper.

>> All right. Any -- okay. Discussion?

All right. Any -- let's see. Anybody opposed?

All right. We're going to accept it. Thank you very much.

Okay. So there's three more issue papers that I have on my list here that the digital twin, we kind of left hanging a little bit yesterday, Qassim, but I believe you're going to look at it again and maybe rewrite some of it and then send it back out. And we can always approve through email, too. I think I asked Lynn that one time and Amanda is shaking her head yes. So we can -- we don't have to actually approve that right now if you want to hold off. We'll hold off on voting on that one and then I can send it back out and approve that.

Okay. And then the sea bed mobility -- oh, okay. She told me she had to step out. She'll be back.

This Maritime workforce, does somebody want to take -- okay. So what I was thinking about, I guess the question is, there is a Maritime workforce, I'll call it a crisis for now. That might not be the best word to really put in there, but lack of Maritime workforce. And then there's also the surveying. Do we want two different papers? Do we want it combined as far as a general workforce? What do you think?

>> I think, too, just because you can focus on each topic very specifically if you do two.

>> What do you think?

>> This is interesting because -- and this is something we've struggled with internally.

Maybe I should say I've struggled with internally. Maybe it's clear to everybody else.

Because they are -- if you draw the Venn diagram, the Maritime workforce and the hydrography workforce are strongly overlapping, but distinct. So do we lump them together or do we treat them separately?

My concern about treating it separately is that if we start to talk about Maritime workforce in general, I think we've gone a bit afield from the -- from the focus area and the expertise area of the majority of the members of this panel. Certainly not all of the members of this panel, but the majority of members of this panel. So my -- I would invite the panel to consider certainly a -- I'm trying to think of words we can use, but a operational high hydrography -- hydrography. If everything is a crisis, nothing is a crisis, but the significant shortage of operational hydrographers. Those probably aren't the words we want to use, but the surveying workforce that is anxious and prepared to go to sea and come ashore and perform the nuts and bolts of this work. I would invite the panel to focus on that piece of it because I think we have more expertise and it's closer to our mandate where we're required to provide advice to the administrator.

>> Thanks.

Lindsay.

>> Yeah, I have -- you understand you what you're saying and I think that's a specific OCS

issue, but you also have contractors, too. And I'm concerned with the general lumping together, because I think that's one of the problems with the survey profession in the U.S. is, like, it's not well defined. And so they lump you in, again, and wholly define it with an issue paper and addressing it. So I think it needs to be kind of separate. And then it's the certification that's -- you know, all of those sort of things under that. So I'm not sure how you lump that together with your workforce. And I see it's recommending to NOAA, but it is the broader work -- survey workforce that I would see we're trying to address.

>> Yeah. And maybe I wasn't clear, so I'll try again. And maybe -- because what I was suggesting is that we not -- we try not to address the strictly Maritime side of that, that we leave that for other bodies. There's a CMTS integrated action team that's addressing that. There are other bodies for which the strictly Maritime workforce, you know -- that's really foresight for them and I don't think that's us. So I think you and I are on the same page. And I totally agree that better identifying the profession and the certification is part of that and those are recommendations that could be part of that paper. So I think -- I think we're on the same page.

>> Yeah. Sorry, I misunderstood. And maybe could I suggest that we -- in this recommendation to the administrator, we address both and say we're going to go ahead with that issue paper. But the concerns that -- an issue that Anne raised about cal Maritime, we raised it that there is an issue that is affecting NOAA's role and that be addressed by the appropriate -- I don't know who the appropriate organization or NOAA, engage with those appropriate bodies to address that.

Are you okay with that?

>> So my question --

>> You want to get it done by the same (indiscernible)

>> My question is, you mentioned the hydrography. But if we're -- if it's a general survey, I mean, isn't that also bringing in lidar, are we talking about or are we talking about only hydrography here?

>> I think that goes back to the feed into the -- it's that general community that feeds into the geodesy crisis is because of that. And it's -- I keep going on about it. I think it's like they're on -- I don't know how many survey -- who was I talking to? Deanna is not here. In their group, you know, people at work, offshore in the hydrofield often come from the land survey organization which have a good background for what they do. And I'm not sure you have anybody in NOAA doing hydrography that comes from the land survey background. That's quite common elsewhere. Why not? That's a whole pool of people that aren't being addressed and I think it's partly a marketing tool, but I think it's partly the career progression that's just not known. Because it's a different animal here and how do we better address that? And part of the certification and actually to have a career -- sorry, Deanna is not here, but she was saying in her industry, if you're, you know, a geophysicist or geologist that's working in the field on those vessels doing those surveys, you have a specific education and certification through the national authority that then gives you, you know, the option to be certified in a particular state. And so those things are missing right now. And I think that's -- that's what I would see part of addressing. And so this does

address, I think, the geodesy in broader -- maybe a part of that.

>> So it's September and you're leaving in December. Do you think that's enough time to write a draft for a workforce shortage paper?

>> Yeah, Gary, I believe we should. Okay. We'll give you a parting gift.

>> Great, great, both of you there.

>> Smiling over here.

>> Then it will go to Nathan and Sean. I didn't want to completely load Gary down since he and Galen did the heavy lifting on the geodesy, but it seems like you guys have the more expertise on that right now.

Okay. And then we're going to wait to talk about the issue paper perceived mobility.

Nathan, there was at one time talk of doing an issue paper about the underserved community, blah, blah, blah. Did that ever go anywhere? Or what is -- can you give us an update?

>> Yeah. The update is there's not a whole lot to update. When we were working on the coastal lands panel, we talked about it a little bit. It is something we're still considering doing an issue paper for. We just haven't formulated it yet.

>> All right. So I guess that's kind of up to you guys if, you know, you want to proceed with that. Then it would -- our next -- yeah, okay. All right. I'm going to make a note of it here as a possible one, just so we keep track of all of these. Actually, Amanda, we could almost put that underserved community one in the -- and just a TBD type thing.

Amanda has been really helpful with keeping up that priority matrix.

Okay. Any more discussion on issue papers? Before we move on?

>> Yes, Qassim.

>> Thank you, Julie.

I mentioned it a couple of days ago. I'm not sure whether the panel feel it is important or that we're ready for it. The importance of connecting NOAA data to the inland topography, which is the three different programs. It's a giant program covering the whole nation with the latest and greatest LIDAR accuracy, quality level zero and one. And I think there's a time we move that way as an issue, definitely. Like we said, modeling, the modeling group, I mean, you're going to need to give them what is coming from the mountain and the rain and snow and mudslide in their model and the coastal. Without it, the model is not going to be -- I'm just saying for for example. We work on issue paper to encourage NOAA to work with the USGS and we can moderate with them that discussion. I would love to be in the middle of it because I have a good connection with the executive management of the program. I can bring them with NOAA and see how we achieve that. It is not an easy task, but it needs to be done. We need one debate with all our multi beam survey connected and go through to the inland. That's something I think is very important.

>> So are you proposing to write a draft issue paper on this?

Okay. All right. What do you think, Ben?

All right. That's great. Yeah, we could enter that one, too. You got it? Thank you, Amanda.

Let me put it in my notes here. Connectivity.

All right. We are going to move on. So just a -- an announcement here. As you know, I am

chair of the planning and engagement committee. And David Motey was actually co-chair. Maybe Dave was chair and I came on as co-chair. I'm not sure how that all evolved. But, anyway, we have Mary Paige and Eric now on our panel. And they have very nicely offered - (laughing) -- to start serving as of the next meeting or maybe actually after this meeting would be great because there will be some calls in between that we can arrange.

Remember, I'm always around. I'm still on for three years, so not going away. But, no, it would be great to have some more help on that because I have been doing it and so I think that if you two could step in there and also help out, that would be great.

Okay. And right now, I want to talk about our priorities matrix next, but before we -- while they're getting that up on the screen, Qassim, did you want to make any tech working group comments, Qassim, Anuj? Do you have anything that you want to -- any -- particularly any topics coming forward that's a few months before our next meeting. If there's something that you want to -- you don't have to come up with it now, but, of course, you're always welcome if there's a topic that you want to focus on and discuss. Then that's a good platform to do it.

>> Yeah. We don't really have -- because we were busy with the digital and putting the spin together took a lot of energy, but in my opinion, and we can discuss it with the technology group next meeting, I think maybe in the next meeting we can plan on a panel for technologies, you know, bring -- we didn't do technology -- what is the greatest and latest -- latest and the greatest, for example. Multi beam and lidar, we can bring manufacturer, bring academia. And a panel just to educate everybody where we stand.

>> So let's just nail down this now. This is the end of September. Do you want a tech working group in October or November?

>> (Indiscernible - no mic.).

>> Okay. So shall we say November? Yeah.

>> (Indiscernible - no mic.)

>> So we had planned to offer a -- the Department of Transportation has a program to monitor GPS jamming and spoofing. We have a speaker for that. So I think it would be very beneficial to make everyone aware that this program is out there.

>> Do you want to do it -- but Qassim, do you want to wait until November, then? What do you think? We could wait until November, too, if you want.

>> So send me the dates and I'll have to confirm that -- the speaker is available.

>> Okay. So I would say the last week -- Virginia, you're getting in this? Last week of October or in November you could put out -- the second Tuesday of November? Whatever that date is. Why don't you -- you could let Gary know what those exact dates would be. And then you could contact FA guide and get back. And then we'll kind of have those -- that speaker. And, I mean, this is a question whether or not we have the tech working group, we have the R take, we have the PNE. It's up to you guys how you want to arrange it, but do we all want to just have one -- one meeting once a month? Yeah. Anuj.

>> I wanted to add, we should also continue supporting the digital twin side of it. So maybe we could ask the port of Corpus Christi to present the security guide, to present their digital twin model, what they are planning to do. So it will bring that visibility to us. Yesterday in

break bulk, there was a panel on digital twin. And they're looking at digital twin for ports. So maybe we can approach them -- I know my university is involved with that. And the other thing I wanted to bring out was we didn't want position navigation to fall off. Fog season is coming 1st of November. And as of yesterday, we still don't have a fog sensor in the Houston ship channel. Which is the largest port complex in the United States at the moment. So we looked at ports. We had that discussion in support of ports. So I feel we need on bring those factors in and see how best collectively we can give our guidance or work this forward among us for giving advice to NOAA on this.

