

U.S. DEPARTMENT OF COMMERCE

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NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION (NOAA)

HYDROGRAPHIC SERVICES REVIEW PANEL

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VIRTUAL PUBLIC MEETING

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TUESDAY
APRIL 28, 2020

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The Hydrographic Services Review Panel
met via webinar at 1:00 p.m., Ed Saade, Chair,
presiding.

HSRP MEMBERS PRESENT

EDWARD J. SAADE, HSRP Chair
JULIE THOMAS, HSRP Co-Chair
QASSIM ABDULLAH, Ph.D.
CAPTAIN ANUJ CHOPRA
SEAN M. DUFFY, SR.
NICOLE ELKO, Ph.D.
LINDSAY GEE
DEANNE HARGRAVE
EDWARD J. KELLY, Ph.D.
CAPTAIN ANN KINNER
DAVID MAUNE, Ph.D.
CAPTAIN ANNE MCINTYRE

CAPTAIN (ret. USCG) ED PAGE

GARY THOMPSON

NON-VOTING HSRP MEMBERS

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

JULIANA BLACKWELL, Director, National
Geodetic Survey, NOS

RICH EDWING, Director, Center for
Operational Oceanographic Products and
Services, NOS

LARRY MAYER, Ph.D., Center for Coastal and
Ocean Mapping and Co-Director, UNH-
Joint Hydrographic Center, University
of New Hampshire

NOAA LEADERSHIP PRESENT

NEIL JACOBS, Ph.D., Assistant Secretary of
Commerce for Environmental Observation
and Prediction, performing the duties
of Under Secretary of Commerce for
Oceans and Atmosphere

REAR ADMIRAL TIM GALLAUDET, Ph.D. (ret.
USN), Assistant Secretary of Commerce
for Oceans and Atmosphere and Deputy
NOAA Administrator

NICOLE LEBOEUF, Acting Assistant
Administrator, NOS

REAR ADMIRAL SHEP SMITH, HSRP Designated
Federal Official; Director,
Office of Coast Survey, NOS

NOAA STAFF PRESENT

VIRGINIA DENTLER, Center for Operational
Oceanographic Products and Services

LYNNE MERSEFELDER-LEWIS, HSRP Coordinator

AMANDA PHELPS, Office of Coast Survey

GALEN SCOTT, National Geodetic Survey

JILL STODDARD, Office of Coast Survey

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

2 (1:02 p.m.)

3 RDML SMITH: All right. Well, I have
4 top of the hour and I see quite a few attendees
5 already online. I see I have 193 attendees plus
6 the 29 of us that are involved in hosting and
7 participating in this.

8 So, welcome to everyone. I have a few
9 opening comments. I'm Rear Admiral Shep Smith
10 and I'm the HSRP Designated Federal Official and
11 the Director of the Office of Coast Survey.

12 The Chairman of the HSRP, Ed. Saade;
13 Co-Chair, Julie Thomas; NOAA Administrator, Dr.
14 Neil Jacobs; Assistant Administrator for the
15 Ocean Service, Nicole LeBouef; NGS Director,
16 Juliana Blackwell; CO-OPS Director, Rich Edwing;
17 UHG-Joint Hydrographic Center Co-Directors, Dr.
18 Larry Mayer and Captain Andy Armstrong; HSRP
19 Members, colleagues and stakeholders, thank you
20 for joining us for a condensed three-hour virtual
21 public meeting due to COVID-19.

22 I understand that Admiral Gallaudet

1 may also be joining us. He's been very
2 supportive and attended nearly every HSRP meeting
3 for the last few years.

4 I would also like to extend a special
5 welcome to our new members, Dr. Nicole Elko and
6 Dr. Qassim Abdullah, and four reappointed
7 members, Lindsay Gee, Captain Anne McIntyre, Gary
8 Thompson and our chair, Ed Saade.

9 On behalf of NOAA, we're thrilled to
10 have your expertise and thank you for your
11 service to NOAA and the nation.

12 In these difficult times our thoughts
13 are with the first responders and the incredible
14 toll that the world is enduring in all areas and
15 especially those in healthcare.

16 As we work down the chain, the impact
17 -- of hydrographic and navigation services there
18 are severe impacts related to our partners in
19 shipping on trade, cruise ship industry and the
20 overall maritime economy.

21 Many NOS and NOAA operations have been
22 affected, including an operational pause in some

1 field work and others you will hear about later
2 this afternoon. The health, cultural and
3 economic repercussions of this crisis will be
4 felt for decades ahead.

5 With all the stresses of this
6 unsettled time, I asked Nicole, Ed, Julie and the
7 panel to also help us recognize some good and
8 welfare during the meeting where possible. This
9 is the third virtual public meeting the HSRP has
10 held and Ed and I intend to make this as
11 convenient and productive as possible to fulfill
12 the HSRP requirement for two public meetings a
13 year.

14 We started out with a pretty low
15 expectation for this meeting, but as we grew more
16 comfortable with virtual tools we continued to
17 raise the bar. And I'm actually pretty excited
18 about the lineup of talks and discussions that we
19 have today.

20 We're really pleased with the high
21 turnout for the meeting today. As I scanned the
22 names as they were arriving I saw many familiar

1 names from our commercial partners, from other
2 U.S. federal agencies, from others in industry
3 and even a few from overseas, from our sister
4 hydrographic offices overseas.

5 We're working on, for later this year
6 we're working on and look forward to our next in-
7 person meeting which is rescheduled for September
8 22nd to 24th, 2020 in Oahu where we will pick up
9 more or less the same agenda that we had to table
10 from -- for this meeting.

11 So, please save the date and join us.
12 I need to -- a couple of pieces of bookkeeping
13 before we turn the meeting over to our chair.
14 This is a public meeting and the webinar
15 proceedings are being recorded, transcribed and
16 posted to the NOAA HSRP website as part of the
17 public record.

18 Your permission is required for use of
19 audio and photos as it will be retained and
20 disseminated on the meeting website and
21 accessible as a public document.

22 By joining this meeting your likeness

1 may be subject to being recorded, filmed and
2 these files stored on a government website in
3 perpetuity. You can decline by abstaining from
4 speaking or dropping off the webinar.

5 As a reminder to our HSRP members,
6 during your service to the HSRP and for the two
7 public meetings a year I want to remind you that
8 you are serving as a NOAA employee, as a federal
9 employee in your personal capacity as a subject
10 matter expert.

11 Please remember to take off your
12 regular work hat and replace it with your NOAA
13 hat as you provide questions, comments and
14 guidance to NOAA and to the administrator. Thank
15 you for your service to strengthening NOAA's
16 Hydrographic and Navigation Services portfolio.

17 While normally we would do
18 introductions to NOAA staff at this time, due to
19 the condensed nature of the call we'll include
20 the list of participants in the summary report
21 for the meeting and those of you online can
22 browse the participants on your own.

1 NOS has a variety of staff who provide
2 subject matter expertise and administrative
3 support. There are approximately 20 NOAA staff
4 who follow the work of the HSRP and already serve
5 as a reference for you and can assist you with
6 expertise throughout the year.

7 The goal of the meeting is to: discuss
8 the current state of NOS Navigation Services
9 portfolio of projects; provide key updates on
10 ocean mapping, such as the NOAA response to the
11 Presidential Memorandum on mapping the EEZ and
12 nearshore and coastal Alaska; and to discuss with
13 HSRP members on these and other subjects, their
14 issue papers and recommendations.

15 The HSRP has an issue paper on
16 emergency response and one on artificial
17 intelligence to discuss. The directors will
18 share some notes on the operational impact of
19 COVID-19 and other topics of interest within the
20 programs.

21 In regard to conserving time, all the
22 speaker bios are in the advanced materials on the

1 web. So, we'll dispense with reading the speaker
2 bios.

3 We'll have four-minute, two-minute and
4 one-minute reminders to presenters to keep the
5 presentations and meetings on time. And with
6 that preface, I'd like to turn the meeting over
7 to Ed Saade, our HSRP Chair. Over to you, Ed.

8 CHAIR SAADE: Thank you, Shep. Thanks
9 everyone for joining us. I hope you can hear me
10 okay. We've had a little bit of challenge on my
11 particular connection.

12 I serve as HSRP Chair and President of
13 Fugro. Nicole LeBoeuf, Dr. Neil Jacobs and Rear
14 Admiral Gallaudet, the HSRP members, staff, and
15 stakeholders, thank you all for joining us.

16 We really appreciate all the folks
17 that are dialing in and taking time to
18 participate. We are all operating in new
19 territory, obviously, but we've all had about
20 six, maybe seven weeks of practice as well with
21 dealing with COVID-19 and we're getting a little
22 bit more comfortable and certainly a lot more

1 engaged during these calls and these types of
2 interactions.

3 So, this impacts us both personally
4 and professionally. But all these types of
5 meetings are really robust and engaged, the panel
6 members really contribute an incredible amount of
7 information and ask good questions.

8 And I think everybody presenting
9 should expect that again today. And again, thank
10 you all that are going to be presenting. I'll
11 just do a little short reminder that everything
12 is going to be squeezed a little bit. So, be
13 cognizant of the time and we'll do our best not
14 to step on each other too much.

15 I want to recognize the following
16 panel members. Julie Thomas serves as the co-
17 chair. There are three working groups with five
18 chairs and that's Dave Maune and Julie is the
19 chair on the Planning and Engagement Working
20 Group. Ed Page chairs the Arctic Working Group.

21 Deanne Hargrave and Lindsay Gee chair
22 the Tech Working Group. As Shep said, all bios

1 are in the web materials and thank you for your
2 leadership and also thank you all for the
3 contribution you've been making.

4 Dr. Jacobs and Nicole LeBoeuf, I look
5 forward to the next in-person meeting and the
6 positive work we will be doing together. And if
7 it all works out that will be in Hawaii hopefully
8 in September.

9 I look at the ease with which that is
10 able to happen in person. And as Shep
11 referenced, there's lots of opportunities to
12 interact and go to breaks and in the evening and
13 an incredible amount of work and information gets
14 passed. That will be sorely missed. But we will
15 do our very best to keep the energy going.

16 In the meantime, the HSRP will discuss
17 and hope to provide you with an issue paper with
18 recommendations as part of the outcome of this
19 meeting. Gary Thompson will lead us on the
20 discussion of a draft issue paper on emergency
21 response and artificial intelligence.

22 And as always, various topics will

1 probably come up and we'll be sure to capture
2 those and forward them to you relative the
3 position of HSRP and its regulation.

4 To the stakeholders, staff, and others
5 joining the webinar, we encourage your public
6 comment and input on the topics of the navigation
7 services.

8 We've found over the years that
9 whatever city that we will be in or whatever
10 portion or part of the country that we're in, it
11 has proven to be a very good outlet for the local
12 interests.

13 We're hoping to be in Hawaii later in
14 the year so we don't miss that opportunity.
15 (Audio interference) across the nation. So, all
16 the input from all different parts of the country
17 and all different cities ought to be (audio
18 interference) in terms of the breadth of comments
19 that come in.

20 Comments will be read into the public
21 record during the public comment period at 3:15
22 this afternoon as well as projected onto the

1 screen if received in time to make it into a
2 slide.

3 I encourage you to please send in your
4 comments now via email as noted on the HSRP
5 website and in the meeting Federal Register
6 Notice, or you can use the chat function of the
7 webinar.

8 So, now on to intros. So, the
9 introductions for the various HSRP members and
10 leadership. While member bios are in the advance
11 materials on the web, we'll dispense with reading
12 speaker bios at this time in the interest of
13 time.

14 Could you please provide your -- could
15 you each provide your name, geographical
16 location, organization, job title and area of
17 expertise?

18 And if possible, provide one of the
19 following: an area you want to see the HSRP or
20 NOAA address, an item of good and welfare, or
21 another comment of your choosing.

22 We'll do those in alphabetical order

1 starting with the voting members. I'll start the
2 process and we'll then move to Qassim Abdullah,
3 Dr. Qassim Abdullah next.

4 So, for myself my name is Ed Saade.
5 I'm the President of Fugro USA and field director
6 for all of the Americas for Fugro. We've been a
7 contractor with NOAA going back to the mid-1990s.

8 We conduct various hydrographic
9 surveys, all types of mapping of the sea floor
10 and the interaction with NOAA in the various labs
11 has been extremely beneficial and educational.

12 As far as any particular topic, I just
13 encourage us all to keep looking for synergies
14 between industry and NOAA and sharing ideas and
15 discoveries between industry and NOAA. Dr.
16 Abdullah, would you go next, please?

17 MEMBER ABDULLAH: Hello, everyone. My
18 name is Qassim Abdullah and I'm Chief Scientist
19 with Woolpert. And I also am an adjunct
20 professor for Penn State and University of
21 Maryland Baltimore County.

22 My intros, I'm a civil engineer and my

1 background and my degree is in photogrammetry and
2 surveying. I'm involved with the industry for
3 the last 40 years focusing on mapping to
4 standards and accuracy, especially with the ASPRS
5 standard.

6 I'm looking forward to serve on the
7 Board for the HSRP. I would like to focus, I'm
8 involved a lot lately with the Smart Cities,
9 Smart ITS, Intelligent Transportation System.

10 So, I would like just to bring this to
11 the, to NOAA activity for Smart Navigation, Smart
12 Board. There's a lot of good concepts, I think
13 we can definitely adopt for our waterways'
14 navigations.

15 On the welfare, like everybody else
16 involved with the situation COVID and I'm proud
17 of the, I did the QC on my wife's mask she made
18 for the first responders. We donated it to the
19 local hospital.

20 She sat me down to have the scissors
21 and snip the thread, and if she missed a seam. So
22 I spend a lot of my time with her on doing that.

1 And I'm looking forward for the meeting and the
2 outcome of the meeting. Thank you.

3 CHAIR SAADE: Thank you, Dr. Abdullah.

4 MEMBER ABDULLAH: Thanks.

5 CHAIR SAADE: Next is Captain Anuj
6 Chopra.

7 MEMBER CHOPRA: Hi, good afternoon.
8 This is Captain Anuj Chopra. I'm Vice President
9 Americas for RightShip.

10 We are -- you can hear some thunder in
11 the background. So, we're getting some rain in
12 Houston.

13 But our focus is really maritime and
14 environmental risk and securing the maritime
15 supply chain for different providers for gas,
16 LPG, LNG, chemicals, crude oil and also dry
17 cargos.

18 Personally I'm very actively involved
19 with seafarers' welfare with education of the
20 maritime supply chain and especially seafarers'
21 welfare now. And they're having a tough time
22 trying to change crews where ships are still on

1 the high oceans and making sure that we get our
2 supplies.

3 I'm intimately involved with big data
4 and with subject matter experts and trying to
5 support the HSRP and the leadership team the best
6 I can. Thank you so much.

7 CHAIR SAADE: Thank you. Mr. Sean
8 Duffy, please.

9 MEMBER DUFFY: Yes. Thank you, Ed.
10 So, Sean Duffy, Executive Director of the Big
11 River Coalition and Executive Vice President of
12 the Louisiana Maritime Association.

13 I represent navigation on the Mighty
14 Mississippi. I really appreciate the engagement
15 with the HSRP, I find that sometimes we have
16 common problems and occasionally they have common
17 solutions.

18 So, as we work to adapt and
19 incorporate some of the things that are very
20 important to us, we've seen information from
21 NOAA's National Center for Excellence on
22 increased precipitation. We've opened the Bonnet

1 Carre Spillway again this year, twice last year
2 and in 2018.

3 So, we're seeing the system change and
4 be tested. Some of the things that may not come
5 to mind when you think of increased precipitation
6 is higher rivers, so air gap sensors on bridges
7 and surveys of shoaling in the lower river become
8 really important. And as we look to expand NOAA's
9 PORTS program and bring in the new frontier with
10 precision navigation, appreciate everybody's time
11 and it's good to have a group of experts to
12 bounce ideas off. Thank you.

13 CHAIR SAADE: Thanks, Sean. Next is
14 new member Dr. Nicole Elko. Welcome, Dr. Elko.

15 MEMBER ELKO: Hi, thank you. I'm
16 honored to be here. You can hear me? Yes.

17 CHAIR SAADE: Yes, loud and clear.

18 MEMBER ELKO: Okay. So, as you can
19 see by my -- all of the words and italics under
20 my name on that slide I represent a couple of
21 different organizations.

22 But essentially I'm bringing the local

1 coastal community stakeholder perspective. So, I
2 work as the science director at the American
3 Shore & Beach Preservation Association, which is
4 a national organization, most of our members
5 being kind of those local communities dealing
6 with coastal management issues, beach erosion and
7 nowadays more often nuisance flooding.

8 I'm also the executive director at the
9 state level of the South Carolina Beach
10 Advocates. That's a state organization here in
11 South Carolina, I'm based on Folly Beach in South
12 Carolina.

13 And that organization has a board of
14 directors of all of the mayors of each of the
15 beach communities from North Myrtle Beach down to
16 Hilton Head. So, comprehensive statewide
17 perspective there.

18 Then finally, I have my own business,
19 Elko Coastal Consulting. My clients are these
20 local communities. For example, this morning I
21 was out on Folly Beach doing some topographic and
22 hydrographic survey work for them.

1 So, I'm really looking forward to
2 working with you all. I am not sure exactly what
3 I want HSRP or NOAA to consider at this point.
4 So, I'm going to focus on learning from you.

5 But again, I'm really interested in
6 sharing these perspectives, coastal community
7 resilience and some of these topics that these
8 communities are really struggling with right now
9 in terms of not really having data, hydrographic
10 type data to understand the flooding and these
11 challenges that are coming their way. Thank you.

12 CHAIR SAADE: Thank you, Nicole. Next
13 up is Lindsay Gee -- sorry, Deanna Hargrave.
14 Sorry, Deanna.

15 MEMBER HARGRAVE: That's okay.
16 Thanks, Ed. So, Deanna Hargrave. I'm the
17 Geoscience Manager for Atlantic Shores Offshore
18 Wind, an exciting 2.5 megawatt project off the
19 coast of New Jersey.

20 We're very excited that in spite of
21 COVID we've partnered with Fugro and yesterday
22 started operations. And so, we had to take into

1 account a number of special measures with respect
2 to COVID.

3 And some of those things are with
4 respect to how do personnel transfer to a vessel
5 which is a confined area that's COVID-free and
6 not introduce the virus to the crew. And so, we
7 took a risk approach to looking at ways to come
8 up with creative solutions for transferring
9 personnel to the vessel.

10 In addition to that there's a number
11 of monitoring measures that have been put in
12 place, you know, measuring their temperature and
13 self-isolating for 14 days prior to joining the
14 crew.

15 So, we are happy to announce that
16 we've successfully started the program and are
17 very excited to, you know, contribute to the blue
18 economy, renewable energy and progress in climate
19 change. So, thanks.

20 CHAIR SAADE: Great. Lindsay Gee.

21 MEMBER GEE: Thanks, Ed. My name is
22 Lindsay Gee. I'm the manager of Mapping and

1 Science Operations of the Ocean Exploration Trust
2 and the operations of exploration vessel,
3 Nautilus. It's on the West Coast.

