

Public 'Listening Session'
Priorities for Managing Freshwater Resources in a Changing Climate

September 9, 2015

NOTE: Public Comment Period Extended to October 15

Email Comments to: water_climate_change@epa.gov

Speakers:

- **Jerad Bales**, US Geological Survey
- **Julie Kiang**, US Geological Survey
- **Rachel Grandpre**, Army Corps of Engineers
- **Nancy Beller-Simms**, NOAA
- **Karen Metchis**, USEPA
- **Mike Shapiro**, USEPA

Slide 1: Public 'Listening Session'

No Transcript.

Slide 2: Participation Guide

No Transcript.

Slide 3: Purpose of Listening Session

Jerad Bales

Good afternoon, thank you all for joining us. I am one of the three co-chairs of this workgroup that has been working on this National Action Plan. I am Jerad Bales, from USGS, along with Mike Shapiro from EPA (US Environmental Protection Agency) and Ellen Tarquinio who is with the CEQ (the Council on Environmental Quality.)

We have had a number of agencies involved in the workgroup, the Corps of Engineers, a number of bureaus in the Department of Agriculture, EPA, two or three bureaus from the Department of Interior, NOAA, CDC, DOE, NASA, the Department of the Army, and CEQ as I said before.

The purpose of this meeting is to get some input on our plans to update the National Action Plan that was created in 2011. It's almost 5 years old now, we have completed many of the actions that are in the action plan, and so we want to get your thoughts on federal priorities for the next few years.

Slide 4: Next Steps

Some next steps - we'll be recording and posting today's session, and we also anticipate a public comment draft of the revised action plan in the winter of 2015-2016, with a final plan in the spring of 2016. And everything is posted on the ACWI web site.

Slide 5: Historical Timeline: Priorities for Managing Freshwater Resources in a Changing Climate

So what have we done in the past? In 2009 there was an Executive Order that established this task force and was really the impetus for this activity. In 2010 this Water Workgroup was formed, and as I said the National Action Plan was published in 2011.

The action plan had a number of major areas and then actions within those major areas.

We also published every year, 2012-2014 progress reports on what was being accomplished in that plan. In 2013, President's climate action plan and EO moved out and established a Climate Preparedness and Resilience Council, and so this refresh is partly motivated by that, but also motivated by the fact that we accomplished most of what we had in the action plan.

Slide 6: 2011 NAP: Six Priority Areas for Taking Action

The six major areas, the priority areas, with a half dozen or so actions under each of these areas that we undertook jointly or individually as federal agencies.

1. Strengthen the data and information required to have a sustainable freshwater resources
2. Provide tools for those who manage water to assess vulnerability
3. Improve water use information and efficiency where we could
4. Promote Integrated Water Resources Management where it was appropriate
5. Increase training and education across the full range of sectors
6. And then to create a structure for collaborative action

Slide 7: Progress

And so the progress to date on these priority actions – as I was saying most of them have been completed and you can read about those in the progress reports.

We have been doing many things, and in 2015 we decided that we just have 4, 5 or 6 actions that we haven't completed, and it doesn't look like we will complete them, either because they were no longer priorities or just because we just didn't have the resources and maybe it was a bit of a reach to put them in as actions.

Slide 8: Recent Developments informing the 'Refresh'

So what has happened recently? Well, the ACWI established a climate subcommittee, a Water and Climate Workgroup, and that workgroup produced a document that also had a set of next steps that they recommended. And then in response to the EO, the SLTTF was formed and they produced a set of recommendations, and then there was also the President's Climate and Natural Resources Workgroup which also had a set of recommendations – a Priority Agenda. And so all of these things inform what it is that we'll be doing.

Slide 9: General Direction

So, this is the way we see things proceeding but again this is where we need your input. As I noted earlier, we had the six priorities areas and we have had six teams that worked on those different priority areas. We are consolidating those six teams into three teams, that you see listed on your slides, and you'll be hearing from each of the team leaders in just a minute. And also that we intend to try to address most of the State, Local, and Tribal Leaders Task Force recommendations, including evaluation of risk of climate change and water resources

availability, provide guidance on vulnerability of infrastructure, and promoting Integrated Watershed Management.

