Woody Vegetation Levees Synthesis Web Meeting 1
23 February 2012

Julie Marcy: Hello, everyone. This is (Julie Marcy) at the Engineer Research and Development Center, and welcome to our one-hour Web meeting. We're going to be presenting the results of a workshop on research related to woody vegetation on levees that was held in December. And then we're going to give an overview of the Army Corps of Engineers' flood risk management goals for levees.

Note: A small portion of the transcript was deleted where audio technical difficulties were being addressed.

Julie Marcy: Similar to our setup last time, we have a few discussion guidelines that will help us. Many of you have already excelled and identified yourself and the number of folks in your group using the chat feature. That helps us track who's attending, and if you haven't already done that, if you would go ahead and do so that would be very helpful for us.

We are recording the Web meeting so that a transcript can be prepared, and ask that when you have something to say if you would identify yourself each time you speak. When we get to the Q&A [Question and Answer] section, we'll be taking turns, and we can use both the chat feature and audio or verbal questions.

We are a very diverse group with representatives from the Corp's South Pacific Division, Northwestern Division, Pacific Ocean Division, and some of their key stakeholders. You can use your chat feature and participants list online to see more information on who is attending to provide virtual

introductions. With that diversity, if you would explain an acronym the first time you use it that would be very helpful. Remember to use the mute button to silence any background noise.

We are going to give you an overview of the R&D [Research and Development] workshop that was held in December and discuss some corporate goals pertaining to flood risk management. Let's begin with a welcome from (Dr. Beth Fleming), Director of the ERDC Environmental Lab, followed by information on flood risk management by (Mr. Pete Rabbon) and the results of the research and development workshop by (Dr. Maureen Corcoran).

(Woman): Is anybody else having trouble accessing the Webinar?

Julie Marcy: Not that I know of.

(Woman): I am having trouble with the Webinar.

Julie Marcy: We have 38 lines currently in use with 120 lines allowed. If you are using the AT&T Web Ex software for the first time, you have to download the Meeting Manager software. With that, we're going to begin with our welcome from (Dr. Beth Fleming), Director of the Engineer Research and Development Center's Environmental Lab. (Dr. Fleming)?

Beth Fleming: Thank you, (Julie). Welcome everybody. It's great to have the opportunity to talk with you today and just to share some information relative to progress that we've made on this very important topic of woody vegetation on levees. Just in recalling where or reflecting where we've come from, we had a series of webinars several months ago where we described the workshops that we

were going to hold, in a December time frame, and then we had a workshop which was a face-to-face invitation only meeting.

And then today is the third phase of meetings that we're having where we plan to share information relative to that workshop. Just recalling again, the objectives of the workshop were to promote interaction between scientists and [USACE] Headquarters policy makers, also to share key highlights of levee vegetation research, suggest high priority research areas, and then identify and prioritize topics for potential future research.

So what we have to do today is just to share some of the information that we believe everyone would be interested in and the topics relative to that workshop as well as our management's corporate goals for levees. So with those introductory remarks, I will turn things over to (Mr. Pete Rabbon). (Pete), are you there?

Pete Rabbon: Yes, I am. Thank you, (Beth). All I wanted to do was take a couple minutes to make sure everybody sees the big picture and understands how the vegetation on levee research works, fits into the broader context. And you see in front of you the corporate goal, and that's the goal for the board of engineers.

As you can see there are our corporate goals for the quarter is to transition all the levees to the Corps standards, and we also want to wherever possible make sure there's P.L. [Public Law] 84-99 eligibility for the levee owners, and, by law, we are required to comply with the Endangered Species Act and other environmental laws.

And the way we have - or the options we've created to transition the levees, we actually have three. At one point in time, we only had one method to transition your levee to Corps standards, which was the middle option of

meeting the Corps Standards. We do understand the difficulty in some regions of the country to meet the Corps standards, so we have created two other options to achieve the Corps standards.

One is the System-Wide Improvement Framework [SWIF] process, and another one is the vegetation variance process. Okay. I won't read this, but this highlights what the System- Wide Improvement Framework is, and - or the process. And keep in mind, the goal here is to reduce flood risk. And so this does give you an opportunity to prioritize what your issues are, and to address them over time, to achieve the standards.