4 I'm based up in New Hampshire and I
5 wish I wasn't right now because actually to wear
6 a short sleeve shirt I have to turn the heat up.
7 So, I would rather this meeting was in Hawaii.
8 But that's okay for now, we're virtually online.

9 And I would also like to say that I
10 am really looking forward to meeting the new
11 members and those that I haven't had a chance to
12 meet up with yet.

13 Yes, I think we're all challenged by
14 current situation. Our ship, Nautilus is down in
15 Mexico just finishing a dry docking and our
16 exhibition season is starting in July, hopefully.

17 So, we're interested in doing the same
18 things trying to make sure we can push that
19 forward. We work with another area of NOAA, the
20 Ocean Exploration and Research for our major
21 grant.

22 And so, it's pleasing. And I think,

1 I'm not sure because I'm involved in ocean
2 exploration but I'm kind of positive when I see
3 over the last few years a really increased focus
4 in the oceans and that goes from the UN kind of
5 Decade of Ocean Science for Sustainable
6 Development, the Seabed 2030 Mapping Initiative.

7 And now obviously we're going to
8 discuss, I think, the Presidential Memo on ocean
9 mapping and in the EEZ and the shoreline of
10 nearshore Alaska.

11 And I'm keen to provide input and see
12 what NOS has in plans for their contributions in
13 particular with transportation and the aspects of
14 the blue economy. So, I look forward to those
15 discussions. Thank you.

16 CHAIR SAADE: Thanks, Lindsay. Ed
17 Kelly, you're up next.

18 MEMBER KELLY: Hey, Ed Kelly here.
19 I'm the executive director of the Maritime
20 Association of the Port of New York and New
21 Jersey.

22 Obviously, that puts me up in the

1 representation for the Northeast. And my area of
2 expertise is for deep sea port operations and
3 also estuary operations, ferries, tugs, et
4 cetera.

5 My interest in this panel is to assist
6 NOAA in looking toward new ways to develop data
7 and products that will lead toward waterway asset
8 maximization, certainly the precision navigation
9 projects, coastal mapping, modeling, weather
10 advanced noticing is all very important to us.

11 And we trust that the proper
12 development of those, that data and the products
13 that result from them will help to lead us toward
14 a safer, cleaner and a more secure waterway
15 environment in which we can conduct business.

16 Thanks.

17 On a personal basis I would just like
18 to put out a shout out to all of our professional
19 mariners and industrial maritime operators,
20 longshoremen, tug crews, et cetera that are on
21 the front line out there of keeping our supply
22 chain moving.

1 CHAIR SAADE: Thanks, Ed. Next up is
2 Captain Ann Kinner. Ann, you're muted.

3 MEMBER KINNER: I am now unmuted, I
4 hope. Ann Kinner, Captain Ann Kinner, owner of
5 Seabreeze Books and Charts in San Diego and Chair
6 of the San Diego Harbor Safety Committee.

7 Longtime experience with small boats,
8 recreational boats, small working boats, pretty
9 much anybody in the maritime community but
10 definitely focused on the small boat fleet. My
11 particular interest as you can tell from behind
12 me is paper charts, charting of any kind.

13 I've been dealing with paper charts
14 for 25 years now, I think. It's still an
15 important part of a navigator's tool kit. And in
16 spite of the fact that electronic seems to be
17 taking over everything in the world, when the
18 power goes down they aren't there.

19 And I'm particularly concerned with
20 the transition in the way that paper charts are
21 going to be produced in the future. Like we had
22 in 2014, there is a lot of confusion out there

1 right now among the small fleet.

2 And a lot of people keep saying I've
3 got to buy my charts now because there won't be
4 any anymore. And that's just not the case.

5 And so, I'm spending a lot of time
6 explaining to them what the real transition is
7 and how going into this ENC-based database will
8 save time and money and probably give them more
9 accurate charts in the future.

10 But it's a communication issue and
11 unfortunately people don't always read all the
12 words in the paragraph. So, that's part of my
13 focus.

14 I'm doing my best and hoping that we
15 can keep it clean and clear to the folks out
16 there so I don't have to spend quite so much time
17 explaining it and I can spend more time getting
18 them the right charts that they need. Thank you.

19 CHAIR SAADE: Thank you. Next up is
20 Dave Maune.

21 MEMBER MAUNE: Good afternoon. I'm
22 Dave Maune from Dewberry Engineers. We're

1 headquartered in Fairfax, Virginia.

2 I'm a geodesist and a photogrammetrist
3 who specializes in elevation mapping of
4 topographic and bathymetric surfaces. I have
5 published three books on digital elevation models
6 from photogrammetry, radar, sonar, topographic
7 and bathymetric lidar.

8 Having just completed our ten-year
9 IFSAR statewide mapping of Alaska, I'm now
10 working on NOAA's 3D Nation Elevation
11 Requirements and Benefits Study documenting
12 requirements for and benefits from seamless topo
13 and bathymetric mapping from the tops of the
14 mountains to the depths of the seas.

15 As you know from a draft issue paper
16 that I presented in -- at our last HSRP meeting
17 I'm interested in the Alaska coastal mapping
18 strategy for shoreline and nearshore mapping of
19 Alaska being prepared in coordination with the
20 Presidential Memorandum that we're going to be
21 talking about today and the HSRP's response to
22 this strategy.

1 CHAIR SAADE: Thanks, Dave. Next up
2 we've got Captain Anne McIntyre.

3 MS. STODDARD: Hey Anne, it appears
4 that you have yourself muted.

5 CHAIR SAADE: No, you're still muted,
6 Anne.

7 MS. MERSFELDER-LEWIS: Hi, Anne.
8 Could you go -- this is Lynne. Could you go into
9 your audio button on your menu and go down and
10 look at what your audio says, and it may say
11 self-muting.

12 If you're using computer audio make
13 sure that's noted and if you're, make sure your
14 speakers are on if you're not hearing us. Hey,
15 why don't we come back to you because we are
16 still not getting you.

17 So, we'll go to the next person and
18 then we'll come back to her towards the end. But
19 we'll work on that in the background.

20 CHAIR SAADE: Okay. Next up is
21 Captain Ed Page.

22 MEMBER PAGE: Hi. I'm calling from --

1 despite the Hawaiian shirt I'm calling from
2 Juneau, Alaska where I serve as the executive
3 director of the Marine Exchange of Alaska which I
4 started some 30 years ago -- 20 years ago after
5 spending 30 years with the Coast Guard.

6 Had tours on the East Coast and the
7 West Coast and first came to Alaska in the early
8 70s and became enamored with Alaska. But I had
9 prior assignments as Captain of Port of LA-Long
10 Beach, chief of marine safety and environmental
11 protection for West Coast out of San Francisco
12 area.

13 And several tours up in Alaska. I've
14 got a total of 30 years in Alaska. So, when it
15 comes down to social distancing I know how to do
16 that.

17 I've done that for many, many years
18 now kayaking, whatever in Alaska and hiking and
19 skiing. So, social distancing is nothing new for
20 me.

21 The Marine Exchange is a non-profit
22 that provides, organization in Juneau that

1 provides information and communication services
2 to help safe, secure, efficient, environmentally
3 responsible maritime operations.

4 There are about 20 staff. We've built
5 130 Automatic Identification Systems throughout
6 Alaska and north of the Aleutian Islands, many of
7 which transmit information as well as receive
8 information on ships.

9 Built some 55 weather stations. We're
10 into brokering information to aid safe maritime
11 operations.

12 And there's a clear nexus to what NOAA
13 has been doing. My time with NOAA starts back in
14 the early 70s when I was on the East Coast and
15 the NOAA weather people would sail with us. And
16 so I've been engaged many, many years with NOAA.

17 I have served several years as the
18 Chairman of the Alaska Ocean Observing System.
19 And so, I find that being on the HSRP I'm more of
20 a maritime generalist.

21 My focus has been in marine safety and
22 environmental protection, having worked several

1 SAR cases over the years that didn't go well
2 because of lack of information and people staying
3 in harm's way not realizing they're heading into
4 heavy weather.

5 Also the Exxon Valdez spill, I worked
6 that for three years as operations and became an
7 advocate of protecting the environment after
8 realizing how much havoc a major oil spill can
9 cause.

10 So, I see the things that I've been
11 involved with some 50 years in my maritime field
12 have been very closely paralleled with what NOAA
13 is doing. So, I'm pleased to have some position
14 to help NOAA kind of work through some of these
15 other issues in the future.

16 So, I think that my focus is obviously
17 Alaska because I've got 30 years up here. And
18 kind of taming the Wild West or opening up this
19 new maritime frontier in the Arctic and doing it
20 right.

21 We're not going to do it the same way
22 in the lower 48. We don't have the resources.

1 We're not going to build lighthouses or what have
2 you.

3 It's going to be using technology and
4 NOAA's been doing a fair amount, quite a bit of
5 efforts as far as surveying and through traffic
6 lanes and safe waters, et cetera. So, when this
7 opens more and more we can take advantage of
8 that.

9 And the only question I have of NOAA,
10 I guess, is how did Admiral Smith end up in
11 Hawaii after all? I see the Hawaiian background
12 behind him and the rest of us are stuck in our
13 respective homes.

14 He still got a ticket to go to Hawaii.
15 So, good on you there, Admiral. I'm impressed.

16 And other than that, I think that, you
17 know, I think the challenges for NOAA and which
18 you're doing great, by the way, is really
19 leveraging technology to get more information to
20 the maritime community and the community at
21 large, all of, you know, the residents of the
22 U.S. when you think of the National Weather

1 Service, whatever.

2 Getting more information and better
3 dissemination of information. Any way I can help
4 to that end and kind of leverage technology to be
5 more effective that way results in saving lives,
6 protecting the property, aiding the blue economy
7 and a lot of good things.

8 So, that's my story and I'm sticking
9 to it.

10 CHAIR SAADE: Thanks, Ed. Julie
11 Thomas, please.

12 CO-CHAIR THOMAS: Thank you. I'm
13 Julie Thomas, co-chair of the HSRP, as was
14 mentioned. And so, I would just like to welcome
15 the panel and a big thanks to the organizers.

16 I've been with Scripps Institution of
17 Oceanography in La Jolla, California. I headed
18 two programs there, both involved with producing
19 oceanographic products.

20 And, you know, it's just been a real
21 honor to be a member of the HSRP and to have a
22 window into NOS' navigation services portfolio.

1 These are really critical and relevant components
2 of maritime operations.

3 And they're -- these topics are really
4 of interest to me, subjects that I've dedicated
5 my career to. So, it's been a real pleasure
6 getting to know a little bit more about the
7 inside aspect of it. Thank you.

8 CHAIR SAADE: Thanks, Julie. Gary
9 Thompson, please.

10 MEMBER THOMPSON: Good afternoon,
11 everyone. My name is Gary Thompson. I'm the
12 chief of the North Carolina Geodetic Survey.

13 And I'm also the Deputy Risk
14 Management Chief here at North Carolina Emergency
15 Management where we have our Floodplain Mapping
16 Program and our Flood Warning System.

17 My area, I'm also a professional land
18 surveyor. My area of expertise is geodetic
19 surveys and I'm pretty involved in our two
20 iterations of lidar data collection here in North
21 Carolina.

22 And we're coming up on our third

1 iteration this year of collecting lidar data in
2 North Carolina. My area of interest, I would
3 like to see the panel in artificial intelligence.

4 I think it could be utilized to help
5 us with disaster response. And so that's, we'll
6 be talking about it later today in my paper. So,
7 thanks.

8 CHAIR SAADE: Thanks, Gary. Okay,
9 we'll keep moving along here. I would like to
10 have the four non-voting members of the HSRP and
11 the NOS and NOAA leadership do self-intros in
12 alphabetical order.

13 And we'll jump right into that. It
14 saves a little bit of time. Captain Andy
15 Armstrong, please.

16 CAPT ARMSTRONG: Hello, everybody.
17 I'm Andy Armstrong. I'm the NOAA Co-Director of
18 the Joint Hydrographic Center. I'm an Office of
19 Coast Survey employee and work at the University
20 of New Hampshire in Durham, New Hampshire.

21 I'm a hydrographer and a retired NOAA
22 Corps Officer. I'm in my fiftieth year of

1 government service, four of those years in the
2 Navy and 46 in NOAA.

3 And it's been my privilege to be part
4 of HSRP as a non-voting member since the
5 beginning. So, thank you.

6 CHAIR SAADE: Thanks, Andy. Juliana.

7 MS. BLACKWELL: Greetings, everyone.

8 I'm Juliana Blackwell. I'm the Director of
9 NOAA's National Geodetic Survey.

10 And I'm joining you from Virginia
11 today. I'm headquartered in Silver Spring,
12 Maryland with NOAA.

13 And one of the things that I enjoy
14 hearing from the panel and look forward to
15 hearing more about are innovative solutions for
16 us for our mission challenges with respect to
17 things like partnerships and technology and
18 outreach and education, things that you all bring
19 to the table from your perspectives, from your
20 organizations.

21 So, I look forward to hearing more
22 about those things today and in the future.

1 Thank you.

2 CHAIR SAADE: Thank you, Juliana.

3 Rich Edwing. Rich, you might be muted.

4 MS. STODDARD: I believe Rich is self-
5 muted.

6 MR. EDWING: Okay. You should hear me
7 now.

8 CHAIR SAADE: Thanks, Rich.

9 MR. EDWING: Okay. Good afternoon,
10 everyone. I'm Richard Edwing. I'm the Director
11 of the Center for Operational Oceanographic
12 Products and Services.

13 I'm here in Maryland, not in Silver
14 Spring, but just outside of Silver Spring. We're
15 also called the Tides and Currents folks, for
16 those of you who aren't familiar with us.

17 And I always look forward to these
18 meetings because I look to the HSRP a little
19 similarly to what Juliana said, you know, where
20 is the country going, where is the industry
21 going, what's coming over the horizon that we
22 need to be paying attention to and getting

1 prepared for.

2 So, we always learn a lot from them.
3 And I have 43 years of service. So, I'm just a
4 mere child compared to Andy, apparently. Thank
5 you.

6 CHAIR SAADE: Thank you. Dr. Neil
7 Jacobs, thank you for joining us. Please go
8 ahead.

9 DR. JACOBS: Sure, thanks for having
10 me. I'll get into a little bit more details in
11 some of my personal background when I provide
12 remarks here in a little while. But I'm the
13 acting head of NOAA.

14 Probably known as the dry side guy.
15 But I think you'll be surprised to know how much
16 wet side experience I have.

17 CHAIR SAADE: Thank you. Nicole
18 LeBoeuf.

19 MS. LEBOEUF: Hi, good day, everyone.
20 This is Nicole LeBoeuf. I'm the Acting Assistant
21 Administrator of the National Ocean Service
22 coming to you from my home office in Kensington,

1 Maryland.

2 I'm looking forward very much to a
3 time when we can all be together again. But I
4 want to thank everyone for all they're doing to
5 make today's meeting run as seamless as possible.

6 I'm keenly interested not only in the
7 input of the HSRP but specifically around where
8 NOS' offices and programs can work more closely
9 together or more integrated or in a more
10 innovative fashion to provide our services and
11 tools even better as we have to deal with a
12 rapidly changing coastal zone.

13 And lastly I will just say that, you
14 know, I hear a lot about this virus that came
15 potentially from China. But I am amazed at what
16 Sean Duffy, the lengths that Sean Duffy will go
17 to, to be able to claim that he had the last best
18 HSRP party.

19 That's what I have to say about that.
20 And more soon, thanks.

21 CHAIR SAADE: Well noted. And, Dr.
22 Larry Mayer.

1 DR. MAYER: Hello, all. I'm Larry
2 Mayer. I'm a professor at the University of New
3 Hampshire. Sitting here in New Hampshire, it is
4 cold.

5 But unlike Lindsay I'm too cheap to
6 turn the heat up so I've got my long underwear on
7 underneath the Hawaiian shirt. I'm a geologist
8 geophysicist by training focused these days on
9 all aspects of ocean mapping.

10 And as I think about this meeting I
11 think about the fact that much of our profession
12 has been fortunate in that we can carry on our
13 theoretical and our analytical work. But as
14 Admiral Smith pointed out it's really, it's that
15 field program aspect that really has taken a huge
16 hit.

17 And that makes me think about how
18 valuable the concept of autonomous vehicles could
19 be. We could have a fleet of autonomous vehicles
20 out there now still collecting data.

21 And so, I'm very pleased that the HSRP
22 has looked into that and will look into that.

1 And I hope it stays a hot topic. Thank you.

2 CHAIR SAADE: Thanks, Larry. We're
3 going to try Captain Anne McIntyre one more time.
4 Go ahead, Anne. Still muted, Anne, sorry. We'll
5 catch you today later on. Thank you.

6 Okay, we'll move on. Next up is --

7 MS. MERSFELDER-LEWIS: Hey, Ed. Try
8 Anne again right now. She was muted by us and
9 we've unmuted her. Anne, if you would --

10 CHAIR SAADE: Okay. Go ahead, Anne.
11 Go ahead, Anne.

12 MS. MERSFELDER-LEWIS: I'm sorry.
13 Your mic must not be on, Anne.

14 CHAIR SAADE: We'll get you. Okay,
15 next up is some remarks from our guests. So,
16 Nicole, if you will go ahead and start we're
17 ready when you are. Thanks.

18 MS. LEBOEUF: Yes, thank you, Ed and
19 Admiral Smith. Dr. Jacobs, welcome to your first
20 Hydrographic Services Review Panel or HSRP as
21 you've heard already.

22 Congratulations to our new HSRP

1 members and our four reappointed members. We are
2 thrilled to have your expertise whether for the
3 first time or another four years, whichever the
4 case.

5 Welcome, everyone. Sorry we're not in
6 Hawaii despite our excellent Hawaiian garb. But
7 no matter where we are today it's great to be
8 with you.

9 I hope everyone can see and hear the
10 webinar and you're comfortable and safe in your
11 homes. Whether or not this meeting is virtual, I
12 predict it's going to be a good, productive
13 meeting.

14 The NOS team has done an amazing job
15 of preparing today and I want to thank them all
16 right off the bat. And Dr. Jacobs, I'm delighted
17 you're getting an introduction to the HSRP under
18 any circumstances.

19 As I said at our pre-brief, this
20 federal advisory panel is top-notch, highly
21 engaged and invested in NOAA's success. And they
22 are a fun crowd as well, I can tell you that.

1 To the HSRP, on behalf of NOAA and NOS
2 let me say that we sincerely appreciate your
3 advice and recommendations and we are looking
4 forward to public comment from the audience.
5 These unprecedented times present unprecedented
6 challenges.

7 But I believe they also offer
8 opportunities to reexamine how and where we work,
9 as some of you have already alluded to. And it
10 forces us to prioritize our health and well-being
11 and that of our loved ones and I welcome that.

12 At NOS we will not waiver from our
13 robust partnerships with everyone around this
14 table and others not here today. And I can tell
15 you that NOS' collaborative spirit is stronger
16 than ever.

17 I have no doubt that together we will
18 emerge from these strange times even stronger
19 than when we came into them. At NOS and across
20 NOAA, I am pleased to report that we are proving
21 ourselves adaptive, innovative and resilient as
22 we press forward with mission-essential

1 functions.

