U.S. DEPARTMENT OF COMMERCE

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

HYDROGRAPHIC SERVICES REVIEW PANEL

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PUBLIC MEETING

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FRIDAY, JUNE 9, 2017

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

MEMBERS PRESENT:

BILL HANSON, Chair DR. LARRY ATKINSON KIM HALL EDWARD J. KELLY CAROL LOCKHART DR. DAVID MAUNE CAPTAIN SALVATORE RASSELLO EDWARD J. SAADE SUSAN SHINGLEDECKER GARY THOMPSON NON-VOTING MEMBERS:

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

JULIANA BLACKWELL, Director, National Geodetic Survey, NOS

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

STAFF PRESENT:

REAR ADMIRAL SHEP SMITH, HSRP Designated Federal Official; Director, Office of Coast Survey TATIANA BOWIE, National Geodetic Survey

CAPTAIN RICK BRENNAN, Chief, Hydrographic Surveys Division

COLBY HARMON, Marine Chart Division

LAURA REAR MCLAUGHLIN, Center for Operational Oceanographic Products and Services

RACHEL MEDLEY, Acting Deputy Hydrographer, OCS

LYNNE MERSFELDER-LEWIS, HSRP Coordinator

ALSO PRESENT:

JOHN HAUSSENER DAVID HERICKS SHANA KINSEY-CARLSEN JOSE MORALES SOONG NOONIAN NATHAN WARDWELL

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1	P-R-O-C-E-E-D-I-N-G-S
2	1:09 p.m.
3	CHAIR HANSON: I just want to thank
4	everybody for getting on the call here and
5	putting up with the chairman's difficulty signing
6	in. I do appreciate the Panel members' work
7	since we met in Seattle. I also, again,
8	appreciate the others the public calling in as
9	well and welcome their participation.
10	So with that, Admiral Smith, I will
11	turn it right over to you.
12	RADM SMITH: All right. Well, thank
13	you all for joining us. We've got we called
14	this meeting specifically to provide consensus
15	comments to NOAA on the National Charting Plan,
16	which we didn't quite get done at the last in-
17	person meeting. And because we happen to have a
18	fully constituted group here, we wanted to take
19	advantage of that by adding a few other small
20	things on the agenda, if we have the time. And
21	that is to discuss the updates of HSRP work, to
22	discuss the draft agenda for the September public

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1	meeting, and we will have an announcement of a
2	congressional briefing as well.
3	So, Susan Shingledecker, who is here
4	in person, was kind enough to lead the coalescing
5	efforts on behalf of the Panel in response to the
6	National Charting Plan.
7	So, Susan, I'd like to turn the floor
8	over to you.
9	MEMBER SHINGLEDECKER: Sure. I notice
10	that the phone mic is way over there and over
11	there. Can people on the phone hear me okay?
12	Great. Oh, it's not green. Is that
13	a bad sign?
14	All right. Thank you to Joyce for
15	starting the process with the National Charting
16	Plan comments and thanks to all the members that
17	did weigh in. I've gotten comments up to a half
18	an hour ago. So, there is a couple of changes to
19	what was sent around but I hope that was useful.
20	Generally, I'd like to just say first
21	that I'd like to applaud the efforts that went
22	into drafting the plan. I think that this has

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really raised a lot of attention, certainly in 1 2 the recreational boating community, but what was interesting to me was, from the recreational 3 4 perspective, I kind of said okay. But then when 5 I looked at all the diverse comments that came in from other Panel members and it really showed to 6 7 me the richness of the Panel as a whole because there were so many things that all of the various 8 9 Panel members raised as a comment that my 10 community, they didn't even know about that part. 11 And so I was kind of laughing when they were all 12 excited about one particular thing. I was like 13 oh, my gosh, there is so much more meat in here 14 that you guys are missing and you are not even 15 aware of how great this is going to be or what a 16 big change this is.

So, it's been an exciting exercise for me. My thought was I have a couple comments from Joyce and she couldn't be here. I was just going to state those. And then my thought was to just kind of quickly -- not quickly -- takes as much time as you all want but walk through the

different sections in the draft comments, just 1 2 kind of quickly summarize those areas and see if there is any further discussion or clarification 3 4 on each of those issue areas. Then, I will write 5 down those comments, make any changes that are needed, and we will turn this back around to NOAA 6 7 as fast as possible because I know you are awaiting that. Does that work for anyone or does 8 9 anyone have any other different approach they 10 would like to take? 11 (No response.) 12 Okay. MEMBER SHINGLEDECKER: So from 13 Joyce, in her comments that I have here, she 14 wanted to make sure that we make it clear that 15 this is a charting plan only. I know there was 16 some -- some of the comments that we had in our 17 discussion in Seattle were there are so many 18 other things that we know the three offices are 19 taking on in terms of their future direction and 20 we didn't see that reflected into the plan. And 21 so perhaps something that we comment on that this 22 is the charting plan only, it doesn't include

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everything that the three offices are focusing on.

And then Joyce also pointed out that 3 4 there were several issues that were generally 5 agreed upon in the first round of reviews being: metric, definitely sounding should be shown as 6 7 much as possible, not removed in the channels, and steps to improve and clarify the ENCs and 8 9 ECDIS displays are critical. 10 So she also mentioned that the 11 documents should cross-reference other documents 12 and mention the plan to investigate or disprove 13 chart discrepancies using available resources. 14 So, those were just kind of some summary comments 15 from Joyce. 16 MS. MERSFELDER-LEWIS: Yes, I just 17 want to do a sound check. Is everybody on the 18 webinar able to hear Susan? 19 MEMBER HALL: We can hear her just 20 fine. 21 MEMBER SHINGLEDECKER: Phew! I was 22 nervous. It was quiet out there.

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1	MEMBER KELLY: Yes, we hear her fine.
2	MS. MERSFELDER-LEWIS: Thanks guys.
3	MEMBER SHINGLEDECKER: So now we have
4	the document pulled up on the screen and,
5	hopefully, you can follow along with me. It is
6	my hope that we can dispense with the
7	proofreading edits; that those are all kind of
8	just minor edits and don't need a whole lot of
9	discussion, unless anyone has any burning desire
10	to dive into proofreading.
11	And then we will go to Section 2,
12	Sources of Data Used to Maintain Charts: New
13	Chart Source Data.
14	The comments here, we talked about the
15	document does not address the inclusion of other
16	data sources except from the Army Corps of
17	Engineers and that it should discuss other data
18	sources and then lists a few them and goes on
19	further to suggest that contractors be added as a
20	source of hydrographic surveys.
21	Any questions or comments or revisions
22	needed for that?

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1	(No response.)
2	MEMBER SHINGLEDECKER: Okay, hearing
3	none, and if I move on too fast, just speak up
4	and we'll go back.
5	The New Editions of Paper Charts, 2.2,
6	there was a suggestion that the algorithm for
7	determining when to issue a new edition of a
8	raster chart be explained or at least the logic
9	outlined. I think this was more just the
10	background understanding to help the public
11	understand where we were versus where we're
12	going.
13	Suggested including a short list of
14	examples of routine chart updates because I agree
15	a lot of people don't understand what triggers
16	that.
17	An issue not mentioned in the document
18	is the timely transmission of the Local Districts
19	to UKHO for compiling the AIO cells. I will be
20	honest, I don't understand what this means but it
21	is very important to some people.
22	So, if anyone wants to expand on that

further, it's quite possible I didn't capture it 1 2 correctly. Can I ask about that, a 3 RADM SMITH: 4 clarifying question? I'm wondering whether local 5 districts they mean the local notices because I think the AIO --6 MEMBER RASSELLO: 7 I think I can. 8 MEMBER HALL: Just one moment. Lynn, 9 just FYI, there are other people on the phone 10 that are definitely being muted by your end, not 11 I was emailing Juliana and so she can their end. 12 hear us right now but she cannot speak. And she 13 used the PIN and everything and not able to get 14 through. 15 I just wanted to give you a heads up 16 on that. 17 MS. MEDLY: This is Rachel. Can 18 everybody hear me? 19 MS. MERSFELDER-LEWIS: Yes. 20 Okay. MS. MEDLY: Yes, I --21 MS. BOWIE: It appears that webinar is 22 unmuting and muting people on its own. We have

unmuted pretty much everyone. So I have just 1 2 unmuted people yet again. So, hopefully you are 3 able to hear and also participate. 4 MR. EDWING: This is Rich Edwing, can 5 you hear me? MS. MERSFELDER-LEWIS: 6 Yes. 7 MS. BLACKWELL: This is Juliana. Can 8 you hear me now? 9 MS. MERSFELDER-LEWIS: Yes, we can. 10 MEMBER HALL: Thank you. 11 MS. BOWIE: Does anybody else need to 12 be unmuted? 13 MS. MERSFELDER-LEWIS: Click Larry 14 Atkinson. 15 MS. BOWIE: So pretty much everybody. 16 Okay. All right. 17 MS. MERSFELDER-LEWIS: No, not 18 everybody. 19 MS. BOWIE: He self-muted. So some 20 individuals are self-muted; some individuals I 21 can unmute. 22 So, anyone else before we move

1 forward?

Т	Iorward?
2	MEMBER HALL: Thank you, Tatiana.
3	MS. MERSFELDER-LEWIS: Can you unmute
4	Andy Armstrong and Dave Maune?
5	MS. BOWIE: Again, some are self-
6	muted. If you need any assistance, please send
7	us a chat. I just unmuted a few that I was
8	unable to unmute. That means you should be
9	unmuted.
10	If you have any further questions,
11	please send us a chat and I will try to get to
12	that as soon as possible.
13	MR. ARMSTRONG: Thanks, I'll go ahead
14	and mute myself.
15	MS. BOWIE: Okay, great.
16	MEMBER SHINGLEDECKER: Okay, so back
17	to the comments about the UKHO. I think that
18	those actually came from Ed or Sal, if I'm not
19	mistaken from Ed Saade or Sal. Is that
20	correct?
21	MEMBER RASSELLO: I think it came from
22	me and I can explain a bit further.

The local correction, original, are 1 2 not permitted to the UKHO and, therefore, they are not readable on the electronic charts. 3 4 And the way that the UKHO permits this 5 on the electronic chart is a system called the Admiralty Information Overlay. 6 7 RADM SMITH: Okay. So I think, if I understand this correctly, it is the 8 9 clarification that I suggested was right, I think 10 that the Local Notice to Mariners is the source 11 for some of the information that is in the AIO. 12 And the Local Notice to Mariners is a 13 U.S. Coast Guard publication. So I think this is 14 -- I appreciate you flagging this, Sal, for our 15 attention. 16 MEMBER SHINGLEDECKER: Okay. So to 17 edit this comment for clarity, changing Local 18 Districts to Local Notice to Mariners. RADM SMITH: To Local Notice to 19 20 Mariners. 21 MEMBER SHINGLEDECKER: Okay, I can do 22 that.

1	Anything else on this topic?
2	(No response.)
3	MEMBER SHINGLEDECKER: Okay, moving on
4	to Section 3, ENC and RNC Chart Updates and New
5	Editions; 3.1 Normalizing ENC Depth Contours.
6	General agreement that standardizing scales and
7	contour values is important; concur with adding
8	additional integer unit contours and a note we
9	jumped the gun here but a note about changing to
10	metric as soon as possible comes up here. It
11	comes up again later.
12	New integer contours should not be
13	added without removing decimal meter contours.
14	And then some examples of importance with the
15	Port of Los Angeles were given.
16	Any further discussion on this section
17	or clarification needed?
18	MEMBER HALL: I just want to say I
19	think I know that Sal probably Ed put this in but
20	I this is something I think a lot of us would
21	agree with, especially the moving to metric and
22	not having multiple different values for contour

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lines.

2	MEMBER RASSELLO: If I can further
3	explain the metrification, it is not just to
4	translate the fathoms of feet in metrics but also
5	to add identity of metrification in narrow
6	channels and in enclosed waters in order that
7	every operator or user can use the most of the
8	back of that area of that channel.
9	So if the channel is metrified meter-
10	by-meter, obviously, I can use to be the site of
11	analysis when I do my voyage process plan.
12	So, it is not just to translate in
13	meters but it is also have a good density of
14	bathymetry in meters.
15	MEMBER SHINGLEDECKER: Okay, I didn't
16	have a bullet on that.
17	RADM SMITH: Yes, was that captured in
18	here? I don't see it.
19	MEMBER SHINGLEDECKER: I don't believe
20	it is.
21	RADM SMITH: I think that is an
22	important additional point, Sal and Susan is

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going to capture that.

2 MEMBER SHINGLEDECKER: Yes. Anything 3 else on the normalizing of the ENC depth 4 contours?

(No response.)