Another process is available for comment through the Federal Register now, but another process we've created is a variance request process for a permanent variance to the vegetation standards for the given levee, and, of course, it has to meet certain nonrequirements to achieve that permanent variance.

And again, not reading this, but so you can see, to keep us focused on the overall strategy of trying to transition all the levees to Corps standards. It will be through the System--Wide Improvement Framework process.

It will be another process that will be available is the vegetation variance, and we also are working with specific regions in the country to look at collaborative efforts, because we do know there are regional issues out there, very site specific, endangered species, other items that we need to deal with and comply with as we transition the levees.

And so as we spend the rest of the time during the discussion today, I simply ask that everybody keep in mind what our ultimate goal is as we talk about the R&D. And the ultimate goal is to reduce flood risk. Okay. Thank you, (Beth).

Beth Fleming: Thank you, (Pete).

Julie Marcy: Now we'll hear from (Dr. Maureen Corcoran).

Maureen Corcoran: Okay, thanks, (Julie). What I'd like to talk to you today about are some highlights of the results from the workshop that we held in this past December in Sacramento, California. As (Dr. Fleming) mentioned, the purpose of the workshop was to bring scientists and engineers together for discussion on vegetation research and also to get some input on the direction of research, to be able to provide scientific information to decision makers and policymakers concerning existing noncompliant vegetation on levees.

The objectives of the workshop were to encourage an exchange between scientists involved in this field of study, and to share key highlights of completed and also of ongoing research. We asked for input from this group to identify and prioritize these research areas. We had 30 people participating in the workshop. It was invitation only for the purpose of keeping it small, a small working group.

As you can see, we had a pretty wide variety of organizations involved with representatives from each of these that you see listed. The workshop principles to start off the workshop were presented to the participants for their consideration when we were discussing the research topics.

The first one is to consider that vegetation is just one part of a broader based risk assessment approach as (Pete) just mentioned, that is used by USACE. Another point was for participants to consider what tools and methods are needed to improve the decision making, and to also provide specific topics

rather than the broad research areas so we can get more detail and make those as descriptive as possible.

These topics should also include creative solutions and also recognize regional considerations. In order to facilitate this large group, we broke out into four different sessions and had these priority topics for discussion for different sessions. The list includes documenting case histories of incidents that are related to vegetation on levees, develop analytical tools and methods for levee vegetation condition assessment to support levee vegetation variance process as defined by the USACE policy guidance letter.

Also, characterization of noncompliant vegetation on levees, so there again USACE can make better decisions about noncompliant vegetation, given all the variables that should be addressed. And a fourth one was risk assessments that include understanding the relative risks of vegetation contributing to a breach on a levee system.

The first one, the case histories, involved developing a study for incidents where vegetation has impacted an activity related to the levee system, such as an inspection, maintenance, and flood fighting. For this topic, it was also suggested that nonincidents in places where vegetation was present but did not impact these activities should also be included in this study.

This group also suggested developing interim recommendations such as trimming guidelines. It was also suggested that the vegetation type, the maintenance of the vegetation, description, and seriousness of the incident and the quality of the source data be recorded. The study would also include the response to the incident and also if the vegetation was a primary or a secondary issue.

The data collection would also include recording if a variance existed. The next step for this research is for ERDC to develop a scope of work for a two to three year effort. The scope of work would then undergo both internal and external reviews. The second suggested topic of research is to develop analytical tools and methods for vegetation condition assessment to support the various processes by improving geotechnical methods used to assess scour and erosion when a tree is present.

This group suggested that a study should develop a geographic information system-based screening tool that levee sponsors could use and then forward to decision makers.

The major task within this study suggested by the participants was to improve tools for scour and erosion analysis for standing and windthrown vegetation, to improve geotechnical analysis methods that address the impact of the presence of vegetation, such as in flood stability and seepage analysis, and develop software for handheld devices to create real time data, such as levee deficiencies, maintenance, and accessibility issues, and then incorporate these data into the [USACE] National Levee Database.