2 Using telework and virtual meetings
3 NOS and other NOAA employees are doing an amazing
4 job of demonstrating their commitment to the
5 American people. And of course, there will be
6 some ongoing impacts, as was noted, especially in
7 the field work and vessel and aircraft
8 operations. But we're doing what we can to work
9 through them while keeping the health and safety
10 of our workforce our top priority.

11 As you all are aware, COVID-19 is a
12 challenge to our nation in many varied ways.
13 Even the maritime industry has had significant
14 impacts.

15 Essential shipments are being
16 delivered. But the cruise industry has been
17 seriously impacted and may feel the effects of
18 the pandemic for some time.

19 Thus far, we have had no mission-
20 related emergencies requiring us to mobilize
21 significant resources at NOS. But we are fully
22 aware that hurricane season is approaching, and

1 we are taking steps to ensure that we are
2 prepared to respond as needed. We will remain
3 public servants and if we need to deploy, we
4 will.

5 Being a leader during these times has
6 been a definite challenge for me. I spend a fair
7 bit of time trying to figure out how best to
8 serve the people of NOS, all 1,800 of them, that
9 were in 50 facilities across the United States
10 but now they're in countless homes across our
11 country.

12 I have focused my efforts on
13 communicating clear expectations for every NOS
14 employee. And I'm going to give you a rundown of
15 the top four of those.

16 Number one, my expectation through
17 this is that their health and safety and that of
18 their loved ones comes first. Number two is that
19 they are gentle on themselves and patient for not
20 getting all of their decision-making right the
21 first time.

22 Number three is to acknowledge that

1 some things at work will slip because there are
2 many people balancing educating their kids,
3 taking care of parents and much else right now.

4 And lastly, I am saying to them that
5 we're in this until we're not. And so,
6 resilience and stamina are the name of the game.
7 I'm pushing these messages out as often as I can
8 and I'm getting very positive responses from the
9 organization at every level.

10 And while I'm not the boss of you,
11 these principles hold true for all of you as
12 well. Be kind to yourselves as we go through
13 this as a nation.

14 And before I tee up for the rest of
15 the day I want to echo something Admiral Shep
16 said at the start. I'd like to take a moment to
17 say that NOAA and NOS appreciate the tireless
18 efforts of the men and women who have put others
19 and country first, including front line workers,
20 healthcare professionals, doctors and nurses.

21 That said, I want to acknowledge a
22 fallacy in that statement. The work of those on

1 the front lines in the medical healthcare
2 professionals, first responders and anyone faced
3 with putting themselves in harm's way to care for
4 others, their work is not tireless.

5 Their work is exhausting. In some
6 cases it's traumatic and it's dangerous. And yet
7 they go to work in emergency rooms, in clinics,
8 to the nursing homes and police stations all to
9 ensure the health and safety of the rest of us.

10 They put themselves and their loved
11 ones at risk and I salute their professionalism
12 and bravery on a daily basis.

13 Okay. So, to the business of the HSRP,
14 the navigation services programs that you advise
15 continue to carry out the missions and there are
16 some COVID-related impacts on our work due to
17 necessary travel restrictions.

18 In addition, there will be delays and
19 postponements for repair and maintenance of
20 things like tide gauges and NGS CORS stations.

21 This afternoon you will hear from the
22 directors of the navigation services portfolio at

1 NOS, including Juliana Blackwell from the
2 National Geodetic Survey, with a status on the
3 NGS' coastal mapping activities as well as the
4 National Spatial Reference System modernization
5 efforts.

6 You'll hear from Rich Edwing of CO-OPS
7 who will talk about their plans for the expansion
8 of PORTS. Admiral Shep Smith from the Office of
9 Coast Survey will cover the progress report on
10 unmapped waters, the new OCS strategic plan, the
11 rescheming of electronic navigational charts and
12 the five-year plan for sunseting of traditional
13 NOAA paper charts.

14 All directors will talk more with you
15 about any COVID-19 related program impacts that
16 they're having.

17 And then after, I will be back at the
18 mic with Shep at 1:45 -- it's already 1:50 -- to
19 share some news on the progress we've made
20 implementing the November 19 Presidential
21 Memorandum on ocean mapping that he mentioned
22 before.

1 Before I sign off, I want to give you
2 some quick budget updates. As you may know,
3 Congress enacted our FY20 appropriation for NOS
4 at its highest level yet, \$606 million.

5 The programs under the purview of the
6 HSRP generally received level funding or modest
7 increases over the previous years so that's a
8 very good thing. And the President's FY21
9 proposed budget was released in February.

10 And that kicks off next year's
11 appropriation process. However, given possible
12 delays due to COVID-19, I would be surprised if
13 we had an FY21 budget enacted before the
14 election.

15 You may have heard about COVID
16 supplemental funding. That's been mainly focused
17 on individuals and businesses and not federal
18 agencies.

19 That said, NOAA has received a small
20 amount of supplemental funding related to IT and
21 continuing operations remotely and via telework.
22 There is some talk among Congress about recovery

1 funding to support infrastructure.

2 If Congress goes forward with a
3 supplemental that supports U.S. infrastructure
4 and jobs we are ready with ideas to put people to
5 work.

6 The US Marine Transportation System
7 information structure has plenty of areas that
8 would benefit from job creation and economic
9 investment, whether in precision navigation and
10 activities like hydrographic surveys, shoreline
11 mapping, geodetic modernization and water level
12 network requirements.

13 And if there's been a silver lining
14 related to COVID-19 in the maritime industry it's
15 perhaps that this whole experiment has shown us
16 how important the maritime industry is to the
17 American people and to the U.S. economy for
18 getting critical goods like food and PPE to
19 stores and into the hands of those who need them
20 most. In that regard, I'd like to echo Ed Kelly's
21 comments expressing gratitude for those working
22 on ships and on the docks to keep our supply

1 chains going.

2 And with that, I'd like to thank
3 everyone who is here in attendance. I'm looking
4 forward to the discussions this afternoon.
5 Mahalo nui and thank you very much.

6 CHAIR SAADE: Thank you, Nicole.
7 Great stuff, really appreciate it. We'll move on
8 to Dr. Jacobs. It's your first time here joining
9 us directly.

10 Looking forward to your statements and
11 what you're going to present. Thank you. Go
12 ahead, please.

13 DR. JACOBS: Well, thank you. It's
14 great to be here. Good afternoon, everyone. I
15 am excited that I'm not wearing a suit although
16 I'm a little disappointed I'm not in Hawaii.

17 A big shout out to Nicole, Admiral
18 Smith, Ed and the rest of the leadership and
19 folks here. What you're doing is incredibly
20 impressive.

21 Obviously, everyone has been aware of
22 the COVID challenges that we've been faced with

1 at NOAA. I can't tell you how proud I am of the
2 agency for just moving forward as if almost
3 nothing happened.

4 Most everyone is teleworking. But we
5 haven't really slowed down our mission. I'm
6 really looking forward to getting back. I know
7 that personally I'm looking at a new work-life
8 balance.

9 I'm actually in my backyard right now
10 because my kids are inside screaming so I may
11 have to talk over some dogs and some birds. The
12 message that I've been sort of pushing down
13 through the agency is really to set expectations
14 on productivity, particularly when you've got a
15 lot of family and other issues to deal with at
16 the same time.

17 It's just not realistic to expect to
18 maintain that same level of productivity and
19 setting goals too high and not achieving them is
20 just frustrating. Other than that, it's mainly
21 been focused on making sure everyone puts their
22 family first and staying happy and healthy.

1 That's a top priority.

2 It is nice to see a couple familiar
3 faces. This is my first, I guess, official HSRP
4 but I did poke my head to the one in Miami.

5 A lot of you were at the PORTS
6 dedication in 2018. Some other folks here I
7 think I've crossed paths with in D.C.

8 I'm probably known as the weather
9 modeler or the weather forecaster, but I grew up
10 along the coast. Almost my entire life revolves
11 around the ocean.

12 My two favorite hobbies are surfing
13 and fishing. I got into surfing basically as a
14 kid back in the early 80s.

15 And of course, if you want to know
16 when the waves are going to be good, you have to
17 understand how to forecast the weather, the
18 tides. You have to understand bathymetry.

19 There's a lot of things that go into
20 trying to figure out when the waves are going to
21 be good. And of course, on the East Coast
22 they're almost never good.

1 So, I ended up really spending a lot
2 of time doing recreational fishing both inshore
3 and offshore. I've spent a lot of time in the
4 Charleston area and Outer Banks area working as a
5 guide.

6 I grew up in Miami fishing both
7 offshore and in the mangroves and the Everglades
8 down there. And then before I finished high
9 school moved to Charleston.

10 So, for Nicole Elko -- I realize there
11 is more than one Nicole in this webinar here -- I
12 actually grew up right at the end of James
13 Island, last street on the left before you get to
14 Folly.

15 I went to grad school at NC State. My
16 Assistantship was actually funded under the DOE's
17 Ocean Margins Program. I worked with Len
18 Pietrafesa there in the early 90s looking at
19 carbon cycle along the continental margin.

20 So, this was mostly southern mid-
21 Atlantic bite between Cape Hatteras and the
22 Chesapeake. We noticed a lot of strange behavior

1 with the Gulf Stream.

2 It was really, tends to do a lot of
3 meandering once it gets off of North Carolina.
4 And a lot of this has been traced back to a
5 feature some of you are probably familiar with
6 called the Charleston Bump.

7 It ends up deflecting a lot of the
8 currents causing some of these meanders and
9 eddies.

10 My interest at that point transitioned
11 over to how it influenced weather forecasting
12 because the sea surface temperature thermal
13 gradient of the western boundary of the Gulf
14 Stream, when it would move to the west and back
15 up against the coast line there would be a
16 tremendous thermal gradient which would really
17 drive the heat fluxes and extratropical
18 cyclogenesis.

19 So, that's what I ended up doing my
20 PhD work on. I've also spent a fair amount of
21 time on the Ron Brown and the Sagar Kenya during
22 the INDOEX experiment.

1 My point in telling you this is so
2 that you know that I've not only professionally
3 benefitted from the work that everyone here has
4 done, but I've also personally benefitted from
5 it.

6 So, I just really want to make sure
7 everyone knows how much your work matters,
8 especially along with the work within NOAA.
9 We've got OCS, CO-OPS, NGS. These are all
10 critical to our blue economy and our nation.

11 We have a lot of programs that I'm
12 sure you're aware of, some of them will be
13 discussed later today. But these are all great
14 examples of public-private partnerships.

15 This is obviously very critical data
16 when it comes to emergency response, whether it's
17 in situ or remotely sensed observations. There's
18 a lot of different applications.

19 But I just wanted to give one that
20 sort of came to mind. It was my last trip before
21 COVID basically shut down all my travel.

22 I had gone down to Miami and I was met

1 with some folks at the Hurricane Center and then
2 ended up going out fly fishing with Jamie Rhome
3 who works at the Storm Surge unit there. And we
4 were fishing a lot of these canals in South
5 Florida that dump out into the ocean.

6 And right before you would get to the
7 end of the canal he was explaining to me that
8 there's these gates. And the challenge that they
9 have when they're trying to forecast inland
10 flooding versus storm surge is do you put the
11 gates up or down, because if you leave them up
12 the surge comes in.

13 But if you leave them down the
14 flooding can't escape. And the concern was well,
15 if you lose power you might lose the ability to
16 move the gates up or down.

17 So, there's obviously a lot of
18 challenges we have. One of the things that I've
19 been trying to work with the agency on is really
20 coupling our storm surge model capability with
21 our inland flooding.

22 We saw this with Harvey. We saw it

1 again with Florence. When you have sustained
2 onshore flow piling up the water while the storm
3 is dumping rain measured in increments of feet
4 and the water can't drain offshore because of the
5 onshore flow, it creates a real flooding
6 challenge.

7 Obviously we're going to be discussing
8 the Presidential Memo. The only thing I wanted
9 to mention on this is the fact that we have a
10 Presidential Memo on ocean mapping should tell
11 everyone what a high priority this is for the
12 administration.

13 And the bottom line is we can't do
14 this without your guidance. So, we're continuing
15 to advance science and tech. We've got several
16 artificial intelligence and machine learning
17 initiatives.

18 We've got quite a few unmanned systems
19 both underwater and in the air. Many of these
20 applications have hydro and nav service activity
21 and interest there.

22 But as we see that when we are faced

1 with this ability to collect a tremendous amount
2 of data, we do want to be aware of a potential
3 bottleneck in how we store and manage the data
4 and manage the metadata.

5 So, we started out with a pilot
6 project called The Big Data Project a few years
7 ago. And this is something that we've been
8 working with a lot of cloud service providers to
9 store this data.

10 And there's a shared interest here.
11 So, the private industry really wants access to a
12 lot of this data and they want access to it as
13 fast as they can get it. We as an agency would
14 love to store more data. And of course, compute
15 storage is not cheap.

16 But the interest in the private
17 industry for acquisition to this data and
18 processing of this data is incentivizing the
19 cloud service providers to give us a very nice
20 deal with storage because without the ability to
21 store the data no one is going to have access to
22 it.

1 Again, this is another great example
2 of public-private partnerships. So thanks for
3 all your recommendations, especially at the
4 August meeting.

5 We are listening. Of particular
6 interest, obviously PORTS. This is going to be
7 really critical going forward especially when we
8 start to spin the economy back up.

9 The National Spatial Reference System,
10 precision nav, strengthening the Weather Service
11 connections, not just with what I just mentioned
12 with flooding and surge but just general
13 forecasting.

14 There's a lot of work we're doing
15 there, particularly engaging with other partners
16 like USGS when it comes to elevation and stream
17 gauges and things like that, the Army Corps of
18 Engineers, the Coast Guard.

19 Anyway, I can't overstate how much
20 value the work you do is providing not just us
21 but the entire global community and the economy.
22 So, thank you very much.

1 I'm going to be on the call for as
2 long as I can. I do have a hard stop slightly
3 after 4:00. Thanks.

4 CHAIR SAADE: Thank you, Dr. Jacobs.
5 That's really great, really inspiring.
6 Appreciate it. Before we move on, I also wanted
7 to acknowledge that Admiral Gallaudet is
8 listening and will at some point hopefully make
9 some comments.

10 And now, I get to turn it back over to
11 Shep Smith so he can get us back on schedule.

12 RDML SMITH: I'll do my best. I will
13 skip over some of the reading of the words on the
14 slides and leave that to everyone's very good
15 reading abilities.

16 So, this first panel is on an ocean
17 mapping moment of big ideas. This has been
18 referenced a few times already with the
19 Presidential Memorandum in the fall.

20 But also, tied into some global
21 initiatives and some at the office level. So, I
22 have a few slides. Are those going to come up?

1 All right. Next slide, please. So I
2 think of all of these things as neatly nested,
3 although they weren't done sequentially.

4 Really of all of these Seabed 2030 has
5 been going the longest, followed shortly
6 thereafter by a UN initiative on a decade of
7 ocean science which incorporated the goals of
8 Seabed 2030 into a broader set of ocean
9 initiatives.

10 And then in the fall we had the
11 Presidential Memorandum which will lead to an
12 ocean mapping strategy for the United States.
13 And the Office of Coast Survey, my office, has
14 really already completed but we're waiting for
15 the national strategy to be released so that we
16 can release an office level plan that is well
17 aligned with it.

18 Next slide, please. A big part of
19 this is you can't do this enterprise of mapping
20 the global oceans without a gigantic coalition.

21 This was recognized decades ago by the
22 coastal -- and the creation of the interagency

1 Integrated Ocean and Coastal Mapping Program
2 within NOAA and the commensurate, the Interagency
3 Working Group on Ocean and Coastal Mapping which
4 is the cross-agency group.

5 So, this was all laid down in law
6 about 15 years ago. In a way that is still
7 evolving, all of these buzz words on this slide
8 are coming into alignment.

9 But one of the things that we really
10 need to do to finish that alignment is to update
11 the OCMIA which authorized the IOCM program. So,
12 the Ocean Coastal Mapping Integration Act has not
13 been authorized since, reauthorized since 2009.

14 Technically expired in 2015, but
15 continues, the program continues to follow its
16 direction. NOAA is suggesting to the HSRP that
17 this could be a good time to review this
18 legislation and the Presidential Memorandum could
19 provide a really good opportunity for much needed
20 attention and momentum on authorization.

21 There are the -- I'll be talking a
22 little bit more about the Presidential Memorandum

1 here in a moment. But integral to that, to the
2 national strategy is a whole lot of coordination
3 between agencies.

4 And this, the OCMIA provides one of
5 the mechanisms for that coordination. One of the
6 missing pieces is the ability to better expend
7 and receive funds between agencies in order to be
8 able to do joint projects and to facilitate
9 partnering.

10 Next slide, please. So, really the
11 Presidential Memorandum directed the agencies to
12 complete a national strategy for mapping the U.S.
13 EEZ and to complete an Alaska coastal mapping
14 strategy.

15 So, really the Presidential Memorandum
16 directed us to develop these strategies. NOAA
17 had a big role in both.

18 I was the co-chair along with Dr. Alan
19 Leonardi of the Ocean Exploration Program of the
20 group that developed the national strategy for
21 ocean wrapping, exploration and characterization.
22 Next slide.

1 And Ashley Chappell and others were
2 heavily involved in the Alaska mapping strategy
3 as well.

4 So, this is Section 2. The group on
5 the national strategy for mapping exploration
6 characterization consisted of representatives
7 from NOAA, BOEM, USGS, et cetera, many agencies.

8 And we worked very hard to honor the
9 original intent of the Presidential Memorandum,
10 but also to incorporate as many coordination
11 functions and existing authorities and
12 organizations as we could into the national
13 strategy so that we would be able to build on the
14 momentum we've had for the last decade.

15 Next slide. There are really four
16 goals. These are paraphrases of the real
17 document which won't be released until July and
18 is undergoing White House review now.

19 But the first goal is to coordinate
20 interagency efforts and resources toward mapping,
21 exploring, and characterizing. Our second goal
22 is to actually do the mapping and by mapping, we

1 really are talking about seabed mapping that we
2 will characterize the success of the program in
3 terms of seabed mapping, but recognizing that any
4 major campaigns for mapping also will provide the
5 opportunity for other baseline-type observations
6 both of the seabed and of the water itself, and
7 potentially some biological and chemical
8 signatures as well.

9 The third goal is to explore and
10 characterize priority areas of the US EEZ. These
11 priority areas are both geographic and thematic.

12 So, for instance, on the slide a few
13 slides back called out the Executive Order on
14 critical minerals. That is clearly a national
15 priority. But is really one that is a thematic
16 priority, not a geographic priority.

17 In addition, there are geographic
18 priorities for characterization depending on the
19 different regions as well. In order to do all
20 this, we recognize that we can't -- the goals
21 that we set out in the national strategy really
22 cannot be achieved using current technology.

1 We set goals that really only -- we
2 can only achieve through the development of new
3 and emerging science and technology.

4 And in this space, we certainly
5 highlighted the opportunity for unmanned systems,
6 unmanned maritime systems, artificial
7 intelligence, improvements in communications
8 technology as a result of the new satellite
9 communications constellations that are going up
10 and continued improvements in both sonar and
11 lidar mapping.

