MINUTES
of the
WATER RESOURCES COMMITTEE
No Host - Virtual
October 14, 2020

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MEMBERS AND ALTERNATES PRESENT

ALASKA	Charley Palmer
ARIZONA	Trevor Baggiore Ayesha Vohra Kyle Miller
CALIFORNIA	Jeanine Jones
COLORADO	Becky Mitchell
IDAHO	Jerry Rigby John Simpson
KANSAS	Earl Lewis Kenneth Titus Tom Stiles
MONTANA	Tim Davis Jan Langel
NEBRASKA	--
NEVADA	Micheline Fairbank Jennifer Carr Brad Crowell
NEW MEXICO	John D'Antonio Greg Ridgley
NORTH DAKOTA	Jen Verleger
OKLAHOMA	Julie Cunningham Sara Gibson
OREGON	Tom Byler

	Doug Woodcock
SOUTH DAKOTA	Kent Woodmansey
TEXAS	Jon Niermann
UTAH	Erica Gaddis Norman Johnson Todd Stonely
WASHINGTON	Mary Verner Buck Smith
WYOMING	Steve Wolff Chris Brown Kevin Frederick

GUESTS

Kathy Alexander, Texas Commission on Environmental Quality, Austin, TX
Adrienne Bartlewitz, U.S. Geological Survey, VA
Jack Bowles, U.S. Environmental Protection Agency, VA
Don Cline, U.S. Geological Survey, VA
Jill Csekitz, Texas Commission on Environmental Quality, Austin, TX
Robin Cypher, Texas Commission on Environmental Quality, Austin, TX
Amy Duffy, Western Regional Partnership, AZ
Christopher Estes, Chalkboard LLC, Anchorage, AK
Indrani Graczyk, National Aeronautics and Space Administration, Jet Propulsion Laboratory, CA
Mike Gremillion, University of Alabama, Tuscaloosa, AL
Lori Hamilton, Texas Commission on Environmental Quality, Austin, TX
Joel Klumpp, Texas Commission on Environmental Quality, Austin, TX
Cari-Michel Lacaille, Texas Commission on Environmental Quality, Austin, TX
Susan Lee, Bureau of Land Management, Denver, CO
Leanna Littler, Utah Division of Water Quality, Salt Lake City, UT
Earl Lott, Texas Commission on Environmental Quality, Austin, TX
Sue Lowry, Interstate Council on Water Policy, Cheyenne, WY
Mike Mathis, Continental Resources, OK
Mark McCluskey, CDM Smith, CO
Amber McCullum, Bay Area Environmental Research Institute/NASA, CA
Brooke McGregor, Texas Commission on Environmental Quality, Austin, TX
Kelly Mills, Texas Commission on Environmental Quality, Austin, TX
Kim Nygren, Texas Commission in Environmental Quality, Austin, TX
Catalina Oaida, National Aeronautics and Space Administration, Western Water Applications Office, CA

Jamie Piziali, U.S. Environmental Protection Agency, Washington, DC
Jim Rizk, Texas Commission on Environmental Quality, Austin, TX
Ward Scott, Western Governors' Association, Denver, CO
Amy Settemeyer, Texas Commission on Environmental Quality, Austin, TX
Keith Shaw, Self, UT
Susan Smith, Willamette University – LAW, Salem, OR
Nakaila Steen, S.D. Department of Environment and Natural Resources, Pierre, SD
Suzanne van Drunick, U.S. Environmental Protection Agency, Washington, DC
David Waterstreet, Wyoming Department of Environmental Quality, Cheyenne, WY
Jennifer Wendel, Idaho Department of Water Resources, Boise, ID
Patricia Wise, Texas Commission on Environmental Quality, Austin, TX

WESTFAST

Deborah Lawler, Federal Liaison, Murray, UT
Pat Lambert, WestFAST Chair, U.S. Geological Survey, Salt Lake City, UT
Robert Boyd, Bureau of Land Management, Denver, CO
Chris Carlson, U.S. Department of Agriculture – Forest Service, Washington, DC
Mindi Dalton, U.S. Geological Survey, Atlanta, GA
Mike Eberle, U.S. Department of Agriculture – Forest Service, Washington, DC
Lauren Dempsey, U.S. Air Force/Department of Defense, Washington, DC
Roger Gorke, U.S. Environmental Protection Agency, Washington, DC
Heather Hofman, U.S. Department of Agriculture/Natural Resources Conservation Service, Portland, OR
Tim McHale, U.S. Geological Survey, Denver, CO
Forrest Melton, National Aeronautics and Space Administration, Western Water Applications Office, CA
Cherilyn Plaxco, U.S. Army Corps of Engineers, Little Rock, AR
Elizabeth Ossowski, National Oceanic and Atmospheric Administration/NIDIS, Boulder, CO