Also, the group suggested that we need to ensure that the current database can adequately accommodate all types of current and future data and formats, and to also perform case histories to select and analyze representative vegetative levee reaches for application to the variance process. The next steps are to develop a scope of work within our [USACE] H&H [Hydrology & Hydraulics] Community of Practice, to develop a scour model that will adequately address scour and erosion effects on vegetation.

And I should also say develop or to modify an existing scour model. We will then look at this from several different phases of research, from modifying

existing scour models to developing models to physical tests, and then we'll further develop it using these data as we progress with the research. The third one is the characterization of noncompliant vegetation on levees.

The group at this breakout session suggested that an inventory plan with peer review and consensus building to confirm accuracy and needs to be developed and use these data to support a risk-based assessment. It was also suggested that two approaches be used, one where an observational method would be used to perform a systematic assessment of levee performance to evaluate effects of the noncompliant vegetation. And the second approach would be a focused experimental numerical study on key factors, such as tree size, soil type, within two or three levee systems.

The fourth one and the last one discussed at the workshop includes a risk assessment approach. This team suggested that the relative risks of vegetation contributing to failure mechanism or failure modes on a levee system should be known.

These include underseepage, throughseepage, scour, overtopping, erosion, wave-wash, and also slope stability. Vegetation is one of the multiple factors that could contribute to these. The situation posed by this group or that it is assumed that all vegetation be removed, but this group considered that some vegetation might be retained in some locations because of a variance approval.

The consequences of tree removal, as well as the need for access to inspection, flood fighting, and maintenance, would also need to be considered. The group also encouraged expanding existing risk assessment tools such as the USACE levee screening tool. The suggestions from this group included continuing modeling research on slope stability, as well as furthering studies on vegetation effects on seepage, erosion, and scour.

The next steps are to develop a proposal through interaction with –our [USACE] Risk Management Center. Some general points of discussion that were also discussed at the workshop are that vegetation, woody vegetation, remains a complicated issue, and that the effects of vegetation on levees is not easily studied. As I mentioned in information from the last group in the breakout session, decisions on vegetation should be addressed in a risk content to include both positive and negative impacts.

We also discussed that the scope of work developed for our research - for the research on vegetation - should be submitted for both internal and external peer review. To summarize, the actions of USACE includes that we will continue to coordinate with workshop participants for input on our scopes of work, in particular the scopes for scour erosion analysis, and the case history studies that will be conducted for FY 12.

These scopes will soon be finalized and reviewed. My contact information is on the last slide, and I'd like to make a note that the research is not constrained by the topics that are discussed on this workshop, so if anybody has any input, please provide it to me. My email address is there as well as my phone number. With that, I'll turn it back to (Julie).

Julie Marcy: Thank you, (Maureen). At this time we would like to open the floor to questions that you may have. You may either use the chat feature to type in a question, or you may ask a question verbally. And if you ask verbally, please identify yourself. Remember to unmute so you can talk to us. Any questions or comments on the presentations?

(Doug Shields): Hi, can you hear me?

Julie Marcy: Yes, we can.

(Doug Shields): This is (Doug Shields). I'm a consultant to Sacramento Area Flood Control Agency. I'm not seeing anything about the impact of burrowing animals and their interaction with vegetation. Current research is indicating it's quite important, and I'm wondering if that's assumed under some of the major headings presented.

Maureen Corcoran: (Doug), this is Maureen. There was some - a little discussion on that, but California is doing a very in-depth study on that, so that's not something that we at the Corps are moving forward with.

(Doug Shields): Well, then the next question is, if we're going to rely on the California work, will the future research integrate the findings coming out of the California program.

Maureen Corcoran: We would like to see the information first before we make a commitment to that.

Julie Marcy: Good. We also have some questions under chat. The first one from (Anne MacDonald). The analytical tools focuses - focus on H&H. Where and when will geotech tools come in?

Beth Fleming: For me personally - this is (Beth Fleming). Can you, (Anne) - can you clarify that question a little bit more? It focused on H&H and when will geotech tools come in?