12 And lastly, we recognized and there
13 was a really powerful summit that was held in
14 November at the White House on partnerships with
15 commercial and not-for-profit and philanthropic
16 organizations on coordinating our efforts.

17 This is a very compelling field and
18 there's an opportunity for real discovery that
19 has some commercial and scientific value and
20 there is quite a few partners that could
21 reasonably be expected to be contributors to
22 this.

1 And so, we've come up with some
2 structures for that coordination as well across
3 all the sectors. Next slide, please.

4 In order to do this in a reasonably,
5 in order to have a reasonably consistent product
6 when we're done we need to have some reasonably
7 consistent approaches to doing the work. As all
8 of you know, ocean mapping can be done in a
9 variety of ways for a variety of applications.

10 In order to meet the goal of mapping
11 once and using many times, we each have to do a
12 little bit more than the narrow requirements of a
13 specific application both geographically and in
14 the way we handle the data to provide access to
15 the data, coordinate it with other groups, et
16 cetera.

17 So, we've envisioned a Standard Ocean
18 Mapping Protocol which would be updated every few
19 years and would take advantage of new technology
20 as well and drive standardization across many
21 programs. Next slide, please.

22 Coordinating and executing campaigns.

1 In order to do this efficiently it's not going to
2 be possible to do little postage stamps at a
3 time. We really need to execute regional
4 campaigns so that large areas are mapped in a
5 coordinated fashion using similar technology and
6 then we'll have a much more, not only more
7 efficient execution of the campaigns but also
8 more consistent result when we're done.

9 But we do need to, as a first step
10 catalog and analyze all existing data and seek
11 out as much data as we can, get access to
12 commercial data when that's possible, certainly
13 get it from other government agencies and to be
14 able to have a solid foundation for what we have.

15 Dave Maune already mentioned the 3D
16 Nation Requirements and Benefits Study. This
17 will help us to justify a fairly significant cost
18 for doing this mapping in terms of a wide variety
19 of applications.

20 I'm glad Dr. Jacobs mentioned ocean
21 circulation. That's often one that is forgotten
22 when we talk about the value of bathymetry. But

1 understanding global circulation patterns is
2 absolutely critical for forecasting our climate
3 changes over the decades ahead.

4 And we also need to be in a position
5 to track and report on progress going forward and
6 I'll come back to that later this morning, later
7 this afternoon. Next slide, please.

8 We have a mapping priorities exercise
9 already in work through the IWG-OCM program that
10 has really shown some good merit and has already
11 led us to some great interagency projects. Next
12 slide, please.

13 So, it says as an example this is an
14 Alaska example. But looking at all of these
15 different cells, different applications can use
16 these cell maps and be able to do some forced
17 choice prioritization for the areas that are
18 needed for those different programs. And to do
19 that on a regional basis. It would be very
20 difficult to compare, do a relative value
21 comparison of a piece of Arctic seafloor that's
22 never been mapped to a busy waterway some place.

1 So, I think that we need to really
2 have a regional way of thinking about
3 prioritization. Next slide, please.

4 Nicole will come back to Section 3
5 here in a moment. But this is the section on
6 mapping near coast of the nearshore and coastal
7 Alaska. Next slide.

8 Then the fourth section is really
9 aimed at efficiency of the regulatory
10 environment, reducing duplication, promoting
11 efficiency across agencies to increase permitting
12 and authorization efficiencies for this work
13 specifically.

14 And this is underway, as well. But we
15 won't be talking too much more about this today.
16 Next slide.

17 All right. And with that I will turn
18 it over to my boss, Nicole LeBoeuf, to walk us
19 through Section 3 on Alaskan coastal mapping.

20 MS. LEBOEUF: All right. Thanks,
21 Shep. Aloha again. I am back briefly to talk
22 about Section 3 of the Presidential Memorandum.

1 As Shep indicated, this is all about Alaska and
2 the need for comprehensive shoreline and
3 nearshore maps which are less available for
4 Alaska than elsewhere, as we know.

5 Similar to the work Admiral Smith has
6 been doing in support of the strategy in Section
7 2, it has been an exciting few months for us
8 working on Section 3.

9 I will just say from the outset I'm
10 incredibly proud of NOS staff and from the staff
11 to the leadership level for co-leading Section 2,
12 for leading Section 3 and for leading Section 4
13 of the Presidential Memorandum.

14 As Neil intimated earlier, just having
15 a Presidential Memorandum on anything ocean is
16 very exciting and it's an honor for NOS to be in
17 the thick of things.

18 So, Section 3 directs the agencies to
19 complete a strategy for mapping the Arctic and
20 sub-Arctic shoreline and nearshore of Alaska.
21 And it is to be led by NOAA coordinated with the
22 State of Alaska and the AMEC, or the Alaska

1 Mapping Executive Committee.

2 If you've not heard of AMEC before it
3 is essentially 15 organizations federal and state
4 that coordinate their efforts to map Alaska. And
5 until recently they have been primarily focused
6 on terrestrial mapping.

7 But when NOAA stepped up to co-chair
8 the AMEC with USGS, AMEC started to shift its
9 focus a little bit more toward coastal mapping.
10 Admiral Timothy Gallaudet is our co-chair from
11 NOAA.

12 He co-chairs AMEC with the USGS
13 Director, James Reilly. And having them at the
14 helm has been extremely helpful in getting some
15 coastal work going there, as has been the
16 Presidential Memorandum.

17 So, we worked with the State of
18 Alaska, AMEC, as well as the Alaska Ocean
19 Observing System and others to draft a coastal
20 mapping strategy per the memorandum.

21 We were somewhat ahead of the game
22 because NOAA, the State of Alaska and AOO, the

1 Alaska Ocean Observing System, had already been
2 thinking about Alaska coastal mapping strategy.
3 So, we were able to build from that work when the
4 Presidential Memorandum was released.

5 Section 3's draft strategy like
6 Section 2 is also at the White House for review.
7 So, there is not a lot that I can do in terms of
8 giving you some specifics.

9 I can say that the strategy will
10 provide foundational geospatial data and maps and
11 that the coast of Alaska by 2013, I'm sorry,
12 2030.

13 As you saw on Shep's previous slide,
14 we do have some high level goals in the strategy
15 which I will share with you. The first is we
16 will build on existing mapping partnerships to
17 meet Alaska's coastal mapping needs.

18 We will expand coastal data collection
19 to deliver priority geospatial products that
20 stakeholders require. We will leverage
21 innovation and mapping technology development and
22 we will conduct strategic communications to

1 promote widespread stakeholder engagement.

2 With regard to the Presidential
3 Memorandum as a whole, as you've heard, NOAA has
4 been front and center in the implementation of
5 this document.

6 I want to give shout outs to Rear
7 Admiral Smith and Alan Leonardi for their work on
8 Section 2, Ashley Chappell for her work on
9 Section 3, and other key staff at NOS for
10 overseeing NOAA's implementation of the entire
11 Presidential Memorandum's implementation on
12 Section 4 having to do with the streamlining of
13 regulatory requirements.

14 All three drafts are with the White
15 House for review. We expect the final versions
16 to be released in late spring, potentially early
17 summer and maybe even in conjunction with Capitol
18 Hill Oceans Week.

19 We will just have to see how that
20 goes. I want to thank you again for your
21 attention to my digital likeness and I would be
22 more than happy to answer any questions if there

1 is time available.

2 If not, thank you all for your
3 attention. That's it.

4 RDML SMITH: I think we would like to
5 hold the questions until the end of the three
6 presentations. I'm going to try to make up a
7 little bit of time here as well.

8 This next section is on the gap
9 analysis or progress report that we published a
10 month or so ago, or really maybe two months ago
11 now. We were still in the office then. And but
12 is really the third annual update to the national
13 gap analysis for bathymetry. Next slide, please.

14 You all have probably seen these types
15 of maps. This is a particular variant that has a
16 depth range in it. So, you can get at a quick
17 glance the red areas are less than 200 meters of
18 water that are unmapped.

19 So, that is a huge level of effort in
20 those areas. In a tabular form, next slide,
21 please, this is not in the report but I think
22 it's a really important and somewhat sobering

1 look at how big a challenge this is.

2 For those of you that are kind of ship
3 people this is a level of effort, you know, in a
4 ship year and I would have to dig into exactly
5 what that is or read the paper. But it's a level
6 of effort.

7 But if you look at the depth ranges
8 from, you know, from five to 20 meters, 39
9 percent. Up to 40 meters gets us to 65 percent.
10 Up to, you know, to 200 meters 97 percent.

11 So, 97 percent of the level of effort
12 of getting the US EEZ mapped is in less than 200
13 meters of water. Only three percent or so in
14 deeper than 200 meters of water.

15 So, when we think about, you know,
16 what type of technology we need to be developing
17 in order to get this whole project done, we need
18 to be really focusing on that 200 meters and
19 shallower.

20 By the time we invent some fancy thing
21 to do the deep water we'll be done with it. Next
22 slide, please.

1 This is just an excerpt from the
2 progress report. The sort of big news is that,
3 you know, over the course of the last three
4 years, from 2017 actually through 2019 so really
5 two years, we went from 59 percent unmapped to 54
6 percent unmapped.

7 That's actually quite a -- that's five
8 percent of the US EEZ mapped in that time. A
9 large portion of that however, is just getting
10 the data out of various shoe boxes and into the
11 public domain.

12 And a lot of that is from federal
13 agencies, even other programs within NOAA. And
14 it's broken down by region.

15 It's worth noting that the least
16 mapped, by this definition, the least mapped
17 region of the United States is the Great Lakes.
18 And it's in worse shape even than Alaska. Next
19 slide.

20 This is just, you know, some of the
21 techniques for how to do it. So, this is all in
22 a slick little report that we put out a couple

1 months ago and plan to update at least annually,
2 maybe twice a year. Next slide.

3 And that's it. So, with that, Ed,
4 I'll turn it back to you entertain any questions
5 if you see that we have time.

6 CHAIR SAADE: Thanks, Shep, Nicole.
7 Really appreciate it. In the interest of time
8 we'll go to questions a little bit later when the
9 HSRP wrap-up is going on.

10 I want to take a break here in a
11 moment. Take a moment just for Anne to go ahead
12 and introduce yourself. Anne, if you're ready,
13 Anne.

14 MEMBER MCINTYRE: Can you hear me now?

15 CHAIR SAADE: Yes.

16 MEMBER MCINTYRE: Great, okay.

17 CHAIR SAADE: So, go ahead. We'll --

18 MEMBER MCINTYRE: I am the business
19 director for the San Francisco Bar Pilots and a
20 recently retired 23 career years as a maritime
21 pilot on the Columbia River.

22 What I bring to the Panel is expertise

1 in precision navigation and use of NOAA services
2 such as the PORTS system.

3 So, excited to be here today and to
4 learn more about areas that I don't have a lot of
5 expertise and I'm looking forward to meeting all
6 the new members when we actually get together in
7 person.

8 Sorry for my technical difficulties
9 earlier.

10 CHAIR SAADE: Thank you, Anne. And I
11 believe we also have Admiral Gallaudet. If
12 you're available could you go ahead and do a
13 little bit of intro?

14 MS. STODDARD: I believe that Admiral
15 Gallaudet may be self-muted or no, it looks like
16 he's able to speak now.

17 Admiral Gallaudet, can you hear us?
18 Can you speak?

19 MS. MERSFELDER-LEWIS: Admiral
20 Gallaudet, we're having a hard time with the
21 audio. If you want to try again.

22 MS. STODDARD: I'm not sure if he's

1 available at this moment. Maybe we can come back
2 to him after the break.

3 CHAIR SAADE: Okay. So, I am going to
4 let everybody know we're going to be in a pause
5 here for about five minutes and we'll get right
6 back into it.

7 So, thanks. We're up to 270
8 participants. So, this is an incredible
9 achievement for all of us. So, see you. Thanks.

10 (Whereupon, the above-entitled matter
11 went off the record at 2:27 p.m. and resumed at
12 2:35 p.m.)

13 CHAIR SAADE: Okay. So, we are --
14 Lynne, correct me if I'm wrong. But we are ready
15 for the next presentation with Andy and Larry and
16 Rich and Juliana.

17 MS. MERSFELDER-LEWIS: Correct, Ed.

18 CHAIR SAADE: Okay. So, without any
19 more delay, Dr. Mayer and Captain Andy Armstrong,
20 over to you guys. We missed you last time.

21 DR. MAYER: Well, thank you very much.
22 We missed you guys too. But I'm sure we were

1 doing something also very important.

2 Let's see if this works now. Do you
3 want my camera on or not?

4 MS. STODDARD: Yes, you can turn it
5 on. I sent you a camera request.

6 DR. MAYER: Yes, and I did and it shut
7 right off. Okay.

8 MS. MERSFELDER-LEWIS: There you go,
9 perfect.

10 DR. MAYER: Okay.

11 CHAIR SAADE: It's strange seeing you
12 sit down to present.

13 DR. MAYER: It's very difficult
14 actually for me to do that. One of the down
15 sides of this.

16 So, what I'm going to do is kind of
17 briefly give an update on where the Center is
18 with respect to our autonomous vehicle
19 activities. We have many activities but this is
20 one focus.

21 And I think you all heard a report
22 last time, next slide, please, from Neeraj on our

1 behalf in terms of where we were. But what I've
2 been asked to do is before I go there is to just
3 briefly touch on some of the potential impact of
4 the pandemic on us.

5 And as I mentioned earlier, we've been
6 relatively fortunate in terms of our ability to
7 maintain our research work and our analytical
8 work. We were quite prepared due to the
9 competence of our IT group to move efforts out of
10 the lab and to home offices.

11 Classes continue at the university
12 although all the teaching is online and we've
13 been able to adjust to that quite readily. The
14 one impact that it had on our classes would be
15 our summer field program.

16 That will have had about
17 three-quarters of that course with impact. The
18 one part is the actual field acquisition with
19 regard to students with data collected last year
20 so they'll be able to go through the motions.
21 And we actually have some opportunities for field
22 work further down the line should we be allowed

1 to do that.

2 The other impact is GEBCO Scholars
3 which are a group of international scholars. That
4 program continues but they all have to get visas
5 and they are uncertain whether their visas will
6 come back in time for them to start in September.
7 So, we'll have to keep an eye on that.

8 As I said, our research activities
9 continue with everybody working from home. The
10 one area that has had impact is on our ASV lab
11 where they really do have to get their hands on
12 the equipment.

13 But they have been doing an awful lot
14 of software writing and our machine shops have
15 obviously come to a halt except that our
16 machinist happens to have a shop at home and he
17 continues to do things, which is quite
18 remarkable.

19 We have already had an early summer
20 field program at Thunder Bay National Marine
21 Sanctuary cancelled. That's been deferred to
22 later on.

1 And the other impact that we suspect
2 will happen is our Annual Site Review is
3 scheduled for the 14th to 16th of July. We
4 haven't canceled it yet but we suspect that most
5 likely we'll conduct that in a virtual meeting.
6 Next slide.

7 So, you heard hopefully at the last
8 meeting Neeraj kindly presented an update on our
9 activities, the use of our four meter C-Worker
10 vehicle from the Fairweather off Point Hope,
11 Alaska, some work we did up the Channel Islands
12 Marine National Sanctuary where we were able to
13 use the vessels in very hazardous conditions
14 right up against the shoreline and the work that
15 we did at Thunder Bay National Marine Sanctuary
16 which was a nearshore based operation that we
17 operated up to 20 to 24 kilometers off shore.

18 We also at that time just took a
19 delivery of a DriX vessel which is a
20 purpose-designed for hydrographic acquisition
21 wave piercing vehicle. And we started to play
22 with that at New Hampshire when you heard the

1 report in New Orleans. Next slide, please.

2 Since that time we've used both those
3 vehicles in earnest. We had an exciting
4 expedition on the Nautilus and this was part of a
5 search for Amelia Earhart. But what we were doing
6 is using the C-Worker inside the coastal waters
7 where the larger vessel, the Nautilus couldn't
8 get safely in.

9 And we basically, through a
10 combination of using drones for the very
11 shallowest water and the island using the ASV for
12 the rim around the island of zero to 500 meters
13 or so and then the deep water multibeam on the
14 Nautilus we're able to get a shore-to-deep water
15 complete map in a very, very efficient manner.

16 I think developing those kinds of
17 protocols is going to be very important as we
18 move out to the Pacific Islands and are able then
19 to complete the entire mission from one platform
20 all at once in an efficient way. Next slide,
21 please.

22 The other big operation has been

1 pushing forward on the DriX, which again I think
2 we see as a very seaworthy hydrographically
3 designed vehicle. We've had it operate up to 12
4 knots without any degradation of data which is
5 really spectacular.

6 And so, here with remarkable
7 cooperation from the crew and captain of the
8 Thomas Jefferson it went through a series of
9 first dockside trials where the davits on the TJ
10 were modified to handle the launch and recovery
11 system of the DriX.

12 Went through a lot of testing and then
13 finally up to the big days of field trials and
14 approaches to Chesapeake Bay off Back Bay, I
15 think. Next slide.

16 We were privileged to have the first
17 real in earnest trials next, I think if you click
18 see what happens. Yesterday we had Admiral Smith
19 helping Captain Welton there direct the vessel.
20 And you can see on the slide on the right there's
21 actually Admiral Gallaudet directing the ASV
22 operations.

1 But the bottom line is after a lot of
2 hard work done on the crew's part and the DriX
3 team's part and I think both Admiral Gallaudet
4 and Admiral Smith were, really it was a very
5 boring day because everything worked perfectly.
6 The vessel just launched beautifully. Next
7 slide. Went out, did its survey. Surveyed for a
8 few hours, parroted the data back, data came back
9 beautifully, came back, swam automatically to its
10 recovery system and came on board. So, it really
11 worked nice. And I think we all went home that
12 day very, very excited about the potential for
13 these sorts of systems. Next slide.

14 It gave us some ideas though. And
15 that was, how do we take that really intriguing
16 launch and recovery system which is like a rib
17 sort of vehicle and maybe we can make it more
18 universal with its application?

19 And so, what we've done is now
20 designed what we call a Universal Delivery
21 System. So, the DriX as you can see sits on the
22 bottom half.

1 And this top half comes and snaps down
2 on it for launch and recovery. Next slide. But
3 at the same time you can put an insert in there
4 for any sort of autonomous underwater vessel or
5 other vehicles, hybrid vehicles too.

6 We're getting them designed for the
7 myriad hybrid vessel too. So, what we then have
8 is if you go to the next slide the opportunity on
9 a very small deck space to be able to launch and
10 recover multiple vehicles.

11 And so, here this is a configuration
12 that would fit on Okeanos Explorer. This is for
13 the Nautilus in this case, but almost any vessel
14 of that size.

15 This is just one quarter. So, the ROV
16 operations are launched from the rails on the
17 other side. Next slide.

18 You can basically, pick up the DriX in
19 this case. Next slide. It's going to be like a
20 cartoon so you just click, click, click.

21 Launch the DriX. It goes off, come
22 back. Snap down and recover the autonomous

1 underwater vehicle. Go ahead, keep going.