STAFF

Tony Willardson
Michelle Bushman
Jessica Reimer
Adel Abdallah
Ryan James
Cheryl Redding

WELCOME AND INTRODUCTIONS

The Water Resources Committee meeting was called to order at 9:00 am via Zoom webinar with Chair Mary Verner conducting. Good morning, everyone. Glad to have you. I wish I could see your faces for the entire meeting. I saw some of you during my intermittent Zoom connection. I will look forward to hearing your voices, and I'll follow along via email and look at the presentations that have been provided.

This morning, is my first opportunity to Chair the Water Resources Committee. I'm really grateful for this opportunity and appreciate your patience as I learn. Tony is a great coach. Our first item is introductions. Tony, in this Zoom world we live in, how do you suggest we proceed with the introductions?

Tony commented that given the registry in Zoom, everyone can see who is participating. It might be fun if everyone would turn on their camera for a moment so that we can see your faces along with your names. That will do as far as introductions, because we do have a good crowd here. It's great to see everyone's faces. We can dispense with the formal introductions, Mary.

APPROVAL OF MINUTES

Chair Verner remarked she would rest assured that everyone has the minutes. She asked: "Does anyone need the minutes? Or do you need a moment to consider the minutes before we accept a motion?" Steve Wolff moved approval of the minutes. Jan Langel seconded the motion. With no objections, the minutes were approved.

SUNSETTING POSITIONS

Position #413 – Supporting prompt reauthorization of the Farm Bill in 2018

Tony mentioned that while the position originally dealt with reauthorization of the Farm Bill, it was reauthorized and will not come up for reauthorization for a few more years. The position also expressed support for a number of Farm Bill programs, including the Environmental Quality Incentives Program (EQIP) and other assistance to the States. The rewrite under Tab C in your briefing materials was considered by the Executive Committee, which deleted a couple of whereas clauses related to the reauthorization. Part of the resolved clause was likewise amended. Otherwise, we left intact our support for the listed farm bill programs. The Executive Committee had no further recommended changes, however the title of the position itself was also changed to USDA Conservation Programs and Water Resources.

Earl Lewis stated that Kansas supports the conservation programs. Kansas and Colorado have run into a change to program provisions that allowed dryland farming under the Conservation Reserve Program (CRP) where a water right was retired. This was passed as part of the 2018 Farm Bill but the Department of Agriculture has determined not to implement it. We continue to work on this, and we're

interested in knowing if other states were dealing with that and would support trying to get the dryland revision implemented.

Tony suggested we can check on this issue with our Natural Resources Conservation Service (NRCS) WestFAST team member. Tony further said staff can prepare some language that the Full Council could consider tomorrow.

A motion was made by Jen Verleger for the Committee to vote to recommend the resolution with the minor edits already made and recognizing language to address Kansas' concern about the dryland farming provisions under the CRP program will be added to the position by tomorrow. Steve Wolff seconded the motion. There were no objections, so it was considered unanimously authorized.

USGS WATER RESOURCES PROGRAM

Don Cline, Associate Director, Water Resources Mission Area, U.S. Geological Survey (USGS) shared a powerpoint presentation. (Link to presentation: https://www.westernstateswater.org/wp-content/uploads/2020/04/Cline_USGS-Water-Mission-Area_2020Oct14_comp.pdf.)

Mr. Cline mentioned USGS strategies moving forward. In 2018, USGS published Circular 1383 G, which is the Water Science Strategy for the USGS' Water Mission Area. This document sets forth five goals. This strategy is about observing, understanding, predicting, and delivering water science to the Nation, which really describe the science process. That is how we do science, in general, and specifically, in the Water Resources Mission Area of USGS.

