

**MINUTES
of the
WATER RESOURCES COMMITTEE
Beaver Run Resort and Conference Center
Breckenridge, Colorado
October 17, 2019**

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MEMBERS AND ALTERNATES PRESENT

ALASKA	David Schade
ARIZONA	Kyle Miller
CALIFORNIA	Jeanine Jones
COLORADO	Becky Mitchell Pat Pfaltzgraff Hal Simpson
IDAHO	Jerry Rigby John Simpson
KANSAS	David Barfield
MONTANA	--
NEBRASKA	--
NEVADA	Jennifer Carr Micheline Fairbank
NEW MEXICO	John D'Antonio Greg Ridgley
NORTH DAKOTA	Garland Erbele Jen Verleger
OKLAHOMA	Sara Gibson
OREGON	--
SOUTH DAKOTA	Kent Woodmansey
TEXAS	Jon Niermann

Kathy Alexander

UTAH

Todd Stonely

WASHINGTON

Mary Verner
Buck Smith

WYOMING

Chris Brown
Steve Wolff

GUESTS

Elizabeth Ossowski, NOAA/NIDIS, Boulder, CO

Ward Scott, Western Governors' Association, Denver, CO

Lorna Shaw, Newmont Goldcorp Corp, Greenwood Village, CO

Scott Steinbrecher, Colorado Attorney General's Office, Denver, CO

Steven Wallander, USDA Economic Research Service, Washington, D.C.

WESTFAST

Stephen Bartell, U.S. Department of Justice, Washington, D.C.

Chris Carlson, USDA Forest Service, Washington, D.C.

Doug Curtis, Bureau of Land Management, Washington, D.C.

Mindi Dalton, U.S. Geological Survey, Atlanta, GA

Amy Frantz, U.S. Army Corps of Engineers, Washington, D.C.

Patrick Lambert, U.S. Geological Survey, Salt Lake City, UT

Deborah Lawler, Federal Liaison, Murray, UT

Lauren Leuck, U.S. Army Corps of Engineers, Lakewood, CO

Cherilyn Plaxco, U.S. Army Corps of Engineers, Little Rock, AR

Mike Woodside, U.S. Geological Survey, Nashville, TN

STAFF

Tony Willardson

Michelle Bushman

Adel Abdallah

Cheryl Redding

WELCOME AND INTRODUCTIONS

David Barfield as the designated chair, called the meeting to order, and requested introductions be made around the room.

APPROVAL OF MINUTES

The minutes of the meeting held in Leavenworth, Washington on July 17, 2019 were moved for approval. The motion was seconded. No changes were made and the minutes were unanimously approved.

SUNSETTING POSITIONS

David Barfield noted there were two sunsetting positions to be taken up by the Water Resources Committee. A third sunsetting position (#398) will be considered by the Legal Committee.

Position #396 and #397 are both long-term positions to be considered for readoption with some relatively minor updates to keep them current. The Executive Committee reviewed the positions prior to the meeting. Position #396 deals with the National Aeronautics and Space Administration's (NASA) applied science research program. We have had long-standing support for that program and how NASA could move forward with applying data to improve water management in the western states. Jeanine Jones assisted in revising the position to make it more current.

Wyoming offered a couple of typographical corrections. A motion to approve the position as amended was offered. Jeanine Jones seconded the motion. The position will be recommended to the Full Council for adoption.

Similarly, Position #397 regarding the Department of the Interior's WaterSMART Program is a long-standing position with recommendations for the Bureau of Reclamation's implementation under the SECURE Water Act and WaterSMART specifically. The position required a few very minor revisions to bring it current.

Discussion ensued. Jon Niermann offered a correction to the eighth "Whereas" clause to retain a portion of the stricken language recommended by the Executive Committee. John D'Antonio remarked that what is identified as brackish water can be different in various states and there is a fine line depending on the parts per million issue.

Tony Willardson said the group could look to the USGS and their report on brackish water resources in the United States and the national groundwater monitoring program. Significant progress is being made on these activities. Tony believes it is already in the Act. John concurred with retaining that reference in the position.

Jon Niermann asked for clarification as to which of the programs has made significant progress. Tony commented that each of the three programs listed in that clause had made

improvements. Jon moved adoption of the position as modified. Seconded, the position was unanimously approved to be brought before the Full Council.

CURRENT WATER INFRASTRUCTURE LEGISLATION

Tony Willardson reviewed current legislative activity related to infrastructure. The Senate Energy and Natural Resources Committee has been working on a number of bills related to different aspects of infrastructure. Legislation has been introduced and a hearing held on S. 1932, the Drought Resiliency and Water Supply Infrastructure Act. It has yet to be reported by the Committee. It has a number of interesting provisions. A bullet point summary is included in the briefing materials under Tab E. The Act would expand authorization for funding for the Bureau of Reclamation under the Water Infrastructure Improvements for the Nation (WIIN) Act. It also authorizes a number of different funds and would change some of the ways the Reclamation projects are funded.

S. 1932 would create a new loan program that would provide non-federal entities with federal loan guarantees related to operation and maintenance of federal projects by the project sponsors.. The title to the project remains with the United States.

The bill would also create a Reclamation Infrastructure Finance and Innovation Act (RIFIA) program. It would allow project operators to buy down interest rates, and would create a new way of funding new projects without going through the project authorization process (which can take up to three years to get through Congress). Essentially, if there is a project recommended by Reclamation, it would go directly to the appropriation process. If such a project is approved by Congress and money is appropriated, in the future, Reclamation would have the flexibility to use money from these funds to continue that project without having to go back to Congress every year for a separate appropriation. The bill was introduced by Senator Cory Gardner (R-CO). Senator Feinstein (D-CA) has signed on. Thus, the bill has bipartisan support. This has not been marked up and reported yet by the Committee, so it is still a work in progress.

The second part of the information under Tab E is Senator Feinstein's recommendations, and a section by section analysis.