Slide 10: Team Presentations

So, these fall along the lines of some of the activities that we had in the previous National Action Plan. Now I will turn it over to the team leaders. Julie Kiang from USGS will talk first, followed by Rachael Grandpre from the Corps of Engineers and finally Nancy Beller-Simms of NOAA. So thank you very much and we look forward to your input.

Slide 11: Data, Research and Assessments Team

Julie Kiang

I am Julie Kiang and I am from the USGS and I have a group of people working with me who are thinking what can we do to further on data, research, and assessment for climate change.

Slide 12: Scope

So for one of the first things that I want to talk about – to make clear the scope of this group versus some of the other groups. My group is focused on the data and the science for climate change. And so what we are looking at: do we have enough observational systems to get the data that we need to understand what is going on right now and to analyze the changes from the past; and then the science - do we have the analysis tools, do we have the modeling tools available that really help us answer the questions that we need answered. Rachel's group falls under planning and decision support is focused on taking that data and science and using it in a management context – so using it for decision-making. And that is the distinction we are making between the two groups. There is some overlap between the two and that a distinction we will have to sort out a little better in the future.

Finally, the third group is Outreach and Education, taking all the information from the first two groups and making it accessible and available to all the people who need it.

Slide 13: Progress on NAP Actions: Data

I wanted to review a little bit on the progress we've made in the federal community on some of the actions identified in the earlier freshwater action plan. I am grouping it into two bit categories – one on data and one on assessments, or the science side of things. Briefly, one of the big pushes in the last action plan was to strengthen data for understanding climate change. And we have been trying to ensure our data networks are intact and we are expanding where possible and we have written that– there are other documents that talk about that.

The previous action plan talked about aligning hydroclimatic statistics, meaning we wanted to make the statistics that people were interested in available including looking at statistics in different ways to understand the changes – in terms of stream flow USGS has been working on that in cooperation with other agencies, to try to look at other ways to understand the stream flow of the past. NOAA NW has been working on updating NOAA Atlas 14 mapping – this is the precipitation intensity, frequency duration precipitation data. Looking at how much, how intense storms are, how often they occur, etc. We've made progress on waterborne disease tracking through the CDC mainly, but also EPA has an advisory bulletin on cyanotoxins in finished drinking water. Sea level rise has been a big issue for coastal communities. There has been a big effort to do more LIDAR shoreline mapping and make it available to help visualize. And

finally there has been a push to develop metrics for water use efficiency, basically to understand where we are making gains in different sectors.

Slide 14: Progress: Vulnerability Assessments

Vulnerability Assessment, I am speaking in terms of what is happening on the ground. What is happening in terms of changes over time? So we have developed ways of looking at this information – portals, and accessible information online, and different courses. And one of my questions I have for you is particularly about data.gov. There is a particular section on climate there, and one of my questions for you all is, is it suitable, is it good resource for you, or are there ways to improve it and make the information more accessible. There was an action to look at developing a climate change vulnerability index – this is one that has been pushed back – it is not one of the high priority items. But there have been various explorations that have been under way over the last couple of years.

In terms of tools, there are a lot of tools trying to make information available. One example is EPA's Climate Ready Water Utilities program. They have a nice software program that allows you to drill in on a location to get an idea of what changes might be happening in your area.

Slide 15: Challenges

So as we were thinking about what we have done to date, we have also thought a lot about what are the big challenges still facing us. I think one of big issues in the realm of data and science is that we always want more data and science. We clearly don't understand all of the issues - all of the potential changes due to climate change - and we always want more data to understand better, better science.

In addition that a lot of times the information that is available can be overwhelming. There are so much data to sort through, so many model projections, so many studies coming out, it can be really overwhelming to sort out what is important, what you can rely on to use in planning. So we think that is something we can help work through a little bit. And one final thought is that there is always going to be uncertainty going forward. And one of the goals on the science side is to characterize that uncertainty. So as the managers take that information, and incorporate the understanding of that uncertainty into their planning process.

Slide 16: Moving Forward

So moving forward two big things on the top of the slide are some data related items we can be working on and on the bottom more of the science side of things. The first three really come straight from the ACWI workgroup recommendations for data for climate change science. Sustaining the data networks, identifying and filling gaps in data, and making data more readily available in acceptable formats, in common formats, so you aren't always just trying to parse through the data trying to get more out of it.