The five goals, however, are broad. Therefore, he asked the National Academies of Sciences to look into their crystal ball and look forward 25 years to find out what water resources challenges may be forthcoming. In order to make sure that USGS work is relevant and delivering the best information we can over the next couple of decades. A blue ribbon panel published a consensus study report entitled, "Future Water Priorities for the Nation" in 2018, and provided ten recommendations. The panel didn't really find anything new and different or new and unfamiliar in terms of new kinds of challenges. Rather, they basically concluded that we're already familiar with the sorts of challenges that we're going to see in the next 25 or 30 years. However, they concluded that those challenges will be more acute due to changes in population, land use, and climate. The good news is we kind of already know what things we need to be doing. The challenge is that we need to step up our game, and move faster to be better prepared to deal with these things.

The first five recommendations are about data observations, enhanced data collection, and coordinating data delivery. The Internet of Water and many others are working to bring water information and data together in a unified fashion to: (1) enhance data collection; (2) coordinate data delivery; (3) increase the focus on relationships between human activities and water; (4) develop a robust water accounting system; and (5) collaborate on water use data standards.

Further, we need to ensure monitoring networks are adequate to assess changing conditions. In other words, are the networks and the density of the networks that have sufficed for the last eight or nine

or 10 decades, adequate to detect and measure the changes that we're seeing at the rate we're seeing today? Additionally, they recommended that we focus on long term prediction and risk assessment for extreme water conditions, droughts, floods, poor water quality events, and to develop multi-scale integrated dynamic models that encompass the full water cycle to help make these predictions. They emphasize collaboration, both within USGS and outside of USGS. Basically, underscoring the notion that we can't do this alone, though we have a lot to bring to the table. The last recommendation has to do with building a workforce that is ready to take on the new challenges of the next few decades.

At USGS, we took these recommendations to heart and have looked hard at how can we do this most effectively. If you consider that the panel's first five recommendations deal with data, then it gets into understanding how change affects water resources, modeling and prediction. It became clear that they were recommending we follow the generic scientific process. But no less germane to water resources, is observing, understanding, predicting, and delivering. In other words, follow our own strategic plan. This is the way empirical science works. We collect observations, we monitor, we see what we've learned and how those observations fit together. That allows us to make predictions. It should work as a cycle where it continuously gets better and better over time. When one of these becomes a bottleneck, it slows down the advancement of science.

Right now, the observations are one of those bottlenecks. We have somewhat surpassed our observing systems' capability to support our process understanding and our ability to model some of these processes. For this reason, four initiatives were developed to wrap around the four main components of the strategic plan and the Academy of Science recommendations, and the fundamental science process.

The first is the Next Generation Water Observing System (NGWOS). This was designed to collect real time data on quantity and quality of water, using more affordable, rapid and intensive ways than ever before. It is a flexible monitoring approach which enables our networks to evolve with new technologies, and emerging threats. Essentially it is designed to provide the data density in areas in which we can advance our science, and also to inform how we improve our networks nationwide.

The second initiative is Integrated Water Availability Assessments (IWAA), which examine the supply, use, and availability of the Nation's waters. These are both regional and national assessments to evaluate the quantity and quality of water – both surface and groundwater. It is by definition water availability as related to human and ecosystem needs and as affected by human and natural influences.

The third initiative is Integrated Water Prediction (IWP). IWP is aimed at building a powerful set of new modeling tools to predict the amount and quality of surface and groundwater, now and into the future. The goal is to bring our models into line with the best available science in the 21st century, to provide more information for places where we don't have direct monitoring.

The last initiative has to do with our National Water Information System (NWIS) which is the backbone of water data delivery for USGS, as well as with the National Water Dashboard, which houses USGS water information. These are being modernized to maximize data integrity, simplify data delivery to the general public, automate early warnings, and support the new National Water Dashboard. Most the modernization is behind the scenes software re-engineering.

The National Water Dashboard is a new product that I want to tell you a little bit about today. As mentioned, our science is empirical. We depend on observations to advance the science and advance understanding of how water works. Observations underpin water science, and we operate the nation's largest water observing system. The USGS collects continuous streamflow data from over 10,000 real time streamgages. We also do a lot of discrete sampling, where we go out to a stream or a river and collect samples manually. We monitor about 17,000 groundwater wells. Additionally, we monitor continuous water quality at about 2,100 stations across the country. In a typical year, we receive just over a billion data requests through the National Water Information System. This whole enterprise is funded by both our USGS appropriations budget and over 1,600 partners across the Country.