6 MEMBER SHINGLEDECKER: Okay, moving on to Metrification of ENC and Raster Charts. 7 As I said, it was mentioned earlier but we concur that 8 9 the U.S. charts should be changed to overall 10 metric format as soon as possible. We further go 11 on to say we would love to know more about soon 12 and pick what soon is with a reasonable fixed 13 date. And then we go on further to suggest a 14 priority of charts to be converted to metric. 15 And then I know I added that significant 16 educational outreach will be needed on the move 17 to metric for nonprofessional mariners. 18 Are there any other comments on the 19 metrification of ENC and raster charts? 20 CAPT BRENNAN: I would just say 21 mariners.

22

MEMBER SHINGLEDECKER: You think

everybody needs it? 1 2 CAPT BRENNAN: I know that that is 3 going to be the case. 4 MEMBER SHINGLEDECKER: Yes. I mean 5 from my perspective, I mean my initial thought, we were out cruising just two weekends ago and I 6 know exactly when we stopped moving because we 7 have run aground on my depth sounder. But that's 8 9 in feet. 10 If you ask me today, I mean I have done metric conversions a lot but I don't know 11 12 what my boat draws in meters. I know what it 13 draws in feet. 14 RADM SMITH: You just have to 15 experiment, Susan. 16 MEMBER SHINGLEDECKER: Right. I can 17 tell you at 3.8, we're not moving. We found that 18 the other night. I can tell you where that was 19 on the Red River. 20 Okay, moving on, 3.3, Reducing 21 Unwarranted Alarms/Isolated Dangers. A problem 22 not mentioned in the document is dual compilation

scales within one ENC due to an insert and an 1 2 example is provided. We suggest creating a dedicated ENC for each inset to the chart. 3 4 Add metric values to non-dangerous 5 point features of unknown depth and it talks about if the imperial-unit depths of these 6 features are being updated, add metric values at 7 the same time. 8 9 When compiling metric values for 10 subsea features on charts, do not forget to 11 compile metric value for overhead clearance. 12 Any other questions, clarifications, 13 or discussion on reducing unwarranted alarms? 14 (No response.) 15 MEMBER SHINGLEDECKER: You quys are 16 easy on me today. 17 3.4, Channel Tabulations. This came 18 up and it came up in a discussion that I saw I 19 think via email where there was some concern 20 about the Panel's comments on the National 21 Charting Plan if those comments are to NOAA or to 22 the Army Corps of Engineers. And I made a note

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here, as we start to get into the Army Corps of 1 2 Engineers related comments. And I thought about that a little bit that as a Panel that it's our 3 4 job to advise NOAA but since this Army Corps of 5 Engineers is in this document so much, I think we certainly can comment on the plan as it relates 6 7 to that. But if we need to have broader discussion on that, we can do that. 8 9 So anyway, 3.4 Channel Tabulations. 10 At least two U.S. Army Corps districts published 11 disclaimers, stating that their channel condition 12 surveys should not be used for navigation and 13 that mariners should refer to the NOS nautical 14 charts. This conflicts with the National 15 Charting Plan recommendation to refer mariners 16 and pilots to current U.S. Army Corps surveys. 17 If the U.S. Army Corps states that its surveys 18 are not adequate for navigation, why should 19 mariners and pilots rely upon them? And then 20 there are some examples here given. 21 The document says that NOAA may remove

all depths from channels. This was a pretty

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strong recommendation from a number of Panel 1 2 members that they do not agree and all channels should have depths. 3 Do we need more discussion on this 4 5 part? Okay. RADM SMITH: Was this -- was that 6 7 section -- was the -- sorry. In the plan, did the plan propose to remove depths from channels? 8 9 I thought that was only on the paper charts, 10 paper and raster, so as to concentrate effort on 11 better charting on the ENCs. 12 MEMBER SHINGLEDECKER: I'm not 13 positive. RADM SMITH: Does that clarification 14 15 change the recommendation from the Panel about 16 all channels should have depths? Are you saying 17 on the paper chart as well? 18 MEMBER SHINGLEDECKER: I'm looking to 19 see where we were getting that from. Does anyone 20 else recall? 21 MR. ARMSTRONG: This is Andy. It 22 seems to me that Part N did say that we were

considering not putting them on the paper charts. 1 2 I don't recall that they might not be in the ENCs. 3 4 MEMBER HALL: Maybe it is worth 5 further clarifying in the actual paragraph where that's found. 6 7 MEMBER SHINGLEDECKER: I'm seeing here -- I'm not sure if this is the right --8 9 It says page 20. RADM SMITH: 10 MEMBER SHINGLEDECKER: Yes, that's 11 where I'm trying to dig in a little bit. I mean 12 we have generally depth values are not shown 13 within chartered channels, however, there are few 14 exceptions, most notably in the Boston area. 15 Given the other changes and how Coast 16 survey will be portraying channel data, the 17 depiction of soundings within channels is being 18 reevaluated and these depth values within 19 channels may be removed from raster charts and 20 ENCs in the future, realigning these charts with 21 the standard NOAA charting practices. I think 22 that was the line that that was addressing.

Okay, so we hear your 1 RADM SMITH: 2 recommendation loud and clear. 3 **MEMBER SHINGLEDECKER:** Okay. MR. ARMSTRONG: So it sounds like what 4 5 that meant was that places like Boston, where soundings are shown in the channels, that they 6 7 would be removed or would be considered for removal, as opposed to changing the situation we 8 9 have now where we show the channel tabs. We 10 should be sure we get clarity on all of this, I 11 think. 12 MEMBER SHINGLEDECKER: Would the Panel 13 like to see me revise the comment to kind of cite 14 the area in the plan where that is mentioned? Is 15 there revision needed in our comment to clarify 16 that further or is how it's represented now fine? 17 MEMBER HALL: This is Kim Hall. Ι 18 think you do need to clarify that we are saying -19 - that the blanket statement that those values 20 are needed I think kind of focus what we're 21 talking about here. So I think it needs to be a 22 little clarified with regard to what we're

It's not on ENCs but perhaps the 1 talking about. 2 paper charts and that's what we mean so that if Shep walks out of the room today, he doesn't 3 4 forget what we actually meant by that comment. 5 MEMBER RASSELLO: This is Sal. Tf T understand well this matter is that probably what 6 7 that means is to remove those back where they are not needed but we should still keep the back 8 9 lines in the channels and not just the single bad 10 spots because they don't do any use -- what we use these, the depth line is to establish the 11 12 safety contours where the ship or the boat can 13 navigate or not navigate. And there should be no 14 difference between the paper chart, or raster 15 chart, or an ENC because all three are connected and replicate -- I mean ENC is taken from the 16 17 paper charts. So if we remove that from the 18 paper charts in the channel, we will not have any 19 depth on the ENC. But we should leave the depth 20 lines, the bathymetries.

21 That's the way I understand. Maybe I 22 am wrong.

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1 RADM SMITH: I don't want to get too 2 deep into this but I will just note for the Panel, just to help with the Panel's discussion 3 4 that we have switched that. So we are not --5 while we did derive the original first generation ENCs from the paper chart, we are now doing it in 6 7 the opposite direction and revising the paper charts based on changes to the ENC, where we have 8 9 paper chart coverage that matches the ENC. 10 Now, the underlying proposal in the 11 national charting plan is that we will be 12 enhancing significantly our ENC coverage but not 13 necessarily developing paper charts that match 14 all of that improved coverage. And so the switch from ENC --15 MEMBER RASSELLO: I understand that we 16 17 don't want to go back to update the paper charts 18 because paper charts are going to go. So, if you 19 work on ENC directly, you don't need to work on 20 paper chart sites. That's what you mean. 21 RADM SMITH: Yes. 22 MEMBER RASSELLO: Okay.

1 RADM SMITH: So I guess I would ask 2 for clarification from the Panel about whether all channels should have depths refers to the 3 4 paper chart and the ENC or if there is any caveat 5 in there about where scale can support it, et cetera, or if the recommendation is all channels 6 7 should have depths, then that means we need larger scale coverage of many channels, which 8 9 could, in fact, be a recommendation of the Panel 10 but I want a clarification. And the second clarification is Sal 11 12 suggested we don't actually need the soundings in 13 the channels, we need the contours, which is not 14 the same as what is written here. So, if there 15 is a clear recommendation there, then I guess I 16 would ask for clarification on that, too, whether 17 we are talking about soundings, or contours, or 18 both. 19 MEMBER SHINGLEDECKER: I'm going to 20 put this back out to you all on the Panel. Most 21 of my votes, the recreational guys, they don't 22 need to know. I mean 50 feet, 60 feet, it

doesn't really matter to them. 1 2 Is there someone that -- I mean do we want to discuss it further now here what we want 3 4 or is there someone that volunteers to write a 5 couple sentences of clarification and send that to me? 6 7 MEMBER RASSELLO: I think that John -what's his last name, I don't remember, the guy 8 9 from hydrography, he can clarify this. 10 MEMBER HALL: John Nyberg? 11 MEMBER RASSELLO: Yes. 12 MEMBER SHINGLEDECKER: Well, what I 13 heard from Shep was he wanted clarification from 14 us. 15 MEMBER RASSELLO: I understand but --16 MEMBER SHINGLEDECKER: Do we mean that 17 all channels should have depths at what scale? Ι 18 mean is it all -- every channel on every chart 19 must have depths or is it you must be able to get 20 it if you zoom in enough? And is it contours or 21 is it soundings? That's what I heard from you. 22 RADM SMITH: Yes.

MR. ARMSTRONG: Or, in fact, is it a 1 2 channel tabulation? So, it seems to me when I read -- this is Andy again. 3 4 When I read the recommendation, what 5 the concern was was the possibility that mariners were being asked to go to the Corps of Engineers 6 7 for the depth information, as opposed to having it on the chart in some form or another. 8 9 Okay, I think that's a RADM SMITH: 10 helpful clarification. 11 MEMBER SHINGLEDECKER: Yes. 12 RADM SMITH: If that is the sense of 13 it, then I think that is a very helpful and clear 14 recommendation. 15 MR. ARMSTRONG: So I guess I would ask the Panel if that is, indeed, what the intent was 16 17 here. 18 MEMBER SHINGLEDECKER: That's how I 19 understood it, Andy. 20 That sounds clear to MEMBER KELLY: 21 me, Andy. 22 MEMBER SHINGLEDECKER: Andy, would you

1	mind sending me that in a sentence or two, so
2	that I can add that in?
3	MR. ARMSTRONG: I'll do that.
4	MEMBER SHINGLEDECKER: Thank you. I'm
5	just writing some notes for a second here, to
6	make sure I get it as fast as I can but that will
7	help me.
8	Okay, any further discussion on this,
9	and particularly with the earlier comment on kind
10	of the conflict between Army Corps saying don't
11	use this data for navigation and we're saying use
12	it for navigation?
13	Okay.
14	MR. ARMSTRONG: Well, I think, yes,
15	that's the point.
16	RADM SMITH: Very well put.
17	MEMBER SHINGLEDECKER: How do we
18	resolve that larger issue? Okay, Section 3.5,
19	Reported, Existence Doubtful, and Position
20	Approximate Dangers. This is more of an edit but
21	this section should be its own separate third-
22	level heading. It's not a subsection of Channel

1	Tabulations. Thank you to Ed Saade, again, for
2	the organization of the document overall.
3	To be consistent with MSC, if the
4	mariner does not specify a safety contour, this
5	should default to 30 meters, we suggest to
6	increase the proposed depth value to 100 feet
7	30 meters as 30 meters has been recognized to
8	be a safe depth.
9	I'm not versed in this comment very
10	well, if someone wants to expand on it more.
11	MEMBER RASSELLO: Okay, I can. It
12	seems we are talking about to use ENC and ECDIS.
13	The ECDIS default but the ECDIS start going into
14	they say is 30 meters. So from 30 meters going
15	shallower, that is where we should have the work
16	done on bathymetries.
17	RADM SMITH: Is this a threshold?
18	MEMBER RASSELLO: Yes, default for all
19	the ECDIS is international citing for ECDIS.
20	They don't read the detail over the 30 meters
21	there. So there is no reason to do any detailed
22	bathymetries metrification of over 30 meters from

That is more or less what that means. 1 that. 2 So, the ECDIS default is 30 meters. From 30 meters going shallower than when all the 3 4 bathymetries should start showing the density. Shep, does that 5 MEMBER SHINGLEDECKER: 6 comment ---7 RADM SMITH: I guess I want to make sure I understand which part of the National 8 9 Charting Plan you are referring to here. 10 MEMBER RASSELLO: This was into the 11 same context of metrification, right? I think. 12 Yes. 13 MEMBER SHINGLEDECKER: If that's the 14 case, then we need move the comment and I 15 apologize for not understanding what it was 16 referencing. 17 MEMBER RASSELLO: You can remove it 18 but what I have that with regard to that was 100 19 feet, up to 100 feet or up to 66 feet, was 20 something limit but this should be 30 meters, 100 21 feet almost. The detail of the ENC charts should 22 be up to 30 meters. I don't know if that is