On the science side of things, one of the things we have been talking about is providing more guidance on the modeling information, what are the limitations, where can you get it, how can you get the information you need for your particular areas. And in addition how do you manage the risk. And this is an example where we are bleeding over into the next groups charge – there are definitely science aspects to this but there are also management aspects to this.

And we want to spend more time, as a federal community, analyzing historical records so we can better understand previous trends and processes.

And then finally, embrace uncertainty, so as scientists we can try to put better uncertainty bounds around all the information we are putting out for the managers and decision makers to use so they can better understand what they are really dealing with in the future.

Slide 17: Questions

So these are just some of the things we have been talking about. We are interested in what you all think is important. Here are just a few questions, food for thought:

Are there particular types of data that we are lacking, that if we had that available you'd be able to do your jobs better?

And the materials through www.data.gov/climate - so this is what I am thinking as the main federal portal for climate information - my question is, is it organized in a way that facilitates getting the data you need and along with that how can we make it better, easier for you to use.

Another major federal tool or assessment, is the National Climate Assessment. It provides a lot of information on what is happening in terms of climate change.

My question is, is it useful for you? Is this document giving you the right climate information, the level of detail that you need? Is it distilling the science into useable information? How would you like to see the document changing over time, to meet your needs better?

And finally are there particular aspects of climate science for which more information is needed?

As we get to the discussion part of this program that would be the types of questions we have for you.

Slide 18: Policy/Planning/Decision Support Team

Rachel Grandpre

Hello, my name is Rachel Grandpre, and I am speaking on behalf of the Policy, Planning and Decision Support team.

Slide 19: Scope

The scope of this section of the report is looking at information tools, guidance that support planning, policy makers, and decision makers who manage freshwater resources in a changing climate.

Slide 20: Scope

Looking back at the 2011 National Action Plan, this section of the new report combines a lot of other chapters that were in that past report – so we are looking to combine elements of: Information for Decision Making, Strengthen Vulnerability Assessment, Improve Water Use Efficiency, and Integrated Water Resource Management. There is an additional chapter on Training and Outreach that is covered by another team.

In addition to this report in looking at where we have gone previously, there have obviously been progress reports for 2012, 2013, 2014 in addition to a lot of other climate change task force and working group conference reports.

Slide 21: Challenges

Some of the challenge for this area is that there is an overwhelming amount of tools out there, that decision makers might not know what is the right tool to use, and if they see a tool that might be useful to them, they might not understand how to use it correctly for their decision-making needs.

So, More needs to be done by agencies to possibly improve the curation of the tools and cater them for specific users where needed. Maybe there are too many tools – that when people are searching they don't know which tool to use.

Another challenge is that there needs to be more guidance on the use of downscaling, and also that there will always be uncertainty so there needs to be more help in improving decision processes, how to understand that uncertainty, and how to embrace that uncertainty, developing ways to manage the risk.

Slide 22: Moving Forward

Looking at all these challenges, they track into our broader decision support needs. For this chapter, we need to consider how we can improve these challenges moving forward.

Looking at some of the information that we are collecting in these areas, for Integrated Water Resources Management, there is a process right now to build something called the XFAST partnership. This comes out of the CNRWG priority agenda. It is an action to bring federal agencies together with state, local and tribal partners and identify local regional associations dealing with watershed resource management. And to involve a federal agency support team to work on issues of common concern. Which is similar to the WestFAST doing the same thing in the western states working with the Western States Water Council.

In the water use area, there are many other federal agencies and city governments tackling drought and other water supply issues.

So the Climate Change and Water Resources Workgroup is trying to focus on at what our unique role can be in this area and we want to think of water use, and the data needed to understand for the National Action Plan. That is our specific area. This can include issues such as looking at supply chain, coordination, planning, adaptation practices, and collecting information on water use.

Getting into some examples of decision support tools involving vulnerability assessments, some examples include CRAVe which is a Climate Registry for the Assessment of Vulnerability. Another example is something that is in beta now that is looking at forecasting real time inundation mapping. This is something that might be useful to communities that don't have detailed models or gaged watersheds. There are lots of examples in this area.

Slide 23: Questions

I want to leave you with some questions to facilitate some discussion and some things that we are interested in hearing from you about.