>> Right. So I think there's two things. Okay. As far as the digital twin, that's totally up to you guys in your working group, you know, whatever you arrange. I got the feeling from Leslie they weren't quite ready to give a presentation on it yet. So maybe it will be after the new year on that one. But, you know, whatever you think there.

As far as the ports discussion yesterday morning, I was hoping that that would come up when we were talking about recommendations to the administrator. And, Eric, I'm kind of counting on you to fill in, but let's not go there right now because that's a whole other topic. We'll get going on that one. But the last thing was the fog sensor, Houston position nav. I mean, I think that as far as the HSRP goes, that's not really an HSRP topic. It is supporting -- how do you think we should -- do you have any thoughts on that, Ben? I mean, I think it's great -- the monthly calls, you can discuss anything you want. You guys, you know, it's totally up to us to make those agendas. Whether or not there's something in the letter or something in the next meeting we want to talk about, I mean, that's going on be a topic today is talk about what we want to talk about at our next meeting. But I'm not sure if you want the connection there.

>> So how do you plan to address ports? Or will that be a part of our recommendation letter going forward? Or are you keeping that for the next meeting?

>> I thought we would probably put a bullet in the recommendation letter for this. Sean and Ben, do you have something to say?

>> Well, maybe I'll defer to Derric here. But I think based on the conversation that Marian led us through yesterday, and I don't want to suggest that we delay, but I would invite the panel to consider before making specific port-related recommendations, let's see the output on of this study that co-ops is undertaking. It might be premature and might have more impact if we could point to that and hammer in on findings from that paper.

Derrick, do you want to address that?

>> I was going to say very much the same thing. If you could craft a bullet recommending follow on from that study.

>> Yeah. And I think that's a good idea and kind of what we talked about. And then, you know, we also get into some of the, like -- not being able to put a fog sensor in Houston. We've had situations on the Mississippi River, but that's probably separate from the panel effort, but let's see that report and go through. And we have challenges maybe a in some of the tech calls. We can talk off-line to get more on the same page and share some of the problems that we're having.

>> So, you're right, like you said, Mississippi or Houston, I'm not saying because I'm from

Houston that's why Houston should be there. I'm saying because Houston has a \$900 billion impact on the economy and we are part of the Department of Commerce and we want to look at that economic impact on the nation. That's the reason I want it there. It's good for the nation, it's good for the country. That's where I'm coming from on there. So -- >> And I will say, I totally agree with you and I even -- like to try to avoid -- I think the Mississippi River impact, you know, is number one in the nation. And we deal with the same things, but for it not to be so focused on our collective backyards, but on the program across is kind of -- and although we can have those discussions when we're talking off-line, and I think that's a better place for it.

>> Can I comment comment on that, too? Not having any skin in the game here, as you say, I agree totally we should wait for the report. And then I think the discussion should be on the implementation report and that should consider the commercial impacts of the port system. And so that's just part of that equation. So I would totally agree. I won't be here, but I think that's the appropriate way for the panel to address it. And then we do get the broader picture off all the economic impacts of the -- for the nation. I think that's the best way, in my opinion. Thank you.

>> Yeah. I agree waiting for this workshop result which Marion represented. But my suggestion, if it's not there already in this, once we analyze the feedback from this community workshop, will be really good for us to know as a nation what is needed from this. You know, because we talk about we need ports and we need gaps and we need folks. But do we have any survey to say if somebody -- if the Congress come and say, okay, I'm going to give you \$100 million, but tell me how many ports? How many fog sensor you need? Would be good to have, even on a high level. If I look at the nation over waterways, all the ports, I need 50 ports to be installed in the next ten years. I need 50 -- something like that we are thinking.

>> I think that's part of the commercial -- it's the cost benefit about exactly that. And it's like this investment in 27,000 folks censoring. So from a national point of view of every port, that's what I meant before about making that assessment on that.

>> I think that further argues for delaying it until after. Because that is part two of the survey was what does a fully built out port system look like. And I can imagine we've solicited that information and then there's going to be a second round where people are going to come back and say oh, I didn't get a chance to at my dot there. So I see that as first draft.

>> Yeah. I really like the way it was presented similarly through Sean's panel where the -- Heidi, was it, from the nature conservatory laid that out. And then this is the total life cycle cost. Then, what was not -- it was kind of, okay, what's the impact? I thought that was a great presentation on the benefits of that program.

>> Eric?

>> And just for the record, when the report, I just need some fidelity. What I mean by that is who is actually providing the input? Who said what kind of -- from what sector. I think that's an important piece of it because I'd like to know exactly where people are coming from from their perspective as to what their input is. I think that's important.

>> Just one last comment. Because my understanding from the presentation yesterday from Marian, we're not doing it as a national survey for all the port. We do a workshop in a community -- I don't know how many at that work short, but that doesn't speak to a national survey for all the port and water ways. People are going to be left out. Because this is local community. We got them together, but that doesn't represent all the waterways.

>> Yeah, I think that ports -- I mean, I know that co-ops is aware of that custom and that -- yeah. Is it possible, Derrick, as you give a report, you give a report out to us on the report to actually see who were the contributors, also a list of contributors?

>> I believe that that was in the contract.

>> Okay.

>> But I'd have to check. Yes, if we are able, we will certainly provide that. We know who was invited.

>> All right. Okay.

Let's move on. We're going to table the ports conversation for right now. Nathan -- yeah, we're going to get to the priorities, but Nathan, do you want to make a comment on -- it's listed in our agenda on the arctic working group, how you want to handle that?

>> Do you want to make a comment on that? So we've been talking about rolling that into the planning engagement working group and not having it as a separate working group. And that's fine with me. That makes sense. I think in general with the discussions that we've been having is it's underserved communities, remote, underserved communities and there's not just the arctic, there's the Pacific and the Caribbean. So incorporating all of that I think would be a good idea.

>> All right. So I think that we can officially, Virginia, and Amanda, take arctic working group off our agenda. And I think we'll have -- I think we have between the tech, that's plenty working groups to keep going.

All right. Let's just go through our priorities matrix. This is something we have tried to keep up over the years just to remind us kind of of accountability of what we've talked about before. I think the mapping one is check, done. Thank you all for your extensive and sometimes very complete comments on the sum. Ashley isn't here, but I know she was very appreciative of them.

>> That isn't the psalm, the first one.

>> Is Ashley online? Oh, Ashley, do you want to make a comment on number one here? I don't know if you can see it on -- no.

>> This particular one is not the -- this was the panel about data, it was the last panel we had yesterday. That's what this particular -- if you go to the right, that specifically says that we were going to have a -- yeah, Bri and I did that panel yesterday. That was how that evolved. It evolved from data and all that sort of stuff. And we said let's put it under here and then we'll --

>> Sorry. Yeah.

>> So I think this is the --

>> Okay. So Lindsay -- Ashley, we'll come back to you in just a minute. Lindsay, how do you

feel about -- what should we put here for the status, then?

>> Bri, what should we put on the status?

>> I don't know. This -- I don't know how -- it's ongoing. Is it appropriate to discuss it here? I think there was a few more comments I had about the panel yesterday. I don't want to take up this time just going through here. I think there's further actions we've talked about and it revealed I think that was really interesting to see across even the different NOAA agencies, the different approaches to metadata and all those things. And I think there should be some resulting actions from that and that relates and obviously flows through the products the and other things, as well.

>> So we don't want to let this topic drop.

>> And I think we've had some discussions after about further actions. I mentioned about the national bathymetric survey. My general comment on that, and that's related to the letter, I think, is made great progress, but it is a real challenge with that. And I am concerned that I think it should be focused on supporting -- clearly focused so it's supporting charting, the new S-100 and all of that. As soon as we get to the north bathymetric survey that supports more than that, I'm concerned that it will be diverted and you don't want the resources diverted at all in the progress you're making there from the charting. And it's -- so it's kind of the best available data for, you know, nautical charting. You know my comments on some of that. Because we mentioned that yesterday. And my -- but my concern is based around you've got to make the progress specifically first to do the charting. And I hate to see that being diverted away. The discussions separately to that were about metadata and --

>> Standardization.

>> So I think there will be actions we can address, Bri and I can address to that, what actions we see should come.

Any other comments? No

>> Okay. So maybe if you could, Lindsay, just send us or just add to it or you can just send it as an email with just a statement, too, and then we can put it in there if you want.

>> Julie, may I set this -- the question for Lindsay, do we need to make tweak the title of it? Because these are not going to be with us to remind us what it is.

>> That is true.

>> So maybe more direct so when people --

>> Quality -- no, standard -- metadata standardization, quality issues --

>> Throughput, yeah. I'll --

>> Yeah, I think that's a good idea, Qassim. Because it took me a minute to recall.

>> Yeah, sorry. That was -- but it was one of the discussion points about kind of metadata, but it's also standards, right, is something that is related in here, as well. So that's kind of the words are there, but it's not clear. Yes. Okay. We'll change it.

>> Right. Ashley, since you are online, do you want to make a comment about this psalm? Oh, okay. All right. Okay.

Then moving to number two. Number two is USACE-NOAA partnership. I can speak up a little bit for long -- maybe we should talk about the next meeting. The next meeting -- well,

okay, we're going to skip here. Ben is going to announce where the next meeting is.

>> So officially, we discussed this the other day, but the official plan is to have our next in-person meeting in the LA Long Beach vicinity. We're still working on the exact logistics of that, depending on how that turns out. There may be some modification to that, but that is the intent.

>> And it's the week of March 4th, right?

>> The week of March 4th.

>> And what I was going to say is that applicable to this number two is that if it is in the LA Long Beach and there is definitely a role for the core to be involved in our meeting.

Because they do have quite a presence there, also.

Okay. So I think that this is something we always want to track. So maybe over -- Amanda, on the further actions is -- examples, funding, let's see. Can we scroll over?

>> (Indiscernible - no mic.)

>> Okay. Perfect.