1 relevant for the paper. 2 I will find the paragraph. To be consistent with MSC.232, the mariner does not 3 4 specify the safety contours. This should be 5 default to 30 meters because that is what the ECDIS default is. 6 I quess I don't 7 MEMBER SHINGLEDECKER: 8 understand. We suggest the proposed depth value. 9 Which depth value, where? 10 The value of the MEMBER RASSELLO: 11 depth where it goes -- we discussed before about metrification, about density of bathymetries, 12 13 correct? 14 MEMBER SHINGLEDECKER: Yes. 15 MEMBER RASSELLO: Yes, so these are to 16 be extended up to 30 meters of depth because that 17 is where the ECDIS starts reading. If I cancel 18 open waters and I get into a port, when the keel 19 clearance reaches 30 meters, that's when the 20 ECDIS starting analyzing the precise navigation. 21 RADM SMITH: Can I ask, Sal, perhaps 22 you are referring to the last sentence on page --

on the section on nondangerous wrecks of unknown 1 2 depth on page 19, where it says Coast Survey is now undertaking an effort to estimate and 3 4 populate safe clearance depth value for all 5 wrecks deeper than 66 feet, 11 fathoms. This will eliminate much of the unnecessary display 6 7 clutter. Is that what you're talking about? MEMBER RASSELLO: No, I'm talking 8 9 The first paragraph on page 8 -about page 8. 10 to be consistent with MSC.232. 11 MEMBER SHINGLEDECKER: Right. We're 12 referring to page numbers in the National 13 Charting Plan, itself, that triggered the 14 comment. 15 MEMBER RASSELLO: Yes. Page 8 --16 MEMBER SHINGLEDECKER: Page 8, that's 17 our comments, the Panel's comments. 18 MEMBER RASSELLO: Yes. Is that not 19 clear? 20 RADM SMITH: Which part of the 21 Charting Plan -- if we were to look at what 22 section I should edit, what am I editing?

1	MEMBER RASSELLO: I don't think you
2	need to edit anything. This is just you asked me
3	to explain what the 30 meters is, right?
4	MEMBER SHINGLEDECKER: It sounds like
5	what I can do is move this comment over in the
6	section where we're talking about metrification.
7	I was going to add a bullet on the density of
8	let me look at my notes on density and I could
9	move this comment there.
10	RADM SMITH: Yes, this it seems to
11	me that this is relevant to
12	MR. ARMSTRONG: Admiral
13	RADM SMITH: Go ahead, Andy. Sorry.
14	MR. ARMSTRONG: Yes, I recall this at
15	the meeting, too, and I think Sal brought it up
16	in relation to just the passage that you cited a
17	minute ago about I think his concern was, at
18	that time, was that 11 fathoms wasn't enough,
19	that it needed to be 30 meters.
20	MEMBER RASSELLO: Yes.
21	RADM SMITH: Okay, so we're talking
22	about the last sentence of the section on

Nondangerous Wrecks of Unknown Depth on page 19. 1 2 So that is the -- I understand what you're trying to get at and it applies to that sentence. 3 4 MEMBER SHINGLEDECKER: I will make 5 that citation more clear. RADM SMITH: 6 Yes. 7 MEMBER SHINGLEDECKER: And I'll revise it to make that citation more clear. 8 9 RADM SMITH: Okay, thank you. 10 MR. ARMSTRONG: Thank you. 11 MEMBER SHINGLEDECKER: And I 12 appreciate the clarification. Because like I 13 said, the value of this Panel is that everybody 14 has a different perspective and I certainly don't understand all of them. 15 I have learned so much. 16 Nondangerous -- just making note. 17 Okay, from there, we moved into use 18 trusted sources to --19 Okay, moving on. So we went into use 20 trusted sources to prove objects near their 21 working areas. So, as Army Corps, Coast Guard, 22 and others are in those areas, use them to prove

objects, where they are. 1 2 Also use satellite and aerial 3 photogrammetric -- I knew I was going to say that 4 wrong -- photogrammetric -- yes, you know what I 5 mean -- to prove the existence position of objects. And then we go into a few examples. 6 And further comment that this is a 7 low-cost, low-overhead method of detecting wrecks 8 9 and obstructions in clear water. It won't 10 suffice for disprovals but it will help declutter 11 the chart. 12 Any other comments or questions, 13 clarifications in this section? 14 (No response.) 15 MEMBER SHINGLEDECKER: Okay, moving right along to Small Craft Charts. 16 17 There was a question about do the red 18 arrows indicate north for each chart panel? It 19 is not clear. The orientation of each chart 20 panel does not necessarily mean the chart panel 21 orientation is north up. 22 And I kind of laughed at this comment

because I think that is kind of the whole point 1 2 of fixing this problem is that that is a problem for everyone and we couldn't even necessarily 3 4 understand it was depicted in the plan. RADM SMITH: We need a better caption 5 6 on that. MEMBER SHINGLEDECKER: 7 Yes. 8 RADM SMITH: Okay. 9 MEMBER SHINGLEDECKER: I think the 10 point of the image was to show how confusing it 11 is and it did, it was successful. 12 And then someone put why not make 13 small craft chart available in KMZ format. 14 Google Earth has apps for Android and iPhone. It 15 would be an easy way to get charts into 16 georeferenced format that people are already 17 accustomed to using. 18 Another comment on making an S-series 19 I thought this was interesting. of charts. Make 20 small-scale small craft ENCs and RNCs as insets 21 or overlays to a distinct set of larger scale 22 charts, much in the same manner that BOEM lease

blocks in the Gulf of Mexico are overlaid on A-1 2 series charts. This would put charts together in a reasonable, logical manner without cluttering 3 4 up existing charts or distracting commercial 5 vessel masters. And a couple examples were provided there. 6 7 Are there any questions or further discussion on small craft charts? 8 9 (No response.) 10 MEMBER SHINGLEDECKER: All right, 11 Section 5. We have a lot to say about U.S. Army 12 Corps of Engineers Data for Ship Channels. 13 There was just kind of a general 14 comment which I think we have been saying for a 15 number of years was the discussion of Army Corps 16 issues and pleased that the issues are discussed 17 openly in the National Charting Plan. There is 18 no reason these two major government bodies 19 tasked with hydrographic surveys should not 20 consult with one another for improvement and 21 standardization. 22 And kind of a general call that all

Army Corps districts, whose products overlap NOS 1 2 charts should be part of this National Charting Plan development. They should be committing to 3 4 timeframes for adoption of eHydro delivery 5 method/schedules. And again, I think this was one of those areas where I know some Panel 6 7 members were like hey, who can tell the Army Corps what to do here and figuring out our best 8 9 mechanism for providing the feedback and the 10 importance we feel on this area. 11 There was an acknowledgment about 12 budget reductions necessitating more cooperation 13 and resource sharing, suggests setting up 14 dedicated points of contact, specific 15 communication protocols between the entities. 16 Again, further coordination suggested 17 set up site visits and/or virtual tours, 18 including horizontal and vertical datums, and 19 just recognizing the complex task and that 20 multiple sessions may be necessary. 21 Further, we go on to say that Army 22 Corps Districts must -- that's a strong word --

adopt and adhere to consistent quality standards between districts and within individual districts for the delivery of their products to NOAA, so that NOAA has the confidence in the use of the Army Corps data for charts.

We go into that a little bit further, the concern about being in different datums and I know Gary actually has a comment to add on datums and moving to new datums.

Serious focus will be required to ensure that Army Corps and NOAA data are compatible and of adequate quality for nautical charting.

14 On the next page, we say given that 15 Army Corps-controlled depth channels are some the 16 most navigationally significant waters in the 17 nation; suggest working with the U.S. Army Corps 18 to ensure better-than-CATZOC B coverage is 19 obtained during all routine channel condition 20 This may be as simple as collecting surveys. 21 sidescan sonar data and sending it to a 22 designated NOAA unit.

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1	If a contractor hired by the Army
2	Corps for channel condition surveys is also a
3	trusted NOAA contractor, then the Army Corps may
4	specify object detection surveying as part of the
5	scope of the channel condition surveys, and that
6	the contractor shall process object detection
7	data in accordance with NOS specifications and
8	submit the object detection data for review, as
9	an effort to save effort on the part of all
10	organizations and be more cost-effective.
11	For distributing NOAA, U.S. Coast
12	Guard aids to navigation and Army Corps-
13	controlled channel updates simultaneously;
14	suggest linking the distribution website to
15	Notice for Mariners, which is where people
16	already go to look for updates.
17	Important to recognize that eHydro is
18	an Esri-based distribution format, not a set of
19	survey specifications and deliverables.
20	Incorporating eHydro deliverables must be
21	considered as a separate item and eHydro will not
22	replace serious discussions on survey quality and

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survey specifications.

2 Army Corps has declared that only data from eHydro should be used. This is a good step 3 but how will this affect getting data from the 4 5 districts that do not use eHydro onto the charts? And need to determine a fixed time 6 line for the eHydro rollout. 7 That's an overview of a really big 8 9 section. What do we need to discuss? 10 I know there's something. Come on, 11 guys. 12 CHAIR HANSON: So, I'll go ahead --13 this is Bill Hanson -- and just offer something I 14 shared by email here. You know as an Advisory 15 Committee to NOAA, I think we have to be careful 16 about advising the Corps of Engineers. It's very 17 easy for the Corps to ignore this or not even pay 18 attention to it. 19 So, if we can rephrase comments or 20 have them from the NOAA perspective, I think it 21 would be more appropriate. 22 MEMBER SHINGLEDECKER: How do you all

1 feel about -- I mean some of these things do
2 require change on the part of Army Corps. Is
3 there a better mechanism to get that message over
4 to them or is it just that we need to word it
5 carefully so that it doesn't seem out of place or
6 off-putting?

7 MEMBER KELLY: Susan, this is Dave I kind of agree with Bill. We can 8 Kelly here. 9 advise NOAA, not the Corps. And I think our 10 instructions should be that we recommend to NOAA 11 to effect the coordination that is necessary with 12 the Corps and just kind of do a work-around a 13 little bit that way.

MEMBER SHINGLEDECKER: Shep?

15 Yes, I guess I think what RADM SMITH: 16 Bill suggested is very helpful in that these are 17 things that -- you know you are advising NOAA. 18 So these are things that we can do or even more 19 specifically what should be in the Charting Plan. 20 Because we are specifically talking -- it's not that some of these recommendations should not be 21 22 good recommendations to NOAA in general or in a

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different context, but in the context of the 1 Charting Plan and how we should handle different 2 types of data, et cetera, I think we should focus 3 4 on the issues that can be responded to or 5 included in the Charting Plan in this recommendation about the Charting Plan. 6 7 MEMBER SHINGLEDECKER: One of the --And most of these comments were kind of 8 I agree. 9 cut and pasted and put in as they came in from 10 individual Panel members. 11 So I know that many individual Panel 12 members feel something needs to happen at the 13 Army Corps level. And one of the overarching 14 comments that Joyce had, I think, this is a 15 National Charting Plan, not just a NOAA Charting 16 Plan. And how do we make it a National Charting 17 Plan that includes the other relevant agencies 18 more, possibly, so that we actually can achieve 19 what's necessary for that interagency 20 coordination? 21 RADM SMITH: Again, I'm trying to --22 this is an ongoing conversation.

1	MEMBER SHINGLEDECKER: Yes.
2	RADM SMITH: The conversation has
3	moved significantly with the Army Corps, since
4	the last time we spoke about it but I want to
5	resist the opportunity, the temptation to update
6	you on it now because we'll do that in September.
7	MEMBER SHINGLEDECKER: What would be
8	most helpful to you, in your relationships with
9	the Army Corps
10	RADM SMITH: I think not pissing them
11	off would be good.
12	MEMBER SHINGLEDECKER: All right.
13	RADM SMITH: We have enough levers to
14	do that on our own.
15	So I mean you guys can you know
16	report whatever recommend whatever you want.
17	That's your prerogative.
18	Those things that are not relevant to
19	the National Charting Plan that are in here may
20	still be good recommendations that we will take
21	under advisement in different contexts and that's
22	fine.