What are the most significant gap areas? What are the subjects we don't have tools for yet? Or for which we need to make better tools? Or to create ones that work for specific persons who needs them?

Who are those users and decision makers that need that information so we can better adapt the tools for them?

What can be more useful for your decision-making, for understanding vulnerability in your specific region or facility? What do you need to inform your policies?

Also, what are examples of successes or foundations we can build upon? What is working and how can we better incorporate them or mimic them?

And what are institutional processes or constraints that need to be changed?

Slide 24: Training and Outreach Team

Nancy Beller-Simms

I am helping to lead the training and outreach team, and as you can see from the list of people on the slide we have a variety of people that are contributing to this particular effort, ranging from NOAA, the Bureau of Reclamation, the US Forest Service, and EPA.

Slide 25: Accomplishments to Date

We have a number of accomplishments to date. I think the big thing now is for people to being to create the training and outreach materials. We need to get the information in a format that people can understand. One way we do this is through webinars.

The one at NOAA is a monthly webinar series called climate information for managing risks in water resources. Every month there are different speakers. This particular series is put together by NOAA. A number of water resource foundations, such as Water Resources Foundation, Water Environment Research Foundation, and the Association of Metropolitan Water Agencies, as well as EPA's Climate Ready Water Utilities. There are a number of different topics that are mentioned, such as decision-making in local and regional planning, monthly water communities and what it means, etc.

There is also CCAWWG and UCAR Comet that have provided a professional development series - this is to train technical staff. You can see there that EPA's Climate Ready Water Utilities conducted a series of 6 different webinars where they teamed up with the Water Utility Climate Alliance and provided information to water utilities. There are several others listed here, like USDA's ThinkWater, which is an education activity.

Slide 26:

Among the other activities that we've listed as accomplishments is NOAA's redesign of Climate.gov. This website is a lot of fun - we have a magazine type interface where you can look up ARTICLES of interest and go deeper into some of topics. There are a number of different topics you can choose, but the one underneath is the CRT. CRT comes out of an initiative from the White House - the White House has the Climate Data and Tools Initiative, and under the Climate Data and Tools Initiative there are two components. There is Data.gov that Julie spoke about where there are different kinds of data sets and information that you can get, but this Climate Resilience Toolkit that I am talking about - it is really fun to play with. You are able to go in and find information - by topic, for example, water. And there are a number of subtopics under there like drought, flood -- and there are case studies where you can see where people actually had a problem and how they dealt with it what kind of data they used.

Slide 27: Projected Completions

The next slide shows some of the project completions of things we will do in the near future. Of course, the continuation of the webinars, which is a good way of disseminating information. Another is USDA's think water, EPA will continue with some of training and technical assistance.

Slide 28: Projected Completions – New training (examples)

Some other kinds of training for example I mentioned, such as CCAWWG and UCAR Comet – they will be adding additional professional technical and nontechnical activities on their website;

EPA has an online training program that talks about climate change and water issues for water program staff. And you can see that the FWS will be adding more training on climate smart conservation and the park service as well.

Slide 29:

In addition there is an effort by a number of different agencies working together to try to bring more training and education together for climate literacy. This is a big effort by all the agencies working with climate.

Slide 30: Proposed New Potential Areas of Focus

So some of the potential areas of focus that we discussed – we realize that so many different agencies are coming out with so much of this outreach and training. That sometimes it gets a little confusing or we may be doing similar kinds of training. So one of the things that we have talked about is finding a way to coordinate some of this outreach and training, especially when it comes to water and climate change.

We've also talked about being more strategic about it. We've been working with the Climate Resilience Toolkit (or CRT) and realize there are learning progressions and learning extent. So how do we go about putting this in an order so someone who knows nothing about climate and water can understand the progression of learning, or if you know something not to have to hear climate 101 for the fifth or sixth time.

We also want to provide more documentation on some of these tools being developed. It is ok to put these tools out there - and some people understand them immediately but there are also people who don't have the technical understanding or don't even know how to begin to use some of the tools, but to be able to find some documentation easily so they can understand what the tool is so they can even open it up to begin to see if they even if they want to use it.

We also want to be more cognizant of user needs. We had a number of different meetings, and at one meeting some of the water utilities said it would be nice to be able to use these climate information with asset management.