2 Click, click, click.

3 Pick up the autonomous vehicle. Let
4 it go and now you have both vehicles, okay, stop
5 at that point, thank you.

6 And what this then provides the
7 opportunity is this really opens up a very
8 exciting world of ASV-AUV collaboration where we
9 can now through optical modes start communicating
10 between the autonomous underwater vehicle, the
11 AUV which becomes a relay and can now transport
12 high bandwidth data to the mother ship or even to
13 the shore.

14 So, it really opens up a very exciting
15 world. And this is something we hope to be
16 exploring in the next couple of years. Real high
17 bandwidth communication between the underwater
18 vehicle and the surface vehicle.

19 And when we talk about things like
20 characterizing it opens up a tremendous new
21 capability. Next slide, please.

22 Now, the final point I want to talk

1 about is another project we're involved in which
2 is, it's called the Saildrone SURVEYOR. I think
3 many of you are familiar with the small
4 Saildrones that have been very successfully
5 deployed on a number of NOAA missions.

6 What this is is a Saildrone on
7 steroids. It's 72 feet long. You can see a
8 little man standing there for scale and I'll show
9 you in a minute that's not an exaggeration.

10 This is a vehicle that can carry a
11 large deep water multibeam system, it will carry
12 a large deep water multibeam system and many
13 other both acoustic systems for shallow water
14 mapping and water column mapping, a full
15 environmental suite, including an eDNA system.

16 So, it has capability of truly being
17 a characterization system. Next slide, please.
18 To show this is not just a dream this is -- there
19 are a range of environmental sensors that might
20 be on there. The sonars that are on there, the
21 EK80s, EM2040, EM304, and the MBARI eDNA sampler
22 and then a range of other environmental sensors.

1 Next slide.

2 We were hoping to get this in the
3 water in May. But the COVID crisis has slowed it
4 down a little. And so, we're looking at a launch
5 in July.

6 Here you can see it for scale next to
7 the other Saildrone. One more slide, please.

8 And there next to a person you can see
9 how very, very large this is. So, we're very,
10 very excited about it.

11 Final slide, our research goes beyond
12 just operating the vehicles. It's how to operate
13 the vehicles and how to go from unmanned systems
14 -- what I've been describing, none of them are
15 truly autonomous now but all unmanned and
16 supervised.

17 But we're doing a lot of research in
18 the lab to try truly understand that transition
19 to autonomy looking at things like using chart
20 information to feed into the autonomous vessel,
21 having decision systems, having the vessel use
22 machine learning and artificial intelligence.

1 Is somebody asking a question? Okay,
2 I'll just keep going. Artificial intelligence
3 and recognizing objects and recurring behaviors
4 that respond to that.

5 Then the last slide, please. Beyond
6 that then taking that data, using the local
7 visualization lab with respect to augmented
8 reality and virtual reality and start trying to
9 design a truly autonomous operating center where
10 the operators can get the full environment from
11 the autonomous vessel.

12 I think I'm going to stop there. And
13 I hope I didn't use too much time.

14 CHAIR SAADE: Great job. Is Andy up,
15 Larry, or is this the end of the presentation?

16 DR. MAYER: This is the end of the
17 presentation.

18 CHAIR SAADE: Okay. We'll have some
19 questions later. Riveting, as always, very
20 exciting. Next up is Rich Edwing.

21 MS. BLACKWELL: No.

22 CHAIR SAADE: Is Juliana Blackwell.

1 MS. BLACKWELL: Hello. Right on cue
2 my dog is barking. So, sorry about that.
3 Hopefully he'll calm down.

4 Greetings, everyone. It's a pleasure
5 to be able to update you on activities related to
6 the National Geodetic Survey.

7 In particular, recent activities
8 having to do with the modernization of the
9 National Spatial Reference System and with our
10 coastal mapping program. Next slide, please.

11 So, as I've updated the Panel many
12 times in the past about our progress and happily
13 be able to say that we've been keeping up with
14 things and making everything stay on track.

15 Unfortunately, even a little bit
16 earlier this year we had to stop and take a look
17 at how things were going and analyze our
18 operations, our workforce and some of the other
19 issues that we've all been challenged with and
20 saw that because of these things and how they're
21 compounding we need to reevaluate whether or not
22 a successful rollout of our modernization effort

1 in 2022 is even feasible at this time.

2 Full disclosure, this was something
3 that we had been talking about earlier this year
4 before we had the pandemic. So, these things are
5 compounding even moreso.

6 I can't really give you a date at this
7 point in time or, but I do want to just let you
8 know that I'm going to continue to update HSRP
9 and we're going to continue to work on messaging
10 once we have a better understanding of how this
11 is going to play out.

12 In the meantime, for those of you who
13 are not familiar with our NSRS modernization
14 effort or for those who are interested in updates
15 in between HSRP meetings, I invite you to track
16 our progress by clicking and signing up for NGS
17 News or visiting our New Datums web pages.

18 Next slide, please. I'm pleased to
19 say that we have accomplished a few things since
20 our last meeting and I want to highlight those
21 here on this slide.

22 The first is that we completed the

1 evaluation of our third and likely final Geoid
2 Slope Validation Survey. The work was conducted
3 in 2017 in mountainous areas out in Colorado.

4 And this was the third in a series of
5 areas that we did a various number of geodetic
6 measurements on and did a huge amount of analysis
7 on and invited others to look at the data as well
8 and compare it.

9 I'm pleased to say the results of
10 these validation surveys give us the confidence
11 that we will be able to deliver a one centimeter
12 differential geode accuracy in coastal regions, a
13 two centimeter accuracy in the Great Plains, and
14 a three to five centimeter accuracy range in the
15 Rocky Mountains when we are finished with our
16 project and our modernization effort.

17 So, that's great news. The second
18 item is again just knowing that we were starting
19 to slide a little bit with some of the data
20 collection and some of the partnership efforts
21 due to some events from last year including the
22 shutdowns, we've already conducted a very

1 comprehensive review of the different projects
2 that are very integrated and necessary for the
3 modernization effort.

4 So, we've taken a look at those and
5 we've looked at how we can reprioritize those
6 projects to be able to deliver as much as
7 possible and as soon as possible. But we want to
8 make sure that we get things right.

9 So, we're going to take our time in
10 evaluating things and continue to look for
11 opportunities to make up some ground and maybe
12 adapt in ways we didn't think of before of how we
13 can make this possible even sooner.

14 But we'll keep you posted on that as
15 things evolve. The third thing is I just want to
16 mention that we've integrated our VERTCON tool
17 into our larger NGS Coordinate Conversion and
18 Transformation Tool that we refer to as NCAT.

19 So, this is something that's going to
20 help us not only now with making things easier
21 for our users but is the framework, the software
22 framework, for being able to connect our updated

1 reference frames and datums in the future very
2 easily into this existing tool.

3 So, we'll have easy, fast access for
4 updates and transformations from NAVD 88 and
5 other current vertical datums into the future in
6 NAPGD22 orthometric heights. Next slide, please.

7 So, you've heard me give updates on
8 our airborne gravity collection which is part of
9 our GRAV-D effort. I want to just highlight that
10 here on this slide.

11 Our goal this year was to collect up
12 to or get a collection of up to 87 percent of our
13 total area.

14 Unfortunately, since the data
15 collection is on hold until further notice no
16 matter what we do at this point with the various
17 scenarios that are in hand with our aircraft,
18 personnel, the geography that we have left to fly
19 and our resources it's very, it's going to be
20 nearly impossible to get to 87 percent completion
21 at the end of the fiscal year.

22 Right now we're just over 82 percent.

1 The areas that you see in green are those that
2 have been collected and the data is available.
3 It's basically those are the blocks that are
4 complete.

5 Orange areas are those that have been
6 started. Blue block is one that's been collected
7 but is now being processed. And the white blocks
8 that you see are those areas that have not been
9 started yet but are planned.

10 The importance of having the airborne
11 gravity is that this is really the foundation of
12 a lot of the -- a foundation of the vertical, the
13 height component of the modernization effort.
14 Without this being complete there really isn't a
15 next step.

16 So, this is a high priority in order
17 to be able to get this done first so that we can
18 continue to build our data, our products, our
19 services on top of this and be able to deliver
20 the NSRS modernization. Next slide, please.

21 The other key component of the
22 modernization effort that is still underway is

1 the -- or the data collection component of it
2 that's underway is the establishment of the
3 foundation CORS component of our NOAA CORS
4 Network.

5 I've mentioned this in the past. This
6 is still something that we are working on. We've
7 got a number of challenges. But we have made
8 some headway in identifying the number of
9 stations that we seek to establish as Foundation
10 CORS.

11 At this point in time, the plan is for
12 a total of 36 stations. We are looking at three
13 different ways to bring these stations up to par
14 to serve as the highest quality, highest reliable
15 stations within the CORS that will support our
16 citizen's access to the NSRS and also support
17 international positioning efforts.

18 We're looking at incorporating partner
19 stations. We're working with NASA and the
20 National Science Foundation to bring some of
21 their sites into the Foundation CORS Network.

22 We're looking to upgrade a number of

1 the sites that NGS owns to make them fully GNSS
2 capable. And we're also looking to build
3 approximately nine new stations in areas that we
4 don't have an existing site.

5 And those would be co-located at sites
6 with existing space geodetic techniques. Next
7 slide, please. Next slide, please. There we go.

8 On the coastal mapping side program
9 work is continuing with funding from the
10 hurricane supplementals from the last couple of
11 years. I want to mention briefly the 2018
12 supplemental and the areas that the data has been
13 acquired, they're currently reviewing and
14 accepting additional deliveries of the data in
15 the areas that you see here on the left.

16 These are a result of Hurricane
17 Florence, Hurricane -- I'm sorry, Hurricane
18 Harvey, Hurricane Irma, and Hurricane Maria. You
19 see those in red, yellow, and green respectively.

20 Those areas have been acquired and
21 again, we're in the process of reviewing that
22 data. This is data that's topographic lidar,

1 aerial imagery, and updated shoreline in these
2 impacted locations.

3 From 2019 work continues in the
4 acquisition phase in response to Hurricanes
5 Florence, Michael, and Typhoon Yutu. We've got
6 about 80 percent of the data acquisition that's
7 been complete.

8 One thing that I want to note in
9 particular with Typhoon Yutu and some of the
10 research, hopefully operational work that we'll
11 be doing in the North Carolina area is using a
12 deep channel lidar in select areas to obtain an
13 enhanced coverage of those areas that experienced
14 storm-induced sound-side flooding and inundation
15 and in areas where water clarity and bottom
16 reflectivity are challenging for the narrow
17 channel topo-bathy lidar sensors that we use.

18 In the areas for Yutu we were able to
19 use the deep channel data lidar and were able to
20 collect depths to approximately 50 meters.

21 So, while this might not be ideal for
22 exact charting work, the concept is that this

1 will assist with the NOAA ship data collection,
2 hydrographic survey collection, providing
3 situational awareness and reducing inefficient
4 operations in the shallow areas.

5 So, we're building upon this
6 technology to help with a lot of the hydro work
7 that's being done and looking forward to updating
8 you more on the results of the deep channel work.
9 Next slide, please.

10 I want to briefly mention some
11 additional work that's been done using our Remote
12 Sensing Division's expertise. This is the
13 emergency response imagery that unfortunately you
14 often see in these updates because there is
15 always something going on.

16 This time it was in Tennessee. As a
17 result of the tornados that went through in early
18 March, NGS collected damage assessment imagery.

19 On March 7th, the areas that were
20 impacted from Nashville to Cookeville, Tennessee
21 we had over 1,100 images that were collected and
22 the data was made publicly available on March

1 9th.

2 This was an opportunity to collect
3 imagery not only to support the emergency
4 response effort, but also to test out new
5 processes to improve delivery efforts and to
6 support artificial intelligent users who use the
7 NOAA imagery as training data sets.

8 So, the two images on the left you see
9 are images of the damaged areas. And the images
10 on the right, the top right, are basically what
11 you will see when you go to our NGS website and
12 are able to look at those images, zoom in, click
13 on the image, view it or download it.

14 The darker image on the right at the
15 lower part of the slide is a link to a web story
16 that was done by USA Today and the Tennessean
17 which highlight some of the work that's being
18 done on creating cloud-optimized GeoTIFFs to
19 support artificial intelligence.

20 So, I know we don't have time to go
21 through that today. But I would, for those who
22 are interested in AI and the things that we're

1 doing I invite you to take a look at that link
2 and see how that is being used to help promote
3 advancement in this area of interest.

4 Next slide. A very quick update on
5 our VDatum efforts. For those who are not
6 familiar with what VDatum is it's a software tool
7 that's been developed jointly between NGS, OCS,
8 and CO-OPS. And it provides a tool for
9 vertically transforming data between different
10 tidal, orthometric, and ellipsoidal datums,
11 vertical datums.

12 Just very briefly, we've been working
13 on providing an update to the West Coast Regional
14 Model that is still on track and we are planning
15 on a release date in, I believe it's Quarter Four
16 in FY21.

17 So, it's still a little ways away.
18 But we are making progress. The top two colorful
19 images that you see on the slide depict our
20 exploratory modeling efforts in the State of
21 Alaska.

22 We've been leveraging a previous model

1 that was developed by Notre Dame and we're using
2 this and running it through VDatum to look for
3 areas of what's acceptable and areas where
4 improvements are needed in our modeling.

5 So, we're looking at areas that we
6 would need additional foundational geodetic and
7 water level acquisition, additional bathymetry
8 and additional shoreline. So, basically it's
9 giving us an idea of what's needed to make the
10 models work for us with the levels of uncertainty
11 that we are expected to deliver with VDatum.

12 The last set of images there under
13 supplemental just to let you know that we are
14 collecting foundation geodetic and water level
15 data to feed the model development in those areas
16 that were impacted by Hurricanes Harvey, Irma,
17 Maria, Florence, and Michael. So, that work
18 continues.

19 Next slide, please. And then for my
20 last slide just a very brief update on what we've
21 been doing as far as a companion document to our
22 NGS Strategic Plan that was released last year.

1 While our Strategic Plan goes into
2 great detail about our goals and the objectives
3 to accomplish our goals operationally, it doesn't
4 adequately address what we need to do to ensure
5 that we recruit, hire, develop, and retain people
6 with the right skillsets, the knowledge and the
7 experience and the competencies that we need not
8 only now but into the future.

9 So, we've taken a look at the most
10 important asset that we have and that is our
11 workforce. And what we have now and what we need
12 to build to be successful in the future.

13 So, we are very close to having a
14 final draft of our Strategic Human Resources Plan
15 so that we can help guide the workforce
16 development within NGS.

17 It includes not only our strategic
18 direction but a gap analysis, some concepts as
19 far as succession planning and career development
20 and strategies for getting our workforce prepared
21 for the future not only in 2022 but beyond and
22 ways that we can actually implement monitoring

1 and evaluating the success of our Strategic Human
2 Resources Plan.

3 So, with that those are my key updates
4 from NGS for the past six months. And look
5 forward to talking with you all soon. Thank you
6 very much.

7 CHAIR SAADE: We're way over time on
8 all this. If, Rich, can you give us a really
9 brief update, if that's possible? I think you're
10 muted. Rich, I think you're muted.

11 MR. EDWING: Now, I'm unmuted.

12 CHAIR SAADE: Okay.

13 MR. EDWING: Ed, can you hear me?

14 CHAIR SAADE: Yes. Go ahead.

15 MR. EDWING: Okay, yes. So, I have a
16 relatively brief presentation here. I'm going to
17 focus on two topics.

18 I'll talk a little bit about the
19 impact of COVID-19 on our operations. And I'm
20 going to talk a little bit about visibility
21 observations and forecasts.

22 That's a topic that the HSRP has been

1 very interested in the last few meetings, has
2 provided some recommendations on how we should be
3 improving the information that we provide on that
4 topic. And then I've got some good news there.

5 So, next slide, please. There we go.
6 So, like other organizations the biggest impact
7 of COVID-19 is on our field operations.

8 We're responsible for something called
9 a Mission Essential Activity which means we have
10 to keep the real time oceanographic data flowing.
11 It's a real time -- I'm sorry, safe and efficient
12 navigation, for coastal hazards such as tsunami
13 warnings and storm surge, emergency response and
14 things of those nature.

15 The PORTS system and our NWLON network
16 are the main ways that we provide those. You
17 know, those sensors are putting out updated
18 information every six minutes and we have to keep
19 those systems going.

20 Being a Mission Essential Activity
21 places certain requirements and responsibilities
22 on us.

1 So, when we sat down six weeks ago or
2 more and started planning out how we're going to
3 deal with the situation, as Nicole emphasized and
4 Dr. Jacobs and others, you know, the safety of
5 our employees and our responsibility for social
6 distancing to avoid being transmitters of the
7 virus were the main drivers for us.

8 And it didn't take us long before we
9 decided we were going to defer any sort of
10 scheduled maintenance either by ourselves or by
11 the contractors that we had that do the same kind
12 of work and that we'll just do emergency repair
13 work on a case by case basis.

14 Not every sensor that goes down
15 necessarily has to be put back into operation.
16 It depends on what kind of sensor it is and who
17 is using it, those that require conversations
18 with the stakeholders.

19 But there are some that are, you know,
20 that are critical and will need to be put back
21 into operation. The thing that allows me to
22 sleep better at night is, you know, we put a lot

1 of effort into very robustly designing and
2 constructing our observing systems.

3 So, they don't fail very often or at
4 least not catastrophically. A lot of redundancy
5 built in, hardened platforms, things of that
6 nature and they are fully automated and we just
7 try to go there once a year.

8 So, I have a lot of faith in our
9 observing systems. And then finally kind of a
10 broader topic is across the organization we've
11 been looking at where do we have single points of
12 failure for key functions in case people do start
13 coming down with the virus and can't come to
14 work, who can kind of step in and keep things
15 going.

16 So, we've been doing a lot of that as
17 well. All right. So, next slide.

18 Okay. And so how has this been
19 impacting us so far? Well, one of the main
20 things is, you know, scheduled maintenance is
21 something we're not going to be able to make up.

22 You know, right now our projections

1 are out to June as long as we shut down travel
2 for sure. And by then we'll have missed 50, you
3 know, scheduled maintenances at NWLON stations.

4 There is a related number for PORTS.
5 We didn't come up with that number. But those
6 are things you really can't make up because you
7 can't make up for lost time that way.

8 Most of the rest of the things on this
9 list are just going to slide to the right. Some
10 of them maybe later this year, some of them maybe
11 to next year.

12 We're really not sure, you know,
13 exactly how that's going to work yet. It just
14 all depends on how reconstitution works out.

15 You know, one of the big things we
16 were going to start a multi-year current survey
17 in the Columbia River. And that may, we may get
18 a piece of that in at the end of the year or
19 maybe it's going to slide to next year.

20 You know, that's going to delay the
21 predictions being updated that much longer.

22 We've got a couple of significant reconstruction

1 projects for a couple of our Great Lakes
2 stations.

3 One in the Great Lakes, one in the
4 Gulf. And those are going to move to the right
5 as well. We were literally getting ready to
6 install a new relatively large PORTS installation
7 for the U.S. Navy in Kings Bay.