S. 2044 is the Water Supply Infrastructure Rehabilitation and Utilization Act was referred to the Energy and Natural Resources Committee and has been reported out of the Committee. It would create an aging infrastructure account within the Treasury to which money would be appropriated or transferred. It authorizes further appropriations for the Reclamation Safety of Dams Act of 1978, and creates a process for review of flood control rule curves within Reclamation. The WSWC has been actively involved with the Corps of Engineers and others in encouraging review of existing rule curves, many of which were dictated by Congress. An addition on page 13 of the bill clarifies that nothing in this section affects or modifies any existing authority to review or modify Corps of Engineers reservoir operations..

S. 1570 is known as the Aquifer Recharge Flexibility Act and was introduced by Senator James Risch (R-ID). Red line changes are included in the briefing materials.

Senator Tom Udall (D-NM) is working on a Western Water Security Act of 2019. This is also included in the briefing materials under Tab E. It would extend and expand the WaterSMART program and authorize a rural desalination project. Tony read through several actions this bill would authorize.

There are a number of bills coming together. Tony has had discussions with the Committee staff. It is uncertain what may come out at the end of the Congressional session. There is an effort ongoing with funding for Tribal Water Rights Settlements. There is some sense that this may be lumped in with some other legislation. There is a lot in play at this time.

The last item under Tab E is a draft letter which the WSWC could use to send to the Committee(s) expressing our general support for infrastructure. There are a few areas in the letter that are not already explicitly stated in WSWC positions, such as desalination or groundwater recharge. Does this letter look sufficient? Could we tailor it to each of the legislative proposals? Tony would appreciate any insight members might provide. There may be some substantial changes to some of these bills as they move through the Senate.

John D'Antonio commented that the New Mexico State Engineer's Office has successfully made some changes to the Udall bill. They are looking for other states to support their efforts.

Jerry Rigby noted there have been discussions by the Idaho Water Users Association regarding Senator Risch's bill.

Tony asked again about the draft WSWC letter. The Committee agreed they would support sending a letter that states the WSWC supports efforts that strengthen infrastructure programs and we are aware of these bills.

Micheline Fairbanks remarked that the bills don't just address infrastructure, but also drought resiliency and funding. The NM bill does include some specificity for different kinds of projects and cost sharing programs.

Mary Verner: I am in support of a general letter. I would like to acknowledge the component that requires consistency with state law. Please emphasize that.

David Schade: From Alaska's point of view, we should use a general letter. If we talk about specific laws, then I have to run it through my individual departments.

Tony, with that direction, I think we can draft a general letter of support.

CORPS WATER SUPPLY RULE STATUS/WGA COALITION LETTER

Major General Scott Spellmon, U.S. Army Corps of Engineers, joined via teleconference to address WSWC members.

Good morning to everyone. I really appreciate the opportunity to dial in and speak to you this morning. I sincerely apologize for not being with you in person as I intended. Some of you may be aware that we have over 250 levee breaches in the Midwest that are keeping us busy.

For those of you I have not met, again, my name is Scott Spellmon. I am the Corps' Deputy Commanding General for Civil Works and Emergency Operations. I have been in this position for just over a year now.

I appreciate the opportunity to provide a perspective from Army Corps leadership on where we are and where we are going with respect to the Water Supply Rule. Many of you have met or know of Ms. Amy Frantz who is in the room with you. We also have Ms. Lauren Leuck and Ms. Cherilyn Plaxco with you in person. They will be able to answer any follow up questions you may have that we do not have time for during the call.

I'd like to make three general points up front. First, we are listening. We have read and are listening to all of the comments that you have given us on the draft rule. I have several binders on my desk that are tabbed, highlighted, and marked up with your comments on the water supply rule. We received a lot of great feedback from all of you, the states, and many of the tribes. You have given us a lot to think about and we have a lot of work in front of us.

Second, in reference to our schedule, several weeks ago, I went to Assistant Secretary James' office and asked him for more time. We were working to post public comments in August. It is now October, and frankly, we are still working through the comments we received. Assistant Secretary James had a number of questions for us as well from his reading of the draft rule. More to follow on the topic of schedule. We are having recurring meetings with the Secretary. In fact, the next meeting is this afternoon.

My final point is to remind everyone why we have come down this path. Why did Ms. Darcy, the former Assistant Secretary, give us this assignment back in 2014? It was to bring consistency and clarity to the two water supply authorities that the Corps has under Section 6 of the 1944 Flood Control Act and the 1958 Water Supply Act. Today we are neither consistent nor clear with either of these. Having the recognition from many of you that we need a rule in place is an important foundation to build from.

I want to walk you through the top three comments or sets of comments that we received and where we are in moving those forward. The first main topic we heard from the field was with regard to surplus water and natural flows. The Winter's Doctrine is clear to us. It is clear to the Corps what tribal water rights are all about. That goes back to the Supreme Court ruling in 1908 that explains that tribal water rights are prior and superior to any State appropriation system. We

understand that. States' rights are also very clear to us from the 1944 Flood Control Act and the 1958 Water Supply Act. We understand what the law says. The Congressionally authorized purposes are also clear to us. The Corps has 715 projects around the nation that impound water. Each one of those projects comes with upwards of eight purposes for us to achieve and give water above and below the project. That is very clear to us.

We are wrestling with what is less clear, and that is Congress' intent in how all of these authorities nest together within a basin where we have multiple reservoirs that are designed to perform as a system, and those systems span several state lines. This is where we are having some challenges.

For the draft water supply rule, we made a decision to stay within existing legislation, and we made an attempt at defining surplus water. It is not a Corps term. This term was given to all of us by Congress in the 1944 Act, and it did not come with a definition. The Corps proposed a definition and we received a great deal of feedback on it. Many of you actually demanded of the Corps that we take a look at another term; that term being natural flows.