Slide 31: Questions We have for Future Work

Some of the questions we have are: How do we handle the quantity of available resources that is coming in? We are getting it from all angles, people are looking at different focal points, like agriculture may be looking at information differently than energy, but some of the basics concepts are there that we can all use, so why replicate and duplicate everything we've already done, so how do we deal with the quantity so that people know where to go? And how do we

deal quality – and credibility. Just because somebody said something on a webinar, how do we know that's the reliable information? So how do we deal with that?

How do we listen to what people need and how to be specific about what they want and hone our activities to those particular needs. How do we assure we have user-friendly pathways so what we are proposing is easily understood?

Slide 32: Questions We have for Future Work

How do we keep everything updated so it goes on the website and keep it updated? Who should we partner with? We currently partner with universities, but also there might be organizations we might want to think about on where to go? What is the best way to train leaders on topics such as sustainability and climate? And finally how do we know that our education and outreach is really making the mark? How do we assure that what we are doing is useful, applicable, and effective?

Slide 33: Your Turn

Karen Metchis

That concludes the presentations that we prepared for you. Mike Shapiro is on the line; he is the Deputy Assistant Administrator for Water, here at EPA. He is going to join us along with Jerad Bales from USGS and Ellen Tarquinio from CEQ - who are our co-chairs - in this next session. So we are ready to field any comments or questions you might have. And Nathan and Stephanie will read out your questions and comments when they come in. But also remember you can email us comments after this webinar to the address you see on the screen. Again this listening session is designed to solicit your input early in our process, so we are trying to get your input on the framing of our document.

Slide 34: What we would like your comment on, in particular....

What we would particularly like your comments on, you heard during the presentation - the types of questions each team would like your comment on. To sum it up, here:

- What are the most important issues you are dealing with due to current or anticipated effects of climate change on the water sector?
- In what way can federal agencies facilitate your ability to manage water resources in the face of climate change?
- What are greatest your training and outreach needs?
- What are the most important decision support tools that could be provided by federal agencies?
- And what are the most important data gaps or research topic that federal agencies should be addressing?

So these are the kinds of questions we have for you to help us frame up our document. Now, if there are any comments or questions...I don't see people typing in comments – people must be listening today. Maybe we answered all the questions!

Since there are no comments that people have immediately, let me turn the session over to Mike Shapiro.

Slide 35: Reiteration: Next Steps

Mike Shapiro

Thanks. The next slide indicates we are going to post today's webinar online for folks who want to refer their friends. There was a lot of information being conveyed today even for those who don't necessarily have questions; there are a lot of good sources of information there. So referring to this webinar will be useful. The draft that we are looking towards we anticipate will be available for public comment sometime in the winter of 2015 (I presume that means by Dec. 31) and we are working towards – we are anticipating - the final updated plan to be available in the spring of 2016. Both of these documents will be posted at the ACWI web site posted at the bottom of the screen, ACWI.gov.

Once we all hang up, if you realize you have a pressing question you would like answered, you can send an email to water_climate_change@epa.gov and we will certainly try to get back to you - also if you have some follow-on comments or questions. There is an earlier website noted as well. I can certainly speak for the entire group in saying that the comments we receive will be carefully considered and reflected upon for the draft and final report. We look forward to your reaction to our initial thinking.

As was reflected earlier, we made considerable progress across the government in preparing for climate change but there is a lot more work to do and we realize a lot of activities in going forward will require broader engagement with communities. We are looking for ways to make the government's tools more accessible, more valuable, and more useful, so any comments along those lines will be quite helpful,

Karen Metchis

Thanks Mike. We did get one question that came in. She is interested in tracking changes on groundwater quality and quantity – how is this being integrated into the plan? So we are talking about groundwater here. Julie would you like to address that?

Julie Kiang

Yes, thank you for that comment. So, right now the way we are framing the data section of the plan, we are highlighting specific areas where we think there is less data than would ideally be available. And groundwater has been one of the things we have been talking about as warranted a section. It is great that you are confirming that that is something you want to see more.

Slide 36: Thank you for Participating!

Karen Metchis

Thank you. So that concludes our listening/reading session. Thank you everybody for participating, on behalf of all the participating federal agencies. And do send your questions and comments to the email we posted in the webinar. Thank you.