1	MEMBER SHINGLEDECKER: Okay.
2	MR. ARMSTRONG: Yes, so there are
3	several fairly significant sections on Army Corps
4	of Engineer data in the plan and I think that the
5	recommendations were sort of all bounced off of
6	those sections but probably worth taking a
7	careful look to make sure that they do, indeed,
8	respond to those sections in the plan, where
9	they're provided as recommendations for the plan.
10	MEMBER SHINGLEDECKER: Is there a
11	Panel member who feels strongly about this
12	section that would like to take a crack at
13	rewording it?
14	I'm asking for help because I know we
15	need to get these comments finalized and
16	submitted Monday. I mean as soon as possible.
17	And if there somebody who has better
18	relations or better insight into Army Corps that
19	could help me with that, that would expedite the
20	process.
21	CHAIR HANSON: I could try, Susan.
22	MEMBER SHINGLEDECKER: Thanks, Bill.

So as far as the timing, 1 RADM SMITH: 2 we have officially extended the comment period to July first but you know whenever you are ready to 3 4 give them would be great. 5 MEMBER HALL: Yes, because I avoided putting out the thing for precision navigation 6 7 because I didn't want to undo Susan's good work. So I hope you don't say I owe that paper to the 8 9 Panel by July first. 10 So we can say by Monday for Susan, 11 then I can put out my message for precision 12 navigation on Tuesday. 13 MEMBER SHINGLEDECKER: I mean, 14 honestly, I would like to just -- I don't want to 15 delay until July first. I've got a window of 16 time next week that I can focus on this a bit and 17 I would like to get it wrapped up and move on. 18 So, thank you, Bill, for volunteering 19 for that. 20 Next is Section 6, Vision for the 21 Future of --22 Can I make one comment? RADM SMITH:

Because this has come up with NOAA contractors a 1 2 couple of times. When we say NOAA survey, we mean NOAA surveys that include our contractors, 3 4 right, not just by NOAA employees on NOAA 5 vessels. So just to clarify, when we say a NOAA 6 survey or NOAA source, we make no distinction in 7 our processes between a survey that was done by 8 9 our own field units and those done by under 10 contract to us for that purpose. 11 So, I know we have got several 12 comments in here where it says and contractors. 13 Like I said, I just wanted to clarify that. 14 MEMBER SHINGLEDECKER: Great. Any 15 further discussion there are you going to wait, 16 Bill, and fill in my edits on that section? 17 Because there were other meaty things, if you 18 want to discuss. 19 Okay, moving on to 6, Vision for the 20 Future of the Nautical Charting. A general 21 comment that came here was the time horizon of 22 this vision is unclear.

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1	6.1
2	RADM SMITH: Do you have a
3	recommendation?
4	MEMBER SHINGLEDECKER: Perhaps
5	clarifying the time line, I guess. I know this
6	came up with the recreational boaters where
7	people, in absence of seeing a timeline, they
8	invented their own. They said you're making
9	these
10	RADM SMITH: Next year.
11	MEMBER SHINGLEDECKER: changes next
12	year!
13	So you know people see future and to
14	me, honestly, I think sometimes with federal
15	agencies it is so rare to see this vision of the
16	future that people didn't know if this is set in
17	stone. Is this absolutely happening? Is it
18	happening tomorrow or is this happening in ten
19	years? Is this a maybe if things develop in this
20	area or is this a we're laying the groundwork and
21	putting the steps in place?
22	RADM SMITH: I think it's all of those

things and without the firm -- so, we could 1 2 clarify we don't have firm plans or timelines on any of these things but this is generally the 3 4 direction we see this happening over the course 5 of the next decade or more. 6 MEMBER SHINGLEDECKER: Yes, so I mean 7 I wouldn't want to handcuff yourself to specific I think it's great that you are 8 timelines. 9 exploring just a future vision. But maybe if 10 there is a way to clarify over the next decade or 11 12 MEMBER HALL: Yes, I would say at 13 least the next five to ten. There needs to be 14 something there because if it is 20 to 30 years, 15 then it is things that folks will decide never 16 gets done because of changes in administration, 17 changes in people and place. But five to ten is 18 doable, potentially. I don't know how doable it 19 is for you, Shep, but I know that that is an

important thing if you will read this to
understand kind of you are going to make strides
over the next decade, fine, but I think it's

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important to have that in there.

2	MEMBER SHINGLEDECKER: Yes, I mean for
3	Panel members that may not know, the recreational
4	boating community was very quiet on the document
5	and in the last two or three weeks, it's like
6	they only read the last section. They missed all
7	the earlier part.
8	RADM SMITH: Perhaps that was all that
9	was forwarded to them.
10	MEMBER SHINGLEDECKER: They missed all
11	of the earlier part that talked about all of the
12	immediate changes. And if you had read those,
13	you would understand that RNCs weren't going away
14	next year but they only read the vision and
15	panicked. So.
16	MR. HARMON: Hello? I don't know if
17	you can hear me. This is Colby Harmon.
18	RADM SMITH: Hi, Colby.
19	MR. HARMON: Hi. So I just dialed in
20	a couple of minutes ago and yes, we did get a
21	flood of comments from recreational boaters.
22	I think we well, I know we

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intentionally left that section vague because it
 was not as much a prediction as a recognition of
 a trend. And I don't think there was any call
 for us to take action. It was just us
 recognizing that, over time, paper charts will
 become less and less important and it is
 something we should think about.

So, you know it would be impossible to 8 9 predict when paper charts are going to go away, 10 5, 10, 15, 20, 50 years from now. So, I think we 11 can certainly clarify in the next edition that 12 this is not an imminent decision. We haven't 13 already decided to do -- we have not decided to 14 do away with paper charts but there is a time in 15 the future where that is likely to happen. 16 That's all that that section said and used big 17 words like likely to, et cetera. Because the 18 blogs that quoted or didn't really even quote the 19 Nautical Charting Plan made assumptions about 20 what those words meant, it sort of riled up the 21 recreational boaters.

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MEMBER SHINGLEDECKER: I think there

is a way to just clarify -- you know you all look 1 2 at what products get used, at what rate, and you are going to have products that meet the wide 3 4 variety needs. That is what the next comment gets to: 5 recreational boating community has had a strong 6 reaction to the concept of sunsetting paper 7 charts. While more and more boaters are 8 9 accessing chart products online and via digital 10 means, there is still a large user base of the 11 traditional paper chart products. Echoing the 12 HSRP's --13 RADM SMITH: Is that true or are they 14 using ESB chart kits? When I sav 15 MEMBER SHINGLEDECKER: 16 traditional paper chart products, that is they 17 may not be using a large format printed print-on-18 demand NOAA chart but they may be using a chart 19 book or some third-party provider that --20 So we very clearly mean RADM SMITH: 21 those official chart products that are suitable 22 for -- that meet carriage requirements that are

printed to a performance standard by our POD 1 2 providers --3 MEMBER SHINGLEDECKER: Right. 4 RADM SMITH: -- period. 5 MEMBER SHINGLEDECKER: Right. 6 RADM SMITH: That's what we mean by 7 traditional paper charts. MEMBER SHINGLEDECKER: 8 Yes. 9 So those paper products RADM SMITH: 10 that are derived by private sector companies from 11 our digital products are not affected by this. 12 MEMBER SHINGLEDECKER: Yes, I know. 13 RADM SMITH: So, I think that's where 14 we need to clarify and that is what keeps getting 15 missed here. 16 Even the articles talking about how 17 valuable paper charts are, none of them showed 18 the picture of paper chart that would be affected 19 by this. 20 MEMBER SHINGLEDECKER: Right. 21 RADM SMITH: They all showed some very 22 nice waterproof chart or a chart kit or

something. 1 2 So I think we recognize we will need 3 to clarify. 4 MEMBER SHINGLEDECKER: Yes. 5 So, we take your point. RADM SMITH: MEMBER SHINGLEDECKER: The photo in 6 our press release had an actual NOAA chart and, 7 I'm the hand model. 8 9 RADM SMITH: Thank you. That was your 10 hand? 11 That was my MEMBER SHINGLEDECKER: 12 hand. I will tell you that chart is framed and 13 on our office wall. It's not on a vessel because 14 more people use them as art but that's a separate 15 issue. 16 RADM SMITH: Okay, so maybe we can 17 just take a quick break. 18 So Colby Harmon, I wanted to 19 introduce, is the main -- the lead editor on the 20 National Charting Plan and is day job is on staff at the Marine Chart Division. 21 22 Oh, and Carol, welcome. Carol

Lockhart is a Panel member. 1 2 MEMBER SHINGLEDECKER: So just ending this section --3 4 MR. HARMON: Good afternoon. MEMBER SHINGLEDECKER: -- ending this 5 section here, the main message on the 6 7 recreational boater perspective, and I think Shep has heard it loud and clear but to have it in 8 9 there is that data for recreational boaters must 10 continue to be available in a variety of formats, 11 including paper charts. 12 And when I say paper charts, I mean a 13 way that people can have a chart printed on 14 It doesn't have to be the large format, paper. 15 traditional print on demand vendor product. We 16 just need to be able to have a way for the person 17 that wants a paper printout to get the data onto 18 a piece of paper. 19 I think my father is the RADM SMITH: 20 last one that uses official NOAA charts on a 21 recreational boat. 22 No, in some of MEMBER SHINGLEDECKER:

the interviews I did last week I said, okay, 1 2 Memorial Day I was out with my family. We had three references onboard. We had a cruising 3 4 quide. We had our chart book, and we had an app 5 on our phone. And all were third-party products. All served us very well but none of them were a 6 7 paper chart in that traditional sense. So we are looking to 8 RADM SMITH: 9 optimize -- I mean so we don't need to clarify 10 again but we're looking to optimize our 11 production system to serve those products that 12 are actually in use. 13 MEMBER SHINGLEDECKER: Yes. 14 Moving on to 6.2, Port ECDIS/Port ENC. The future of nautical charts should reflect the 15 16 discussions of the Port ECDIS/Port ENC, which 17 comply with the latest international standards 18 for metrification and bathymetry density, at 19 least every meter, starting from 30 meters 20 inland. Additionally, this product should have a 21 real-time weather data overlay. These elements 22 are the foundation of precision navigation in

ports and channels. 1 2 This is Sal's comment and I am wondering if does this, here, cover what we were 3 4 talking earlier about with regards to density and 5 the 30 meters. 6 MEMBER RASSELLO: Yes, this is This is Sal. 7 correct. I would remove that starting from 30 8 9 meters inland, probably, because that is the 10 thing that confuses. 11 So yes, I think this is reflecting the 12 same thing we see on page 8. 13 Okay, do you MEMBER SHINGLEDECKER: 14 want me to move it? We had put it here because 15 we thought it was more vision -- it was more 16 future-looking. I just want to make sure I'm not 17 being redundant. Tell me where to put it. 18 MEMBER RASSELLO: Yes, just -- I think 19 it should stay as a future chart status but 20 please remove that starting from 30 meters 21 inland, that part. 22 MEMBER SHINGLEDECKER: So remove --

1 MEMBER RASSELLO: Remove the part 2 saying starting from 30 meters inland. So just have 3 MEMBER SHINGLEDECKER: 4 the sentence say, which comply with the latest 5 international standards for metrification and 6 bathymetry, period? 7 MR. ARMSTRONG: So after meter, period. 8 9 MEMBER RASSELLO: Yes, after every 10 meter. 11 Okay, remove the part which says --12 after density at least every meter; up to there 13 that's fine. And then you remove the part says, 14 starting from 30 meters inland. MEMBER SHINGLEDECKER: 15 So, it ends 16 with density every --17 MEMBER RASSELLO: No -- every meter, 18 yes. 19 MR. HARMON: So what that is saying 20 now is that we would have one meter density to 21 the bottom of the ocean all the way out. 22 MR. ARMSTRONG: No, all the way in is 1

what he means.

2	MEMBER RASSELLO: What it means for
3	the ECDIS to work on a precise navigation, the
4	ECDIS needs to have bathymetries at every meter
5	in closed water, not in the open ocean.
6	MR. ARMSTRONG: Yes, for port ENCs,
7	right?
8	MEMBER RASSELLO: Yes, for port ENCs.
9	CAPT BRENNAN: I thought that there
10	was internal discussions at least about that but
11	I think the intent to address contour intervals
12	was going to be addressed in the next version of
13	the National Chart Plan. But I know that
14	internally that was discussed and that we were
15	going to follow IHO. There is an IHO
16	specification that talks about that interval
17	which addresses I think what Sal's concern is. I
18	mean that's esoteric, as far as your comments go.
19	MEMBER SHINGLEDECKER: And this is in
20	that forward-looking part of the plan.
21	Section 7, Open Data and Marine
22	Spatial Data Infrastructure. Is the MSDI a

bathymetric database for all data submitted to NOAA, all data from NOAA sources only or only OCS? Would suggest a wider field than just OCS data. Database is critical for Marine Spatial Data Infrastructure.