I've given Amy Frantz, Cherilyn Plaxco and our term guidance to go back and strengthen our recognition of state and tribal water rights in our definition of surplus water. We can do better there. As we get around to doing consultation with the tribes and the states, we would like to have more dialogue with everyone on this topic. If States have complete authority over natural flows, how does the Corps fulfill our trust responsibilities to the Tribes, and also accomplish the congressionally authorized purposes that have been directed?

Many of the States provided an alternative definition of surplus water. I will walk you through an example of what I'm describing. It is an example of looking at natural flows and regulated flows through Bismarck, North Dakota. The States and Tribes told us they have the water right to the natural flow of the river as if the dams were not in place. The example is of flows on the Missouri River past Bismarck, North Dakota this year. The blue line on the powerpoint slide indicates the natural hydrograph downstream of the Corps' Garrison Project and Lake Sakakawea. This represents the flow past Bismarck as if the project at Fort Peck, Montana and Garrison Dam upstream of Bismarck were not there. The red line on the slide depicts where we begin to experience flood stage in Bismarck, which is just under 73,000 cubic feet per second. I've included this to highlight or show several reasons why the Corps regulates the flow. The comments we received from several of the States defined surplus water differently from our proposed definition. They told us that surplus water is that water retained in a reservoir or in a river that would only be present but for the construction of the dam (depicted by the green line). The issue the Corps is wrestling with is how to meet the congressionally authorized purposes that Congress has directed, including water supply, and tribal responsibilities, when we only have access to the flow of the river depicted in the yellow shaded areas on the slide during these periods of time. The graph shows the flow of the Missouri River in 2019, the highest run-off ever. The flow is at 61 million acre-feet, which ties the run-off during the major flood of 2011. The next two slides in the presentation depict the flows and the surplus water (under the States' definition) available in 2004 and in 2015 (which was an average flow year).

I bring this up because this is why the Corps feels they need to have more conversations with the States and Tribes on the topic of natural flows. We look forward to having that conversation with you.

The second topic I would like to cover today is federalism. The message I'd like to share is that we've heard the States loud and clear. The Corps has more work to do on this front. The Corps is having conversations with the Secretary's offices to get their help and make some improvements. The Corps absolutely recognizes the Tribes' prior and superior water rights. The Corps also recognizes the rights of States in developing water supplies for all of the various uses within your boundaries. When you back up and look at the Corps' practices over time, it is clear that the Corps has not always held to those methods.

Several years ago, the City of Pierre, South Dakota, came to us and asked the Corps to enter into a surplus water contract to meet a very small water supply need they had in the capital city. The Corps said, before we can grant you an easement for that small amount of water for the pipe and pump, we have to have an approved water supply contract. Before we can get to an approved water supply contract, we have to have an approved surplus water report, which the district turned in back in 2014. Further, before the Corps can approve the surplus water report, they need to have a final water supply rule --- which is still ongoing.

It is true that we have put up these obstacles over time, which has kept States from exercising their water rights. When you add in the Secretary's elevation of decisions, and position regarding reallocations and surplus water, the Corps gets your point.

We are discussing with Assistant Secretary James an effort to take down the policy barriers just described. Assistant Secretary James has redelegated reallocation reports back to the Corps as well as surplus water contracts. The next step is to brief him on how to implement both of those delegations, following which the Corps will get that information to the regions and the general officers and colonels in the field.

With respect to pricing, though I sound like a broken record, the Corps has heard your comments. Under Section 6, the Corps has about ten surplus water contracts nationwide. No two of them are alike. Some districts charge flat rates to a user. Other districts are applying charges using the 1958 Water Supply Act. Thus, the rates are not consistent. It gives the impression that we are charging for water, when we are not. We ought to be charging for storage. That is not the perception everyone has. The Corps has to clean this up. On a surplus water contract, the Corps wants to charge the full separable costs they incur by accommodating withdrawals, and that might be the expense of administering or monitoring contracts, a temporary change to a reservoir operation or some type of real estate fee. All of this is defined in OMB Circular A-25. We want to get away from the flat rates and from the districts using the Water Supply Act guideline.

For water supply storage agreements, under the Water Supply Act, in the public comment period we heard from the field the question of whether or not there is the ability to amortize the

annual operation maintenance and repair and rehabilitation (OMR&R) clause, particularly when we have a short notice major repair involved. The Corps will look at that.

In 2010, we went to Ms. Darcy as there were a lot of capital improvements needed across the country, and we had a lot of water users that could not pay their percentage of the OMR&R bill. The 2010 exception allowed us to work with the users and amortize the costs over time. Mr. James is open to that conversation. More details will follow on that front.

We held a good meeting with a number of tribes and the Great Plains Tribal Chairmen's Association a few weeks ago. We will be conducting individual consultation with every tribe that requests that. The same is true for the States. We will consult with every State that asks to meet with us, as well as meeting with congressional members. Amy Frantz can give you more details. The Corps intends to get a notice out in the Federal Register and get the meetings with tribes and States moving.

You all have given us a lot of work to do, and rightfully so. This topic is very important to all of you, and the Corps will be taking another shot at the rule.

Garland Erbele: General, thank you for joining us today. My name is Garland Erbele, and I'm the State Engineer in North Dakota. One of the things that is not clear to me from your comments is with regard to the reserved flows for the tribes, and whether or not the Corps understood that States recognize that component comes out of the natural flows and that part that States are also claiming as part of their natural flows. Does the Corps understand that? I would like some clarity if the Corps recognizes that.

General Spellmon: We understand that the States account for tribal water needs under the appropriation system. We know that is the case. It gets a bit tricky because we hear the tribes say their treaty is with the Federal Government. The tribes say they signed two treaties with the Federal Government before North and South Dakota were even states. They claim therefore that the Federal Government owns the Trust responsibility for their water rights, even though they are recognized by the State of North Dakota or the State of South Dakota (or wherever they may be). We have to make sure that we get that language right in this particular water supply rule. The Corps does in fact have a Trust responsibility and we signed treaties with them. We also recognize that the States fully account for the tribes' water needs in their appropriation system. That may not be a very clear answer, but that is what we hear from both sides.