(Anne MacDonald): So in your - as you were setting up the discussion of the analytical tools portion of your proposed future research, you had mentioned slope stability, windthrow, things like that. And yet the - when you got down to the very

bottom bullet on focused research, I saw H&H but I didn't see the geotech component of it. So I was wondering at what point are geotech tools going to be coming in, for instance, incorporating vegetation into throughseepage or underseepage or slope stability analyses?

Maureen Corcoran: (Anne) this is Maureen. That's a very good question. We did bring in the H&H to talk about that we are coordinating through those, but we have developed some geotech tools that - through our additional study, that need more refinement. One of those was our slope stability model.

We had some input on that through our workshop to just consider some other aspects, for instance the wind load distribution over roots. So we're looking closer on that. To answer your question, we do not have anything that is defined that we can turn over to the [USACE] districts. That was not our intent. But we are refining our tools by future research. Does that answer your question?

(Anne MacDonald): Certainly in terms of the wind load, absolutely. Are you going to be able to - or are you looking more fully at incorporating roots into the slope stability models, or into really evaluating piping in more detail? And that's why I had the follow-up question, which is how are plant physiologists and plant ecologists getting pulled into this research for their understanding of root architecture?

Maureen Corcoran: Right. We are looking at root architecture. We do have scientists that are experienced in that area involved in this, and we have in our initial research used LIDAR [Light Detection And Ranging] studies, and California is also using that as well, to incorporate the actual root systems.

(Anne MacDonald): Okay.

Maureen Corcoran: Where we go from here, however, is to bring more realistic properties to those roots themselves. And I believe that's what you're probably more interested in, and that's what we would move forward on in any future research, but right now, this FY, we aren't focused on the slope stability or the seepage.

(Anne MacDonald): Okay, thanks.

Maureen Corcoran: Sure.

Julie Marcy: We have another question from (Charles). Has the criteria for granting of permanent variances been documented? (Pete), do you have any thoughts on that?

Tammy Conforti: This is (Tammy Conforti). I'll go ahead and answer that, (Julie). Right now, the draft variance policy that the Corps is proposing is published in the Federal Register for a 60-day comment period, which ends April 17th, so if you go to the Federal Register and look for that announcement, I think the easiest thing to do would - to look for Docket Number, I think it's 2010-0007. I can put that in the chat. You can find that document, and you can look at our proposed process for getting vegetation variances.

Julie Marcy: And so, (Tammy), this is (Julie). That would include some of the sources or documentation that you used?

Tammy Conforti: It's either - that would include the proposed criteria.

Julie Marcy: Okay. We have another question or comment from (Steve). (Pete) mentioned the need for regional flexibility and particularly with regard to Washington

and California, but that may be unclear. How will regional differences be handled? Our Endangered Species Act [ESA] challenges in Washington or California seem completely at odds with the national standards being pushed. Any thoughts on that from either (Pete) or (Tammy)?

Pete Rabbon: Yes, let me respond to that. This is (Pete Rabbon), and I guess I would challenge the concept that they are completely at odds. It is going to be difficult to address both the public safety standards and the environmental and ESA standards, but that does not mean it's going to be possible. We know it will take time. We know it will take bringing people together and sitting down and trying to figure out solutions that work for all the parties. And so that's technically what we have done with our policy is (unintelligible) to offer more time, create a mechanism to come up with solutions that work for all parties, but the key thing is it will take a commitment from all the parties to sit down and work through the issues. So we think the policies we recently put in place can address the concerns that (Steve) has expressed.

Julie Marcy: Okay. Thank you, (Pete). Adding to that, we had another question from Vincent. Can you share the U.S. Fish and Wildlife Services input or perspectives on this issue? At the December workshop, we did have an attendee from the U.S. Fish and Wildlife Service and he participated including participation in one of the breakout groups, but I cannot tell you specifically that this individual said x, y, z, because we don't capture the meeting documentation on an individual format like that. I can tell you as the individual who facilitated the workshop that threatened and endangered species came up many times and concerns about them were expressed.

(Alison Berry's) question is a clarification from (Maureen). Did you say that the ERDC priorities are currently focused on slope stability and seepage or not? California is modeling tree root architecture and levees currently, and

they hope to be able to incorporate that data in future iterations of slope stability modeling. Miss (Maureen)?