Any questions or comments on that? 6 7 I have one additional comment from Gary which I think is an excellent one and 8 9 represents the diversity of the Panel. Gary had 10 a comment on the change in datums in 2022. His 11 comment was in 2022, the National Geodetic Survey 12 will replace NAD 83 and NAVD 88 with new 13 horizontal and vertical datums. I recommend that 14 the plan include information, how this change 15 will impact the charts, and an overview of a 16 transition plan utilizing the new datums.

We were debating where to put this in our comments and we think in the Vision for the Future, it probably could go there, unless we think it needs to be more in the immediate time, as opposed to the time frame unknown section. Does anyone have comments on that or

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thoughts on where it should go? 1 2 RADM SMITH: For your comments, if you have overarching things like that, then you don't 3 4 have to decide. You can let us figure out where 5 it should go. Just make note of the datum 6 change. MEMBER SHINGLEDECKER: All right, we 7 can do that. 8 9 That wraps up going through the 10 comments as we had summarized them. 11 Are there any comments that anyone had 12 that they didn't send to me or brilliant thoughts 13 that came up while listening today? 14 (No audible response.) 15 MEMBER SHINGLEDECKER: Okay, I have 16 that Andy is going to help me on a section on --17 RADM SMITH: Before we go to wrap-up, 18 should we turn the floor back to Bill, who can 19 open the floor for public comments? 20 MEMBER SHINGLEDECKER: That would be 21 wonderful. 22 CHAIR HANSON: Yes, I think we are

supposed to open for public comment now. And so 1 2 Gwen or Tatiana can tell us do we have any requests for public comment. 3 4 RADM SMITH: So we may have some 5 written or we may, if we unmute everyone --6 MS. MERSFELDER-LEWIS: So, currently 7 there is nobody in the chat who has comments but if you have one, would you please go ahead and 8 9 send one there? 10 So we have I think that there are four 11 or five public people on the call. So Shana Kinsey-Carlsen, if you have comments, would you 12 13 let us know? And if you don't, could you just 14 send a chat that says no comment? 15 And Nathan Wardwell, the same thing. And James Haussener, welcome, by the way. We're 16 17 glad to have you on. And John Mongoven, if any 18 of you guys would like to make a comment, we 19 would welcome you. 20 And if I missed any other public 21 folks, I apologize. 22 But Carol, if you wanted to say

anything, I know you're on. If you want to self-1 2 unmute, you are welcome. We would welcome your 3 comments. 4 So, Shana Kinsey-Carlsen, if you are 5 on the -- if you have logged in through the webinar, you would make a comment at this point. 6 7 And Rachel, also, if you had a comment you wanted to make, that is, I think later. 8 9 Okay, I see no chats. I see no 10 questions. 11 RADM SMITH: Wait we had a question or 12 something. 13 Jim Haussener has a question that we 14 are going to try and make bigger so we can read 15 it. 16 I wanted to see if there were any 17 questions. 18 RADM SMITH: I thought there was some 19 20 MEMBER SHINGLEDECKER: I thought there 21 was one. 22 RADM SMITH: I saw one from Jim but

1 now it's gone. 2 MEMBER SHINGLEDECKER: I thought there 3 was one, too. 4 RADM SMITH: Go back to the top? 5 MEMBER SHINGLEDECKER: Go back to the attendees and we will unmute anybody else who 6 7 wants to be unmuted. Jim, we can't figure it 8 RADM SMITH: 9 out but I think you sent a question or a chat. 10 Are you now able to talk? 11 MR. HAUSSENER: I am able to talk. 12 Whether or not you can hear me is always the 13 difference. 14 RADM SMITH: We just got you unmuted. 15 So, please say what you were going to say. 16 Welcome. 17 MR. HAUSSENER: Thank you. There is 18 just a lot of stuff in there but a couple of 19 questions. One is I didn't see anywhere 20 reference to crowdsourced data and I know that 21 Admiral Glang and I talked about that several 22 years ago but, since that time, the makers of the

hardware, et cetera, have been doing a lot to collect data from their customers, their recreational boaters or commercial boaters, in order to provide that. I didn't see any references to if NOAA is going to be using any of that material after you do the appropriate QA/QC or not.

8 RADM SMITH: Okay, thank you for your
9 comment. I think we should address that in some
10 fashion in the Charting Plan.

11 I know that the MEMBER SHINGLEDECKER: Panel members, I think we briefly discussed it in 12 13 There was some confusion about what Seattle. 14 elements were part of the Charting Plan and what 15 elements are part of other documents that we have seen early drafts of. And I know that 16 17 crowdsourced data was part of some other efforts 18 as well.

And Joyce made that comment, too: We
should make it clear that this is the Charting
Plan only, unless it would make sense to combine
this with other documents.

MR. HAUSSENER: And then the other 1 2 question or comment I had was you talk about how NOAA is doing weekly updates of ENC and RNC 3 4 products. And the question was what is a 5 mechanism to get the third-party vendors then to I mean if NOAA is doing your 6 push that out? 7 weekly updates, how is it getting to the ultimate consumer of that data, if the vendors -- and say 8 9 I have got an Android phone. The vendors don't 10 always provide all the updates that Google 11 provides. How are you guys going to create a 12 mechanism to get that information out to the end 13 user? 14 That's a great comment RADM SMITH: 15 and one that we are very concerned about. And I 16 don't know how much we have about sort of 17 dissemination issues or downstream issues in 18 I think not much. here.

19 MEMBER SHINGLEDECKER: Yes. I can say 20 I'm not sure exactly which users you are most 21 concerned with but I know BoatUS has asked that 22 question a couple of times and we are actually

contemplating a couple activities to investigate 1 2 who is using the latest data and how old is the data that is being used, to see if we can get a 3 4 better understanding of that. 5 As I understand it, NOAA is not able to see or maybe not able to share who pulls the 6 7 data how frequently. Because I would absolutely love to know which third party products are using 8 9 the latest data that is available. It's a very 10 good point. 11 RADM SMITH: Yes, I don't want to 12 answer -- I don't want to get too deep into this 13 now but we don't control that. 14 I would say the people that are in the 15 driver's seat on that are the consumers of those 16 unregulated products. 17 MR. HAUSSENER: Thank you. 18 RADM SMITH: But can we -- we'll take 19 a note to comment on for both crowdsourcing and 20 dissemination as potential areas to touch on in 21 the Charting Plan, if only to refer to say that 22 we're not dealing with that in this plan because

1	there are other documents afoot as well.
2	So, thank you, Jim.
3	MR. HAUSSENER: Thank you.
4	RADM SMITH: Are there any other
5	sorry to jump on you, Bill, here. We seem to
6	have the technology going now to have other
7	people chime in. Is there anyone else that would
8	like to comment?
9	MS. MERSFELDER-LEWIS: Also I know we
10	have a couple of members who haven't said
11	anything and may want to comment. I think Ed
12	Saade, he might be muted or self-muted, and
13	Carol, and Larry Atkinson is on the line, too.
14	We have a bunch of people on.
15	MEMBER SHINGLEDECKER: Any other
16	comments?
17	I have notes that Andy is going to
18	help me on Section 3.4, clarifying under Chart
19	Tabulations, clarifying having not to go to the
20	Army Corps of Engineers to get channel depth
21	data. So, Andy, I will follow-up with you on
22	that.

1	And then, Bill, we can work together
2	to tackle how to reword the Army Corps sections
3	more diplomatically.
4	CHAIR HANSON: Fair enough.
5	MEMBER SHINGLEDECKER: Any other
6	comments, at this time?
7	RADM SMITH: Thank you, Susan for
8	taking us through that. That was great.
9	CHAIR HANSON: Yes, thank you, Susan.
10	And if I was there with you, as I promised I
11	would be, I would give you a high-five. So I
12	will give you a virtual high-five and a standing
13	ovation for all your hard work on this so far.
14	Thank you.
15	So, obviously, the Charting Plan is
16	extremely important to NOS and NOAA and the
17	public. So, it is good to see this progress and
18	also the participation of the Panel and the
19	public.
20	I guess it's okay now to go ahead and
21	jump into our updates on other HSRP work. And if
22	I could briefly just talk about some things that

have happened since I -- things we have been 1 2 working on since our Seattle meeting. We have submitted our letter to the new administrator or 3 4 the person acting in a very, very long title of 5 Mr. Friedman right now. But as it gets sent down, along with the three issue papers, total of 6 7 11 recommendations. We had five recommendations coming from our Recreational Boating Issue Paper. 8 9 We had three recommendations from our Surveying 10 and Charting in U.S. Channels paper and three 11 more from the Improving Access for U.S. Nautical 12 Charts. 13 So, again, I really appreciate a lot 14 of participation and input on those documents, 15 some of which we have been talking about for 16 quite some time. So, it's good to get those 17 done. 18 We have several other issue papers in the works and I'm glad to ask some of the authors 19 20 to weigh in and give a brief summary. The first

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one is precision navigation. Kim, do you have an

opportunity to just give us a quick update on

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1

where that stands?

2 MEMBER HALL: Yes, the Planning and Engagement Group talked about this last month. 3 And my annotated or other built-out outline is 4 5 soon to be accessible to most and I got some comments back from Lawson, and Andy, and a couple 6 7 of others. I was going to put it out right after 8 9 that meeting but then I did not want to, very 10 truthfully, Susan, I didn't want to co-op the 11 time that people were putting into the 12 Charting Plan. 13 So my plan is as soon as we decide 14 that we are going to sign-off on all those 15 comments, I will put it back out for comment. Tt 16 is a little bit more meaty now, looking a little 17 bit more final. But I didn't want to be a rah-18 So, I didn't want to get too much rah person. 19 into it if there was somebody who really had some 20 heartache about what it looked like. 21 So, I will get that back out to the 22 group next week, hopefully, and hopefully, we

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will be able to talk about it at the next 1 2 Planning and Engagement Work Group meeting, which will be in July, on July 14th, I believe. 3 So, 4 hopefully, we will have this ready to go and it 5 will be a pretty easy sign-off when we get to our meeting in September. 6 7 CHAIR HANSON: Terrific. Thanks, Kim and thanks for deferring to our Charting Plan 8 9 Group as well. 10 Certainly, yes, you have noticed over 11 your time on the Panel that we can handle quite a 12 few things at a time but not everything at once. 13 So, I appreciate that. 14 We have a Technology Issue paper 15 underway. Ed Saade or -- I know Lindsay's not 16 on. Ed, are you able to update us on that? 17 MS. MERSFELDER-LEWIS: So, Ed wrote us a note that he thought you guys did a great job 18 19 and, for some reason, Ed, you are self-muted. Ι 20 have tried to unmute you but I'm not able to and 21 I believe that that is what that is. Tatiana is 22 sitting here and nodding at me.

1	So, if you could try to unmute
2	yourself or you could call my cell phone and I
3	could put you on the speaker. But he actually
4	had some comments for us.
5	Sorry, we're just not able to get him.
6	He said he could hear us perfectly well.
7	CHAIR HANSON: Okay. Well, we know
8	that it has still got some work to do and it's
9	being developed. So we will get the update from
10	Ed at the next opportunity.
11	We also have other items of interest
12	that may or may not end up in papers but are
13	certainly part of discussion. There is interest
14	in a possible P3 paper, that being a public-
15	private partnership and it's applicability to
16	NOAA and NOS products.
17	And there has also been some
18	discussion and something I think will probably
19	develop over time as well is interest in
20	autonomous systems, externally-sourced data, as
21	we just discussed, and then continued discussion
22	of surveying in harbors and channels in

partnership with the Corps, which, getting 1 2 updates on that on a frequent basis from Admiral 3 Smith, who has been quite helpful to see the 4 progress in that relationship, as important as it 5 is. So, where we are at, our next meeting 6 7 is September. And I think, Admiral Smith, do you want to update us on the agenda there? 8 9 Yes, Lynne, do you have RADM SMITH: 10 that up? 11 MS. MERSFELDER-LEWIS: Yes, I do. 12 Does everyone have the --RADM SMITH: 13 can everyone see it or have a copy of the draft 14 agenda? 15 MEMBER KELLY: Yes. 16 RADM SMITH: Okay, great. 17 So we have --- there are a few things 18 to -- I don't want to go through this line by 19 line but I think there is a few things to 20 highlight here. 21 One is that we, instead of having one 22 day of sort of field trip activities, we are

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proposing to do that in two half days, to do one 1 2 trip up to the University of New Hampshire for an afternoon tour there; then do another half day of 3 4 meetings and panels; and then do an on-the-water 5 demo of unmanned systems. And so that, I think we were reacting to what felt like perhaps a bit 6 7 of meeting fatigue from some really long days. And I think this is a nice way to sort of break 8 9 that up.