This entire system is underpinned by what we refer to as the HIF, the Hydrologic Instrumentation Facility. Since 1972, this facility has been the epicenter for calibrating and cross calibrating essentially all of our instruments nationwide. The facility is located north of Bay St. Louis, Mississippi. It has basically reached its useful service life. As part of the Next Generation Water Observing System (NGWOS) initiative, a new facility will replace the HIF, and is scheduled to be completed by December 2022.

This facility will include a state of the art hydraulics laboratory for the testing and calibration of components. For the first time, we'll have a single unified network operation center for all USGS water observing systems where all of the data across the country will come in. We'll be able to monitor it live and make sure that all systems are healthy. We plan to focus on innovating new types of sensors working with academia and the private sector, to lower the cost of sensors, so that we can get more of them out there and increase the density across the country. The facility will become the water science training center and will have both indoor and outdoor research testbeds to help drive the science forward.

NGWOS has ten intensive reference basins to help drive the future of integrated water science. There are regional focus areas for intensive observation, assessments, modeling, and prediction. The goal is to achieve about ten regions in ten years, with each region being representative of larger water-resource regions. The areas are selected through a process of both quantitative metrics and extensive stakeholder engagement, to make sure that they are going to be the most representative of the region, and that we'll be able to extend what we learn in these areas to the broader hydrogeographic region. NGWOS has been launched in the Delaware River Basin in the Northeast. We've selected the Upper Colorado and the Gunnison in particular for the second one of these basins, and we're just getting started on the execution of that now. In a few weeks, a third basin area in the upper Midwest will be announced.

The National Water Dashboard product is a combination of a great deal of work to pull together all USGS water information, including the information from our partners. We're aiming to essentially have a one-stop shop for relevant water information for the public for planning or for whatever application one might have. The behavior and comprehensiveness of this water data is new. There are new graphics and new capabilities associated with this product.

We are moving forward with these initiatives, working through things such as our Water Availability Assessments, to begin to put together a comprehensive science base surrounding the behavior of water resources. Next, we will work through our Integrated Water Prediction program to start projecting extreme water conditions over the next decade or so. These products will also start to show up on the USGS Water Dashboard, again to be a one-stop shop.

Please feel free to reach me at any time if you want to learn more about what we are doing.

Questions

Tony Willardson: Could you please speak to the importance of NGWOS and this intensive data gathering effort? How do you see that affecting your ability to model other basins where we don't have that kind of instrumentation?

Don Cline: Looking nationwide, there are about 10,000 streamgages, but that is only about three one hundredths of one percent of the Nation's stream reaches. When we talk about groundwater, it is even more sparse. As models and predictive capabilities have advanced over the years, we're starting to exceed in the modeling what we have observations to support. The density of observations starts to get too low to calibrate and validate the new high-fidelity models that we need to project what water will look like in the next few weeks to the next few years. NGWOS will go into these ten basins and increase the density of water observations and really focus in on the key processes that are relevant in a particular area.

Basically, the goal is to provide more reliable information about future water conditions. How we expect them to change due to climate, population growth, and so on? This will be done in an empirical way, where the models are supported by a dense observing system network, so that we can build up and quantify the uncertainty associated with those projections. We do that by essentially running the models over the last 40 years, and then look forward to the next 20 years or so. Using the NGWOS observations moving forward is really the only thing we've got to go into these high-fidelity models. NGWOS is the lynchpin for advancing water projections into the future.

Adel Abdallah: I participated in the testing for the portal. When is the projected release date?

Don Cline: In the next couple of weeks. Thank you for participating and helping with the testing.

FEDERAL WATER INFRASTRUCTURE LEGISLATION

Tony Willardson noted President Trump's issuance of an Executive Order yesterday on Modernizing America's Water Resources Management and Water Infrastructure. Many of the components parallel with the President's Memorandum on Water Sustainability in the West. There are a number of different items. It formalizes the creation of an Interagency Water Policy Committee, or the Water Subcabinet, which is to be co-chaired by the Secretary of the Interior, the Administrator of the Environmental Protection Agency, with members including the Secretary of Agriculture, Secretary of Commerce, Secretary of Energy, Secretary of Army, and others that are determined to be relevant by the Secretary of Interior and Administrator of EPA.