Jennifer Verleger: Hi, General. This is Jen from North Dakota. This group would be more inclined to ask you to formally withdraw the current rule. Is there a formal mechanism we can take to help with that? Or is that something you can do on your own?

General Spellmon: This was an assignment and a mission given to the Army Corps by the Assistant Secretary. I cannot relieve myself of that mission. That conversation would have to occur above my level.

Tony Willardon: General, this is Tony Willardson. I am the Executive Director of the WSWC, and I want to express our appreciation for your efforts at the Corps in stepping back and engaging the tribes and the States. Ward Scott, with the Western Governors' Association, is with us here, and we've had discussions with the Western Attorneys General and others. As Jen mentioned, there may be a comment letter from us and/or possibly a joint comment letter from those organizations asking that the rule be formally withdrawn, and then request that the Corps engage with the States and the tribes. You have a challenge with the tribes, particularly in the Missouri River Basin since those rights have not been adjudicated. Those adjudications generally take place as part of a general state stream adjudication in state courts. The tribes don't like that, but that is the process. The Corps has the challenge of trying to ensure that there is water there to meet the future needs of those tribes once they are adjudicated. However, with 61 Maf of water, we ought to be able to cover everyone's needs.

General Spellmon: Yes sir, loud and clear. You've got some of the largest reservoirs in the world in the West. I know what you're telling us on the adjudication and the quantification. You know better than I the different rationale that the tribe would have for wanting to quantify or not wanting to quantify those rights. To your first point, we made a mistake in not consulting fully with the States and tribes. If the Assistant Secretary asks us to continue to move forward, we will get out and consult with everyone.

Amy Frantz: No other questions of the General? I am here for the remainder of the conference and can answer any further questions. Please feel free to talk to me.

Good morning. My name is Amy Frantz, and I am a Senior Policy Advisor at Corps Headquarters. One of my main areas is water supply, but I also handle navigation. As General Spellmon mentioned, the last six months we have looked at your comments. There are 8-10 of us in the team at the Corps working on water supply. Water supply is a smaller mission compared to navigation. That said, the team has found your comments very enlightening. I have only been with the team for about one and a half years. The federalism issue came up. The Corps didn't do coordination like we should have. As General Spellmon said, we made a mistake on that. We are looking to move forward.

In the future, we will put out a Federal Register notice, likely between January and March that will occur for about 60 days. We will also notify you in advance. In the meantime, we will be accommodating. That would be more formal, and it would set out the process that should have been followed. I'm working with our folks to get it in the Federal Register. Assistant Secretary James will then send letters to all of the governors of the states with an invitation for discussion. We will try to have General Spellmon there as much as we can. We will have discussions to rewrite the rule to meet your requests and needs for water supply. A total of 158 formal comments were received, and many of those comments had several subcategories. We hope to clear up your concerns in a new rule.

John D'Antonio: So do you have to amend the statute, Section 6 of the 1944 Act, in order to be able to incorporate what the States are suggesting, or can this be done on a policy level?

Amy Frantz: We are thinking about what can we do policy wise that does not need to be in the Federal Register under a draft rule. Things that are under the control of the Assistant Secretary. I've not heard it suggested that we go back and try to change the rule. Obviously, we want to make sure that state rights are taken care of and that our policies do not interfere. We are trying to take a step back and figure out which policies can be taken care of internally and get the Assistant Secretary's concurrence. If it is internal policies, then we want to simplify and maintain consistency. We don't charge for storage. We are not selling water. We're just looking at needing funds for billable hours and the real estate.

Tony Willardson: I noticed that Senator Cramer (R-ND) is proposing amendments to the Water Resources Development Act (WRDA). One thought that goes way, way back with respect to the Corps and water supply involves Dworshak Dam in Idaho. There is a water supply line from the reservoir that serves a federal fish hatchery. It runs through the small town of Orofino. The small town asked about the possibility of tapping that pipeline as a small rural water supply. The Corps asked the community to pay for foregone hydropower. Idaho said, "No, this is the State's water." The Corps' authority is really for non-consumptive uses for the most part. The water supply becomes a more difficult challenge to deal with.

Amy Frantz mentioned that Cherilyn Plaxco, based out of Little Rock, will be working on such matters. We have had challenges working with other federal agency partners on things like hydropower. There is a process in our policy for how we choose. Mr. James is concerned about taking water from any flood risk management component at any facility. There are challenges considering the finite storage the Corps has and how to distribute it. In the cases where hydropower is involved, the least risky place to take it is hydropower.

Tony Willardson: General Spellmon mentioned the hurdles that you've got to get over if you want water from a Corps reservoir as far as the water allocation studies and water supply agreements. The Corps' real estate policy is something else that has been raised as far as access to the reservoir. We appreciate that those are challenges you have to face together with consistency and trying to maintain flexibility. Water law in the West is very different from that in the East. It would be very difficult to have a one size fits all rule.

Amy Frantz: We acknowledge that. Initially they tried to fit everything into one piece of legislation and in my opinion, that is not possible. I'm not an attorney. They tried in 1958 to have Congress approve a contract for an allocation for the Missouri River, and it never passed. The Missouri is just a different animal. Or do we pull out western state laws? I don't know what the answer is, but these are the challenges we are facing.

Tony Willardson: We appreciate you being here.

John D'Antonio: Western reservoirs also have compacts that govern how we store water. That is possibly something that might assist in a solution for all of the States. It is clear that in western reservoirs that are authorized for sediment control that if there is any water supply component, we

use easements and other things to store water for water supply. I agree that one size cannot fit all. It may be better to have a solution for this reservoir system, than to include it under a surplus water rule, which could be problematic for the Corps.

Amy Frantz: We are open to ideas and comments. We have not tried to rewrite the rule yet. We have some ideas to either be more specific or more broad on the definitions, as need be. Nothing has been finalized. Again, there is only a team of eight.