And on the day of the on-the-water tour, we will end that day down by the water, where we often have a -- when we're up in New Hampshire for the annual review, we often do a waterfront picnic. And so we can end the day with a cookout and a picnic in a beautiful spot on the coast there. So that's one thing to note.

I am interested in your feedback on a Panel -- on a session on unmanned systems. We proposed this as timely because of the University of New Hampshire's new sort of research focus on control and other research topics associated with unmanned surface vehicles for hydrography and the

fact that we will be doing a demo there. 1 So we 2 put together a block to have that be a theme, overall, for the -- one theme overall for the 3 4 meeting but would welcome any guidance you have 5 on, one, the scope of that; whether we keep it fairly narrow to hydrographic systems, do it more 6 7 broadly to include user applications, or other types of unmanned systems. A buoy, after all, or 8 9 a satellite is also an unmanned system. So we 10 can do this at any level. 11 So maybe we can have comments on that 12 Any thoughts? now. 13 MEMBER HALL: Hi, it's Kim. I just 14 saw that they put the Arctic Panel or the other 15 update there. I think it's really important for 16 this, one, to be at the top and I will speak for 17 Lindsay as well because we talked about this. It 18 has been a subject that has been on our minds. 19 We had hoped to do it in Seattle and it didn't 20 make the cut. 21 I think it is important to do it here, 22 especially if we are going to see a system later

on, that it is great to have an intro for those 1 2 folks who aren't aware. Because if we see the thing zoom around on the water, that might not 3 mean much to folks until we understand what the 4 5 applications on it are. So I think it is really important to try to do this the first day at the 6 7 time that is noted here. So, I just wanted to 8 put that out there.

9 And I think that maybe we could -- it 10 sounds like you can go wide and far or you can 11 got a little bit in depth with the hydrographic 12 one. I would assume, and I know Ed can't speak 13 up right now, but I know that at least Lindsay 14 has interest in kind of all the ways that NOAA 15 could use the autonomous boats.

But there is also the concern, and I don't think Lawson's on, about the future where ships will be autonomous.

So I think we should probably try to limit what we talk about here and I think right now I think it is a great opportunity, especially if the demo we are going to see is a hydrographic

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1	boat, then maybe leave it to that, so that we
2	don't get a little bit inundated and maybe our
3	next meeting we can do the next subject on
4	autonomous systems.
5	RADM SMITH: All right, any other
6	comments?
7	MEMBER LOCKHART: This is Carol. Can
8	you guys hear me okay?
9	RADM SMITH: Yes, we can hear you,
10	Carol.
11	MEMBER LOCKHART: Okay, good. Sorry,
12	I don't have my headset so I wanted to make sure.
13	I think this is going to be good, as
14	Kim just said. I think it will be interesting
15	for folks that aren't as familiar with these
16	systems, if we can have somebody talk, like
17	Thomas Chance, who is using a bigger system. And
18	then if we can have the NOAA Z-Boat or something
19	smaller more explained.
20	And then I think TerraSond has a
21	really great presentation on how to use data from
22	your guys' surveys up in Alaska last year. And I

think that's a really compelling presentation 1 2 because they talk about some of the issues they had but they also talk about why it was guite a 3 4 success and why they want to keep doing it. And 5 I think that might be good for folks that don't understand, necessarily, the technology as well, 6 but it's a good exploration of why you would want 7 to do this. 8 9 So, I would only suggest maybe we 10 can't see if Andy Orthmann or somebody wants to 11 give that presentation. 12 And then lastly, I think also hearing 13 about the software, or vaporware, or whatever I 14 think is important because when your stockings 15 run autonomously, the software part is important 16 as well. 17 MEMBER SHINGLEDECKER: I would agree 18 with Carol that kind of that summary overview 19 perspective, to make sure everyone's on the same 20 page but I do love to see the practical 21 applications. While I think the depth is nice, 22 breadth is also nice, too, to really get the full

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understanding of the possible.

2	RADM SMITH: So if you talk about
3	unmanned maritime systems then we could go I
4	mean there is a lot of different things. There's
5	gliders, sort of sail many of those things
6	don't have application to the don't have clear
7	application to the part of NOAA that we are
8	trusted to discussing.
9	MEMBER SHINGLEDECKER: Keep it
10	specific to the Tri-Offices, I would say.
11	RADM SMITH: Yes. And that's sort of
12	where
13	MEMBER HALL: That's what I was trying
14	to say, Susan, yes.
15	MEMBER SHINGLEDECKER: Yes. Yes, as
16	cool as it would be to hear about all of it,
17	let's keep it specific to the applications for
18	the Tri-Offices. But if there is a way to show
19	breadth or some diversity in application,
20	specific examples, that can be really exciting to
21	see.
22	RADM SMITH: Sure. So, I'll just flag

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for you all that the TerraSond example is the 1 2 same technology and probably the same example that Thomas Chance would use. So one was from 3 4 the surveying company under contract to NOAA that 5 used an ASV Global unit. The other would --So I think for sort of fairness to the 6 7 industry, I think it might be good to break that Now, it could be that we would rather 8 up some. 9 hear from TerraSond than from Chance and we don't 10 need to decide that right now. But if anyone has 11 any thoughts on that, you could pass those along 12 to Lynne. 13 And we heard also a suggestion on a 14 smaller unit from Carol, whether that is a Z-Boat 15 or otherwise. 16 MR. ARMSTRONG: Yes, we actually have 17 some small boats here as well. So we could 18 potentially add that into the UNH demo. 19 RADM SMITH: Okay, great. Thank you. 20 And Leidos is a contractor that they 21 are a contractor for NOAA doing survey work and 22 also a systems developer for the Navy doing

unmanned systems. And they were the ones that 1 2 put together the Sea Hunter and that was with the So, it is more of a ship scale with sort 3 ACTUV. of ship scale issues, integration, and 4 5 engineering that is a little bit on the other end and maybe may start to scratch the itch a little 6 7 bit about what the challenge and opportunities are for unmanned shipping. 8 9 So any -- I think I'm hearing that we 10 keep it focused there. 11 So the third application that we 12 flagged was and maybe RSD would like to chime in 13 here is that the Remote Sensing Division of 14 National Geodetic Survey has been experimenting 15 with a small aircraft for doing small 16 photogrammetry projects that has some potential 17 for our applications, particularly in response. 18 Juliana, did you think that is 19 something promising or is there something else 20 that you would like to suggest? 21 MS. BLACKWELL: Hello, can you hear 22 me?

1	RADM SMITH: Yes, we've got you.
2	MS. BLACKWELL: Hello.
3	RADM SMITH: Yes, you are online.
4	MS. BLACKWELL: Okay, I'm trying to
5	unmute all the different things. Okay, great.
6	So the Ebee system I think that you
7	are referring to, Shep, is a pretty small system
8	and it is being used now in a research mode to
9	capture imagery for small areas. I'm not sure
10	that it fits into what the group is looking for
11	but I'm really trying to understand a little bit
12	better what types of systems and is this
13	something that is in place now or something that
14	is more futuristic as far as autonomous systems.
15	So, I'm not sure that the Ebee, from
16	the Remote Sensing Group here is ideally what
17	we're looking for because I don't see it being
18	used for much from a charting perspective because
19	it's just not really economical for that reason
20	right now.
21	But I am really trying to understand
22	if autonomous systems is much broader and would

it encompass anything having to do with 1 2 autonomous vehicles and the role that geodesy perhaps would play in ensuring that information 3 4 is accurate from a baseline perspective to an 5 able autonomous transportation economist system beyond maritime. 6 7 RADM SMITH: Any comments from the Panel? 8 9 CAPT BRENNAN: Can we see if Ed was 10 able to get himself unmuted? 11 Ed, are you on now? RADM SMITH: MEMBER SAADE: Yes, can you hear me? 12 13 RADM SMITH: We've got you. Welcome. 14 MEMBER SAADE: Great. You guys 15 couldn't hear all the things I said about you. 16 RADM SMITH: Well, you can repeat the 17 sanitized version now. 18 CAPT BRENNAN: Yes, we could feel you 19 cursing on the other end, though. 20 MEMBER SAADE: So anyway, don't forget 21 we have a Tech presentation on Monday and some of 22 these topics could easily be included in this

Technology Working Group presentation on Monday. 1 2 So whatever other things you want to 3 talk about relative to the Plan for the 4 autonomous presentation, let's remember we have 5 that opportunity to summarize this and Lindsay should be involved as well. 6 7 But I agree, we want to make as much of this applicable to what we're talking about 8 9 with NOAA, and charting, and coastal mapping. 10 And there are autonomous aircraft sensors that we can include in the discussion that are relevant 11 12 to coastal zone mapping, and shoreline mapping, 13 and that sort of thing. 14 Okay. So, I think I RADM SMITH: 15 heard the Technology Working Group volunteer to 16 mature this section of the agenda. 17 MEMBER SAADE: Correct. That's 18 correct. 19 RADM SMITH: Thank you. 20 Lindsay, in particular, CAPT BRENNAN: right? 21 22 RADM SMITH: Lindsay in particular.

1 Thank you, Lindsay.

2 MEMBER HALL: I'm sure he won't have 3 a problem with that, though.

RADM SMITH: So there were a couple of
other suggestions that I think we wanted to get
more clarity on. One was Lawson had suggested
that we have an Arctic priorities focus in this
meeting. Do we have any input on what form that
should take?

10 MS. MERSFELDER-LEWIS: So, Lawson sent 11 a note saying maybe somebody from Murkowski's 12 staff might come; maybe somebody from UNH could 13 talk about the work they're doing in the Arctic; 14 we could talk about the surveys that we're 15 planning for next year or out. And he had his 16 own things that he wanted to update about.

17 MEMBER HALL: Does it need to be a 18 full panel -- those usually take longer. I don't 19 want to cut out Lawson's topic or anything like 20 that but I know sometimes we are wanting for 21 time. Can it be a presentation where somebody 22 does a little bit about everything or it gets

1	updated, or let Lawson run the show?
2	I'm just conscious of our time and
3	where some of the interest this time, especially
4	when it came to the unmanned systems for the
5	majority of the group.
6	MEMBER SAADE: I can make a
7	recommendation. There is an Arctic Ice
8	Conference of some sort in the middle of July
9	that some of us are going to be attending. And
10	it would be probably pretty straightforward to do
11	a summary of what is discussed at that meeting,
12	as opposed to an entire panel.
13	MEMBER HALL: I like where your head
14	is at.
15	RADM SMITH: So we have
16	CHAIR HANSON: Since this is Lawson's
17	last meeting, I want to make sure he gets a wrap-
18	up.
19	MEMBER HALL: Yes, and that is why I
20	want to find the most kind of effective way to do
21	it. And I'm not sure a full panel but I want to
22	make sure that we are hearing about the latest

and greatest.

2 So maybe we ask Lawson, give him our recommendations on what we would like to see and 3 4 ask him to put it together, with a time frame in 5 mind. All right, thank you. 6 RADM SMITH: 7 Right now, we have an hour on there. Does that seem about right, more or less? 8 9 MEMBER SAADE: I think that, myself, 10 I am a big proponent of Alaska things, I think an hour dedicated is plenty to get all the points 11 12 across. 13 MEMBER HALL: I agree. 14 Okay, thank you. RADM SMITH: 15 And then the next --16 MS. MERSFELDER-LEWIS: Could I --17 RADM SMITH: Yes. 18 MS. MERSFELDER-LEWIS: I just want to 19 ask you guys to give your input to him and I will 20 tell him that you guys, we discussed it at this 21 meeting and he's going to hear some input from 22 Kim, and from Ed, and maybe others about what --

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you know so he has some idea about that. 1 2 MEMBER HALL: Sure thing. Not a problem. 3 4 RADM SMITH: So a couple of other 5 questions on the agenda. We had a request at the last meeting to do a deep dive on datums. 6 And as 7 I recall, it was both sort of terrestrial and tidal datums but I don't think that we've 8 9 actually kind of framed that very clearly yet. 10 Does anyone have any clarification or 11 input on what they would like to see on that? 12 CAPT BRENNAN: Well, I think it was 13 intended that --14 MEMBER HALL: This is Kim Hall. Ι know that we asked for that and the VDatum 15 16 specifically. And what I brought up in Seattle, 17 I really wanted a presentation like what we saw 18 from Carol. So, a little bit of mostly 101 and a 19 little bit of in-depth, but something to kind of 20 give everybody the same lexicon on the topic and 21 then we are seeing kind of just general 22 understanding without boring the folks that

really, really know it. So somewhere in-between 1 2 but not kind of hitting us over the head with too much information. And the best thing I can point 3 4 to is Carol's presentation to us in Seattle, 5 something similar to that. Okay, who should do that? 6 RADM SMITH: MS. MERSFELDER-LEWIS: 7 We tentatively put Juliana and Rich; Rich doing some time on 8 9 that. 10 RADM SMITH: Okay. So --11 MEMBER HALL: Well, I would assume, between Rich and Juliana, they would be doing it, 12 13 right? It would be by request. MEMBER SHINGLEDECKER: 14 I might be able 15 to get Gary or a state person to weigh in also, 16 just for a different perspective, have a Panel 17 member. I don't know how Gary feels about me 18 volunteering him but --19 (Simultaneous speaking.) 20 MEMBER HALL: -- in very technical 21 terms. So I was hoping for something where 22 somebody gave us that kind of general

understanding and then would love to hear from 1 2 Gary on kind of the application and how they are dealing with it, especially in light of the paper 3 4 that we did last year. 5 But I would hope that somebody from the staff because I think you guys kind of know 6 7 how to teach us all that, where it is not completely elementary but it is also not 8 9 completely grad school level. 10 Oh, this is Carol MEMBER LOCKHART: 11 If somebody from the staff can't do it, I again. would think, I don't know if Dave is online, but 12 13 Dave or myself could probably do that for you. But it seems like we should have 14 15 somebody that can do this. I don't think it 16 should be that hard. 17 MEMBER SAADE: I think one of Larry's 18 students can do it. 19 Oh, there you go. MEMBER LOCKHART: 20 MEMBER SHINGLEDECKER: I was just 21 going to say that Larry is an UNH professor that 22 teaches datums for non-geodesists.