Many of you know that there has been an effort functioning at the so-called water sub-cabinet level, which has been comprised of those at the Assistant Secretary level and the Assistant Administrator level. This group will be addressing us this afternoon with respect to efforts related to Waters of the United States (WOTUS). The direction from the Executive Order is actually at the cabinet level with this new Water Policy Committee. Most of you are not as old as I am and are too young to remember the old

Water Resources Council (dormant since the early 1980s), which was a similar cabinet level committee charged with looking at water resources in the Nation. It will be interesting to see how this operates.

President Trump's order is another step toward institutionalizing the importance of water resources. The WSWC's vision statement notes that water needs to be a public policy priority. We saw some movement towards this with a White House Conference on Water under the Obama Administration. We would hope the emphasis will continue into the future.

After reviewing the Executive Order, Tony noted a few things that stand out regarding States' interests. One is the call for better coordination among state, local, tribal and territorial governments as well as rural communities and other water users. There is an emphasis on developing voluntary market-based water and land management practices and programs to help improve conservation, economic viability, water sustainability and security. It further directs the subcabinet and other federal departments and agency heads to provide assistance and technical support to the States in order to enhance the recruitment, training, and retention of water professionals. It identifies actions related improving water quality through source water protection and nutrient management, as well as promoting restoration activities, and examining water quality challenges of minority and low-income communities.

Lastly, Tony touched on actions the Executive Order mentions to improve water systems, including drinking water, desalination, water reuse, wastewater, flood control, and improving water data management, research, modeling and forecasting, including development of state-of-the-art geospatial data tools. We will hear more this afternoon about using geospatial tools to map Waters of the United States.

A copy of the Executive Order was emailed yesterday to WSWC members.

John D'Antonio mentioned that the Water Subcabinet has been informally in effect for some time, and it is nice to see that it has now been formalized. WestFAST is excited about the formalization.

Tony noted for WSWC members that at our last meeting, we included in the briefing materials a letter that was sent to the leadership of the Senate, as well as the leadership of the Senate Energy and Natural Resources Committee. A couple of bills had been pending on the Senate calendar. S. 2044, the Water Supply Infrastructure Rehabilitation and Utilization Act, is a bipartisan bill introduced by Senators Martha McSally (R-AZ) and Sinema Kyrsten (D-AZ). It was reported by the Natural Resources Committee, and was put on the Senate Legislative Calendar last October. Action is still pending. It would create a $400 million Aging Infrastructure Fund. It is significant in that the bill would expend money from receipts to the Reclamation Fund. As you all are aware, we have been advocates of spending those receipts for their intended purpose, and this is consistent with that position. As this bill is still pending, Senator McSally offered an amendment to the Senate WRDA bill that would have included this Aging Infrastructure Fund. This money once deposited into the Fund would be available to the Secretary of the Interior without further appropriation. The provision offered to the WRDA bill was not successful, but may be included in other legislation. In discussions with Senate committee staff, they would like us to offer any support we could provide for this infrastructure fund.

There is another bill that also came up from the committee, S. 1570, the Aquifer Recharge Flexibility Act. An update on this bill is under the legislative summary in Tab S in your briefing materials. It was introduced by Senators James Risch (R) and Mike Crapo (R) from Idaho. It was similarly placed on the senate legislative calendar last year. It is self-explanatory with respect to promoting aquifer recharge and recovery efforts and projects.

S. 1932, the Drought Resiliency and Water Supply Infrastructure Act, was sponsored by Senator Cory Gardner (R-CO), with bipartisan support from Senator Dianne Feinstein (D-CA), Senators Martha McSally (R) and Kyrsten Sinema (D) from Arizona, and Senator Jacky Rosen (D-NV). A hearing was held last year in the Senate Energy and Natural Resources Committee, although that is as far as the bill has progressed at this point.

The Western Water Security Act, sponsored by Senator Tom Udall (D-NM), and co-sponsored by Senator Martin Heinrich (D-NM) had a hearing on July 22. It would reauthorize the WaterSMART program created in 2009. S. 4188, the Water for Tomorrow Act of 2020, which was also a subject at that same hearing in July, was introduced by Senator Kamala Harris (D-CA). Furthermore, the Water for Conservation and Farming Act was introduced by Senator Ron Wyden (D-OR) on July 22nd and was also a subject of that hearing.