>> I think that's good. Probably straying from our topics.

>> I know.

>> (Indiscernible - no mic.)

>> I realize that, too.

>> Let's leave it like that and we'll come back to it.

Okay. Number three. The public-private partnerships. This is something, too, that we always are interested in. We did. We did put an issue paper on that. So we could take it out of here because we do have an issue paper. Okay. Delete the whole line. Huh? We archive -

-

>> Delete it, I think it's something that we need to continue to --

>> Continue to monitor.

>> Continue to monitor.

>> Okay. So let's move it off of this one here and put it down on our -- I think we have a tracking session or monitoring section here. Yeah.

Archive. Okay.

All right. Number four. Oh, disaster response. Coastal resilience relative -- well, this is something that we seem to want to have a session on it every -- continue to track. We can talk about topics for our next meeting is I was going to keep it as a separate discussion, but it does kind of roll into our priority topics here because if we want to -- do we want to have our people amenable to have some panel discussion on coastal resilience for the next session? There's a lot of homes falling off the Cliffs in San Diego.

>> We had a -- we have the coastal resilience session. So what do we think were the outcomes from that and how do we --

>> Right.

>> -- address it in the future. Is Nicole online?

>> I don't think that either Nicole or Tuba are online.

>> We should get -- put it on this one --

>> Check it with Nicole and see? I mean, the very nice little session that was done on

resilience yesterday where we have the director's input and then it was kind of supposed to be more like a discussion with Mark Osler, an update. So it wasn't really what I would consider a panel session in that sense. But the question is, if we want to have one. But we can -- we can come back to this and my feeling is there's lots of room to have one at the next meeting.

>> Julie, we should have -- I mean, I think for this topic, we keep it -- would be good. Because track, it's just going to keep just doing -- panel, but what's the result?

>> Right.

>> I mean, you know, the measure of success, maybe we need to define -- if we are tracking NOAA action on it, then we need to do that. Or whatever. But just do panel, panel, yes, create the awareness, but --

>> So there was a chunk of money awarded on this. And that work is continuing, right? So that budget -- that money was supposed to flow through in the infrastructure act on this coastal resilience side of it. And the money allocations where they said those contracts are going to go out. So maybe it's worth having that panel to understand what progress has been made, what has been awarded, what is that update? Because that is post our -- you know, what has been discussed here. Maybe that's worth considering, Julie.

>> Go ahead, Derrick.

>> Just from a timing perspective, the letters of intent were just received. And I don't think the proposals will be announced before the next HSRP meeting.

>> That's what I was wondering.

>> That's why I'm kind of in limbo land with this, because it's not like -- you know, as far as the actions that will have happened in the next five or six months -- okay. Can you just put down there, Julie, update on that one. And on the -- yeah, on the resilience. And I'll get together with Nicole and Mark Osler and we'll talk about what to do.

There's a ton of stuff we can talk about in Long Beach, but let me talk to Mark Osler and Nicole and see how they want to take that there.

And then number four -- well, this is pretty much -- we can take this off now because this was our presentation on modeling. So we can archive that one as far as I'm concerned.

Does anybody else have any feeling?

Okay. Four, done. That can be moved down.

Number five, offshore wind farm development. Oh, and we lost Ed and Deanne. Is Stan back? No.

Okay. I would say for there, what's -- if we do that sea bed mobility issue paper, that Deanne talked about, it would be something that we could adhere to our -- is there anything else that should go in that? I can tell your wheels are --

>> The wheels are turning a little bit. I guess -- I wonder if -- I feel like we're just starting to understand that issue. And I wonder if it's mature enough, if the panel's understanding of the issues that Deanne raised is mature enough from the issue paper. Stage at this point. Or if a panel on that topic might inform us and then we would be in a better position to have the issue paper.

>> It almost needs a technical P&E meeting first with more exposure to the issues and then

a panel and then there's the issue paper comes from that, I think.

>> Just to add to that, I agree and I think that this could be viewed as one of those gaps in the hydrographic services related to resilience. Because I think this is a resilience related issue because it has to do with development of wind farms and other offshore energy. And potentially it has similar application in the near shore in terms of sand moving in front of harbors and so on.

>> And if the panel you got in San Pedro -- sorry, Long Beach, you have the Corps of engineers, so that would be another connection, maybe.

>> We go ahead a lot of sand movement. It is deep, but it can -- my beach gets covered -- uncovered from rocks every year. So, okay, what wind farm? It's a mobility issue paper proposed during -- you know what? Maybe we could put future issue paper and say maybe working group meeting.

Okay. Expose the challenge and then a panel. All right. As long as we've got it there. That's fine.

Next one, digital twin. What did you want to do with digital twin? Qassim and Anuj.

>> Have another panel where we bring up updates as to what the industry has progressed in that space, try to get more data on it and have a panel on it.

Yes, for the next meeting. Yeah, for the next meeting agenda.

>> (Indiscernible - no mic.)

>> Okay. Hydrographic survey fleet. Oh, now you've got all your money, so --

>> This issue never goes away. So it's true, we were fortunate and I'm thankful to everyone that had a role in raising awareness of the issues associated with the aging NOAA fleet. We were successful in getting the class B ships funded and awarded, but I think that this issue is something that the panel -- I would recommend the panel continue to track. And, you know, even going to the issue I raised earlier this week of Rainier's current status and issues coming as to whether the repair for that -- on that vessel is going to be significant. And does the agency choose to invest in that vessel in repair of the shift ship or not is coming. And I think this is not an issue that the panel should take their eye off of just because we -- we won this one particular battle.

>> I wholeheartedly agree. Coming from the Coast Guard and seeing our assets age for years and years and the damage it does also to your recruitment and retention tension is a huge aspect of it. So I think we should continue to monitor the aging fleet.

>> So, do you think we could have a presentation on the for the next meeting, post accident, what decision is made so it's a -- we get the current status for the next meeting? It's worth putting it on the agenda?

>> That's an interesting idea. I think we could certainly -- let's see how it fits in with timing. It my -- as I sit here today, I think that might be kind of a second order of topic giving the many pressing and local topics that we might have for a -- for an LA Long Beach meeting. But I think we could certainly promise at least a lunchtime update on that. And not to stray into our -- into your recommendations letter, but I might also propose just a note in the recommendations letter reminding the administrator of the need to continue to, you know, sustain -- that we perhaps to the -- again, this is -- I don't want to put words in the mouth of

him, but recognizing it as a significant capital investment that's been made in the fleet and also inviting the administrator to continue to sustain the fleet, recognizing that it's going to be a number of years until those new ships are online. And inviting the administrator to continue to sustain the fleet during that period and beyond.

>> I don't know whether it's appropriate, but is this the place to raise the general Maritime workforce and sustaining the fleet? Maybe this could be part of that. Not as a paper, but a general discussion.

>> I was wondering whether or not we should put that in this.

>> I think we should put it in here. The sustaining of fleet without enough people is pretty hard. That's going to be a pressing issue on the -- on NOAA. If you can't staff, you will be under pressure to continue.

>> Okay. Thank you.

Let's see. And I would think that would be fitting, a good update to do at a luncheon interval when we are in Long Beach. So that would be my recommendation.

Okay. Number seven, delivery of services. Oh, yeah, underserved community.

Nathan, what do you want to do here?

>> Well, I definitely want to leave it on. I'm not sure if it's necessarily delivery of services or not. I know that kind of probably came out of the last meeting, getting supplies from the communities. In my mind, it's been from an Alaska standpoint, it's the foundation data to have these communities to begin with services. So I'd like to leave it on there. And then work with Nicole to get an issue paper together with the panel.

>> Coming from a Pacific point of view, I think the data presented in the Pacific, I think that's a -- that's all kind of part of the picture here. And I hope that maintains for some Pacific input.

>> And I was going to call on Alex, too, here.

>> It's kind of funny. Last night I was watching TV. I don't do that too often. And I was watching this show called arctic hollers. And it's about that, how they -- to board the arctic communities and the ships over there and the weather problems they have. So it's important enough that there's a TV show about it, which take a look at it more in-depth.

>> I think, Nathan, you raised this on the underserved communities, that the ports program also get extended there. So maybe there's an opportunity to, if you think, to add that into this, as well, as part of that initiative.

>> Right. And Anuj, you're right, we have talked about that. And I think that would be good to roll it into that after we see our assessments and our comments and everything. So we don't want to forget about that comment when we're really addressing the ports issue at the next meeting.

Did you get that aAmanda? I'll make a note of it.

>> (Indiscernible - no mic.)

>> Yeah, the ports and the underserved -- after we see the ports report, we want to address this underserved community and see if there isn't some way to roll that in there.

>> Yeah, Anuj was saying, in that review, we're seeing the broad issues of that. And it's the balance between the commercial impact and the social equity of delivering services into

those communities that don't have the -- that same issue. But have different problems.

>> Yeah. I agree.

>> All right. Number 10, sustainability. To be covered by Anuj will lead this group. I think it --

>> I thought we formed a group, not in the -- a separate group for sustainability. Didn't we do something like that?

>> What did we do with that?

>> We did -- we said we would, but we didn't actually go into it. And the reason is, we weren't sure how the policies would unveil. So there was a national policy on the Maritime, but it wasn't fully spelled out. Now that we have talked to Spinrad saying net zero by 2050 in that space and we said measure to manage and all those aspects. Maybe it's worth activating that group now and look for volunteers, who wants to join that group. Yes.

>> Just for the new members, can you explain a little bit more about what the idea was there.

>> Sure. So it was a two-part idea. The first was looking at greenhouse gas emissions, scope one, scope two, scope three and see what is measurable and have a plan of when they would be measurable and start that process. Because it would take time. And see -- then look at low-hanging fruit and try to reduce those. So that was really the larger picture of the journey of the group. And work with the NOAA leadership to see where they could -- where that could come in.

I did raise this with Nicole and we did have a discussion in the last meeting on ESG specifically related to ESGs come in on the DEI side, but it still hasn't been put in where NOAA is concerned. She's taking notes about it to follow up on it. But this one was agreed and declared by Dr. Spinrad. So maybe it's time to activate it.