1 MEMBER SAADE: There you go. 2 MEMBER LOCKHART: That would be 3 awesome. 4 MR. EDWING: This is Rich Edwing. Me 5 and Juliana had discussed this. Like I said, it seemed to us that you were guys were looking for 6 7 a Datums-101, just kind of a general definition and kind of some of how we generate these datums. 8 9 Certainly, a student can explain to 10 you what the datums are. We can give you a little bit of behind the scenes of how we get --11 12 you know how we kind of from here to there with 13 providing those. And then we also talk about 14 kind of where we see things going in the future, 15 surveying on the ellipsoid, things of that 16 nature. 17 But if that's not what you're looking 18 for, I mean, you know let us know. 19 MR. ARMSTRONG: Yes, this is Andy. Ι 20 have to agree that Rich and Juliana are probably 21 in the best place to do that. 22 MEMBER MAUNE: I agree, and this is

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David speaking.

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2 MS. MERSFELDER-LEWIS: Oh, I'm so glad 3 you could get on.

4 RADM SMITH: All right. I think that
5 clarifies that. I appreciate that.

So we're having a little bit oftrouble cramming everything in, as usual.

One of the topics that we discussed, 8 9 as we were working on this agenda was do we need 10 to have the director's update or should we do it 11 more topical-based, rather than -- and so if you 12 want to hear an update on our efforts to work 13 with the Army Corps on improving how we survey 14 and chart channels, that would be a theme. 15 Rather than having that be one thing that you 16 would hear from me, we would talk about that as a 17 specific topic, or if we want to talk about the 18 NEEA Study or if we want to talk about -- so, we 19 could have more specific, narrower, specific 20 briefings, rather than directors' updates. 21 I know for myself, I put a lot of 22 things on the table in the last meeting. And

those are not -- most of those are still on the 1 2 So, I don't really want to put anything table. else on the table but I would continue to like to 3 4 work with you on those topics. 5 And so for me, I am happy to sort of forego my section of the director's update in 6 7 lieu of giving more time for specific discussions on specific topics. 8 9 Any other directors have any comments 10 on that or any comments from the Panel? 11 This is Dave Maune. MEMBER MAUNE: 12 Can you hear me? 13 RADM SMITH: Yes. 14 Okay, you mentioned the MEMBER MAUNE: 15 NEEA Study. We have just completed a study for the State of Florida in which we evaluated both 16 17 the requirements and benefits of topographic 18 lidar, as well as bathymetric lidar. And it's 19 going to be seen as lessons learned from that as 20 what will be used to evaluate the 3D Nation 21 Study, which will include both topographic and 22 bathymetric lidar.

I could get a status briefing on the 1 2 lessons learned from the Florida Study on both topo and bathy lidar, if that would be of 3 4 interest to the group. 5 RADM SMITH: I think that would work very well with maybe an update from Ashley. 6 And 7 I do know that the scope of work for the NEEA Study was informed by that Florida Study. And so 8 9 I think that would work well to have you and 10 Ashley tag team that update. 11 MEMBER MAUNE: Okay. 12 RADM SMITH: Thank you. 13 MEMBER SHINGLEDECKER: I would say, 14 Shep, to your question to us, I would be curious 15 if Rich and Juliana had additions to add, I think 16 that the topic-specific-driven organization is 17 more effective than just the general office 18 I love the general office updates. updates. 19 Perhaps if we could get like a little one-page 20 summary in advance of the meeting to look at so 21 that if people have questions about specific 22 things, we can follow-up so that we don't exclude

1	that altogether. But I have found that the
2	specific topic, organization, or specific request
3	to be it seems to motivate us more
4	effectively.
5	RADM SMITH: Okay.
6	MEMBER HALL: I agree.
7	MEMBER SHINGLEDECKER: Does anyone
8	also have similar or opposing thoughts?
9	MEMBER HALL: No, I completely agree
10	and it is helpful for us to say what can HSRP do
11	for you or what do we need to be aware of as
12	things move forward with some of the other
13	documents that we've seen and looking forward.
14	Obviously, for NGS 2022 could be
15	important in just kind of understanding how we're
16	tracking towards that.
17	MS. BLACKWELL: This is Juliana.
18	Well, we can provide you know, if you want a one-
19	page handout with information, especially with
20	NGS and the 2022 update, we put out a quarterly
21	newsletter on it. So, that would be easy to do.
22	The other thing that our office is

involved in doing is providing a read-ahead 1 2 highlights of that region, wherever we're 3 meeting, and try to highlight the activities that 4 are ongoing there. So, that's a little bit more 5 information in a broader sense, programmatically. But that also describes the activities and then, 6 7 in this case, it would be in the New England area that are ongoing. And again, we have been doing 8 9 those updates for a while now. So, I'm sure that 10 we will have it for the September meeting as 11 well. 12 So, I think we can cover what you all 13 would like to hear without actually giving an in-14 person presentation. So, I'm fine with that. 15 MEMBER SHINGLEDECKER: Yes, the 16 regional-specific information is always great. 17 It was amazing to me, personally, in Seattle, I 18 was getting an email to join a working group from 19 one of the panelists that was in the room at the 20 time and he didn't know I was there and I didn't 21 know he was there. Now, I'm on a Vessel Incident 22 Working Group for the Olympic National Marine

Sanctuary and we were just there. So, it really 1 2 did inform that regional-specific information. That was very ironic. 3 4 RADM SMITH: Lynne, what did I leave 5 out in my highlight of the --MS. MERSFELDER-LEWIS: 6 So just logistics-wise, it is going to be a little bit 7 Airport stuff is going to be just a 8 harder. 9 little harder because Boston is a little farther. 10 So we might authorize rental cars and people to share them back and forth a little bit more. 11 And 12 we will look into, again, like shuttles and, if 13 you are flying into Manchester, shuttles for 14 that. 15 MEMBER SHINGLEDECKER: Is Manchester 16 closer than Boston? 17 MS. MERSFELDER-LEWIS: Oh yes, 18 Manchester is a lot closer. 19 RADM SMITH: Closer, sometimes 20 cheaper. 21 MS. MERSFELDER-LEWIS: It depends. 22 It just depends on where RADM SMITH:

you're coming from whether it is convenient. 1 2 CAPT BRENNAN: If you are driving, you avoid driving through Boston, too, which is --3 4 MS. MERSFELDER-LEWIS: So just please 5 put the dates on your calendar, if you haven't already, September 12th through 14th. 6 And I'll 7 put a calendar hold as well through Google Calendar for those of you who use Google 8 9 Calendar. 10 Andy Armstrong and Larry Mayer are 11 going to give us a bunch of suggestions about 12 what they think in terms of demos and tours, and 13 presentations. And then you are going to get to 14 see their really cool Gulf Surveyor Research Vessel and have an ASV demonstration. 15 So, I 16 think that's pretty neat. 17 I think one of the things we did is we 18 put -- we tried to really listen a lot to what you said in Seattle about recommendations about 19 20 not really topics but time for discussions. So, 21 we put in one morning discussion, where you guys 22 would have a breakfast and a discussion for two

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hours on whether it's the -- you know your 1 2 comments on the autonomous systems roadmap or your comments finalized -- trying to finalize or 3 4 develop new or old issue papers or whatever other 5 things you want to talk about that you can talk about as a quote, unquote working group. 6 So 7 that's your cover to have a separate meeting. You can have a working group meeting and then you 8 9 can come back to the bigger group and report out 10 with anything you want to report out. That's one 11 of the sessions.

12 And then you put in three sessions of 13 an hour to an hour and a half or two hours for 14 different discussions under the header of the 15 Planning and Engagement Working Group but it is 16 everybody, everything you want to talk about on 17 the agenda, itself. So you have a lot of time to 18 hash through the different topics or new topics. 19 One thing we didn't talk about that 20 Bill had mentioned from Seattle was a P3, 21 potential P3 paper. So, Bill, I know you wanted 22 to mention that and I know you also wanted to

mention your interest in the Army Corps of 1 2 Engineers coming to the meeting. So I was going to leave that with Bill. 3 CHAIR HANSON: Yes, well the P3 paper 4 5 I think is something we need to talk about a little bit and just see what the interest is and 6 7 where that leads. As far as getting somebody from the 8 9 Corps there, since we have talked so much about 10 this, I thought it might be convenient to get somebody from the Corps and their headquarters, 11 12 possibly, to join us. 13 Admiral Smith, I know you had had some 14 thoughts as well about maybe getting General 15 Jackson. 16 RADM SMITH: I think it would be 17 entirely lucky if we could get on his calendar 18 and he would be willing to have a boondoggle to 19 New Hampshire. But if we timed it right and 20 maybe had the adjacent activity, whether it is 21 the unmanned systems or the UNH tour, we may be 22 able to entice him to come for a day trip. Ι

mean it is possible to do a day trip, early 1 2 flight to Manchester, day trip, and back, or a one overnight. 3 4 So, I think that is not out of the 5 question, Bill, and he would be fabulous. Second, the next level -- his main 6 lead for responding to our concerns on surveying 7 and charting issues is Tony Niles. And I think 8 9 that that -- I would suggest Tony as a backup 10 from General Jackson. 11 MEMBER KELLY: This is David Kelly. 12 I think that would be a great idea to get a 13 senior guy from the Corps. RADM SMITH: 14 Now, the other Great. 15 thought we had is --16 MEMBER HALL: Just real quick --17 RADM SMITH: -- we are a little ahead 18 on this and you don't know about this yet, but 19 one of the things that we're working on with the 20 Army Corps is a bit of a pilot project to show 21 what is possible in one area. And the 22 Philadelphia Army Corps District is very anxious

and their user base is very anxious to do that. 1 2 So another possibility is that we may have a really willing and engaged Army Corps 3 District that could -- we may even have something 4 5 to show for it by then. And so we could potentially invite them in addition or instead of 6 7 larger leadership. I just wanted to say one 8 MEMBER HALL: 9 key thing because I think we can -- I mean I have 10 only been on the Panel for what, a year and a 11 half now -- is to make sure that we talk, if it 12 is going to be the General, that we talk with his 13 folks who write his talking points and ensure 14 that it's not U.S. Army Corps 101. I think we

all get that now. We seem to get the same presentation from those folks. No offense to them at all. I think it just helps to do some prep. And if it is something that our team can help with, somebody from the Panel can actually help and talk to what we're looking for, I'd love to do that.

22

But Philadelphia if that is more fully

baked by then, I mean that is a really
interesting one to hear about. As much as senior
leadership is good to see, I think seeing how it
applies to what we're doing and how things are
moving forward would be very much value-added to
our meeting.

7 MEMBER SHINGLEDECKER: I would say I 8 get where Kim is coming from with that but I 9 would say shoot for the top first. I think that 10 it seems we have had pretty good representation 11 in a number of meetings from Army Corps 12 individual districts.

13 One of the biggest challenges I see 14 with the Army Corps is there is just so little 15 consistency district to district, to district. 16 And that is one of the biggest challenges we face 17 is that that inconsistency is hard for you guys 18 to deal with.

And so if there is any way we can get somebody from the top, that would be where I would shoot for.