The Council has been supportive of the programs under WaterSMART. There has been some discussion of restrictions, that I was not particularly aware of myself, included in that legislation for the use of grant funding, specifically under the Water and Energy Efficiency Program. It prohibits any applicant from receiving funding unless they agree to not increase their irrigated acreage. It also prohibited an increase in the consumptive use of water in the operation of the eligible applicant as determined pursuant to the law of the State. There has been a proposal that would amend that language, such that it would prohibit the user provided assistance under a grant or agreement to increase the consumptive use of water for agricultural operations above the pre-project levels, as determined by state law. We participated in discussions with the Senate minority and majority committee staff, as well as a number of environmental groups and water users' irrigation interests a few weeks ago. The language has been shared with a few of our WSWC members, in particular John D'Antonio (NM) and Tom Byler (OR), given their Senators' positions. We would also ask for your feedback.

Tony also mentioned H.R. 1497, the Water Quality Protection and Job Creation Act of 2019. It has also been placed on the House calendar. It would reauthorize the State Revolving Funds for clean water and safe drinking water. It would be the first time that those programs have actually been reauthorized since 1986.

Of interest, Senator John Barrasso (R-WY) has in the past had a program authorized for the Upper Missouri River Basin for more monitoring. Recently there was an award to the University of Wyoming for $8 million under a firm fixed price contract to established a network of stations to monitor snowpack and soil moisture along the plains area of the Upper Missouri River Basin. So that will be a substantial increase in the monitoring capability in that basin and requires a report to the Congress on those efforts in the future.

WESTERN REGIONAL PARTNERSHIP: WATER SECURITY DEEP DIVE

Amy Duffy, Coordinator for the Western Regional Partnership (WRP), addressed WSWC members and provided background on the WRP utilizing a powerpoint presentation. The partnership was initiated by the Department of Defense to proactively work across geographic boundaries at the senior policy level with federal, state and tribal leaders. The partnership focuses on: Arizona, California, Colorado, Nevada, New Mexico and Utah. Obviously, the Western States Water Council has a lot bigger geographic boundary than we do, and I look forward to working with any and all of you that might be interested.

The WRP structure is comprised of committees and principals. We are very fortunate to have three amazing co-chairs: (1) the Honorable Gary Herbert, Governor of Utah; (2) the Honorable Jordan Gillis, Assistant Secretary of Defense for Sustainment; and (3) we're waiting for a Senate confirmed position as the Assistant Secretary of Land and Minerals Management from the Department of the Interior. The members on our steering committee support our principals. We've got a great group of folks from the six Governors' offices, federal management agencies, Native American leadership, and the Western Governors' Association (WGA), with the WGA Director as a liaison as well.

In our region, we have significant and extensive training ranges, testing facilities, and a lot of military assets. As you recognize, there is a lot of federally managed land, a lot of state trust land holdings and approximately 172 federally recognized tribes in this region – which is why there are a lot of reasons to be working together.

We did a survey of WRP leadership to determine when they think of WRP, what do they think of? Collaboration is number one. WRP is building resilience in the West for America's defense, energy, environment and infrastructure through enhanced collaboration among federal, state and tribal entities. The survey also sought to find out what building resilience meant to our leadership team. What are they focused on? Where are the gaps? From that, four deep dives were identified: (1) resilient energy infrastructure; (2) resiliency of airspace in our region; (3) disaster mitigation, both pre and post; and (4) water security. I will also mention that of the four deep dives, and since you've just talked about aging infrastructure, three of our deep dives have also identified aging infrastructure as an item.

For the first time, WRP is undertaking a deep dive on water security. We are trying to do so cautiously and yet be proactive in collaborating with our partners. If you see anything missing or you think should be updated, please contact me. Currently, we are holding a lot of calls and webinars. An update will be provided to the steering committee in January 2021 at their virtual meeting. A full report is expected to be finalized, which will include recommendations and insights collected, in April 2021. The principals are meeting in Colorado in May, where we will have a presentation highlighting some case studies or vignettes to assist in understanding efforts by our partners. From all of this, we hope to identify areas of commonality and recommendations on water quality and quantity, financing and funding.

Naturally, aging infrastructure has come to the forefront. We're looking to capture some illustrative examples of things that should be highlighted related to data, infrastructure, and areas of potential partner commonality. Again, this is States, federal agencies and tribes working together to address water security.