Garland Erbele: I agree with John. We have tried to address this issue with a single rule. There are water bodies that do not have natural flows. There are also water bodies like the Missouri River that have a continuous natural flow where storage is not critical to having access to water. The problem occurs when you are trying to write a rule to address both situations.

Jeanine Jones: While we have the Corps here, we certainly have issues with the water supply rule, but other aspects of flood risk management, and water supply balance. Some of us are exploring forecast informed reservoir operations. There are much smaller reservoir systems where there is a lot of opportunity to run the operations more efficiently and achieve a better balance. I would like to commend the research and development arm of the Corps for working collaboratively with our state and local partners on those issues.

Mary Verner: I thank you and the General for being here, and I thank you for slowing down and planning to consult. If the Federal Register notice is going to be published during the January to March timeframe, I need to know how to start scheduling with you now. Those dates will land during our Washington legislative session, and it would take some coordination to work out a consultation schedule.

Amy Frantz: I understand. I will need help with that. We can meet before, such as during the November/December timeframe. If you happen to be coming to Washington D.C., we can meet if you provide about three days notice, then we can set up an appointment. I may not be able to fit General Spellmon into all of those consultations, however we will do our best. Let us know what you specifically want to talk about. Let's make sure we use our time wisely. Amy's direct line is 202-761-0106, and email address is: Amy.K.Frantz@usace.army.mil

Detail me dates, times, and so forth, and we will try to get security clearance into the GAO building. We can also meet outside the GAO building if need be.

Jennifer Verleger: It has never been clear to me, or never really been explained to us, what the original motivation was that precipitated going down this path in the first place. Is it to raise revenue? Is it to solve some other water war?

Amy Frantz: I understand Ms. Darcy was very involved with the North and South Dakota contingents. I'm still learning, so I'm not sure if that is true or not. The Georgia, Alabama, and Florida litigation may have been an impetus. This started in conversations back in the Bush Administration that a national rule was needed. That could all be hearsay.

Tony Willardson: When the WSWC was organized, interbasin transfers were a big deal.

WATER INFRASTRUCTURE STRATEGIES FORUM II

Tony Willardson reported on an infrastructure forum the WSWC held last Spring with the Water Subcabinet members. The group spent a half-day and talked about coordination at the federal level. There were state presentations and a “meet and greet” of sorts.

We are looking at next steps in moving forward. The President has issued a memorandum on western water. The agencies have submitted plans and those are now at the Council on Environmental Quality (CEQ) for review. We are working to continue to be a catalyst. We are trying to find a date when we can meet with the Water Subcabinet committee again, and have tentatively scheduled a meeting on December 17, at the Interior Building. There is a sense of some urgency to try to get something done with this Administration prior to the elections.

There is an outline in Tab F of your briefing materials, which note we hope to come up with a short list of case studies or demonstration projects to bring to the Water Committee/Subcabinet at our Spring meetings. At that time, we could potentially roll-out the demonstration projects, which would provide something for the agencies to point to as far as completing their assignments under the Presidential Memorandum.

It will take some work on our part to come up with some demonstration projects. For example, David Ross of EPA, just released a water reuse plan. There have been discussions about the possibility of coupling that with a groundwater recharge project. What role would USGS have? Another thought is that this could be a continuation of the work WestFAST has done with the National Drought Resiliency Partnership (NDRP) and the Oklahoma Southwest Water Action Plan. Montana also had an NDRP program. We need your help, and expeditiously, in order to get this on their radar.

Michelle Bushman: Many of you have State Water Plans and projects, some of which need federal funding and permits from federal agencies. If there are things that you are already trying to accomplish under your State Water Plans that you would like to have multiple federal agencies working on with you, this may be the ideal kind of project to bring forward. Then this could be a win-win.

John D'Antonio: I have a couple of ideas. There is a rural water supply project in eastern New Mexico that would also involve an interim groundwater supply piece with the Bureau of Reclamation. It is a localized pipeline project that also involves getting water to Cannon Air Force Base. It would be mutually beneficial to a lot of folks. The locals are behind the idea and are looking for cost share opportunities with federal agencies. Significant money and local cost sharing are involved.

Tony Willardson: If we could put together a short briefing paper on this and similar projects, it would be beneficial.

USGS NEXT GENERATION WATER OBSERVING SYSTEM (NGWOS)

Michael Woodside remarked the key reason for speaking today is that the USGS has begun work on the Next Generation Water Observing System (NGWOS) with a pilot on the Delaware River. USGS is moving rapidly toward selecting the next basin, which will be in the western United States.

The USGS Water Mission Area priorities include: water hazards; integrated water availability assessments; a water prediction work program; NGWOS; and the National Water Information System (NWIS) modernization. There are more priorities than these.

USGS comes into a watershed with this new monitoring system, and following on the heels of NGWOS is more work on watershed conditions through integrated watershed assessments. Also following that is work on integrated water prediction capabilities. At the same time, USGS is modernizing the way they deliver data throughout the United States, and also throughout watersheds.

The water models of today and the models of the future will look vastly different. There is a lot of machine learning going on. USGS operates about 10,000 streamgages in cooperation with many agencies. That is only a small footprint compared to all the watersheds or segments of streams across the landscape. There is also a suite of about 143,000 community supply wells and over 14 million domestic wells. The modern models will require a lot more information with streamflow, water storage in snowpack, and a whole host of water cycle components. The density of the current networks will limit the ability to accurately understand and predict water-resource conditions with these advanced models. USGS is trying to roll out a new type of monitoring system that will have reference watersheds that help inform the models and help them understand areas that they may need to monitor more, as well as help USGS understand which areas they might focus more resources.

Key components of the NGWOS involve working with partners and stakeholders to: (1) identify gaps in water monitoring and data needs; (2) establish an integrated set of fixed and mobile monitoring assets in the water, ground, and air; (3) integrate delivery of water quantity, quality, and use data; and (4) work to inform modern water prediction and decision-support systems.