8 But that's been put on the back burner
9 for right now. We'll see if that happens this
10 year or next year.

11 Two smaller ones, one up in Valdez,
12 Alaska and one in Portsmouth, New Hampshire
13 having the same situation. We'll see if they
14 happen in this fiscal year or next year.

15 I've spoken to you about our update of
16 the IGLD. And actually this next, this piece is
17 done more by NGS than us. But as a GNSS campaign
18 that was supposed to happen this year.

19 There's a big campaign that's done
20 every five years. And I think that it was just
21 decided that this one is being canceled and
22 cannot be done this year.

1 It's going to have to be done next
2 year which has some consequences associated with
3 it. You've heard Juliana just talk about VDatum
4 modeling and part of that was doing water level
5 surveys to reduce the uncertainty of those
6 models. We've got a number of those surveys
7 planned in different parts of the country.

8 Some are base funding, some are
9 hurricane supplemental funding. I won't go
10 through the areas, they're in the bullet.

11 But again, those are all moving to the
12 right which will delay, you know, the updating of
13 those models and reducing of uncertainty of those
14 models by a like amount. And that's from the
15 field operations impact.

16 And just one concern I have kind of a
17 longer term impact is, you know, we primarily use
18 small business contractors as our service
19 contractors to maintain, deploy, renew our
20 observing systems.

21 It's possible some of these folks may
22 go out of business, I don't know. And that's a

1 big loss for us. It's not a big capability out
2 there.

3 So, I've not heard of anybody in that
4 situation. But who knows. So, that's a concern
5 for us. Okay. So, next slide.

6 Okay, visibility. Visibility was one
7 of the more recent additions to our PORTS
8 network. I would say maybe about ten years ago
9 we came up with the capability.

10 You know, our users are asking us for
11 a fog sensor basically. And we worked with the
12 FAA and US Coast Guard and we tested a bunch of
13 sensors.

14 At the time visibility sensors were
15 very commonly in use for highways and inland for,
16 you know, that transportation system. But a lot
17 of them weren't suitable for the marine
18 environment for a number of reasons.

19 But we were able to find one. We
20 settled on the Vaisala, a sensor which you see a
21 picture of that to the left. And there have been
22 14 of these stations put in across the U.S. in

1 various PORTS systems.

2 You can see the dots on the map there
3 and it's got the numbers right below. And the
4 Corpus Christi PORTS which is a relatively new
5 PORTS but it's been extending light crazy
6 already. It's in the process of adding seven
7 visibility PORTS. So, they're expanding that
8 subcomponent of the PORTS network by 50 percent
9 right there.

10 And the Vaisala is a good sensor, but
11 does have some drawbacks. It requires power,
12 hard wired power.

13 You can see in that picture of the
14 sensor itself are actually those horns at the top
15 of that structure on the right. And there's a
16 number of constraints to having to site this.

17 So, we really wanted to try and come
18 up with a better visibility sensor. So, next
19 slide, please.

20 So, a couple of years ago we put a
21 proposal in through the NOAA Small Business
22 Innovation Research Grant, which is a great

1 little program if you need some sort of
2 technology developed. You can put some concepts
3 out there and if they get approved internally
4 they go out for bid.

5 And the end goal is for that
6 commercial entity to develop something they can
7 then sell. They're developing for the commercial
8 market, although we're getting a technology that
9 we need for ourselves in that process.

10 And there's a couple of different
11 phases to that. Phase 1 which is kind of the
12 concept development, prototyping phase is done.
13 And, you know, part of our concept was we wanted
14 a lower power, robust, easy to maintain device.

15 We didn't get into the different kinds
16 of technology, if you will, but the successful
17 candidate is a multi-spectral sensor suite. And
18 it can actually, you know, right now our
19 visibility observations just kind of tell you
20 what we think.

21 It's an extrapolated how far do we
22 think you're going to be able to see, it's going

1 to be fog-free or not. This provides some very
2 nice imagery products, which I can't go into.

3 That gives you a lot more information
4 about what's going on. And right now we're in
5 Phase 2 which is a couple of year effort to how
6 is this going to integrate into our network?

7 And at the end of that we'll have
8 fully tested it. Is it the right sensor for what
9 we want? Hopefully, yes. And then we would be
10 able to start kind of offering it through the,
11 you know, to our partners.

12 But I'm excited about it because it's
13 much lower cost, much lower maintenance on it.
14 And it doesn't require hard, you know, hard-wired
15 power or kind of a lot of that physical
16 infrastructure.

17 So, significantly less expensive. And
18 it should be able to be integrated right with an
19 NWLON station before we kind of have put in a
20 separate data collection platform and some other
21 things to be able to support that visibility
22 sensor.

1 This could be integrated right with an
2 NWLON station or a PORTS water level station, be
3 put up on, you know, the meteorological mast.
4 And we can get it up higher so we can, you know,
5 even give a better, a larger range of what
6 visibility might be like.

7 And this sensor also has the ability
8 to potentially provide other kind of measurements
9 as well. So, to me, the holy grail was always
10 getting a better technology with better products
11 for less money and this is really, you know,
12 hitting both of those aspects hard, I think. So
13 I'm very excited about this.

14 Next slide.

15 CHAIR SAADE: Rich, I'm sorry. We
16 only have two minutes.

17 MR. EDWING: Okay. Well, I'll be
18 quick then. So, I've spoken before about the
19 Tampa Bay Marine Channel Forecast.

20 This is a capability developed by the
21 Tampa Bay Weather Forecast Office. They had been
22 given some funding to do a development effort.

1 And they kind of integrated into our OFS model a
2 very specialized weather and wave forecast along
3 the marine channel.

4 But they also came up with a way to do
5 visibility. But it was kind of a one-off. And
6 that's where we are today. We just have one area
7 where we can do these forecasts.

8 So, last slide. The way forward now
9 to make this a national capability is the Weather
10 Service is in the process of updating their
11 National Blended Model. And this is a model that
12 provides WFOs with all sorts of different kinds
13 of forecast information that they can use to make
14 their marine forecasts. And they're going to be
15 adding the visibility capability to that. And
16 that will be done by this fall.

17 Just provides the capability to do
18 this nationally. There still needs to be some
19 work done at a local WFO level.

20 But another piece to this is, in the
21 Gulf, we're getting ready to upgrade our Northern
22 Gulf of Mexico Operational Forecast System. The

1 big upgrade is going to be a broader geographic
2 scope to cover the entire Gulf Coast as well as
3 high-resolution nested grids up into seaports
4 like Mobile. It's going to go up the Mississippi
5 River into Baton Rouge. And that's going to
6 allow the capability for this probability or
7 visibility product to be put out there.

8 And we're going to work with the
9 Weather Service. We're probably going to pick
10 one location, likely Mobile, to do this first.
11 But then once we kind of get that pipeline and
12 that process worked out we'll be able to do it at
13 other locations as well.

14 And so, that's probably, you know, a
15 year to two years away to being able to deliver
16 that. So, there's a lot going on with the CO-OPS
17 in terms of, at least our role within the
18 visibility realm of providing observations as
19 well as working with the Weather Service to put
20 out, you know, visibility forecasts.

21 So, last slide, which is questions.
22 And I'll just turn it back over to you, Ed.

1 CHAIR SAADE: Thank you, Rich. We'll
2 have to move along here. Shep, the same
3 restrictions, if you can be quick.

4 RDML SMITH: I'll do as best I can.
5 Jump to Slide 3, please. All right, so,
6 consistent with the federal and CDC guidance, our
7 folks are mostly working remotely, and our
8 routine field operations were also curtailed as a
9 result, to be consistent with that guidance.

10 The NRTs are in a ready state.
11 Equipment is calibrated and ready to go. But
12 they're not doing routine operations.

13 Our contractors, the award of task
14 orders to individual contractors continues to be
15 a priority for the Operations Branch. We have
16 some done already.

17 On a case-by-case basis, impacts and
18 mitigative strategies as a result of COVID-19
19 will be discussed during task order negotiations.
20 Of the two awarded task orders to date, the
21 COVID-19 is impacting schedule with field
22 operations delayed.

1 Contractors are encouraged to monitor
2 the ongoing COVID-19 situation and incorporate
3 any anticipated COVID-19 related impacts into
4 their proposals during negotiations.

5 Following award, the Government will
6 address any unanticipated COVID-19 related
7 impacts on a case-by-case basis through
8 consultation with the contractor and the
9 Contracting Office.

10 For charting, our charts are going out
11 every Thursday just as usual. The amount of new
12 source coming in has started to diminish
13 somewhat, but we still have hydrographic surveys
14 in the queue, shoreline surveys in the queue and
15 we'll be making chart updates routinely. In
16 addition, we've been able to focus some
17 considerable effort on our rescheming so that
18 we're building new charts in the ENC scheme that
19 we've discussed previously.

20 Skip to Slide 5, please. Raster chart
21 production, sunset of raster chart production.
22 Captain Kinner already mentioned this once. We

1 announced in the fall the beginning of a five-
2 year sunset period where we will be working with
3 the interagency, our interagency partners,
4 particularly the Coast Guard, for the impacts to
5 regulations and training and testing of mariners,
6 et cetera.

7 But the time frame of five years was
8 chosen because looking at the linear, nearly
9 linear graph of demand, that's about when it
10 crosses zero. Now, we don't expect it, if we
11 continue, to be completely zero. But -- because
12 there are reasons, residual reasons for having
13 paper, but it is no longer worth the amount of
14 production focus that it would take in order to
15 maintain a similar suite.

16 So, we're focusing on digital charting
17 instead and have made provision for printing that
18 digital charting information to meet the need for
19 charting practice. Next slide, please, for paper
20 chart.

21 This is a quick example. On the left
22 is the traditional paper chart of the region. On

1 the right is an experimental chart-looking thing
2 that is the -- derived entirely from the ENC.

3 We are working already on getting the
4 landside topography on there, doing a little
5 better job with feature names, et cetera. But
6 there are some significant advantages already
7 evident in this.

8 One is that we can have true metric
9 contours and more contours. So you can see in
10 this case we chose a blue tint that was different
11 than the blue tint on the chart that would be a
12 user choice.

13 So, the blue tint was relevant for the
14 charting application for the particular vessel.
15 And the second is a much more rigorous treatment
16 of unsurveyed areas, those big gray areas on the
17 north and the south end of this chart are areas
18 where there is no meaningful survey data.

19 And that's more rigorously captured in
20 this presentation. We can skip ahead to Slide 8,
21 please. Actually, would you mind going back to
22 Slide 8?

1 The, this is the -- you deleted them
2 already. That's okay. There is a service where
3 we show the progress of buildout of the new
4 charts.

5 The S-100 services timeline. These
6 are the services that comprise the precision
7 navigation basket of services, some of them.

8 This is the first look at an initial
9 timeline for the development, testing, and
10 eventual deployment of those services. And I
11 think of note here, we really already have the
12 surface currents developed. We're really waiting
13 on the dissemination to be mature for that.
14 That's coming along very nicely. I had hoped to
15 have something to report to you at the next
16 meeting.

17 And -- but it will be an entirely
18 cloud-based system coordinated internationally
19 and -- as well as through our value-added
20 resellers. And there's been a big push for
21 demand for S-102 bathymetry.

22 And the standard is now set. And so,

1 we are developing the database and the service to
2 provide high-resolution gridded bathymetry as
3 well. And that will be suitable for navigation
4 but with the applications beyond that as well.
5 And that is all. I will stop there. Back to
6 you, Ed.

7 CHAIR SAADE: We're going to delay any
8 additional questions at this time and start in
9 with Julie Thomas' session. So, Julie, do you
10 want to go ahead and take it from here?

11 CO-CHAIR THOMAS: Okay. I think I am
12 on now.

13 CHAIR SAADE: Sorry, Julie. I'm
14 sorry, Julie. We are going to take a quick five
15 minute break first.

16 CO-CHAIR THOMAS: Okay, great.

17 CHAIR SAADE: Thank you. So, when we
18 come back Julie will be all set with the other
19 panelists. So, everybody in five minutes. Thank
20 you.

21 (Whereupon, the above-entitled matter
22 went off the record at 3:26 p.m. and resumed at

1 3:33 p.m.)

2 CO-CHAIR THOMAS: All right. So, I'm
3 Julie Thomas, as you know. And I'm going to lead
4 this next section. We're going to be addressing
5 the one issue paper that we have outstanding
6 right now.

7 We're going to be also very briefly
8 talking about our matrix prioritization
9 spreadsheet and then we will also hear from Ed
10 Page and Lindsay Gee regarding the Arctic and
11 Technology Working Group. It's a brief update.

12 Under the issue paper, can we have
13 Gary on?

14 MS. STODDARD: Gary, it appears you
15 might be self-muted.

16 MEMBER THOMPSON: Can you hear me now?

17 CO-CHAIR THOMAS: That's great, Gary,
18 thank you. So, Gary has been taking the lead on
19 this issue paper.

20 It's gone through a few different
21 realms of edits and changes. Gary, why don't you
22 give us just a brief update as far as where the -

1 - what it's about and where the status is right
2 now?

3 MEMBER THOMPSON: Okay. So, the paper
4 gives a good overview of the disaster recovery
5 products and services that NOAA provides, how
6 critical they are.

7 But the focus of the paper is that --
8 and you've already heard discussion in some of
9 the presentations about the use of AI. But the
10 focus of the paper is to do more with AI to help
11 with disaster recovery because the imagery, the
12 other products we can serve, are very valuable
13 information.

14 But there's a lot of time being spent
15 on the user end analyzing that information. And
16 with the use of AI, for example, to determine
17 where damage is at, where beach erosion has
18 occurred, where there is a lot of debris, AI
19 could be used to help us do that in a more
20 efficient manner so that we could get recovery
21 efforts quicker and get the resources to the
22 areas that need to be -- that need the resources.

1 So, the focus -- the recommendations
2 are to look into more, to see what the users
3 need, states, local governments, and then do
4 research into utilizing AI more for more
5 actionable items and products and services that
6 can help us with disaster recovery.

7 CO-CHAIR THOMAS: Right. And I think,
8 do you want to talk about a little bit of the
9 feedback or the questions that Lucy had because
10 it might clarify a couple things?

11 MEMBER THOMPSON: Right. So, Lucy had
12 asked some questions about -- as far as funding.
13 So --

14 CO-CHAIR THOMAS: Lucy is one of your
15 Nav Managers, right?

16 MEMBER THOMPSON: One of the Nav
17 Managers, correct. So, Lucy is involved with NGS
18 and the disaster imagery.

19 And so, do an event and -- I know we
20 work with FEMA and then there's task orders given
21 to provide to NGS to do imagery. And so, there
22 are funding sources for different parts of NGS to

1 provide this information.

2 As far as the question about people
3 and resources. We feel like the AI -- for
4 example, we were spending 24 hour days, three
5 shifts of people to analyze this imagery. And
6 so, with AI that just really alleviates having to
7 use people to do the manual editing of it, manual
8 analyzing of the imagery. And I'm looking to see
9 what the last question was.

10 I think that was the two things that
11 she had asked about.

12 CO-CHAIR THOMAS: Okay. And then I
13 think we also we had a comment about whether or
14 not we wanted to put more specifics into the
15 recommendations too, and not keep it too broad.

16 MEMBER THOMPSON: Right.

17 CO-CHAIR THOMAS: So, like I said,
18 this paper has gone around a few times. I think
19 what we'll do is send it one more time with --
20 Gary, maybe we'll touch base on this after the
21 meeting in the next few days, and maybe send it
22 out one more time where we can even give a

1 specific example within the recommendations as
2 just an example of what we're really asking for
3 here.

4 MEMBER THOMPSON: I think that's a
5 good idea. And we can -- we'll focus our
6 recommendations on what we have in the paper.

7 CO-CHAIR THOMAS: Right, because I
8 know that from NOAA's perspective there is a lot
9 of AI that is being used. So, it's like where
10 can really focus that AI to benefit people that
11 are in your role that are -- that need this quick
12 turnaround?

13 I think I was going to go around
14 naming. Okay, let's do this real quickly. We're
15 going to just go around and see if people have
16 comments on this issue paper because we would
17 like to include it with our administrator letter.

18 And so I'm going to just very quickly
19 go through. If you don't have any comment or
20 want to send it in in writing, just say pass, and
21 that way we'll make sure we get everybody's input
22 on this. Qassim? I guess you need to unmute the

1 Panel.

2 MEMBER ABDULLAH: Yes, sorry, I was
3 muted from that other side. I think I agree with
4 you, Julie. We need to add a little bit of
5 specifics to it just because AI is a very wide
6 thing, you know.

7 So, we just need a little bit more
8 specific. What we're looking for with AI to help
9 us for what Larry is saying, you know, Gary is
10 saying, the interpretation for which kind of
11 feature we need to extract. One we know that,
12 then it will be easier to line up solutions for
13 it.

14 So, we -- if we're going to pass it
15 around we can comment on it and Gary, maybe you
16 can help us to form a plan which will explain,
17 like, in the disaster recovery, I mean, what
18 you're looking for. Are you looking for
19 destroyed houses, flooding, all the different AIs
20 and different tools, for example?

21 CO-CHAIR THOMAS: Okay. We'll
22 definitely -- I made a note of that. We'll

1 address that one. Anuj?

2 MEMBER CHOPRA: Thank you so much. I
3 think using AI is perfect. Let's just make sure
4 that the models are self-learning so that it can
5 be -- that perhaps needs to be included that they
6 are self-learning. And I think that should work
7 well. I think that's the way to go. So, thank
8 you.

9 CO-CHAIR THOMAS: Sean? Sean, are you
10 self-muted?

11 MEMBER DUFFY: Should be free now.
12 Okay. So, I agree you just need a couple of
13 touches. And I know one of the things mentioned
14 was related to ports reopening.

15 I think some of the specifics, ports
16 have kind of adapted their own kind of models.
17 But having this info together is very good.

18 And, you know, as a -- just some
19 navigation guy I have to say, you know, the
20 artificial intelligence is great. But will it
21 overcome our ability to use it, or as I have said
22 before, natural stupidity?

1 But how do we make it where it gets to
2 the end users and it's good? And with that, I'll
3 look forward to trying to work on some of that
4 because there are real specific ways to reopen a
5 port and this could indeed be helpful. Thank
6 you.

7 CO-CHAIR THOMAS: Okay, thanks.
8 Nicole?

9 MEMBER ELKO: I'll actually pass. I'm
10 happy to review the next round.

11 CO-CHAIR THOMAS: Great, Lindsay?

12 MEMBER GEE: Yes. I just -- I support
13 the paper. And I just think we need to be
14 careful in adding more comments that we don't
15 dive down into the details of trying to tell,
16 recommend solutions.

17 I think as an HSRP we should be just
18 saying look, this is an important issue to look
19 at for the stakeholders to apply artificial
20 intelligence to, and then kind of leave that to
21 the, you know, the specialists to do that, to
22 define the areas.

1 So, that's just my comment, that we
2 don't go around the buoy again, as they say. I
3 don't want to see us trying to bring out
4 specifics in that. That's it. Thank you.