Water security was divided into four main topics or buckets: (1) data; (2) policy planning and implementation; (3) water resource management strategies; and (4) water laws and regulations. Collectively, these four areas help define what water security is. Each of the buckets teams are going to explore their interdependencies with each other looking at enforcement, water quality and quantity, and financing and funding.

The first main bucket is water data, and is intended to develop an understanding of the data that is accessible. I found Don Cline's presentation absolutely phenomenal and kudos to him for what he and his team have put together. Obviously, some great work has been done. We are capturing the available data for our region, and will look at what some of the data gaps are. Sometimes what we believe is a data gap, we find out is not a data gap, and that there are resources in place. Referring to the powerpoint slide, Amy noted identified data gaps. NRCS informed WRP that they had data in some of the areas that they can help with. WRP is still building out this effort. They're trying to look at it from a watershed scale to assess vulnerability and risk and to highlight proven conservation practices.

The second bucket is water policy planning and implementation. We're looking at the recent policy on the WOTUS memo, and highlighting the changes and how they potentially might impact water security. We're also identifying if there are any gaps or opportunities for partnerships? Further, are there trends or predictions and other policy changes with funding? Finally, are there any agency challenges and hurdles we can identify? We intend to summarize all of that together and come up with some best practices for policy planning and implementation. On one of our recent calls, there was a discussion about federalism. It was quite interesting to hear the States' perspective on federalism.

The next bucket deals with water resource management strategies. This is looking at best practices and new technologies for implementing water resource management strategies, and then determining where there may be gaps and recommendations associated with that. As an example, we have amazing participation from California. Using their water plan, we've made some slight modifications and added one item not included in their water plan, which they acknowledged as an issue. To their recommendations, we added navigation.

As you all know, water laws and regulations are super important and can either help you or perhaps be a little bit of a hindrance. We're trying to develop an understanding of the water quality and quantity laws and regulations in the context of water security, and looking at what the federal, state and tribal roles are. How do we advance water security using those laws and regulations? What are some potential trends for water rights and regulations and water accounting? Additionally, what collaborative tools are there to help resolve water disputes without litigation?

That is an overview of what the WRP team is working on. For those who may be interested, we are holding a webinar tomorrow highlighting the work around Fort Huachuca, an Army installation in southern Arizona. In support of the water laws bucket a webinar is scheduled on October 22 on resolving water disputes. This is a summation of the overall value of the WRP and our water security efforts. Please let me know if you're interested in participating.

Questions

Tony Willardson: Thank you for the presentation. I also want to thank you for the opportunity that a number of our members and staff have had to participate in these discussions. Obviously, the military bases are very important to the economy of many of our States. It's important that we recognize and try to accommodate their needs. One of the efforts the WSWC has been involved with, in Oklahoma, with our WestFAST team, has been development and implementation of the Southwest Oklahoma Water Plan and water supplies for Altus Air Force Base. I'd also note that Idaho has moved forward to ensure that Mountain Home Air Force Base has the water resources that will be needed for the base in the future. So thank you, Amy, for updating us on all that you're doing and thanks for your work.

Amy Duffy: Thank you so much for your participation. It's always a pleasure to work with you. You are an expert. Thank you.

Roger Gorke: Another comment supporting Tony's comment. On a recent call, someone mentioned that they did some online research and could not find an organization that was taking on water security with such a broad perspective. In some ways, this is the first of its kind. It's exciting to distill it down to its essence. Hopefully, these efforts can be built upon in the future.

Amy Duffy: Thank you, Roger. Yes, we're looking forward to the lessons learned. We share the desire to see how this works out.

Mary Verner expressed appreciation to Amy for the great work that's being undertaken.

IMPROVING SUBSEASONAL TO SEASONAL (S2S) FORECASTS

Jeanine Jones shared a powerpoint presentation and gave a status report on efforts to improve subseasonal to seasonal (S2S) precipitation forecasting. This is the time period beyond a weather model out to one or two years. As water managers, one of the questions that we're most interested in, especially this time of year, is for forecasters to tell us what this winter is going to be like – wet or drier than average.

The National Weather Service Climate Prediction Center (CPC) of the National Oceanic and Atmospheric Administration (NOAA), does produce these operational products. Jeanine showed an example of a product made in September, for one of the wettest times of year in California; that being December, January, and February. In the graphic, they are suggesting that much of the southern tier of the United States will be dry, because they are essentially betting on underlying conditions being present. NOAA has produced such products since 1995, but unfortunately, there is a slight problem with their skill – which is that largely it does not exist.