USGS is also looking at new technologies. NGWOS provides USGS with new ways of working with different partners. They have been working with vendors that are providing infrastructure for the military. They are hoping to apply new technologies to streamflow monitoring and hope to lower the price point for water infrastructure remote sensing.

They cannot afford to rollout this program and monitor everywhere. They plan to implement NGWOS in ten watershed basins across the United States in basins of about 10,000-20,000 square miles that are representative of other water resource regions. This is not a replacement for the existing infrastructure networks. Rather, it builds upon those systems.

USGS first started work in the Delaware River Basin. It is a critical water resource for about 15 million people. It is also a very ecologically diverse area. The basin has a long history of environmental insults dating back to the days of Benjamin Franklin. This basin also has a long history of innovative, and regional solutions to insure the long-term sustainability of this treasured resource.

Data delivery is being changed to overlay information through cameras, and other technologies. We're also using social media type graphics that show how watersheds are changing over time in response to things like hurricanes or major droughts. Windows will pop up to show the economic impacts as well so people can see how conditions are changing.

A second NGWOSS basin will be selected in the West. The Delaware River Basin project received new money in May of 2018, and USGS had a few months to start work. For the second basin, they will be using a streamlined selection process. They are developing national criteria to rank watersheds (using quantitative criteria). The Water Science Centers in each of the states have been asked to nominate basins. They will work with a limited stakeholder group to nominate three watersheds. Initially they need to divide up the United States. Eighteen hydrologic regions have been identified by applying cluster analysis to HUC-4 basins, based on proportions of the 20 hydrologic landscape regions (Wolock, 2003). They are similar in the way that water flows through systems. USGS will rank the HUC-4 basins within each of the colored areas. Nine watershed areas across the country will be selected. Now they are focusing on the watersheds in the western United States.

Twelve variables were selected to use as ranking criteria. It is a quantitative way to represent the basins, while elevating some factors to weigh their importance in the basins. People from across the country helped form the ranking criteria. Three basins have been recommended to the USGS Executive Council by combining the quantitative ranking criteria with issue-based input from the USGS Water Science Centers and Regional Directors. The three proposed basins are the Upper Colorado, the Willamette and the San Joaquin. USGS will announce the selection of the second NGWOS basin in November 2019.

We appreciate your support.

WATER USE DATA COLLABORATION WORKSHOP

Adel Abdallah, Water Data Exchange (WaDE) Program Manager, addressed the Water Information Management Systems (WIMS) workshop that was held in collaboration with the

USGS. The workshop was very successful. It was held in Fort Collins, Colorado on September 16-19, 2019 at the USGS Science Center. The focus was on a forum for the state agencies to exchange information on water use data and what they are using as far as estimating water use and reporting it. They also shared IT solutions they are using to share data. Four main areas of focus included: data gaps; quality assurance and quality control (QA/QC) methods; data access challenges; and temporal spatial skills for water use data. There is a lag between actual water use and when it's reported, which may be as a result of statutes and QA/QC methods.

Overall, fifty-four representatives attended the workshop from eighteen states, including five eastern states, as well as different federal agencies, universities, organizations, and private sector participants.

A post-workshop survey was provided to inform us so we may improve future workshops. States would like to know what IT solutions other state agencies are using. A compilation of that information could be used as a resource, both for state agencies and the federal agencies. There is also a need to identify the QA/QC methods used by state agencies as well and include that information as a resource.

Mindi Dalton, USGS, provided a summary of their Water-Use Data and Research (WUDR) Program. A summary report is provided in your briefing materials under Tab J. Last week, USGS announced seven new WUDRewards. There is a cap of \$250,000 awarded to any one state. Under the current language, those states are no longer eligible for WUDR funds. Mindi is reaching out to determine if there is a way to lift or raise that \$250,000 cap.

USGS is moving away from their five-year compilation of water use and towards developing models to estimate withdrawals and use annually. In order to run the models, it requires data, which is obtained from the states. They are working with states to improve data collection, improve methodologies for estimation, and improve the way that data is received and served back out.

The SECURE Water Act Section 9508 calls for improving water use databases. USGS is trying to improve their ability to do national assessments of water availability and better understand how water is used.

With respect to the WUDR competitive awards process, in FY2016, eighteen proposals were funded. Each received \$27,000 to write a work plan outlining their priorities. In FY2017, fifteen proposals were funded. In FY2018, seven proposals were funded. In FY2019, only seven proposals were awarded \$597,000. There are new regulations in place requiring that the Department receive Secretarial clearance to post the announcements. Once selections have been made, they have to get clearance to make the awards. These clearances essentially limit the amount of time states have available to write proposals. Another limiting factor is that some states have already hit the funding cap.

We want to work with states to acquire data through access to your database and set up web data services. As soon as a flag is reached at the state level then we can share that data. We can consume it and use it and update our models. This is important to us, but it is also important as we are developing models for rural electric withdrawals, public supply withdrawals, and irrigation withdrawals. We have funded a number of projects at the state level that look to improve methodologies for those categories.

Please don't hesitate to send me an email so we can find ways to assist your states with WUDR funding.

WADE 2.0 UPDATE AND OPPORTUNITIES

Adel Abdallah next provided an update on the Water Data Exchange (WaDE) program. Adel commented that it is difficult to talk about the WaDE program without mentioning Sara Larsen, his predecessor. For the past several years, Sara worked hard to connect all of the Council member states to WaDE. We continue to work with Montana and hope to work with North Dakota soon to get them connected.

There are currently four types of data shared through WaDE: (1) water rights;,(2) aggregated water budget estimates; (3) site specific water use and withdrawals; and (4) regulatory overlays. WaDE has helped provided \$643,654 in funding assistance to member states.