Maureen Corcoran:: Hi (Alison). I'm glad you asked that question and gave me a chance to clarify that. We are developing a scope of work based on input from the workshop that would include both slope stability and seepage assessments. We will not be conducting that research, however, this FY. This FY will be a scope of work for our research on a scour model and also the case history study.

Julie Marcy: Great and (Tammy) was nice enough to list the Federal Register Docket Number information in chat for us. That's for some of you that may only be calling in by phone, the Federal Register Docket Number is COE-2010-0007.

Our next comment from (Natasha) is, is any research planned to look at vegetation removal methods and potential effects on levee stability and hydrology; for example, removal of just above ground biomass versus removal of entire root systems?

Maureen Corcoran:: This is (Maureen). Our first step on this - this is a topic that was also included in the characterization of vegetation with the tree removal. So it came up quite frequently. Our first step in this is to gather the information that already exists on the tree removal and to report interim vegetation management through trimming and maintenance such as that. Getting back to the tree removal issue though, we will gather the information. We are not planning on conducting any research, however, on that topic for this FY. That could be included in any future scopes though.

Julie Marcy: Is there anyone on the phone that would like to ask a question verbally or we can have additional questions via chat? A new chat one just came up. From

Vincent, Orange County, California, tends to have short duration storm flows. In other words, flashy storm flows. Was this regional flow characteristic discussed, considered in the levee failure modes and risk?

Maureen Corcoran: This is (Maureen). We did discuss the fact that there are different scenarios, different loads, as you said, different levee characteristics, and obviously those do have to be considered. You're exactly right. So yes, we did consider that. We did discuss that and this is also something we definitely pointed out in our initial research also.

Beth Fleming: This is (Beth). I thought of a point to add to that as well. That would certainly be part of the case histories piece that (Maureen) said in her discussion also.

Julie Marcy: And (Doug) is asking about whether the slides and the transcript of the Web meeting will be available and (Doug), yes they will. We will post them as soon as we receive them. We receive the transcript from AT&T and we'll post that along with the slides and the information on how to access those.

Another question has come in. If the scopes of work are issued this year, when are results expected?

Maureen Corcoran: This is (Maureen). For the case histories studies, we will have an effort that may be one and a half to two years in length but we can expect some results at that time. As far as the scour model, we will have different phases within that and we would have some initial results within 10 to 12 months after beginning the research.

Julie Marcy: (Paula) pointed out that I missed an earlier comment from her that it seems the cart is before the horse. While the SWIF (System-wide Improvement Framework) process buys some time, will there be enough time to incorporate

the results of the research to come? (Pete) or (Tammy), do you have any input for that?

Pete Rabbon: Yeah. This is (Pete Rabbon). Keep in mind again the whole goal here is to reduce and the SWIF process allows you to prioritize the deficiencies on your levee in order of risk and so we have been told that vegetation is very low on that priority list. And so we are expecting that it's going to take a while to address some of those issues. So I think the answer is yes, for those who have issues beyond just vegetation. If their only problem is vegetation then we will be looking to a SWIF plan that addresses vegetation standards as they currently exist.

Tammy Conforti: And this is (Tammy). I just want to make a comment that we can't have the expectation that research in general is going to have a definitive answer and try to guess on what research will give us answers that may or may not change what we're currently doing. It's just like any area in the engineering profession. You know science is going to always evolve. We're always going to learn more about things but for the time being, we have to move forward with the best available information and so as we're moving through this process, as we're implementing SWIF and different things, we're going to adapt based on new information as we go, but we're not going to try to say we are not going to act until we get a definitive answer or until research is going to give us that answer.

And everyone's going to agree that the vegetation issue is very, very complicated and so we're going to try to learn more so we can make better decisions about vegetation, but we can't have that expectation that it's going to be black and white and we're going to get an answer anytime soon.

Julie Marcy: Thank you (Tammy). We also have (Steve) asking for some more information about the proposed current year scour research. (Maureen), can you comment on that?