Ben, if you have suggestions or anything in that space -- the

>> One comment first. Because I'm not sure how many people on this panel have expertise that you have on this. So whether or not we really do it as a subcommittee, but I'm putting this out there, if you feel that it's something that you want to work on as a panel or if Anuj you just really want to work with Ben and -- I mean, you can always dialogue directly with our -- any of our directors, right? I'm assuming. So, I don't know, how does the panel want to handle it?

Oh, Ben, you were going to say something.

>> Well, my face may have betrayed my -- this is a challenging topic. Not because it's unimportant, but simply because this is one of those frustrating place wres the -- the administration of -- and the -- of government has not moved as fast as the demand as we're hearing around this table has, the demand for action.

At the risk of correction, I think what Dr. Spinrad was referring to was net zero in the NOAA fleet, not necessarily in NOAA operations. So that's just one example of how when we start poking at this, like what are we talking about? And if we're specifically talking about net zero operation of the NOAA fleet, that is an important and worthy goal, but that is outside the ability of any of the offices here to directly influence. So I worry -- although we are close partners of the fleet, we're dependent on the fleet, our ability to directly influence their -- the fleet's carbon footprint is essentially nil. So I worry about that from that perspective.

From the perspective of our other -- and, again, I'll just keep it within my office's purview. Our contracted hydrographic survey operations we perform with our small in-house assets, I think I shared with the panel previously, we have been working to try to understand that. And we have run into some significant roadblocks. And I'd invite Bri to speak to this if she wishes to, but also if she would prefer not to, she's welcome -- she's standing up. But, again, I think the challenge is, before I pass it to Bri, the challenge here is we have to be specific about what we want to track, what we want to address and how because, unfortunately, a holistic way of looking at this across NOAA, across even -- across even -- what would appear to be fairly narrow aspects of our operations does not currently exist. But, Bri, do you want to talk about some of the more specific is?

>> Yeah. Our understanding is the Department of Energy has an annual -- well, each department in the federal government has a sustainability report every year. And presumably, the -- well, all of NOAA is captured under the Department of Commerce. So you have this big sort of umbrella and it drills down. So, you know, starting from that level and going to NOAA and going to NOS and going to coast survey and looking at individual missions, there seems to be a lack of guidance at those levels to commensurately track sort of a mission portfolio or footprint, if you will. We pushed on this a little bit, tried to poke at it from the acquisition and grants side, how would we do this? How would we track it? We're a little bit nervous about sort of going alone due to that sort of level of granularity if I'm articulating myself well. Probably not. I'm looking at faces and thinking -- okay.

>> I think that's a great point and you're absolutely right. So I can tell you what's happening in USAID and USDA. I'm dealing with that. There, the leadership has actually made a plan. There were goals set up and there's a -- there's a committee in the White House who sort of gives that strategic committee who sort of roles that out. So it's for each -- each wing of the government, each agency of the government to decide how they want to work it and how it's being done, but we also heard on the first day, on 23rd that a few of our NOAA team r a tending COP 28. So what I would say is maybe it's an education phase where at least give that understanding of scope one, scope two and scope three because that is the international nomenclature, which is there, and then look at it and see how it develops. Maybe there would be more clarity coming by the end of the year. So post that meeting, we might hear something and bring this up in the next meeting.

>> Thanks, Anuy. And I think you know more about this probably, than anybody else here. And I would like to understand this better. I think Bri and her team would like to understand this better. And if we can use the convening short of the panel to help educate everyone on this, I think that would be powerful. What I am wary of is receiving direction to our program that's is potentially unexecutable because it's not in step or is just -- it's not aligned with policy and procedure that we have to align with that's coming from above. So that's my hesitancy on this is to receive a strong recommendation from the panel to do something which ultimately we can't deliver on because it doesn't align with the policies and administrative procedures which are currently in place.

>> That's a great point, sir, and completely understand. If it's okay, then maybe we can just hold an informational session in January and just lay it out by the time COP28 will be over.

And then you can decide, you know -- then we can decide collectively how we have not to proceed on it. So it's purely informational and educational rather than trying to force goals on.

>> Yeah. And whether we want to do that in an intercessional or have that as a panel presentation at our next full meeting, I think we would welcome that approach. And I think I shared this on the first day, but we're certainly not the only ones in our does she among our hydrographic office colleagues internationally that are facing this and this exact topic is going to be the central focus of the arctic hydrographic meeting next November. This is not going away. I'm not suggesting it should go away. And maybe, yeah, some sort of informational session, again, whether intercessionally or at our next meeting when we meet again next fall, I'll be in a position to report out on the conversation we've had in Norway with our arctic colleagues. We may be in a position to get smarter and then to a point where we can recommend real actions at that point.

>> I don't know, but just a thought was that we mentioned giving an update on the fleet at noon time. I don't know if just a luncheon update for as much as you know. You know, if you don't know anything yet or moving forward. But that might be another possibility is just to include it in the fleet update.

>> Presumably because we're focusing on the fleet, someone somewhere decided that that was a high impact move in the overall umbrella of the footprint of the Department of Commerce, the carbon footprint of the Department of Commerce and the footprint of NOAA. From where I sit, I don't understand it. I don't know if that's true. I'd like to think that exists. So I think a technical briefing and common understanding throughout NOAA about that approach might be helpful for everybody trying to do the work. Yeah.

>> Are you referring to the DOC report on this?

>> The annual footprint report.

>> Okay.

>> And so where we target our efforts to, you know, reduce our carbon footprint, presumably, someone did some analysis across the Department of Commerce and maybe across NOAA and said, these are the most impactful things we can do now to have an overall reduction of our mission footprint.

>> So, I mean, I haven't seen that report. But from the way you're speaking, it sounds like the NOAA fleet was called out on that report?

>> No, it is not, but it's called out by Dr. Spinrad.

>> Yes, okay.

>> And I'm asking is that -- because that's a thing to look at or because we've done a holistic analysis?

>> And I believe it aligns with IMO goals internationally.

>> Right. So it's another -- yeah.

>> Okay.

>> That's okay. Great discussion on this.

I suggest we just say briefing at the next meeting update or something. And leave it at that for now. Anuj, it seems a little premature to get too into the weeds with it. Is that okay with

everybody on the panel?

I'm going to go back to our coastal resilience. Welcome, Nicole. I understand that you're on the line?

>> Yes, I am.

>> Glad you could join us. We're going through the priorities matrix. And we -- I don't know if -- can you see or do you have a copy of the priorities matrix?

>> Yes, I can see it, Julie.

>> Okay. Number three is coastal resilience, relative sea level change and coastal flooding. And at this time, we're just updating our priority matrix. And you don't have to respond to this right now. You can do it in writing to me later, but that line needs to be updated. We need to decide -- that was a great panel, by the way, that you and Mark put together yesterday. And we have not to decide, you know, where we want to go with this. What do we want to do with it? Do we want to include another panel at the next meeting? Do we want to have action items that we look at before then? What are your thoughts here?

>> Well, I would love some feedback from the panel. I think that we have clearly defined the issue and I feel that we are sort of starting to make some headway in doing what our panel is designed to do, which is advise and help the directors, you know, get ahead of this. So I don't want to lose our momentum, but I also recognize that, you know, we dedicate a lot of time to this topic and we have for several meetings now. So I would defer to some input from the group as to whether or not they think it's beneficial to have a panel on it at our next meeting.

>> Okay. Thanks. Group, those of you that will be at the meeting, do you have an opinion on this? Qassim?

>> Just what Nicole said, maybe -- I'm struggling to decide how are we going track that and what's -- what Nicole is saying, we did everything we can and really maybe on the NOAA side. Maybe we need to track that. Maybe in our recommendation we ask the administrator, I mean, what is the progress along that for the coastal resilience? And the action done. I mean, we need a measure of success. We need to put something we can -- we can measure and gauge as action here. Either we retire it and we say we're done or if we're going to keep tracking it, when we come back to it, what is something we can measure instead of just keep talking about it? That's all I want to say.

>> Yeah. No, I totally agree that we -- among the panel here, we want to see our recommendations, our actions going forward. Hopefully making some impact. When I think of coastal resilience, I go, oh, my gosh, I wish there was an actionable finite thing.

Juliana, did you have a comment on that?

>> I'm thinking about the NOS strategic plan. And I think that hasn't been made public yet, but I'm imaging there's something in n there related to coastal resilience. And I don't know if there are measures of success or strategies in there. We should be finding out soon. And if anybody in the room from NOAA has more insight that we can generally share, great. But we can look to that, also, and see if there's something in there that we can mine for ways that we can report out on or focus our energies on. But it's going to support the higher level strategies within NOAA and commerce.

>> That's a good point. And Nathan, I know you had something.

>> I mean, I was just going to add, you know, I'm totally bias. I love listening to the topic. It covers a lot of things and a lot of issues that are not just remote underserved communities, but nationwide, right? And it also gets into the discussions about the need for foundational data to support coastal resilience. And then there's a lot of money going towards coastal resilience right now. So I think it's a topic that still needs to be discussed. But I'm bias on that.

>> I guess I'm a little bias, too, and the reason why, I was actually talking with Mark Osler after the panel and, you know, it came up about the next meeting being on the west coast. And he goes, yeah, and so we have such different -- in many ways, we have different issues, difference issue than you do on the east coast or in the Gulf. So my feeling is, it might be interesting to have another coastal resilience session, whether or not it's a long session or just a couple people talking, just because it would be a west coast perspective. But, Ben?

>> I tend to agree. I think it's -- if we're going to go to a place, you know, highlighted this in my opening remarks the other day. If we're going to go to a place, we need to hear from the people in that place. And it's particularly impactful if the -- if the -- if the people who -- the panel members can share with us the data that these offices provide or could provide which makes a difference for their ability to response, adapt, make their communities more resilient. It's -- it's most impactful if there's a direct connection between the impacts they're experiencing and the requirements they have and the data, products and services we can provide. But hearing directly from people in those communities, in those locations that we go to, I think if we're not going to do that, we should just stay here or do it online.