Over the past eight years, technology has changed a lot, and state data and sharing needs have also changed. We are adapting to those changes through the WaDE 2.0 system. Rather than asking the states for data, we are updating the system to consume state data once it is turned on as a webservice. We are building wrappers bringing state webservices into a WaDE Comma Separated Values (CSV) file format that we consume and load into a central database in the cloud. This opens up possibilities for data manipulation and access to all the western states using world class standards. We have utilized an information technology (IT) contractor to develop this system. We are working now to connect our member states. For the past few months, we have been connecting Utah, Wyoming, and Colorado water rights data. We are looking towards connecting New Mexico and Montana by the end of this year. Adel described the timeline for connecting subsequent states to the system.

Over the Summer of 2019, three interns helped states clean up their data and meet their data needs. Utah had two needs. They wanted to visualize their water budget data for the public, using ESRI web services. This has provides users the ability to scroll through time to see how water withdrawals have changed over time. The second task was to turn that data into a webservice that can be consumed through WaDE.

Wyoming had been working to digitize their water rights import that data into ArcGIS, and there were errors in the mapping process that needed to be fixed manually. Two interns cleaned up the water rights location data through manual mapping changes. Also, Wyoming needed to

visualize their data to communicate water budgets and water trends over time, so they could be easily incorporated into their annual reports. Using a Tableau Dashboard, they can now take a snapshot of the Dashboard and include it in their annual reports.

Two other interns joined in the fall. The summer interns have moved on in their masters programs.

In September, Adel attended the California data streaming workshop that is part of their AB1755 implementation. It was interesting seeing all of the agencies in California trying to streamline their data and make it available to the public and to federal agencies. He also attended a meeting in Reno a couple of weeks ago about the Open ET Project. It is a cloud-based solution to providing evapotranspiration estimates for running models to estimate water use. They are planning on rolling out an initial release early in 2020.

One week ago, Adel attended the Internet of Water Technical Committee Meeting in Washington, D.C. They discussed how to connect all of these different data services (ETA, USGS, WaDE and others) together for better access.

A “That’s so Water Meta!” Workshop is planned in connection with the America Water Resources Association (AWRA) conference to be held in Salt Lake City, Utah November 4-6.

The Wade program work has been made possible through strategic partnerships with your state agencies. We have also received funding from several different foundations.

Jeanine Jones: Something that has just come up in California that has been quite a challenge for us on all of our websites, including data. A few years ago, state legislation was ignored that said all state agency websites had to be accessible to low-vision, blind users, etc. A change was suddenly implemented on July 1, 2019. It resulted in a “chainsaw massacre” of our websites and a tremendous backlog of tasks that will need to be reprocessed, including any decision to not make them publicly available as a practical matter. I would encourage you to think about that prospect going forward and what you do with WaDE.

Tony Willardson: WaDE 2.0 will be cloud-based. Adel, would you please mention the use cases that are available on the website?

Adel Abdallah: Yes, we are moving to the cloud. I received a call from Oklahoma saying that the WaDE database is costing “x” amount and we are having technical difficulties. Hopefully, moving to the cloud may solve some of those issues for our states. We have a repository at our website that lists all the use cases that drive the design of the database systems at the higher level. California and Texas have taken the lead on that. We are compiling other member state use cases. It is scalable. If you have use case summaries of decision-making processes or questions that have to be answered, those will basically drive the design of the database. There is a challenging question as to who drives the design – the decision-makers or the IT engineers. It is important to be clear about what you want out of the databases and systems.

NATIONAL DROUGHT FORUM, NIDIS & CURRENT DROUGHT OUTLOOK

Elizabeth Ossowski, Program Coordinator with the National Integrated Drought Information System (NIDIS) addressed the group. Many of you are familiar with the NIDIS program, but as a refresher, we have nine regional drought early warning systems (DEWS) across the country. In 2019, after the program was reauthorized, we started to think a lot about parts of the country in which NIDIS has not had much of a programmatic presence. We are also looking at expanding the drought early warning system into many of the southeastern states.

The U.S. Drought Monitor did not pick up the flash drought (a period of 13-15 days) that occurred recently in the Southeast. There was not adequate assistance provided to the agricultural sector across the Southeast. The flash drought decimated crops and impacted livestock. At a recent meeting with the Interstate Council on Water Policy held in Mobile, Alabama, we discussed what can be done to strengthen the Drought Monitor. I wanted to mention that in 2019, the USDA Office of the Chief Economist is undertaking a review of the Drought Monitor at the state and local levels in particular, and determining what could be put into the monitor for a more accurate representation of drought conditions.

Elizabeth showed a slide of the Seasonal Drought Outlook put out by the NOAA Climate Prediction Center which showed that in the southeastern United States, drought removal is highly likely. Whereas drought conditions persist in the Southwest, as well as parts of southeastern Alaska.

As mentioned, the NIDIS program was reauthorized in January 2019. Many thanks to Tony Willardson and the Western States Water Council for being a voice for the value of the program. The legislation increased the authorization over the next five years to a \$14.5 million. It calls on the program to continue to make advancements in a couple of key areas. Most importantly, improvements are being sought for advancing sub-seasonal and seasonal (S2S) forecasting. It also calls on NIDIS to engage in more deliberate partner building with the private sector. Further, NIDIS and USDA were called on to build out a strategy for a national soil moisture monitoring network.

Since the reauthorization, NIDIS is taking action in some key areas, including drought and public health, drought and wildfire, drought impact reporting and analysis, drought indicators and triggers, and the national soil moisture network.

In terms of drought and public health linkages, many of the regional DEWS have indicated that there is a need for better understanding of the linkages between drought conditions and public health impacts. In particular, public health professionals are not literate or well-versed on what the impacts are, what they could expect to see, and what the early warning indicators may be of drought. NIDIS is partnering with the Center for Disease Control (CDC) and the National Drought Mitigation Center (NDMC).

This year, NIDIS is continuing their ongoing Coping with Drought FY20 Grant Program. They are focusing on research to improve our understanding and use of drought indicators, thresholds, and triggers, as well as drought impacts. This is a \$1.2 million per year program.