5 CO-CHAIR THOMAS: Yes, great comment.
6 Deanne?

7 MEMBER HARGRAVE: Yes, thanks. I have
8 nothing further to contribute at this time.
9 Thank you.

10 CO-CHAIR THOMAS: Okay. Let's see, Ed
11 Kelly? You're on mute, self-mute.

12 MEMBER KELLY: Okay. I'm unmuted now.
13 The information that is required by Coast Guard
14 and to reopen the ports is absolutely essential.

15 We've run into that with Sandy and the
16 post operation with that. And I would leave the
17 AI to the scientists and to NOAA to figure out
18 how to make information available in a complete
19 fashion and as quickly as possible.

20 But I fully support the paper. To
21 reopen ports and marine commerce, that
22 information is absolutely essential. The faster

1 we get it, the better we can use it.

2 CO-CHAIR THOMAS: Okay, thank you.

3 Ann Kinner?

4 MEMBER KINNER: Yes. In San Diego we
5 have a resiliency team that's been put together
6 that basically includes all the different bodies
7 who are involved in the port operations. And
8 they did a pretty good overview a couple of
9 months ago of what kinds of things were
10 available.

11 I would be surprised if there aren't
12 similar groups and similar kinds of, I want to
13 say, lists of what they need already in other
14 ports around the country.

15 I think the paper is great as far as
16 it goes. And I just think it might make some
17 sense to reach out to some of these more local
18 bodies who have done this kind of study within
19 their own area.

20 CO-CHAIR THOMAS: Okay. We can take
21 that into account. And -- Dave Maune?

22 MEMBER MAUNE: I would like to see if

1 it's possible to include one or two images that
2 demonstrate the kinds of things you can do with
3 artificial intelligence.

4 I always find that if an issue paper
5 is all words it's more likely to be set aside and
6 not read. And people look at the pictures first
7 and then look at the words that go with them.
8 And I think that a couple of pictures could be
9 worth a lot to improve this issue paper.

10 CO-CHAIR THOMAS: Good comment. And
11 I think we'll just have to figure out how we can
12 do that within the length of what we are talking
13 about.

14 But we'll come back to that, Dave.
15 Anne?

16 MEMBER MCINTYRE: I just would say
17 that I agree with what Sean and Ed had said about
18 the importance of being able to reopen the ports
19 in a timely manner.

20 And I don't know much about AI, but I
21 find it fascinating and just wanted to thank
22 everybody for their hard work on this project,

1 this paper.

2 CO-CHAIR THOMAS: Great, Ed Page?

3 MEMBER PAGE: Thanks. I agree with
4 Lindsay as far as let's not over-engineer this
5 thing. I think that -- let others decide the
6 actual mechanics of it.

7 I also think Dave Maune is -- for some
8 graphics or pictures would help. As a prior
9 Captain of the Port and dealing with these issues
10 of deciding when to open a port after some
11 events, the Northridge earthquake and storms,
12 what have you, the faster information gets to my
13 hands, the quicker I can reopen, get the blue
14 economy back in business.

15 So, I think this expediting
16 information and getting it in the hands of the
17 decision-makers, which Gary is taking the lead on
18 as far as how do we do that, AI is a great way of
19 going about it. So, I applaud your paper. I
20 think it's looking really good. I wouldn't go
21 too far over-engineering. I think a graphic or
22 two and let it go. Thanks.

1 CO-CHAIR THOMAS: All righty. Sal is
2 not with us today, couldn't make it. So, Ed
3 Saade, do you have anything to contribute to this
4 paper?

5 CHAIR SAADE: I don't have anything,
6 Julie. Go ahead, thanks.

7 CO-CHAIR THOMAS: Okay. In the
8 interest of saving time here -- okay, those are
9 all great comments. I really appreciate them.

10 Gary, let's get together on this and
11 see if we can get it together within the next
12 couple weeks so we can actually include it with
13 the letter that goes out.

14 MEMBER THOMPSON: Very good.

15 CO-CHAIR THOMAS: Is that okay?

16 MEMBER THOMPSON: Yes.

17 CO-CHAIR THOMAS: Great. Thanks so
18 much for your input, Gary. And speaking of the
19 letter, I wanted to just take a minute to thank
20 Sean Duffy. Sean is going to be working with me
21 on the letter for the administrator.

22 You will all see that. Remember this

1 letter will have recommendations. It will be
2 brief and shorter than our normal letter. But we
3 do want to make sure that we follow through with
4 that tradition. And it will all go out to you
5 for review before we submit it.

6 Next, let's bring up the priorities
7 matrix real quickly.

8 So, as you know, the priorities matrix
9 is kind of a running spreadsheet that we have
10 kept for tracking issues that have been important
11 to us, not only the issue papers, but I would say
12 subjects that have been important to us.

13 So, let's see, is it possible to bring
14 that up?

15 MS. MERSFELDER-LEWIS: Hey, Julie,
16 this is Lynne. Could we pause on that and do the
17 public comment period right now and come back to
18 that because we -- actually that was scheduled
19 for after the public comment.

20 CO-CHAIR THOMAS: Okay.

21 MS. MERSFELDER-LEWIS: And we're
22 already over the public comment period. So if we

1 can come back to you.

2 CHAIR SAADE: Okay. We would like to
3 invite written and public comments at this time.
4 Lynne, are there any public comments for us to
5 address at this time?

6 MS. MERSFELDER-LEWIS: Yes. So, this
7 is Lynne Mersfelder-Lewis. I'm the program
8 manager, and I will read you -- we have seven
9 public comments.

10 And let me just, we'll get that up,
11 two seconds. Virginia has a slide of some of
12 them, or most of them, to put up. So just give
13 us a second.

14 Hey, Virginia, would you put up that
15 slide, pretty please? Okay. Jon Dasler gave us
16 the biggest, the most comments.

17 And he -- well, also, I just also want
18 to mention all the public comments will be put
19 into the meeting report as well and we will get
20 back to people after the meeting with whatever we
21 can get back to you on.

22 So, Jon Dasler said, in Fiscal Year

1 2021 NOAA Congressional budget justification we
2 noted the following. Under Navigation,
3 Observations and Positioning Direct Obligations,
4 there is an increase for in-house navigation
5 observations and positioning of \$2.8 million over
6 the Fiscal Year 20 enacted and a decrease in
7 hydrographic survey priorities contract by \$5.1
8 million over the Fiscal Year 20 enacted
9 obligation.

10 We also noted the following in Exhibit
11 13, schedule and milestones. Fiscal Year 21
12 there are three bullets and Fiscal Year 22 to 25
13 there are three bullets.

14 The -- he notes the deliverables.
15 There are two bullets and he gave a table that
16 one of the deliverables is collect an additional
17 150 square nautical miles of hydrographic survey
18 data for a total of 2,429 square nautical miles
19 in priorities annually starting in Fiscal Year
20 21.

21 I'm sorry, could you go back,
22 Virginia? We applaud NOAA's outreach effort and

1 used the external data to analyze priority areas.

2 While we commend for the outreach
3 efforts in support of contracting and agree with
4 the increase to support in-house operations to
5 meet the needs of the nation, we question why an
6 additional contractor is needed when the
7 contracting budget was reduced by \$5.1 million
8 from \$32 million Fiscal Year 20 enacted to \$26.9
9 million in Fiscal Year 21 estimated.

10 Many current contractors have capacity
11 through subcontractors that is currently not
12 being tapped. Can NOAA explain the rationale
13 behind the desire for an additional contractor
14 when budgets are being cut and there is adequate
15 capacity among the existing seven contractors?
16 This in effect undermines the capacity and
17 expertise of the existing pool of contractors.

18 So, Jon, we appreciate your comment
19 and we will get back to you offline on that. It
20 is a very long comment and also neither
21 contracting or budgeting are in the purview of
22 HSRP. But they are in the purview of NOAA.

1 And then I want to also mention the
2 other comments that we had. Rada Khadjinova,
3 thank you very much. She says, Fugro is a global
4 geodata company. We acquire, analyze and provide
5 advice using geodata in Alaska and other regions.
6 Our work includes research projects for resource
7 and land management agencies.

8 In the course of our research, we
9 review all existing data, including bathymetry
10 and backscatter, both water column and seafloor
11 data. NOAA hydrographic data uses much beyond
12 accurate knowledge of the water depth.

13 For instance, backscatter is valuable
14 to characterize seafloor habitat and to make
15 resource assessments: mineral, including critical
16 minerals, hydrocarbon, biological, et cetera,
17 among many other uses. I want to express support
18 for NOAA collecting backscatter data along with
19 bathymetry and to continue to do so in this -- in
20 the future.

21 Thank you, Rada, for your comment.
22 That is something Ed Saade has mentioned to us

1 many times.

2 Denis Hains asks, do you insure
3 international linkages and how are interfacing --
4 how are they interfacing internationally to
5 ensure smooth transition with Canada, especially
6 for the Great Lakes and Mexico?

7 Thank you, Denis. We will try to get
8 you an answer on that after, if we can.

9 Sean Murphy, thank you for the invite
10 to the meeting. I am interested in creating a
11 multiple boat USV solution for swarm bathymetry
12 that is driven by AI.

13 I have previously accomplished a swarm
14 USV survey. I monitored and controlled all
15 sensors and USVs. But I believe the next step is
16 for an AI to adjust survey lines and
17 automatically post process the data that I
18 collect. I heard at the beginning of the
19 presentations about a cache of bathymetric data
20 that could be made available to companies.

21 So, we've already actually put him in
22 touch with somebody to help with that answer.

1 But -- that is Sean Murphy. He's out of Florida.
2 He's with the business unit of the subsurface
3 applications.

4 Jill, you have unmuted somebody and
5 there is an echo and I can hear my voice.

6 Colleen Roche asked two questions.
7 She said as -- this is the fifth comment -- as
8 visibility/fog is a big issue during the spring
9 and fall on the Hudson River, are there any plans
10 to install sensors on the upper Hudson? I
11 believe that's a question for CO-OPS and we will
12 put you in touch with CO-OPS.

13 Captain Scott Ireland, Colleen passed
14 from Captain Scott Ireland also about the Hudson
15 River.

16 Good afternoon, my name is Captain
17 Scott Ireland. I'm the senior pilot with Hudson
18 River Pilots Association. Back in '17 NOAA
19 undertook a survey -- a resurvey of the Hudson
20 River. As the existing soundings are a hundred-
21 plus years old, we are anxious to see the new
22 surveys published. When might that happen?

1 We will get back to Captain Ireland
2 and Colleen Roche about the timing for that.
3 Thank you for your comments.

4 Edward Albada asks, what is the --
5 this is the seventh public comment -- what is the
6 best mechanism for private entities that have
7 emergent remote sensing, satellite, and
8 hyperspectral imagery-derived bathymetry
9 technology to get involved with NOAA's
10 initiatives?

11 And, Edward, thank you for your
12 comment. We will get back to you with a contact
13 after the meeting.

14 That's all I have, Ed, for right now.
15 Galen, I don't know if any more came in while we
16 were, while I was talking.

17 CHAIR SAADE: Okay. That's a good
18 list. I guess I would like to ask Dr. Jacobs if
19 he has any comments before he has to depart the
20 meeting -- if you want to say anything.

21 DR. JACOBS: This has just been an
22 excellent discussion. It's been really

1 fascinating for me to see some of these
2 PowerPoints.

3 Really interesting questions just
4 coming up. I just want to say I appreciate
5 everyone's dedication and hard work and your
6 guidance. Even despite the current pandemic and
7 everyone having to telework, I think we're moving
8 forward on our mission. I've been texting
9 Admiral Gallaudet over the last hour and just
10 want to pass along his praise and thanks to
11 everyone.

12 Just let me know how my team and I can
13 help and really look forward to seeing all of you
14 in Hawaii.

15 CHAIR SAADE: Okay, great. Thank you.
16 Stay safe, stay healthy and we'll catch you next
17 time. Thank you.

18 RDML SMITH: Thank you, sir.

19 CHAIR SAADE: Lynne, I'm going to hand
20 it back to Julie, okay.

21 CO-CHAIR THOMAS: All right. So, you
22 know, I see Ed Page on. Why don't we do the

1 Arctic Working Group update then with Ed on?

2 And, Lindsay, we'll do the Tech one next.

3 MEMBER PAGE: Sure. In the interest
4 of saving time and whatever I'll go real quickly.

5 First of all, we came up with a
6 strategic plan about six months ago when we
7 basically dusted off the strategic plan that my
8 predecessor, Captain Lawson Brigham, did when he
9 was on the HSRP, another Coast Guard guy that --
10 we go back, I guess 50 years. We've known each
11 other for about 50 years now.

12 So, anyhow -- and we just kind of
13 updated. And so, strategic plans for the last
14 four to six months. So, the strategic plan that
15 came six months ago is still relevant. Things
16 are changing in the Arctic as far as obviously
17 the climate change issues, but also the fact that
18 the price of oil and the interest in offshore
19 exploration and other issues are very dynamic.

20 The Russians are accelerating and
21 increasing their maritime activity. But the
22 maritime activity we've seen for the last several

1 years is pretty much stagnant. So, about 500
2 vessels go through the Bering Strait each year.
3 And there's still speculation that over time the
4 Arctic will be more of a thoroughfare.

5 And -- but the punch list that we
6 identified in the strategic plan, we looked at it
7 and it's still very relevant as far the use of
8 technology and surveying and tools to aid safe,
9 efficient, environmentally-sound maritime
10 operations.

11 And evidently, the President read it
12 because that memo on charting the Arctic came
13 out. So, he read our position paper. So, that's
14 pretty impactful. So -- I think we'll leave it
15 at that. Success. Victory.

16 CO-CHAIR THOMAS: Okay. Thanks, Ed.
17 Lindsay, do you want to give an update on the
18 Working Group?

19 MEMBER GEE: Yes. And it's not much
20 of what we've done, but what we plan to do, I
21 guess. Something now we haven't really directly
22 worked on -- the particular issue papers in the

1 last six months, but I think with that general
2 input into a number of the meetings and issues
3 and it's kind of stating the obvious now that
4 technology is kind of the new infrastructure
5 across those things.

6 A couple of the areas that I think
7 you'll see of interest, the autonomous systems or
8 unmanned systems, a big part. And I think what I
9 would like to address and see addressed is how --
10 the impact they have on, really, the operations.

11 And something we're seeing and how
12 industry is adopting some of that technology as
13 well. We've been mostly focused on the nice toys
14 and the yellow boats, and orange boats now, and
15 the systems and this kind of software.

16 What I want to -- I think it's
17 something -- it's time to address now is kind of
18 the people and the resources of how that might be
19 addressed. We're trying to do more with what we
20 have. But it's probably not the same people that
21 are going to operate the newer systems then it
22 was. And I think we saw that with technology.

1 I'm an old guy. So, I saw that with
2 technology through the years from the
3 cartographer and the seamen to where we are now
4 with digital systems.

5 The other thing I think would be
6 interesting to address with the systems is the
7 way that business has adapted to them now and
8 industry. And we're seeing they have a different
9 purpose when they take technology out.

10 And we're seeing going from those both
11 the platform to the systems now we're seeing --
12 and the services of delivering surveys we're
13 seeing, for the unmanned systems, we're seeing
14 data delivered. And I'm interested to pursue
15 that further.

16 The other thing -- Admiral Smith
17 mentioned the IOCM and the update of the Ocean
18 Coastal Mapping Integration Act. And we had a
19 meeting before that and I think the Technology
20 Group will take the lead on that.

21 The final thing I would say knowing
22 we've got new members now, I think it's probably

1 time -- a good time to review the membership of
2 the group and see if others are interested, and
3 hopefully we can address that in another session,
4 in our engagement session.

5 CO-CHAIR THOMAS: Great. Thank you,
6 Lindsay. I think we have the matrix
7 prioritization to go to now. And this is our
8 ongoing list of topics that we would like to talk
9 about.

10 Dave Maune, did you want to still make
11 a comment here about IOCM, Alaska, et cetera?

12 MEMBER MAUNE: Okay. Admiral Smith
13 talked about the Presidential Memorandum, Section
14 Number 2, and Nicole LeBoeuf talked about Section
15 Number 3.

16 Both of those are going to be having
17 strategies developed that I think the HSRP will
18 want to review when it comes in. It isn't clear
19 to me whether Section 4 is going to have a
20 strategy for mapping (audio interference).

21 I had already been working on the
22 Alaska coastal mapping strategy because they've

1 been having coastal summits up there for years.
2 And last September I already had a -- was
3 drafting an issue paper on the Alaska coastal
4 mapping strategy. But I wanted to do it and work
5 in coordination with what the people of Alaska
6 were developing for their strategy. And then, lo
7 and behold, the Presidential Memorandum came
8 along and really made it easier for us.

9 And so, like Nicole said, we had a
10 head start on the coastal strategy. Ashley is
11 taking the lead on that now and I'm anxious to
12 see what it says. But I certainly will be
13 looking forward to somebody to help me with an
14 issue paper or other approach to addressing
15 Section 3 on the Alaska Coastal Mapping Strategy.

16 And I think that Julie and I will be
17 looking for volunteers to look into strategy
18 number two on the EEZ part because I think we
19 will have at least two issue papers or at least
20 two topics for us to review.

21 And for all these strategies under
22 development, the HSRP should look critically on

1 those documents to see how they align with our
2 current thinking as best we can, by issue papers
3 and other means, and to determine if they have
4 specific recommendations for improvement.

5 And so, in order to do that we will be
6 looking for volunteers from the HSRP Members to
7 say look, I'm interested in that topic and I
8 would like to be part of this movement.

9 So, yes, I still plan to proceed with
10 something and addressing. But I have to wait for
11 the Alaska Coastal Mapping Strategy to be
12 officially approved by the White House.

13 CO-CHAIR THOMAS: Okay. Thanks, Dave.
14 So, if you will note that Row Number 1 of the
15 matrix, I actually did add in IOCM here. And
16 this is really very preliminary, is what I want
17 to say.

18 We can adjust this to include the
19 Presidential Memo, to however we want for the
20 wording. I suggest that we send this matrix
21 around and people can adjust any wording here.
22 But we might -- if you scroll down there is a

1 section where we talk about, Dave and -- I think
2 it's Row 19 now. And we might roll that all into
3 the mapping row.

4 And so these are all ongoing projects
5 that we have. You'll see that there are two --
6 you can keep scrolling down because we're not
7 really going to have time to go through all of
8 these projects.

9 But I wanted to point out that in
10 Hawaii, there were two topics we were going to
11 address, the relative sea level and incorporating
12 authoritative sources into the hydrographic
13 products.

14 And these we still plan to address
15 when we have our meeting in Hawaii, then we will
16 still address those. And we will probably also
17 get the IOCM or the presidential mapping
18 campaign, some integration of the mapping
19 discussion into this in Hawaii also.

20 So, I'm not going to go through any
21 more of this priorities matrix. I won't go
22 around in the interest of time to everyone. But

1 we will be doing closing remarks, so if you do
2 have something specific for the priorities
3 matrix, why don't you mention it at that time.
4 And also, we will be getting -- we would like to
5 include an update to this with the administrative
6 letter.

7 So please, when we send it around
8 again, make sure that you get in there any
9 comments or edits that you would like.