Maureen Corcoran: Sure, and it looks like (Doug) may have a question about that, too. Can you scroll down so I can see the rest of his question? All right, because I think it's probably pertaining to the same, scour on levees. First of all, on the scour model we are looking at three different phases. We're looking at gathering information on existing scour models and to modify those, what it would take to modify those. That's the first phase. The second - and that's the only one that is this FY. We could further develop that into using physical models and also field data. We will include all of those within the scope of work, but I need to stress that right now we're going to look at existing models and see how we could best modify those.

So also I need to point out we are developing the scope of work. We have not completed it.

Julie Marcy: And (Vincent) is asking us about some earlier discussion and that the workshop included discussions about flashy systems. Did it conclude that flashy systems are more resilient and less likely to have seepage issues?

Maureen Corcoran: Okay. Could you clarify that because I'm not sure if you're talking about our discussion that came out of the workshop or perhaps our initial research?

Julie Marcy: Okay. (Vincent) may be on mute or something. He is asking whether or not a conclusion was reached at the workshop, I think the short answer to that would be no. That wasn't the nature of the discussion. The discussion was simply to take into effect that there are variances across the country and

regionally in terms of flooding and that was what the discussion was relevant to and that research would take that into account.

(Vincent) was also asking if a future study workshop would be open to larger participation since December was by invitation only.

Beth Fleming: (Vincent), this is (Beth Fleming) and there are a number of reasons why the December workshop was by invitation only. One of those being that we are under some very strict constraints in terms of the Department of the Army and the numbers of people that we can have attend meetings. We just bumped up as far as we could for one thing on the limits required for meeting attendance which is $25,000 for which I can approve. That's one limit (unintelligible)

At this time, we're not planning another face- to-face workshop. We are, in order to comply with the Department of the Army requirements, we're using this method that we are using right now, which is webinars in order to limit the amount of funding that we spend on large workshops.

I would go further to add we even had to cancel R&D conference that we planned for last November by my boss, the ERDC director, which we were not allowed to even have that meeting at all, and we had to question ourselves whether we would have the vegetation workshop, and we were able to do it. So, I just wanted to communicate that to you in context of communicating how difficult some of these meetings have been and that we are using this type of methodology for having meetings. So that's where we are right now.

Julie Marcy: And this is (Julie). Remember too that you have (Maureen's) contact information there. If you have comments or suggestions concerning those scopes of work, you can certainly send those in and (Tammy) mentioned the fact that the Federal Register comment period is open.

Our next question is, is it expected that regional differences will be handled by the variance process or will they be included in the future technical manuals? Probably (Pete), (Tammy), do you have some thoughts on that?

Tammy Conforti: I would say, you know, initially yes, they would be handled during the variance process or the SWIF process and then if we see things through that as good lessons learned or things that would be good standards that could be applied nationally then we'll adjust our vegetation standards, the Engineer Technical Letter accordingly.

Julie Marcy: I think we talked a little more about the scour research earlier so I'm going to move on to (Kevin) asking what research has been done on other types of vegetation such as riversides and alluvial fan sage scrub, which is common in southern California? Based on the performance of our levees and past significant storm events, we've not seen any issues with this type of vegetation on stability and structural integrity of our levees, and it is habitat for several endangered species.

Maureen Corcoran: Okay. (Kevin), this is (Maureen). That’s good information and I think that’s something that we can consider and need to include in our case history study. So I'd like to be in contact with you to get some of that information from you.

(Kevin): Sure.

Maureen Corcoran: Thanks.

Julie Marcy: We have another comment from (Charles). It appears that there is an additional filing process for requesting variance from vegetation standards for

levees and flood walls and he lists another Corps Federal Register Docket Number of 2012-3701. (Tammy), do you have any comments on that?

Tammy Conforti: Yes. That was the Federal Register process. When they first issued the posting, they assigned a new number to it and what we wanted to do was have that posting linked to our original posting that was done in February 2010. So when you go in there, you'll see everything. You'll see the previous 2010 version, all the comments made on that version and then you'll have the new version which we just issued this month. And so that number got assigned before we could move it over to our other Docket Number, but it's the exact same document.

Julie Marcy: Okay. Thank you (Tammy). I have a question from (Jody). At what level is the Fish and Wildlife Service engaged in these discussions? Significant commitment of time and resources will be necessary for both the Corps and Fish and Wildlife Service in order to reach implementable solutions under Endangered Species Act. Has an agency level partnership discussion been considered? (Julie), I can tell you that the Fish and Wildlife Service was invited to the Sacramento workshop and they did send a representative from their Sacramento field office.