>> I totally agree with that. Something I enjoy about the regional meetings is getting that input about how they use the data services. As our role with providing recommendations to the administrator, that's an important input for us to be able to provide those recommendations.

>> I'll tell you, there's a lot of people that are very concerned about sea level rise, too, at the port of LA Long Beach as you can imagine. That is a big topic there. Coastal resilience, sea level change, all of this. Yes.

Qassim?

>> Yeah. I think what Ben and Nathan, exactly, that's what the feedback we need. So we could have -- if we do that, a lunch report, the -- the infrastructure act and money, I mean, there is line item, right, for resilience. We saw it, I think, in one of the presentations. It will be good, like NOAA tell us, out of this money, how many contracts was awarded in the last year, for example? If we're going to go next year, something like -- that's a thing that I'm looking at. I mean, when we talk about it and we did issue paper and panel, let's see the money coming and infrastructure act, where it is -- for how many projects and along the coastal resilience? That's what I'm looking for here.

>> Nicole, do you have anything further that you -- I think we will have -- I mean, if everybody on the panel agrees, we are going to talk about topics of the next meeting. That's actually my next topic on the list here. But as far as just this coastal resilience line on the priorities, we'll keep it ongoing and some presentation at the next meeting somehow.

Mary Paige?

>> I had jotted down, in adding to this discussion, you know, what is the goal for NOAA in this? Strictly from the standpoint at this point in time. Are we -- is it the role to communicate and advocate awareness across all the difference areas of how this is affecting us? And, hence, the going local? Different communities involving them as to how it's affecting them and helping with, again, communicating, advocating the awareness of everyone and how this affects. I guess I was trying to wrap my arms around this to -- as Qassim was saying. He's likely for measurements. Liemg for the ultimate goal. Not that we're finished, but we've done as much as we can and we do our preventive maintenance.

>> I'd like to make one quick comment here, Julie purchase I agree the perspective is valuable and I'm happy to keep helping to arrange for the panel at the upcoming meeting. I think Qassim is on to something is very important and I think we include a letter about two items related to the metrics or the budget. One being that the services are needed by communities and the resilience funding isn't necessarily addressing that in the program's budget. And number two, I love that suggestion of, you know, what communities were funded? Where is this money going? Give us some overview status of the resilience funding and how it's being pushed out to the communities.

>> All right. Thank you. Nicole, do you mind, if you could send me a sentence to put in, a bullet for the recommendation letter, that would be great on that.

>> Will do. Thank you.

>> All right. Do you have anything else that you want -- I don't know how long you're going to be on, so I'll ask you now if you have anything else that you want to discuss today or share today?

>> Those are my main topics. I really enjoyed the meeting. I have lots of thoughts on all the other things, but I'll look forward to catching up on our next virtual monthly check-in. Thank you, everyone.

>> Thank you so much. Appreciate your participation here.

Thank you all for going through that priorities matrix. It's always rather cumbersome, but I think it keeps things in line.

>> So in case I'm going off the sub -- or committee, NSDI is developing a strategic plan. So NGAC, we have a southbound committee that is going to make recommendations. That is an ongoing process right now.

>> Are you talking about recommendations through the administrator letter or just recommendations that would go directly to them?

>> There is a subcommittee that looks at the development of the strategic plan and looks at the recommendations, so I think it would be something that you have a group within HSRP to make recommendations. Because it is going to set the strategic plan of how the federal government handles special data.

>> They have a presentation now?

>> We have a subcommittee that's -- so the process has just started. So I can send what we have to see if HSRP is interested in contributing.

>> Yeah. And just because you officially -- I've been reminded that our members are

members for life. Just because you don't have to come for, you know, you're off attending our meetings, but you're always welcome to send us, if you think, hey, this needs to be addressed or something, so if it needs to be further along, you know, don't let the timing sway you here is what I'm saying.

>> I understand. And I'll send you the contact in case you want one of the monthly meetings to have a presentation on what -- how it will impact what HSRP does.

>> Okay. I tell people that I hire at Scripps, he ask, how long is the position for? I say oh, for life. They always look at me panicked.

All right. So we are done. Is that correct, Amanda? Are we down to the very end here?

>> I just had a couple of comments about the stuff below our --

>> Okay. Yep.

>> It is, it is a quarter to 11:00. Why don't we break right --

>> (Indiscernible - no mic.).

>> Okay. We're going to do public comments now just because I don't know if anybody has checked out. And then we'll break right after that and come back and tie this up afterwards.

Sorry.

>> We have one public comment from the online audience. I'm just going to go ahead and read it since it's on the screen. Maritime workforce shortage is a global phenomena. Therefore, recommend the immigration department to relax their terms of immigrations for expertise in this sector.

I think we can note that comment. It's beyond the scope of this panel to address, but we can certainly note the comment.

Are there comments from the floor?

Okay. Hearing none, I will pass back to you, Julie, and I think we can go to our break.

>> Let's go ahead and take a 15-minute break and we'll see you back here shortly. Nathan, we'll start with you coming back.

>> Since we know the next meeting will likely be in LA Long Beach, keeping that in mind, I'd like to go through and get ideas for the sessions. But let me tell you that I already have a whole page of ideas that people have intentioned to me written down. So why don't I read - - these are just ideas. We're not going to do all of these because otherwise it will have to be a five-day meeting. But I want to get some feedback from you as far as which ones do you think are priorities, that we should really do and we will definitely have more discussion about this at our P&E meetings. But, anyway, let me -- can I just -- if you'll allow me, these are my thoughts and notes. Juliana. I would love to have Galen come to this meeting. He is such a resource. And we don't have to decide this right now, but what -- there is a person from NGS who sits at Scripps who -- he is anything NGS I go to him for. I mean, he's just an incredible resource. And I -- I have been trying to think about something that -- a role, a presentation, whatever, you know. So we don't have to think about it right now or get anything down, but that was one thought I had.

>> Dana would most definitely be included and invited to the meeting. And if we can give him a speaking role on whatever we come up with, he would be more than supported in

order to be able to do that. So we can figure out what --

>> We'll figure out what --

>> Once we get the agenda --

>> Yeah.

>> Closer.

>> Okay. Ben has mentioned, and others, in the later shift have mentioned this climate ready ports idea theme. It's a perfect theme to kind of -- to me to kind of set the tone for our meeting in Long Beach, because there is lots of resilience. There's -- you know, if it backs up, we don't have a lot of other -- you can't get into the port of LA Long Beach, we have port Wynimi and we have San Diego. But the draft -- the deepness of the channels are so different than bringing in -- we don't have another place for a 1200 foot tanker to go. And by the way, that's 50% in California's oil. We only have three days to store it there. So there's all sorts of resilience, port ready topics that could be addressed. So that was one theme I thought about having an underclearance precision nav session, I'll call it. There is Karsten who does come over for twice a year to meetings. I'd love to have him come at the same time when we have our meeting because he's really running what would be the digital twin in Rotterdam. And he's such a wealth of information and basically does all the QC accuracy information very much in the weeds of what it goes into that decision-making process.

The other one --

>> Julie, can I interrupt for a second?

>> Yes, please.

>> In that regard, it would be nice if we could get somebody from the -- how do they use the UKC with their port double pallet units.

>> So if there's a UKC session, if we decide to have that, Tom Jacobson would it on it, either that or John strong, whoever is around. Kip from the Marine exchange, cars ten from Rotterdam, somebody representing the hydrography from the bathometric source data from NOAA because that's a key part and probably someone from CDIP because Scripps plays a big part. There's a ready-made panel. We presented at that exact panel to the HSRP in Long Beach eight years ago, ten years ago. But we've actually done other ones, too. Okay. Some coastal resilience, the panel session, it fits into the climate ready ports, the Army Corps is very involved. They had to do big repairs on the east jetty for Long Beach a couple of years ago, completely overtopped and crumbled. So there's lots -- and, of course, the erosion in southern California, there's some really experts, Mark Merifield runs the center. He's a worldwide expert there.

Yeah?

>> Julie, it would be good if we have a speaker about actual project.

>> Okay.

>> To tackle the coastal problem, the resilience problem. Just note --

>> What's being done, yeah.

>> No, I agree. And Alex made the point yesterday that he really likes to hear from the operational people that are in the field using the data. And there's lots of the NOAA data

that are used in southern California. So I think we could bring in some really good people using it. And let's see. If -- I don't think we should drop this topic of Bri and Lindsay about the metadata and standardization of batho metric data. You twoebl are sitting back there collaborating. I almost think that could be a luncheon update, what is the ongoing status of it. Lindsay, we're just talking for the next meeting, what would be good to -- I just don't want to drop the topic because it's so important, the standardization and getting the metadata in for the bathometric source and the NCI, the path of what happens to the data. We just need to think about -- we're going over topics next meeting, how to roll it in, do we get abdomen update, is there something else that would be value for the panel to hear?

>> I agree. And Bri can give that update seeing I'm not going to be there.

>> Oh, come on. You can come back from Hawaii.

>> No, we do have to have some specific actions from this and not just have the -- have that go on. But there were some things that we can talk about regarding the metadata and some -- dive down deeper in that that wanted to move forward. And I think hopefully there will be something to report on by then.

>> Okay. Well, we'll put Bri's name by it and she can follow up with us.

>> If Bri is around.

>> Bri, okay. Got it. I mean, Bri, we don't have to decide right now. I'm throwing out things of things I think it would be good to follow up with on the next -- okay. All right.

>> The tail end part, another representative about it. The admiral's comments yesterday about NCI and the tail end piece being an after thought.

>> Right.

>> And hopeful that that will get some attention.

>> So hopefully, by the time we have this meeting, there will be some updates and some actionable items that have occurred. And it will be great to know about them because it is such an important topic. I just didn't want to let it drop.

>> Deanne? And seabed mobility, I think you were out of the room when we thought that maybe it wasn't -- our ideas they weren't knowledgeable about that without having some type of briefing at the next meeting. But don't do the issue paper right now because it seemed like there were -- we didn't quite have enough knowledge base. So we could think about for the next meeting, what you would suggest as far as informing the panel, basically, on it.