The NIDIS program is continuing drought impact assessments across the country, including one along the Mississippi River, and also one looking at the impacts in the Southwest partnering with the States of Utah, Colorado, New Mexico and Arizona. They are looking at the economic impacts of drought and the relationships between things like crime rates and drought conditions, mental health conditions and how they are associated.

The National Soil Moisture Monitoring Network is an ongoing network that NIDIS has been engaged with for several years. The impetus behind development of this network has come from Congress because of a drought that happened in 2017 in the Northern Plains region, in the Dakotas. The Drought Monitor failed to pick up a flash drought that took place in the Dakotas and in many instances, soil moisture indicators could have facilitated and strengthened the early warning that was needed. We are better defining what this network could be and refining a consistent methodology for data collection on soil moisture and collaboration across federal agencies, towards development of a national multi-platform soil moisture product.

NIDIS manages the drought.gov website, and is making improvements. They anticipate a re-launch of the website to meet web design standards set by the government in March 2020. It involves repackaging of information that is currently contained on the website in a more accessible way, and there will also be new and updated content and design.

The second National Drought Forum was held July 30-31, 2019 in Washington, D.C. The first Forum was held in July 2012. The 2012 forum was heavily focused on regions impacted by the 2012 drought. The second forum was more about assessing the status of national drought readiness, to take stock of progress since the 2012 National Drought Forum, and to help provide new information and guidance for coordination to improve the Nation's preparedness for drought. The Western States Water Council was among our key partners on the planning committee. She reviewed the panels and keynotes that had been presented at the 2019 Forum.

NIDIS will be putting out a report of things learned at the Forum. This will be a very high level report. The outcomes of the 2019 National Drought Forum included: (1) investing in forecasting improvements; (2) providing greater flexibility in federal programs to allow/add drought resilience, especially FEMA; (3) investing a greater percentage of annual disaster response and recovery funding in resilience planning; (4) partnering with the private sector around risk and reinsurance; (5) tying solutions to resilience planning and to financing; (6) building incentives for investing locally in water storage – tying natural storage and ecosystem restoration to human water supply goals; (7) advancing understanding of integrated surface and groundwater ; (8) using stormwater for aquifer recharge; and (9) considering a drought-readiness campaign. The report will be out by the end of the year and will comprehensively include the discussions from the forum.

WSWC/NASA TECHNOLOGY TRANSFER AND APPLICATION WORKSHOP

Jeanine Jones reported that a workshop had been held this past summer in California with our partners at NASA's Western Water Applications Office. We discussed including technology transfer in NASA research projects to applications in the community of water managers. Jeanine noted specifically the airborne snow observatory program which NASA had been talking about transferring for a couple of years. This project involved using NASA research aircraft to do observations during the snow season to get a much better picture of what is on the ground in the mountains, which allowed for greatly improved runoff forecasting. It is very expensive, but very good in terms of improving runoff forecasts.

California partnered with NASA on this project. Observations have been expanded in other areas, Colorado being one example. The transfer of technology however has failed completely. We would like to see such programs moved to the NRCS snow surveys program or perhaps to USGS where these programs can continue as an ongoing operational monitoring program.

We are planning to hold a follow on workshop next year. We invite states to let us know if you also have some ongoing programs that have great promise, so we can focus on research successes and find out how to get them transitioned to be more usable.

USDA SURVEY OF IRRIGATION ORGANIZATIONS

Steven Wallander of USDA's Economic Research Service noted there is a one-pager in the briefing materials under Tab L. He commented that he had given a presentation at the WSWC Fall meetings last year.

This is the first time that the federal government will have done a national survey of irrigation organizations since 1978, which was 40 years ago. There have been a variety of targeted regional surveys by the Bureau of Reclamation, the State of Wyoming, and others, but nothing on a national basis in the last 40 years. Obviously a lot has changed with irrigation organizations since then.

An extensive part of this effort was building a list-frame – a list of all of the organizations they want to send the survey to. Post cards will be sent out giving irrigation organizations an opportunity to update their information and tell us who in their organizations will be responding to the survey. They identified 5,000 entities to send the survey to, which is down from the 1978 survey number. This is not surprising, however, as there has been a lot of consolidation and some have sold their water rights or converted them into residential, suburban, or small ranchette kinds of uses. Groundwater districts have been included which were not part of the survey 40 years ago.

The questionnaire has been drafted. It will include the nine topics listed in the document in Tab L.

- Organization type and governance structure
- Delivery of off-farm water
- Management of on-farm groundwater
- Systems for measuring water
- Drought planning and response
- Water conservation and environmental concerns
- Assets, liabilities and investments
- Revenue and pricing structure
- Costs of operation and maintenance

With respect to the clearance process, a Federal Register notice was published this summer regarding this data collection request. They are on the calendar with their anticipated work. The next Federal Register notice will be coming out shortly and it will be asking for more detailed feedback and will provide a sample version of the questionnaire.

In order to make this project successful, stakeholders can help by: (1) informing irrigation organizations about the survey and encouraging them to respond; (2) working with USDA to ensure that the list of active organizations is up to date; and (3) providing feedback on the public review process for the survey.

The listframe has been built from publicly available datasets the States have. Please review that listframe and let us know if some organization is missing. We would appreciate constructive criticism on the Federal Register notice, so please give us some feedback. Steve's contact information is on the bottom of the one-pager under Tab L.

Tony Willardson: You state you will be asking about assets and liabilities. Would that include water rights? That may vary among the states as to whether or not the district holds the water right or if it is the individual landowner.

Steve Wallander: We are asking about the assets they would put in their annual reports, basically how they account for their assets and liabilities. There is likely to be a lot of variation in how they treats water rights. Elsewhere in the survey, when we are talking about water quantities, we ask about their rights and whether they are held by the districts themselves or not.

SUNSETTING POSITIONS

The positions that will sunset at the Spring meetings were included under Tab XYZ in the briefing materials for reference in preparation for those meetings.

OTHER MATTERS

There being no other matters, the meeting was adjourned.