Maureen Corcoran: The participants were asked to provide comments based on the draft minutes from the workshop and definitely they'll have a chance to respond on that, too.

Tammy Conforti: This is (Tammy) and I just want to add to that. [With] the policies that (Pete) talked about, the SWIF process, the variance process, at the national level, we have been meeting pretty regularly with the resource agencies including Fish and Wildlife. We've tried to make sure that they know our process and understand what we're doing and we'll continue that relationship. We're

promoting that similar type relationship down at the end implementation level so between our districts and the local offices of the resources agencies.

I think if you have a copy of the SWIF process, the System-Wide Improvement Framework process, we've incorporated a lot of language in there about that kind of collaboration and so forth. So I think all the agencies know it's going to be a resource commitment, but everyone has a very important interest and stake in this effort. So far, we've gotten good feedback that really we don't have a choice. We really need to dedicate our time to this effort.

Julie Marcy: Thank you, (Tammy) and that may also be related to (Anne's) next question asking about any participation or engagement by the National Marine Fisheries folks.

Tammy Conforti: Yes.

(Pete Rabbon): This is (Pete) and they also have been involved at the national level in those same discussions that (Tammy) has described.

Julie Marcy: Okay. Thank you (Pete). Any other questions for our panel either verbally or using chat?

(Anne MacDonald): This is (Anne) again. At what point do you think you're going to get into inspection techniques?

Maureen Corcoran: (Anne), this is (Maureen). Well, one thing that did come out of the workshop that we're looking at is we're going to gather information from our levee screening tool, and we're going to use that information with our case

history. I don’t quite know what you're questioning. Are you talking about developing new tools?

(Anne MacDonald): I guess my point is that even if we can get through the scour and through technical issues that there are still issues of inspectability, and I didn’t know whether you were looking at things like truck-mounted (LiDAR) or any other sort of tools on the horizon for being able to inspect a levee and feel confident that you're seeing true vegetation.

Maureen Corcoran: Okay. No (Anne), we're not considering that in our scopes.

(Anne MacDonald): Okay.

Julie Marcy: Any additional questions?
We have another question from (Doug). Why was scour selected as the priority item to address this fiscal year? Are there several cases where trees have triggered local scour on levees?

Maureen Corcoran: We selected that for this FY (Doug) based on tools that were needed for the variance process. We wanted to look at those first. Now those would be in the scour model.

Julie Marcy: Any additional questions? Thank you for muting that feedback we were getting?

(Laura Kaplan): Hi. This is (Laura Kaplan) from the Center for Collaborative Policy. My question relates to the lawsuits that have been filed on the variance process and what impacts, if any, you see those lawsuits having on scientific collaboration on the research.

Tammy Conforti: And this is (Tammy). We just cannot comment on pending litigation right now.

(Laura Kaplan): Yes, thanks (Tammy). I guess I was just more concerned with whether those lawsuits will cause any gaps in communication related to research.

Tammy Conforti: Our direction right now is no. We're fine to move forward on the research and the science discussions.

(Laura Kaplan): Thank you.

Julie Marcy: We have about five minutes left in our Web meeting so this would be a good opportunity to ask a burning question that you have.

Last call for questions. Remember to unmute if you're on mute and need to communicate with us.

(Walter Mitchell): Hi. This is (Walter Mitchell) from the Santa Clara Valley Water District and I got on the call a little late so you may have said this, but how do you want people to be involved with providing information on case studies?

Maureen Corcoran: Okay. The last slide has my name, my email and phone number. Email is the best way to reach me.

(Walter Mitchell): Okay.

Maureen Corcoran: So you can contact me (Maureen).

Julie Marcy: So if you have some case study information to share, just head it (Maureen's) way.

(Walter Mitchell): Well, particularly could you talk a little bit about what would be the criteria you would be interested in?