>> I think that's that fabulous idea. I think that's probably where we are right now. I think there's a lot of information there that can be shared. If it's of interest, offshore wind and renewable energy is definitely expanding. We did a panel two years ago virtually and, in two years, there's been a huge changes. And now it is no longer a regional northeast, north -- you know, east coast thing. It's in the Gulf. It's --

>> The bay.

>> It's right off southern California.

>> Right where that next meeting will be. So I wonder if that is the right time to do a panel on kind of the broader offshore wind. And this could be one subtopic on of that discussion, kind of more of an update, a state of the state of where things are and where things are

going.

>> You see, I told you we need to have five-day meetings. Let's table our thoughts right now, but I didn't want to -- I wanted to bring it up and get it down as a suggestion.

>> Okay.

>> All right. Digital twin, that we don't want to drop. I know you guys would love to give updates, examples of where it's being used. Truthfully, char that in Rotterdam is an example. Maybe there's something to tie into that or another example in Texas or what not. We'll have to think about how to coordinate and present that, but we don't want to drop the topic.

>> Julie, just a thought.

>> Yeah?

>> We have the naval base right there. And they're running --

>> The field base.

>> That's right, in San Diego. You want to get them involved because they're running digital twin at this time.

>> In Coronado or at seal? There's two different ones. Coronado is San Diego. Seal is right next to LA Long Beach.

>> You'd have to begin to find out. I believe I've heard some people from there.

>> If it's Seal, it's right there, very close to our meeting. If it's Coronado, it's something coming up from Coronado. But that is a good suggestion. And if you can find out more about it, that would be good.

Lindsay, we have a Indian Schumash issue, we have massive problems of raw sewage, the drinking water has to be shed, the drinking water is affected. NOAA is very involved with that. Jeff Crooks is an incredible person there. Have you met jack? I thought we did a attorney once that we took people on that border. Anyway, that's a whole other thing is to bring in the sanctuary. There's lots of -- bathy data, too.

>> Yeah. Again, make this by refrain, trying to keep it within -- there are a lot of sanctuaries there and this -- in some cases, the selection is in the case of the Shumash heritage national -- or I think it's -- I'm not sure. I guess it's been announced and official that the sanctuaries have heavily benefited from the work of these offices in the selection of the area and the management of that area. If we can keep it focused on that, the relevant of -- not solely symmetry, be the work of these offices and how it's relevant to the identification of potential sanctuaries and the management of Marine protected areas. I think that would be most -- most of -- that would give us the greater connection to that.

>> And also, I just have to mention, I mentioned this to Julie Anna, that Naras, they wanted the lidar flowing and they were chiming in to all of the datum and trying to find monuments. I don't know too much about what is there, but I don't know if there's something that -- does dane the na know about that stuff? I don't know. He should know. He should know the -- I'll talk to something there. Anyway, I guess we also need to put down our ports discussion. Because we said we would have an update on ports. Okay. So those were just the topics that I jotted down as we were talking.

Yes, Nathan?

>> I was going to throw one out there. I don't know where it will unless we have another meeting in Alaska. There's coastal strategy and we've been talking about reporting and there's the implementation plan that had a long list of milestones to achieve. So United States a ten-year plan. It would be good to get an update on that at some point. I don't know how we could work that into the Long Beach meeting, but just throwing it out there for a future one.

>> Correct me if I am wrong, but I think all the good surfing waves come from --

>> We have Tobasco. A lot of south swell in southern California, but you're right.

>> We could have for an update at a P&E meeting on that, Nathan. That might be good, too, just because we already have a crowded agenda here, but I don't want to ignore that.

>> That would be great.

>> Talk to our new P&E chairs.

>> Ashley said she could give an Alaska update.

>> Oh, great. So maybe she could -- oh, not right now, but you mean at a P&E meeting? At the P&E, and meeting. Okay. Well, I think we should do it at a P&E meeting. But, anyway --

>> The request and the requirement --

>> Right, right, how we can do it. Okay. All right. So let's go around the room wrapping up here. And I'm just going to go around the room here. Let's start with you, Lindsay. Any final thoughts? Anything we've left out? And I have -- we haven't even talked about the bullets in detail for the administrator's letter. So if you have anything, I mean, I've got some written down, but if you have a particular one you want to get in there.

>> Yeah, no. As a final meeting, I think it was great to see that this was quite a different meeting, I think, than the previous, very much on the front end technology and those sort of things and talking about systems and actually acquiring the data. I think it was not before time. I'm really glad it was the modeling and databases and the details.

>> Dense.

>> We call boring, it was kind of good. I'd first like to say, I do -- there's nothing wrong with D.C., but let's it's not Puerto Rico or Hawaii. But we should note that we have access to the leadership for that period, that it's really important. I think that we do come back regularly as part of a committee to be able to meet with that. So I think that's really important as a point that I'm sure you're going to include in the letter.

Generally, the crisis avoids have already discussed and the personnel and how we put that in the letter I think is important. I always go back, I think, and some of the modeling and then the data and all of those things, the digital twin, always go back to think, so what does NOAA need to do to support those? And what is the balance between yes, no one can do it all or can do lots in different projects, but they shouldn't because the industry -- you know, what's the boundaries that Ben talks about? And I forget who it was that gave the analogy of that, but the interstate highway system. Tease what the federal government built, but it's no use building a federal highway system if you don't have on and off ramps. And I think that applies to the digital infrastructure, as well, that we're talking about here. And the digital twin is not going to be built by NOAA. It's going to be built by others in different places for different purposes. But what do these agencies need to provide to support that?

And support the economy that's going to be a -- it's an overall economy. So I think that's -- that's really important to focus that because we hear about general resources and workforce. It's nice to get the infrastructure reduction, and those sorts of things, but it's temporary. How do you maintain that through and not get -- oh, we can do a list and then all of a sudden, no, we can't do that any more because we haven't got that ongoing funding purchase but focusing on how NOAA supports all this is really key. And I think that was my earlier comment about the bathometric source. In that sense, it is important to make sure that the highest priority is supporting, which I know, and it's a great job that's being done and not before time. But it has to be really focused and not get too far diverted away from that. Even though that's not maybe what you want to do, I think it's really important for resource perspectives. So that's just my summary from the meeting.

Thank you.

>> Great. Thanks, Lindsay.

Anuj.

>> Thank you. I was waiting to see how you were going to do it this time because you jumped it a few times earlier.

No, that's so nice.

So I was going to -- first it was really nice to have the leadership and listen to Dr. Spinrad. I thought that was very special. And really appreciate that opportunity. Great meeting. I think we had amazing panels. Lots of information. And lots of experts. That was tremendous. It was drinking from a fire hose.

I like the special comments on cloud computing that we need to move from ground to cloud and NOAA's transition to that. That is very refreshing. That's really nice. The shortage of human resources was, again, highlighted at different stages and different aspects. And maybe that's worth a consideration for us to look forward and work more on it.

Standardization, as Lindsay mentioned, is a major issue. The focus on climate change and measurement of climate change and those aspects are important and they're there in the strategic goals. And then NOAA has phenomenal satellite capability. We saw that data. We got a preview of it. And maybe it's time to explore if it could measure hot spots of greenhouse gases to fixed and floating absence as a future way forward to bring in transparency into the industry. That could become one of the data streams of tomorrow. Like we do for weather today, that will be a data stream for tomorrow. But looking forward to it. Enjoyed it. Learned a lot and met some very nice people, so thank you.

>> I'm going to start by saying that I wish I had a digital twin. And that I would be able to go back and I learned a new work from Deanne, hind cast. That I could hind cast my life and see where I might end up and, you know, hopefully it would be, like, in the esteemed company of all the folks that I've had the opportunity to work with here. On the digital twin, I find it very interesting. It seems there's two distinct applications from a lay person's perspective and how NOAA addresses that. One is kind of the discreet objects and the fleet and that type of stuff. When you're looking at environment and much more amorphous instruct things and oceans and all that type of stuff, I'm going to be very interested to see Ohio NOAA approaches that in terms of, you know, data or are they developing these

models, that type of things. So it's going to be an interesting conversation for the HSRP to have.

Secondly, I thank you for indulging beyond my workforce issues and I also look forward to seek how those can be addressed within the confines of the middle of the HSRP. Always looking forward and, you know, volunteering to participate in any ways and development of ports systems and the precision navigation. You know, mariners as you know have a great need for data and we also need to understand what that data means. There's just so much out there and I'll tie that into the -- I really like the presentation on the air gap sensors. That type of information is critical in how that information is displayed in a way that it can be used and correlated against other information is super important. And I'm going to also pick up on a comment that Mary Paige made about drawing a line versus a course on a chart. And just because it's my last meeting and I've been navigating for most of my life and with all the all the technology, I feel that there's been a degradation of, like, the human's ability to predict and forecast when navigating with all the reliance on technology. There is such a focus on everybody gets tiled in on this is where I am and they lose the ability to predict where they're going. And that's what's important. Again, I think that's more of a vendor issue and how your data is used, but I think it's an important thing to keep in mind. And other than that, thank you so much for the experience here. I've gained much more than I've given. If you ever want to come to San Francisco, maybe now isn't the time. You know, any way that I can help if a sell Tate bringing the HSRP there. We have nine ports, rivers, bays, national na reason sanctuary, we would love to have you. So thank you very much.

>> Thanks, Anne.

Qas is I m.

>> Thank you, Julie and everyone. I really enjoy the meeting. There's a lot of science. There is a lot of important discussion on it. And I just want to assure the directors, we've got to be disruptive here. And we understand, I personally understand there is certain environment need to be there for anything. You know? And I fully understand the digital twin. We have to baby it until it grows. So it takes time, definitely. But you're going to hear disruption from me and I'm very well known for that. So but I really -- I want to take my time to talk about Kim Valentine, I feel bad we stopped her because she went over time, but she has such important message for us in her last slide. So if you don't mind, just I can read it, maybe. But look what Kim is doing saying NOAA provides a critical foundation and support the national spatial data infrastructure. The public and our partner, we are committed to ensuring all NOAA Geospatial data support the NSRS. That's a great message. NOAA's data management framework is evolving and maturing to support the FAIR principles, but is currently under resourced. That's nice message. We need to convey to the at administrator. Additional attention, focus resources across the organization must be dedicated to proper data management moving forward.