RADM SMITH: All right. I'll just

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1 shoot for Jackson. He's a good guy. And in 2 fact, if we got him to agree to it in principle, we could use it as a bit of milestone for making 3 4 some progress. 5 MS. MERSFELDER-LEWIS: Since our next meeting is going to be in DC after this, like you 6 7 know March/April kind of time frame, and the Philly guys, if we can't fit them into that -- to 8 9 our New Hampshire meeting, they could easily come 10 down to DC and talk to us. 11 RADM SMITH: We could probably even do 12 a panel with some of the stakeholder folks up 13 there, too, who are really interested in these 14 issues. So we could maybe make it a port-15 specific thing. I was talking about the port of 16 DC. We could talk about the Philadelphia one 17 later. 18 CAPT BRENNAN: Well, Jackson came up. 19 I mean there is the Boston District is there. 20 Maybe we could get some of his own people to come 21 up to that, too. It might make it a little more 22 enticing.

1	RADM SMITH: All right, did we get
2	enough on that, Lynne?
3	MS. MERSFELDER-LEWIS: Yes. Yes, I
4	think we are good on that.
5	Go on to other business.
6	RADM SMITH: Okay. So, if we are
7	going to shift away from the agenda for the
8	meeting agenda for the September meeting now, of
9	course, this is never done until we get close to
10	being there but Lynne will send out a new version
11	with your input included from this meeting here
12	in the next few weeks and we will keep moving
13	from there.
14	So, if I may, Mr. Chairman, may I call
15	on Rachel Medley, who is going to announce an
16	all-interested staff brief?
17	CHAIR HANSON: Please do.
18	RADM SMITH: Rachel, are you on?
19	MS. MEDLY: Yes, I am. Can you guys
20	hear me?
21	RADM SMITH: We can.
22	MS. MEDLY: Okay, great. I'll take

you all off speaker. Everything is being slow on my computer. But hi, everyone. I think a good meeting.

4 I just wanted to make you all aware, 5 and some of you already have this, that the NOAA Nav Services are going to do our first all-6 7 interested staff briefing for the Hill on June 27th from 1:30 to 2:30 p.m. And we have a flyer 8 9 that we're going to send out. This is really 10 geared toward getting Hill staff, particularly 11 those that might be new to the Hill and don't 12 know what NOAA Nav Services is all about. We're 13 asking that, as HSRP members, you may have 14 connections yourself to congressional staff or 15 maybe you are part of associations that interface 16 with staff, but Lynne will send you out the flyer 17 and we are just asking that you pass it on to the 18 appropriate level people so that we can get 19 increased participation and visibility.

20 And really it is just all about an 21 educational campaign here, just to get the Hill 22 more informed on NOAA Nav Services and what we do

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and why it has value.

2	So, I will take any questions on it.
3	Hopefully, some of you have gotten the flyer
4	already and it will be in the Rayburn Building
5	from 1:30 to 2:30 p.m. on June 27th.
6	Speakers will include Rep. Alan
7	Lowenthal from California. He is co-chair for
8	the Congressional PORTS Caucus and they are
9	offering cooperation in hosting this event. So,
10	the PORTS Caucus was able to host it for us.
11	Dr. Callender was the first
12	chairperson to NGS, CO-OPS and Coast Survey and
13	the value that we bring to the waterways. And
14	then Rich Edwing will speak, and then Admiral
15	Smith will speak.
16	And we will top it all off with one of
17	our business partners that we have in NOAA Nav
18	Services, which is the pilots. And so we have
19	Captain Jorge Viso, who is the President of the
20	American Pilots Association and he will not only
21	talk about using the space but how NOAA data will
22	help in terms of just giving support on the

1	waterways, such as when you get increasing draft.
2	So, I will take any questions but will
3	really suggest that just passing of this flyer on
4	could really help get more support.
5	Thanks.
6	RADM SMITH: Thank you Rachel.
7	Any questions? I guess we can send
8	out a flyer if we haven't already, to the Panel,
9	that you could forward. We have already. Great.
10	MS. MERSFELDER-LEWIS: Yes, but we
11	will send it out again because there is a slight
12	update.
13	CHAIR HANSON: At this time, I just
14	want to point out the importance of something
15	like this. The PORTS Caucus has been
16	particularly effective in advocating for port
17	funding, maintenance dredging, freight funding,
18	those types of things. So, it's good to get NOAA
19	on that menu. So, well done.
20	RADM SMITH: Thank you, Bill. I think
21	we are at the end of our agenda. Unless anyone
22	else has any other business, we can start our

wrap-up.

1

2	Bill, would you like to kick us off?
3	CHAIR HANSON: Sure, I'll kick us off
4	and then turn it back over to you because I think
5	we have been, as usual, not been very bashful
6	about voicing our opinions. So I don't have much
7	more to say. And I will leave it to you, sir.
8	RADM SMITH: All right. Well, thank
9	you all. This has been a very productive
10	meeting. I think we got some really great
11	comments on the National Charting Plan; some that
12	are challenging to us, which is exactly what
13	we're looking for. And I'm feeling pretty good
14	about the agenda for the fall meeting, as well.
15	And I am really pleased with the issue
16	papers that are coming together. I think they
17	are important topics and I expect that they will
18	be useful to us.
19	I would like to go around the room,
20	starting with the Panel members. Or why don't I
21	start with the other directors and then we'll
22	shift back to the Panel?

1	Rich or Juliana, do you have anything
2	to add?
3	MR. EDWING: This is Rich Edwing go
4	ahead Juliana.
5	MS. BLACKWELL: I was just going to
6	say I don't have anything additional. Thank you.
7	MR. EDWING: This is Rich Edwing.
8	Actually, I would like to send around to the
9	Panel a notice of an Emerging Technologies
10	Workshop that is going to be coming up in August.
11	Last year, NOAA held its first ever
12	Emerging Technologies Workshop. It was really an
13	internal affair. It was the very first again,
14	it was kind of a baby step in that direction.
15	The next time around, we are opening it up to
16	other federal agencies, as well as the private
17	sector.
18	I am going to send around, I can
19	provide right now, a kind of a save the date
20	outreach one-pager that provides the details of
21	where and when and kind of the purpose of the
22	workshop. Pretty soon, they are going to be

opening the registration as well. 1 2 So, I will get that one page to Lynne and she can send that out. 3 Thanks. 4 RADM SMITH: Thanks, Rich. Well, why don't we start with Susan, 5 since she's here in the room, made the big trek 6 7 to Silver Spring? I just thank 8 MEMBER SHINGLEDECKER: 9 everybody for your input on the charting plan and 10 I will follow-up with Andy and Bill. And my aim 11 will be to get you all back a revised draft early 12 next week, with the aim of quick turnaround. 13 Read it. If you have got more comments, let us 14 know so maybe we can have it wrapped up by the 15 end of next week. I mean guick. 16 But if anybody has a problem with that 17 time line because of travel or anything, I don't 18 think the changes were that substantial. But if there is a problem with that time line let me 19 20 know. 21 Other than that, the only question I 22 had was I looked recently on the website for the

1	link to the most recent issue papers and the
2	letter from Seattle and I didn't see it on the
3	website.
4	MS. MERSFELDER-LEWIS: They weren't
5	public yet.
6	MEMBER SHINGLEDECKER: Okay, when will
7	a link be available?
8	MS. MERSFELDER-LEWIS: Bill, did that
9	go out, officially by email? We don't post it
10	until the administrator gets it. They don't have
11	it yet.
12	MEMBER SHINGLEDECKER: Okay.
13	MEMBER HALL: I thought Bill said that
14	they did send it.
15	MS. MERSFELDER-LEWIS: He sent it but
16	it is not received yet.
17	MEMBER SHINGLEDECKER: Email's really
18	slow.
19	MEMBER HALL: Okay.
20	MS. MERSFELDER-LEWIS: He didn't send
21	it by email. He sent it by Express Mail or
22	something. So I feel very loath to put up a

letter that they haven't seen. 1 2 MEMBER SHINGLEDECKER: Right. The issue 3 MS. MERSFELDER-LEWIS: papers, no problem. 4 5 Yes, my main MEMBER SHINGLEDECKER: concern was with the issue papers. I was really 6 7 excited to have someone ask for one of our issue papers. And I was like I want to give it to you 8 9 but I don't know if I can. 10 So, and I need to -- I can't hand 11 deliver it to this person. So, if there is a way 12 to get it electronically --MS. MERSFELDER-LEWIS: 13 Yes, yes, you 14 guys have it. MEMBER SHINGLEDECKER: -- the final 15 16 formatted electronically. 17 MS. MERSFELDER-LEWIS: Yes. 18 MEMBER SHINGLEDECKER: I wasn't sure 19 if that was final, final or not. 20 MS. MERSFELDER-LEWIS: I'm assuming --21 Bill normally sends out the letter or I will send 22 it out but usually Bill sends out a letter and

attachments to the HSRP. So, I'm just waiting to 1 2 see. So, Bill, if you want me to send it, 3 4 I'd be happy to. 5 CHAIR HANSON: That's correct. Actually, the stuff that happened last time, I 6 7 was wanting to make sure they get received. 8 MS. MERSFELDER-LEWIS: Okay. 9 So, if you can confirm CHAIR HANSON: 10 that, when it is received. I mean I have got the FedEx tracking slip but I want to make sure I get 11 12 the right people this time. 13 RADM SMITH: Great, thank you. And 14 then following up on the issue papers posting to 15 the website, when can we get that done? 16 MS. MERSFELDER-LEWIS: Soon, really 17 soon. But we just literally got the last one 18 updated and finished last night at 9:30 at night. 19 RADM SMITH: Okay, so end of next week 20 type soon? 21 MS. MERSFELDER-LEWIS: Oh, no, I'll 22 send it to them. Yes, by end of next week,

1 probably a lot sooner. 2 RADM SMITH: Okay, great. And then 3 can you send out an announcement to the Panel 4 when they are posted? Thank you. 5 RADM SMITH: Other Panel members -- I don't have an easy way to go around the room --6 7 on the phone. MS. MERSFELDER-LEWIS: Well just, why 8 9 don't we -- we've got two Eds. Start with the 10 Eds. 11 RADM SMITH: Okay. 12 MS. MERSFELDER-LEWIS: I'll give you 13 the list. 14 RADM SMITH: Why don't we start with 15 an Ed? Kelly. 16 MEMBER KELLY: Two Eds are always 17 better than one. 18 This is Ed Kelly. I've got nothing 19 right now. 20 RADM SMITH: Okay, thanks, Ed. 21 Mr. Saade? I don't think we have Ed 22 Saade.

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1	Carol Lockhart.
2	MS. MERSFELDER-LEWIS: I think they
3	have to unmute themselves again.
4	RADM SMITH: Do we have people muted
5	by accident again?
6	MS. MERSFELDER-LEWIS: No, they have
7	to unmute themselves.
8	RADM SMITH: We may have lost them.
9	No Carol. Gary?
10	Dave Maune.
11	MEMBER MAUNE: I have no further
12	comments.
13	RADM SMITH: All right. Larry, are
14	you still there?
15	(No audible response.)
16	RADM SMITH: All right, how about Sal?
17	(No audible response.)
18	RADM SMITH: Sal, I think you are
19	self-muted.
20	I know Kim is going to say something.
21	MEMBER HALL: What? That's not fair.
22	I already said my piece, actually,

1 just a reminder that you are going to see 2 precision navigation, I call it my meaty outline. It's going to go out to the rest of the group. 3 Ι 4 think you might have seen it last month but I 5 will make sure it gets out to you with comments -- for comment. And if I could get those back 6 7 within a few weeks, I'd appreciate it. And that's it. 8 RADM SMITH: Great. 9 Thanks, Kim. 10 I think I skipped Andy Armstrong as 11 well, earlier. 12 MR. ARMSTRONG: Yes, thank you, 13 Admiral. I don't have any other comments. 14 RADM SMITH: All right, thanks. Who else did I miss? 15 16 MS. MERSFELDER-LEWIS: I think you got 17 everybody. 18 RADM SMITH: All right. Well, thank 19 you all. It's been a great meeting. 20 Bill, do you have anything last for 21 the good of the order? 22 CHAIR HANSON: No, I think just again,

I thank the public and also thank the Panel 1 2 members. A lot of hard work goes into this and I 3 appreciate your time and efforts. It proves there are some really nice products that NOS can 4 use and we can all use. So, I appreciate that. 5 And do I need to get out some type of 6 a hammer and adjourn? 7 8 RADM SMITH: Please do. 9 CHAIR HANSON: Well, I guess I'll have 10 to do it virtually again. So, the meeting is 11 adjourned. 12 (Whereupon, the above-entitled matter 13 went off the record at 3:12 p.m.) 14 15 16 17 18 19 20 21 22

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CERTIFICATE

This is to certify that the foregoing transcript

In the matter of: Hydrographic Services Review Panel Public Meeting

Before: National Oceanic & Atmospheric Administration

Date: 06-09-17

Place: Webinar

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