10 And, Ed, before turning it back to
11 you, I know that Anuj also has a comment that he
12 would like to make regarding the vis sensors. Is
13 this a good time to take that now?

14 Let's see -- Anuj, are you there? Are
15 you self-muted?

16 MEMBER CHOPRA: Yes, I am unmuted.
17 Thank you so much. Thank you so much, Julie. I
18 wanted to highlight the requirement or the need
19 for good management of restrictive visibility and
20 precise navigation.

21 We just completed a very tough season
22 of fog in the U.S. Gulf. And it has had huge

1 economic impact. They're shutting off marine
2 operations, channels, entries, because of fog,
3 and so it just brings it back to the forefront
4 that if we have a solution, and if we have the
5 technology available, to utilize that technology
6 so that ships can navigate in fog safely and
7 commerce can continue.

8 Wanted to highlight that. So, that's
9 -- I would like you all to consider that. Thank
10 you.

11 CO-CHAIR THOMAS: Yes. Thank you,
12 Anuj. And we did actually put that in as one of
13 our recommendations in the letter last time.

14 Maybe the place now so that we can
15 follow this and track it is to actually put a row
16 in our priorities matrix and we can just bring in
17 the management of the fog sensors also as a
18 topic.

19 And so when we send this priorities
20 matrix around, feel free, Anuj, to either give me
21 the verbiage and I can add it in, or if you want
22 to add it in too that would be great. But I'm

1 comfortable with handling it that way if that's
2 okay.

3 MEMBER CHOPRA: Awesome, thank you.

4 CO-CHAIR THOMAS: Okay. Ed, back to
5 you.

6 CHAIR SAADE: Hey, great wrap-up to
7 the -- exceptional job. We're only about seven
8 minutes behind schedule all of a sudden. So,
9 appreciate (audio interference) -- reverse
10 alphabetical and again let's -- it was a really
11 great meeting. Okay, Gary, if you can go first,
12 any comments you would like to make, please?

13 MEMBER THOMPSON: Great meeting.
14 Thanks for the input on the issue paper and we'll
15 work on getting those modifications made so that
16 we can get it sent out.

17 CHAIR SAADE: Okay, thanks. Julie,
18 back to you. You're back on.

19 CO-CHAIR THOMAS: All right. Wait
20 just a second. I'm going to make sure my webcam
21 -- okay. Yes, I agree it has been a really
22 interesting meeting, considering we did this all

1 virtually.

2 And you know there were so many things
3 that I was interested in -- I'm just looking at
4 my notes also while I'm talking.

5 But I was really glad to hear some of
6 the points that both Admiral Smith and Nicole
7 LeBoeuf brought up during their discussion of the
8 mapping and things across, the efficiencies
9 across agencies, the standardization protocols,
10 the partnerships.

11 These are all things that have been
12 near and dear to my heart, and things that we've
13 worked really hard for over the years to try to
14 standardize some of these products. And it's
15 interesting that the shallow less than 200 meters
16 is still always the most difficult to map.

17 And I am always interested in that
18 update by Larry and Andy as far as their
19 nearshore remote AUVs and ASRs and communication
20 there. That sounds like a really powerful tool
21 in the future.

22 And let's see, it's the -- Juliana's

1 update on datums was really interesting. I'm
2 impressed there's even 81 percent of the U.S.
3 that has been -- data have been collected.

4 So I look forward to following the
5 updates on there. And that's all I'm going to
6 talk about. Once again, we will be circulating
7 both the priorities matrix and the administrative
8 letter for your input. Thank you all very much.

9 CHAIR SAADE: Thank you. Ed Page?

10 MEMBER PAGE: Aloha. That's all I
11 have to say. Let it go.

12 CHAIR SAADE: Okay. Anne McIntyre,
13 now you've got the floor.

14 CO-CHAIR THOMAS: Anne might be gone.
15 She sent a note saying she had to leave for 30
16 minutes and that was not too long ago.

17 CHAIR SAADE: Okay, thanks. Dave
18 Maune, anything else you want to -- you're muted,
19 Dave. You're muted.

20 MEMBER MAUNE: Okay, can you hear me?
21 Okay. I just want to remind people that I'll be
22 looking for volunteers to work an issue paper or

1 something like that when that Section 2 comes out
2 on that from the EEZ.

3 People that are interested in that
4 topic should let Julie and me know because we
5 would probably like to put you in charge of
6 putting together our position on that. That's
7 all I have. Thank you.

8 CHAIR SAADE: Ann Kinner?

9 MEMBER KINNER: Am I there? There we
10 are.

11 CHAIR SAADE: Yes, go ahead.

12 MEMBER KINNER: Lots of stuff to think
13 about. And I'm just curious and -- it's a note I
14 put down and don't know quite where to find the
15 answer.

16 But the use of all these autonomous
17 vessels underwater and on the surface, I had the
18 question come up to me maybe a month and a half
19 ago from somebody in the Navy who wanted to know
20 what the new COLREGs were with respect to these
21 things.

22 And as far as I know there aren't any.

1 But I would think there would have to be
2 something. And I know the comment was made that
3 these are addressed in the COLREGs some place.
4 But I haven't been able to find it myself,
5 whether it's specific lights or day shapes or
6 communications to vessels in whatever area
7 operations are going on.

8 So -- and it's something that's come
9 up as a safety issue in certain areas too, with
10 all these things running around with nobody
11 actually onboard looking out the window.

12 Can somebody point me at COLREGs that
13 relate to this or tell me if this is something
14 that the -- I am always going to eventually deal
15 with?

16 CHAIR SAADE: I think it's safe to say
17 it's long answer and we'll have to address it
18 later. It's a very long response. It will be a
19 very long response.

20 MEMBER KINNER: You were a little
21 garbled.

22 MR. MURPHY: I can assist and provide

1 insight towards that if anybody is interested in
2 that. This is Sean Murphy from Maritime Tactical
3 Systems. We make USVs.

4 CHAIR SAADE: Okay, Ann, did you hear
5 that?

6 MEMBER KINNER: Not all of it, no.

7 CHAIR SAADE: Okay, we'll get back
8 with you. I'm going to move on. Ed Kelly?

9 MEMBER KELLY: Just an observation,
10 Hawaii is a great place, but the commute was much
11 better for this meeting. The other thing is I
12 really continue to be fascinated and I'm very
13 glad to hear reports from Rich and the guys up at
14 UNH about the continuation with the technology.

15 We definitely need to move toward
16 increased technology in AI. Who knows, we might
17 actually defeat the government and actually end
18 up being faster, better, and cheaper. That's it.

19 CHAIR SAADE: Okay. Deanne?

20 MEMBER HARGRAVE: Thanks, Ed. Yes, so
21 I guess my main comment was to commend NOAA on
22 the interagency coordination that continues to

1 happen. I think that's just really key. It's
2 key for industry in order to make things go
3 smoothly. So that was my main takeaway other
4 than, of course, being a technology person, I
5 always like the technology presentation. So I
6 appreciate everything. Thanks, Ed.

7 CHAIR SAADE: Lindsay Gee? Lindsay
8 Gee?

9 MEMBER GEE: Hi, Ed, sorry. Yes, I
10 think the thing to come away with is I'm really
11 looking forward to seeing the strategy papers and
12 whatnot, and obviously that interagency
13 coordination is going to be required to implement
14 those.

15 And just to Dave Maune, I think the
16 note about the IOCM getting that legislation
17 renewed, and the strategy too, go together. So,
18 I think I already put my hand up for the other
19 one so I think we're happy to run that from the
20 Technology Working Group if you want.

21 I do have other things I'm interested
22 in for both Julie and Rich, I guess about the

1 VDatum and the National Reference Frame and how
2 that's -- I'm interested to know how that's
3 progressing out into the Pacific. But that's all
4 I have, thanks.

5 CHAIR SAADE: Thanks. Nicole? Nicole
6 Elko?

7 MEMBER ELKO: So, thank you. This was
8 an interesting meeting. I learned a lot. I want
9 to thank Lynne in particular for providing such
10 great materials. I was really able -- even when
11 I was getting distracted sometimes, I was able to
12 keep myself focused and stay on track. The
13 priorities matrix is really helpful.

14 So I look forward to continuing
15 learning more about that. There are some
16 elements on it that weren't discussed that I'm
17 interested in. So I will look forward to
18 learning some more about that.

19 Interagency collaborations in
20 particular are something that are of great
21 interest to me. I didn't mention this morning or
22 earlier today -- I guess it depends on where you

1 live -- in my introduction that I also work with
2 a new program called the U.S. Coastal Research
3 Program, which is just that.

4 It's an interagency collaboration that
5 also includes academics and stakeholders. And I
6 can start to see a lot of similarities here or at
7 least areas of overlap in collaboration.

8 So really looking forward to seeing
9 you all in person soon and continuing this good
10 work. Thanks for having me.

11 CHAIR SAADE: Sean, if you can hear
12 me, Sean Duffy?

13 MEMBER DUFFY: All right. So, I can
14 hear you and hopefully you can see the orca that
15 I received several of after the party in New
16 Orleans.

17 I made a comment that I wanted one in
18 my pool. And HSRP, let me tell you, you
19 delivered. I got a bunch of whales. I've towed
20 one behind my kayak in the swamp and something
21 nipped it. I'll hold to it was a gator, but I'll
22 leave it at that. Well done. Of course I have

1 to say that my wife woke me up this morning with
2 we're supposed to be in Hawaii. So I'm sure that
3 everybody had those pains.

4 I think we did a great job covering a
5 lot of material. There's no substitute for being
6 in person. I look forward to working on the
7 director's paper with Julie and to trying to help
8 put, make some sense of some of the things and I
9 always look for the humor and time to keep things
10 going.

11 So with that, my whale's name is Tua
12 after our Hawaiian quarterback from the
13 University of Alabama. And he can be seen
14 regularly in our pool. Thank you, signing off.

15 CHAIR SAADE: Anuj?

16 MEMBER CHOPRA: Good afternoon. Thank
17 you so much. Really enjoyed the presentations.
18 I'd like to commend NOAA on the progress made
19 especially in these difficult times, especially
20 about -- really liked the comment about taking
21 care of personnel, NOAA personnel, in these
22 COVID-19 times made by Nicole.

1 I strongly support the push for tech
2 and AI and to promote that into the mainstream.
3 And last but not the least, want to commend Lynne
4 and her full team for making this a virtual
5 meeting and making it successful and make us work
6 for it.

7 So, awesome. I think it went
8 seamlessly. So thank you for the opportunity.

9 CHAIR SAADE: Thank you. Qassim,
10 you're up, Qassim.

11 MEMBER ABDULLAH: Thank you. This is
12 my first meeting and I think it's a great
13 meeting, actually. And again, I just reiterate
14 what Anuj said. Would like to thank Lynne and
15 her team to make it happen online. There are a
16 few things that I would like to -- Lindsay
17 mentioned, like, for the membership of the group.

18 I would like to be a member of the
19 Technology Working Group in the future. And I
20 would like really to be involved with the
21 restricted visibility on the table, the
22 navigation through fog, you know.

1 I think we can bring a lot to it
2 definitely between GIS and bathymetry. I have
3 good experience with that and -- with something
4 for that. And I would like to commend Admiral
5 Smith for what they did on the Presidential Memo.

6 I will be looking forward to see what
7 the White House responds because it seems like we
8 are behind on mapping shoreline. There is a lot
9 of work needs to be done. So we'll be looking
10 forward for that. Thank you. That's it, Ed, for
11 me.

12 CHAIR SAADE: Thank you. Dr. Larry
13 Mayer? Larry? There he is.

14 MS. STODDARD: It looks like Larry
15 might be self-muted.

16 DR. MAYER: I think that fixed it, has
17 it?

18 CHAIR SAADE: Good.

19 DR. MAYER: Great meeting. Anuj and
20 Qassim stole my thunder in terms of thanking the
21 NOAA staff for making such a difficult virtual
22 meeting happen relatively seamlessly. I think

1 that was a tremendous job.

2 I think, like many of us, I'm very
3 excited about the ocean mapping strategy and
4 waiting for that to come out. And as was
5 reported, both at the White House summit and
6 again here, the ocean and ocean mapping are
7 really having a moment in this country. And it's
8 time that happened and I think we're at the
9 forefront of it and I think that's great.

10 CHAIR SAADE: Thanks, Larry. Nicole,
11 do you have any more comments for us, Nicole?

12 MS. STODDARD: Ed, if you're talking
13 about Nicole LeBoeuf, I believe that she had to
14 leave and she is no longer on the call.

15 CHAIR SAADE: Okay. Rich, over to
16 you.

17 MR. EDWING: All right, can you hear
18 me?

19 CHAIR SAADE: Yes.

20 MR. EDWING: I've got a green here,
21 so. No, I think we packed a lot into the
22 meeting, you know, for a short meeting. Maybe

1 the next best thing to being in Hawaii, right?

2 And I found the presentations
3 interesting and really look forward to seeing
4 everybody in person at the next meeting.

5 CHAIR SAADE: Thanks. Juliana?

6 MS. BLACKWELL: Just want to thank you
7 all for your continued enthusiasm and support for
8 our offices. And again, another kudos to the
9 staff for making this all work. Thank you.

10 CHAIR SAADE: Andy, you're up.

11 CAPT ARMSTRONG: All right. Thanks,
12 Ed. Again, I think a great meeting. And I guess
13 I'm coming -- I'm looking forward to the HSRP
14 developing this AI topic and particularly
15 identifying associated research needs and
16 opportunities with that.

17 CHAIR SAADE: Okay. I think you guys
18 can hear me. I'm going to wrap up and let Shep
19 do the words. I wanted to thank Jill Stoddard,
20 Amanda Phelps, Christine Burns, Galen Scott,
21 Virginia Dentler and the entire team.

22 It went off really well. A lot of

1 hard work. And, Shep, I want to say publicly
2 we're going to miss you at the next meeting, but
3 best to you in whatever comes next. So you can
4 take it from here, thanks.

5 RDML SMITH: Thank you, Ed. The HSRP
6 has been a really fun part of my suite of duties
7 here as the coast survey director. And I'm
8 actually quite proud of what we have all done
9 together in the last few years.

10 I think this, the health of this -- of
11 the HSRP itself is stronger than it's been in
12 some time. The engagement is outstanding.
13 Judging from the interest in this meeting, this
14 is a very relevant set of topics and the place to
15 discuss them. And so, I really want to
16 congratulate you, Ed, on your chairmanship and
17 your predecessors.

18 I saw Bill Hanson was on the phone
19 earlier. I don't know whether he's still on.
20 But -- and all of the really great Members that
21 we have had and that we have now.

22 And so, I also, I think I'm really

1 pleased that you all remember from meeting to
2 meeting some things that have long-term thorny
3 implications. And, you know, interagency
4 coordination is hard.

5 We work really hard at it. And it's
6 really critical and really is -- underlies our
7 credibility in our -- in the continued relevance
8 of our programs.

9 And on the fog and I'm glad you raised
10 that again, Rich raised it on the observation
11 side. But when we originally talked about it we
12 talked about three things, observations,
13 predictions, and scales, and in forms that were
14 relevant for navigation and also operating in it.

15 And so I'm really glad that Qassim
16 raised the subject of what it takes to operate
17 safely in sort of an instrument mode of precision
18 navigation. And that takes a lot of other things
19 in addition to the knowledge of the fog.

20 So, thank you all. And I'll just
21 reiterate thanks to the staff. And I'll
22 particularly call out Jill Stoddard who -- this

1 is her first HSRP and she got roped into being
2 the orchestrator of the entire thing.

3 So deciding who could talk when and
4 getting it all set up and conducted seamlessly.
5 So it's very hard, and this is the biggest
6 meeting we've ever done like this. And so, thank
7 you, Jill, and congratulations on pulling this
8 off. And back to you, Mr. Chair.

9 CHAIR SAADE: I would like to just
10 tell everybody that one of our former panelists,
11 Dr. Larry Atkinson sends his warm regards. He's
12 been stabilized and says he misses the HSRP
13 members and mission. And maybe he even watched.
14 I don't know, but hopefully --- (audio
15 interference). Our best wishes to Larry as well.

16 Before I sign off, Lynne, I'll just
17 ask should I read Admiral Gallaudet's note?

18 MS. MERSFELDER-LEWIS: I'm sorry, Ed.
19 Could you repeat that? You were garbled.

20 CHAIR SAADE: I think I know the
21 answer. I was going to ask you should I go ahead
22 and read from Admiral Gallaudet's note?

1 MS. MERSFELDER-LEWIS: Yes, actually
2 if -- let me just pull that up. I think I'm
3 going to read that for you because you're very
4 garbled.

5 CHAIR SAADE: That's fine. Okay, go
6 ahead.

7 MS. MERSFELDER-LEWIS: Admiral
8 Gallaudet, we tried valiantly to get him on but
9 he was, we couldn't control his phone from our
10 webinar. So he has been, like, a super strong
11 supporter of the HSRP over the years that he's
12 been with NOAA.

13 And he sent us a bunch of comments.
14 And we'll put this also into the report. But he
15 says, thank you all, both HSRP, NOAA employees,
16 and partners for advancing our hydrographic
17 capabilities and services over the years.

18 That is what gave the White House
19 confidence in getting the Presidential Memorandum
20 signed and that is what is ensuring that -- NOAA
21 and USG in applying the Ocean S&T to benefit the
22 American people.

1 It also delivered in a big way in our
2 COVID-19 response, where Office of Coast Survey
3 surged support to USNS Comfort's deployment to LA
4 to establish a safe navigation exclusion zone. I
5 think that was also in New York. I know we had a
6 safe navigation exclusion zone.

7 We are grateful for your efforts
8 during this meeting to review and recommend how
9 we apply emerging S&T and how we are implementing
10 the Presidential Memorandum.

11 For our unmanned systems, we are
12 surging unmanned this week and in May to mitigate
13 the collection gap created by having our ships
14 and aircraft halt their operations.

15 For this, work is being enabled by our
16 new unmanned program, the Fiscal Year 20 budget
17 and appropriations growth for the unmanned
18 systems. It will serve as a remarkable
19 validation for our NOAA unmanned strategy, the
20 executive order on AI and the CENOTE Act, which
21 you guys might know is C-E-N-O-T-E, and that's
22 referencing geospatial requirements.

1 Lastly, I look forward to seeing you
2 all in person again. I have thoroughly enjoyed
3 our past meetings, Miami and Juneau were
4 especially memorable.

5 And Nicole was right. You are one of
6 the funnest federal advisory committees that we
7 work with. Tim Gallaudet, PhD, Rear Admiral U.S.
8 Navy, Retired, Assistant Secretary of Commerce
9 for Oceans and Atmosphere, and Deputy NOAA
10 Administrator.

11 We so thank you for your comments,
12 generous comments. And that's all I have, Ed.

13 CHAIR SAADE: Okay. I'm garbled up.
14 I'm going to call the meeting closed. Thanks,
15 everybody. Great job, lots of great information.
16 Stay healthy and we'll all see each other soon.

17 (Whereupon, the above-entitled matter
18 went off the record at 4:29 p.m.)

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Before: US DOC/NOAA

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