And the last one, that's what I love here. Potential and future of digital twins is exciting, but without accurate and quality data and information, the digital twin concept is useless. Which she is right. I mean, you have to build it on the right foundation. That's all I want to

say, Julie. Thank you very -- it's a great meeting. Nice meeting, everybody. We're going to miss you as a chair and we're going to miss our friend, Lindsay and Gary, for not being with us.

>> And, Amanda, did you get that number two bullet? Just a few, the administrator recommendations.

>> (Indiscernible - no mic.).

>> Derrick, go ahead.

>> Yeah, thank you. It was my first meeting and so it was a learning quite a bit of new words, new information, new faces. Seeing an old friend again and meeting a bunch of new ones, so this b a great. I appreciated the panels, also. The data management in particular. I've spent most of my career in ocean observations for things between the bottom and the waves, you know, the water observations and we've had a lot of data management talk over the years. And we could have had the exact samezation if we just everywhere took out bottom -- or bathymetry and inserted gliders for profiles or anything. So those issues certainly are not dependent on this particular type of data we use here. I look forward to the port's discussion and being able to share what we've learned and get your thoughts on how to evolved that and maintain that program stability. And I think I'll end there. Thank you.

>> Okay. Galen is sitting back there. Do you have anything you want to say, Galen? You're so integral to the plan. You're not on my list to call. That's the advantage of not going by my list.

>> First of all, thanks. It's been a great meeting. I think there's a lot of key concepts here that are -- will percolate for a while, right? These are -- as was said, kind of disruptive, but looking forward in terms terms of where technology is going and where, you know, I think the group is encouraging NOAA to go. I think it's been a great discussion and I look forward to more sessions in Long Beach. Thanks.

>> And I know Bri is back there in the corner, but she's had to come forward one time.

>> (Indiscernible - no mic.)

>> Thank you, Bri.

Eric.

>> First of all, my first HSRP and I want to thank the staff that put all this together. I know it's a lot of work and I do appreciate it. And I know it took a lot of time and effort to get it to run so smoothly. And I think it went really well. Second on of all, I want to thank the HSRP for welcoming me. I appreciate you bringing me on with open arms. Third, I'm grounded in reality. So one of the things that I understand the injection of the bipartisan infrastructure law dollars, but I also understand that there's a timeline and expiration to that. So I think there's a huge challenge going forward with resources. So good ideas are great, but they also have to be resourced. So that's going be a struggle for NOAA going forward. I don't see appropriations. I'm engaged with a lot of political stuff. I think appropriations are going to be tighter for organizations across the board. I don't know how NOAA will fair in that, but just something to keep in mind as we -- we bring up these good idea toes make sure that we understand that they have to be grounded in reality of budgetary constraints. Again,

thank you very much for having me.

>> It was great meeting. Like all the eight years, I learn something every time I come to a meeting. I'm going miss attending. I have to echo what Lindsay, I think you should rotate back to this area just so we can have the leadership and staff come to the meetings. It would be probably learned as much in the breaks talking with staff that I did here. I'm encouraged to talk continue with the geodesy crisis. I think the more attention we can bring to it, the quicker we can come up with a solution and get a pipeline of geodesy into the system working together. I just want to thank NOAA for giving me the opportunity to serve. It's been a great eight years and don't seem like eight years. But encourage you to come to Wilmington, North Carolina, for a meeting soon.

>> I love Wilmington.

Gary, along with the geodesy crisis, there's the latter that you want us to send out. So you have two things.

>> Two things. So I'll get you a draft of the letter and go back and find the presentation that was made at NCCS by the admiral and John. So you'll have those background.

>> Okay. Great.

>> Alex.

>> First of all, I do thank you for your leadership and your time here. It's been great. I agree completely with the panel with the thoughts. Two things I'm going bring over is definitely we have to support ports. It's extremely important for the navigation around the nation. And even for national security because if we close the port, we have really great problems. The other part, which I talk about yesterday was it was very nice to see that technical to practical engagement between the panels that we should bring more into is what we do in our meetings. And on the labor shortage, I'm going to bring that again because today I saw a good clip. Today is the 80th anniversary of the United States (indiscernible). So they put out a good clip of what they do, they mission and what their missions do after graduation. And they serve and they mention every single service brand, including NASA, when NOAA wasn't there. So I think it is NOAA core advertising towards the academies where they can get people out to serve into the NOAA Corps. So looking forward to see some engagement on that.

>> I didn't understand why NOAA wasn't there. Ben just told me that's complicated. Be quiet, don't ask. We won't ask.

Julieana.

>> I also just want to thank Lindsay, Ed, who I know has left already, and Gary for all of your support over the years. You guys have been tremendous panel members and it's been a joy to work with you. And I know that we'll continue to hear from you, especially Gary, because he's in contact all the time. So -- but Julie, I want to thank you for your succession planning and Sean and Nathan for taking the gavel, the baton, whatever you're passing down to them, Julie, everything. Okay. All the work that's flowing down you to you. And, really appreciate that and looking forward to continuing the great panel sessions that we've been having and meetings that we've been having.

Just very quickly, some of the things that have come up, I just want to go on record here to

say Anuj, just want to let you know, I've contacted Brad Pierce and asked him to make sure that he brings up and to the geodesy community of practice the aspect of working with ACE and ACUE. So if you could send me just a short summary of what you are recommending -- not right now, maybe not even next week, depending on what happens -- but we'll make sure that that gets communicated to the larger geodesy community of practice through Brad. And then, Julie, Dana has been contacted about putting a hold on his calendar for the spring meeting. And then I just want to say thank you very much for highlighting that last slide that Kim Valentine didn't have enough time to present. And we'll make sure that she knows that that did get aired. Galen has probably already taken care of that. I appreciate everybody's attention on the geodesy crisis and especially Gary for bringing this up and championing this and all of the federal advisory committees that you sit on. And just remember, we can only do more with -- thank you. All right.

>> Well, I just want to say it's really tough sitting right next to Juliana and coming after her. So, anyway, I want to echo all the of the things she said. I want to express my appreciation and admiration for the work of our outgoing panel members. They have been great members and I've truly enjoyed working with all of you and socializing, as well, and sharing the time together. And thank you, Julie, for your leadership. And then about the meeting, I would like to say that I thought -- this meeting felt a little different than others. And I think it may be because we didn't have the local representative, but that gave us the opportunity to spend more time discussing our issues and talking. And I really -- really appreciated that. And I think we got a lot out of that. So I would say that we ought to schedule some meetings in from time to time that are here or some place elsewhere we don't have a lot of -- a lot of input from the local area, which I think is really important and I wouldn't want to not do that. But every now and then, it's good to be able to take a breath and just have some meetings. And boulder might be an area where that's feasible, as well. So thank you all, outgoing members, and thank you, Julie, and thank you all the members for a great meeting.

>> Thanks, Andy.

Deanne.

>> Absolutely echo that. I think this was an amazing meeting, the panels were just unbelievable. I think all of our minds were blown with the -- the amount of work that's being done and spaces that we weren't even aware of. One of the key ones, always in the top of my mind is the interagency -- interagency activities that are going on in the -- the update about the CMTS and those action teams and the things that they're working on was really, really eye opening and great to see a lot of those touch pretty much everything that we've talked about in different ways. So that was excellent.

This is my fourth year, I guess, starting my second stint here. So that you can for that, for supporting me over the first four years and now four more. But I feel like in the first four years have just been me understanding what's going on. Like I almost understanding what we're doing now, so I look forward to being able to, you know, help out more and, you know, certainly continue learning as we go for four more years. And Julie, thank you, especially, for mentoring me along the way on that. So excellent meeting. Look forward to

the next one. Thank you.

>> Mary Paige. Thanks.

>> Yes. I want to thank everyone for welcoming me, one in Puerto Rico and semi embracing my observations and such. I feel like I'm the high school freshman and the seniors are graduating and you're all leaving and you're my resource for information or Lindsay, I must have -- in Puerto Rico, leaned over about every 15 minutes, what does that mean? And he graciously answered me. And can I have a new digital twin. So we forgot to dress alike today, so we'll take care of that the next meeting.

But regardless, it has been a joy because it's serious work. But if you don't have that camaraderie, you don't benefit and you don't create. So on a -- looking at things, I did learn this meeting to take a different perspective from the sense of what's in it for NOAA. Not so much the -- I have a tendency to look at everything from a -- oh, oh, oh, we can do this and oh, they can do that. You know, if there's an unlimited pot of gold at the end of rainbow, that ain't happening. So -- so, you know, I'm trying my best now and if it's going to take me four years, so be it. You know, how things benefit NOAA and the -- and the entities within it and the personnel within it, what role should NOAA play, if any, in some of these things as well as what the asset allocations are. And that comes down to human assets more. If we want -- if we focus on something and it sounds like a really grand idea, what are we Ropping in order to get to that point? So what are you willing to do without? It's enlightening. Tracking the origination of data collection is huge. Boy, if we can follow the industry, whether it's consumer goods or manufacturing -- whatever it is, and be able to backtrack where that data comes from, you're going to need it from a liability responsibility standpoint. You can just see who is going to be tapping into -- the -- I'm going to use a technical term. The bozos who utilized data and all of a sudden are out there and going to point to credible agencies that could then ultimately be discredited. So we don't want to get into that type of a scenario. I spoke the other day and included about Coast Guard boating accident statistics opinion I did send on out a message to the Coast Guard as well as the Florida fish and wildlife people to see if there was data wind the data. And I have not heard back from them, but they acknowledged receipt of my request. I spoke also with Virginia and that record is going to be attached to our meeting for review. So you have that for future.

And last but not least, the cat procedures, that was really cool. In the modeling program, that -- I mean, I just love the fact that the woman from the university of Michigan, they actually had steps to get everyone on board. And then go to the next step. We don't go -- from that to that. And I wish my organization did that. We tend to ready, fire, aim. And that's not a -- not a good recipe for success. So thank you very much.