Maureen Corcoran: Well, that’s a good question and it's pretty broad right now. We are looking for any incidents where vegetation was involved that perhaps hindered vegetation inspection or could have influenced a levee breach or slope stability problems or seepage problems. We also are looking at areas where vegetation, woody vegetation, was present that did not cause any problems or did not hinder or hamper the flood fighting and inspections.

(Walter Mitchell): So to summarize, you're looking at places where it might have contributed to a failure and places where it held firm.

Maureen Corcoran: Exactly. Not only that, but also relating to the flood fighting and inspection and maintenance.

(Walter Mitchell): Okay. Thank you.

Julie Marcy: We had a comment from (Jody) that allowable or alternative inspection techniques might help eliminate some of the endangered species issue early and that this could be important in the research scope. So we've noted that comment, Miss (Jody).

(Doug) is asking what plans are there for ERDC or the Corps to participate in the Levee Vegetation Symposium in August 2012?

Maureen Corcoran: USACE will discuss this on how best to participate and we hope to, when the final panel comes - I mean the final agenda comes out that we can

obviously target the people to participate in that. Right now, we haven't seen the final agenda on that.

Julie Marcy: Okay. We also have a note from (Steve). Inspection research seems an interesting question. In our work with the Seattle District, we've been told that Corps staff resources are limited and therefore inspection must be possible in a hurry. If research could identify a remote sensing alternative, it might help speed the inspection where vegetation exists. That could potentially help a lot.

Tammy Conforti: This is (Tammy). I guess I want to reiterate that I don't - I would hope that someone said that we need to rush - didn't say we need to rush inspections. I think what we've been promoting under the Levee Safety Program is contrary to that because what we've seen and even more recently is previous routine inspections we've done in the past where maybe we've driven over a levee in a car versus what we've done recently through periodic inspections, which we require walking each toe of the levee and the crown during the inspection. We've uncovered a lot of serious deficiencies that were otherwise missed in a rushed type inspection.

So as far as levee inspections, I don't think we're going to be able to find a method that's going to be able to replace that kind of actual visual inspection especially if it's heavily vegetated but - and I do think the inspection process or looking at inspection techniques is interesting. I think where we want to pursue some future I don't know if it's research or investigations, but we have a requirement now through the variance process that you have to develop inspection criteria or interim inspection criteria through the SWIF process and we say that if you have vegetated levees, you need to be able to demonstrate that you can inspect it. And so what we don't have is for those interim inspection guidelines what does that mean. I think right now [USACE] districts are doing - using various different distances. Some of them are 10

feet centers on trees or they've got different criteria for groups of brush and how thick that brush could be.

So I think that's where we can get a lot of information that would be helpful is maybe set some criteria on what we mean as you have to have the ability to question we have right now.

Julie Marcy: Thank you, (Tammy). Our last question from (Norma), will there be any consideration by the Army Corps to have variance approvals made at the local divisions? I'll turn that back to Headquarters in that regard.

Tammy Conforti: I would say, just provide that comment through the register process. I mean, we've gotten various comments to that. Right now, it's pretty much a revised process that we haven't even begun implementing, and I think as we start implementing a few of the processes, we get some consistency down. We get some good examples of what that process would look like, we can look at revising the review process, but until that time, right now it's really early to kind of say, what our future plans are when we still kind of have a draft policy out there for review.

Julie Marcy: Thank you, (Tammy), and (Steve) snuck in one last question. This is the last, last question. It seems that the PGL process involves some major federal action. Is it being consulted with regard to Endangered Species Act compliance?

Tammy Conforti: I think to maybe help answer some of these questions I, and again I can provide it, but in some of the documents and from the first time we reviewed the or had the variance process in the Federal Register, there was a lot of questions about just that, environmental compliance and so forth. So we've written a document that summarizes those types of comments that we received

and the Corp's response to that. So there's an environmental compliance paragraph in the draft PGL, and I think that pretty much will help answer that question on what is the Corp's approach and how we're going to ensure environmental compliance for the variance process.

Julie Marcy: Thank you, (Tammy) and thank you to everyone for joining us on the Web meeting. We will make the slides and the transcript for the call available to you, and I apologize to your ears for our earlier technical difficulties and feedback that we were fortunately able to resolve. With that, we conclude our web meeting.