>> Man, when I go first, I'm not prepared. When I go towards the end, everybody said everything. So, yeah, great meeting. It was a lot of value having the meeting here in Silver Spring, a different perspective. Like many other people, Julie, thanks for serving as chair and being a mentor. And to the NOAA staff, I mean, multiple times, people have mentioned, hey, this panel is really productive. And it's the panel, it's the staff, it's everybody that really makes it a productive panel. So I'm really excited to be a part of it.

I think for the letter to the administrator, I will continue to suggest that we include language about supporting underserved communities. I really like the digital twin. I mean, obviously, you know, it's kind of -- you know, it's been around for a while, but it's also for thinking, trying -- as the discussion is great to figure out what the recommendations are that we're going to have. And so we -- I think we continue to bring attention to that. And then always -- you know, just funding the foundational programs, not just from a supplemental standpoint, but a sustained standpoint. I mean, we talk about the value of the data that comes out of those programs. And every one of these meetings, right, and so just -- and we talked about, you know, the supplemental funds, you know, creates resource constraints once those funds disappear. So sustained funding for those programs, I think we need to include that.

>> Nathan, what would be really helpful to the rest of the panel. If you -- could you send a note in writing about what you -- if there's particular verbiage that you would like to get in, it's really helpful if you could email it to me and Amanda and Virginia.

>> Yes, I can do that.

>> Okay. And anybody else if you -- it can be an after thought tomorrow if you wake up in the morning and you have something, don't hesitate. Because over the next couple of weeks, we'll be writing this letter. So if you have particular language you want to get in there, send it to us.

>> Okay. Thanks, Nathan.

Sean.

>> Yes. Thank you, Julie.

I'm going to just add a couple of things. I feel like we had a busy panels and that maybe some of the discussions would have liked to have off-line, there were two topics that are relevant maybe for one of the committees to pick up, at least in my opinion. One of them is related as we talk about greenhouse gases and not to be contrary to the rules, but we're seeing vessels call the Mississippi River that can't make full revolutions. And I know the American pilot association is in these discussions. We have kind of a Marine safety information bulletin from the Coast Guard for vessels calling the river. I don't want to get into the rules or going against it, but just say maybe we should add that as a discuss does she a topic for one of the subcommittees to just kind of go over some of those impacts and look at it.

Another one that I just will talk about is the rule making or the Reisis well restrictions impacting the Gulf and knowing that's in a rule making, not to be in a letter, not just mentioning two things that I'd like to see us have a discussion on. I think there's impacts to the navigation industry.

I know the pilots have commented on both of those and we're concerned right now, of course, we have low river, but during a high river, vessels not able to make full revolutions will lead to an incident and the NSIB kind of goes through the rules just to reinforce that the master should be able to override and shouldn't have to take a call to wherever around the world to get some kind of a letter of approval. But for some -- for two things that I think this group should talk about off line.

Other than that, I wanted to say, Nathan, I'm glad you're going to be stepping up and, Julie, you've done a great job and your panel members wanted to thank you. Sorry if that took too long, but I appreciate it.

>> Very nice. And, okay. Moving right along, Nicole, are you still online?

>> I am.

>> Do you have any final thoughts you'd like to share?

>> Yes, thank you. Thanks for accommodating my schedule this week, everyone. I apologize for some of my agenda miscues. I look forward to seeing you all in person next time. And I just wanted to mention that, you know, sediment is a big part of my world and I feel that sediment is a resource for coastal resilience. And I've mentioned before that the HSRP doesn't deal directly with sediment, but we measure. We measure sediment in our vicimetry charge. And I've heard a lot of talk around the periphery of sediment this week. Deanne's comment about sediment transport and looking forward to pursuing that a little bit.

Another thing I wanted to get out there is that the Army Corps, collaborating with the Army Corps is on our to-do list sort of as an ongoing priority. And I appreciated the inclusion of the E hydro presentation this week. And just wanted to mention that in, you know, southern California, the Army Corps is doing a whole lot of beneficial reuse of dredge material and the Corps has made that a very large priority going and looking ahead to 2023 with an intent to reuse 70% of their dredge material. So as that may relate to the resilience mission, to the hydrographic mapping, something to keep in mind for our next meeting. Thank you.

>> Thanks, Nicole.

Yeah, I made a note about that, too, for the sediment management because I know about the reuse that the Corps is doing.

Okay. So I just want to say, yes, Lindsay, Anne, Gary, thank you again for your service.

Remember, you are always welcome at the HSRPs. And you're in California. Hopefully you'll come down, work with pilots to contribute there.

Amanda has a little bit she's going share with us regarding one of the questions that came up.

>> Hi. Thanks, everybody.

So when it comes to measuring a lot of the coastal resilience efforts, NOAA is doing that. With our strategic plan, there is an intention. Once it comes out, I've heard October now, hopefully, late October for the NOS strategic plan to come out. There are plans to have a road map associated with that to track some of the actions related to coastal resilience in there. So that's going to take some time to develop. My guess would be about a year. Maybe shorter.

But we are measuring things from all of our program offices and the other program offices related to BIL and IRA funding. And I'm Mott sure how publicly available some of those reports will be, but if there are things available that we can share, we can certainly be doing that.

Thank you.

>> Okay. And this was -- you know, when we were talking about accountability matrix, like we hope that that might give us something. And you mentioned that initially and that's what got me talking with Amanda here. So thank you.

All right. I really want to thank the NOAA staff, too. I mean, as chair, they keep everything going. So Amanda, Virginia, Megan, Amber, Galen, wherever he is, Bri, great conversations. And Robin, right? Oh, and Lynn is here, too. Lynn, of course. I didn't know you snuck back in when I wasn't looking. And I don't know who else I have missed or lost, but it really -- the NOAA staff keeps everything going here. So I just really want to thank them.

And Ben, it has been great to get me through being chair. So I'm going turn it back over to you.

>> Thank you, Julie.

And I'm Mott sure who got who through, but I'll start with my thanks to you as our faithful chair since, you know, before my arrival in my position. And through the transition to me as DFO. So thank you, again.

A couple notes on the -- just notes on the meeting. I also -- I echo Andy's comments on the value, and I think others, as well. The value on periodically returning to D.C. or some other neutral location as noted, Boulder might be a -- might also be one. To really allow us to dig into conversations that are -- that are nationwide in nature. And I think there's value in -- in going and hearing issues specific to different coastal communities and then periodically coming back and being able to synthesize that across the communities and really hear about how we're putting that into action. So I think as we kind of reboot our meeting progression after the disruption of COVID, I think inserting a periodic return to D.C. or some similar location is something we will -- we will try to prioritize.

I also want to note that we need to think about how we are prioritizing our meeting locations. I think there was perhaps in the past, you know, pre COVID, premy arrival, there was a more formal process for receiving input on that, receiving recommendations and prior advertising that. And I think we need to reboot that. But I do want to invite the panel members to provide your recommendations for meeting locations. We've got a few in the cue right now, but it would be very helpful to hear from all of you. And when you make a representation for a location -- and I'm sure you would do this, anyway, but there needs to be kind of a business case for that, right? What is unique about this place? What would we learn in the location you're proposing that we haven't seen somewhere else? And how is that relevant to the navigation services mission of our -- of our offices? How would that impact what we are doing? So, again, I would invite that input. That can come to me, that can come to the staff. And we will -- we will incorporate that. And then, again, reboot the process by which we collectively make a decision as to where we're headed next. But at least we have a plan for March, so that's good.

On the subject of the letter to the administrator, one thing -- and I think I -- I don't know that I made this comment publicly. I've made it to a couple of people individually. The Dr. Spinrad, Nicole, have given this panel pretty broad remit to opine on a wide range of issues relevant to the work of annoy's navigation services offices. And I certainly don't want to suggest that that be constrained. I think what could be helpful is -- and this gets to the

resourcing issues and the what can we do about it questions that Lindsay and others pointed out is if those recommendations can be nested in that, you know, there's a lot of really great aspirational thinking and idea that's comes from the members of this panel. And I think that can be stated in terms of, like, NOAA should do this, NOAA should pursue, NOAA should -- and that's a recommendation to the administrator, right? But nested within that, the navigation services offices can support this, can enable this, can pursue this by taking these specific actions. And I think that would be helpful to help differentiate the things that are really for the administrator to think about as strategic aims and then things that navigation services offices really ought to be working on and that the administrator, you want the administrator to be aware that you think we should be doing. And I think that perhaps is a way of having our cake and eating it to in terms of providing this aspirational guidance but at the same time providing more concrete recommendations that those of us down in the stretches can actually take action on.

The two things that I would -- and, again, this has been mentioned previously, but I would -- two things I would invite the panel to consider in its -- in its recommendation letter, one, and this has been mentioned, but the resourcing required for data stewardship and dissemination. And that really is -- you know, I mentioned this yesterday and it's come up again today, but I'll re-emphasize it, that that is a critical link in the -- in getting the data into the hands of the people who need it, whether that's for navigation or for other purposes. NCII has been mentioned as an underresourced link in that chain. I think data stewardship and dissemination in general is an area where that resource curve really starts to tail off the further you get from the initial acquisition. So I'll note that.

And I also again note the comment I made earlier, which is that I think the fleet recapitalization, the executive we've achieved there is worth celebrating. And we need to keep our foot on the gas in terms of sustaining that moving forward, sustaining the fleet that we have, so I think that's worthy of the panel's consideration.

So those are my -- those are my substantive comments. I also will thank the staff. These are wonderful people to have working for us. They really do make this engine go. I also want to thank all of you, the panel members and particularly the offgoing members, Ed, Lindsay, and Gary. If this -- the value of this panel is in all of you. And the recommendations you provide. So please don't let it stop here. You know, I invite you to take what you've learned this week and go home and talk to your partners, talk to do -- talk to the folks you work with. Share -- so much of our challenge as a relatively small federal agency is getting the word out about what we're doing and its impact. So I invited you to continue to share that information and share your perspectives on that.

I'll close by saying, Julie, it's been a tremendous pleasure. Sean, Nathan, looking very much forward to continuing to work with you. It's been a great week. Thank you.

>> Okay. Meeting adjourned.