Another slide depicted a graphic from NOAA that evaluates their skill over the long term for these winter season forecasts across the United States. They use a metric which I won't go into the details of but suffice it to say the white areas on the map means you have no more skill in a forecast than simply predicting average weather conditions. In other words, practically speaking, there is no skill for support of water management. It would be hugely useful for us as water managers if the forecasting could be better.

We recognize that this is a difficult science problem. Frankly, it is a case of you get what you pay for. This is an area of science that has had very little research funding. The weather sector is really pretty starved in the federal budget anyway. While the climate change work in the last couple of decades has done well from a funding standpoint, this area simply has not had support.

As a result, there is not much research going on in this area. There is a very small community of academic folks who participate in this area that we could partner with. There are oceanographers and oceanography, a lot of work and effort goes into that research domain. There is also work being done in terrestrial hydrology. However, there is a gap where those two disciplines need to interface. We're in a similar position with S2S forecasting. Historically it has occupied this gap in between the weather forecasting world and the climate science world. And, frankly, it has been very much under-appreciated.

In 2017, Congress enacted (after two attempts), the Weather Research and Forecasting Act, that included a title on S2S forecasting. The WSWC participated in the coalition that led to getting the S2S forecasting title in the bill. While NOAA and the National Weather Service (NWS) have broad authority to do forecasting, they have not previously been specifically directed to do something at this time scale. The Act provides specific direction to them to actually produce forecasts of temperature and precipitation at this time scale. This is useful as it relates to trying to get the federal government's attention and trying to get research funding to support this effort.

Among other things, the Act called for NOAA to submit a report to Congress within 18 months of enactment. That report has not yet been submitted, unfortunately, but is to describe what NOAA needs to do to improve its forecasting. The initial authorizing legislation expired. It was reauthorized as part of the NIDIS program reauthorization. Because of the string of continuing resolutions in recent fiscal years as pertains to the Department of Commerce and NOAA budget, they have not had specific funding appropriated yet for implementation. In addition, there is already a very small funding program within the NWS, which is the U.S. Weather Research Program. Oganizationally, this is where they have assigned that line item. The WSWC and others have been working with NOAA on this.

Internally, NOAA is starting to focus on what they call the grand challenge of improving precipitation forecasting. However, they have not yet gotten funding to do it, or to put in place a science program to make progress in this area. This is something we plan to work on in terms of appropriations for FY 2022 when the opportunity arises. I will stop on this subject and ask if there are any questions.

Tony noted that Tab L in the briefing materials has a document on this subject that was prepared by the WSWC with a lot of assistance from the California Department of Water Resources.

Jeanine commented that California's motivation on this effort has been related to drought. S2S forecasting is especially useful when you're planning for drought and drought response.

AIRBORNE SNOW OBSERVATORY (ASO)

Jeanine Jones provided an update on the Airborne Snow Observatory (ASO) program. The program began as a National Atmospheric and Space Administration (NASA) research pilot in California.

The NASA research grant has now basically ended and the program is in search of a long-term home. The concept is to improve snowpack forecasting for water management purposes by using aircraft-based remote sensing to fly over a watershed, collect data and use that data in coordination with a watershed model to improve estimation of snowpack runoff. Manual snow surveys and snow sensor data cover realistically a very small part of a watershed, and mostly the more accessible, lower elevation parts of it. From a technical perspective, the program has been very successful.

In California, we were funding the program to the tune of about $3 million a year for flood risk mitigation purposes or flood risk management purposes. Several of our local water agencies were involved in pilot efforts in the San Joaquin River system. We are very appreciative of the usefulness of the improved forecasting for water supply purposes.

The program was also demonstrated on a test basis in a couple of basins in Colorado. The Colorado Water Development Board provided some funding to that effort, as did the Bureau of Reclamation. The program has technically been successful and is looking to continue in some form in another agency, because the NASA research phase is over.

Tab M in the briefing materials includes a copy of legislation that was introduced this summer in an attempt to find a home for the program. Local agency sponsors in California worked with California Senators to introduce a bill on the Senate side, and also a companion bill on the House side. The bill was supported by two Colorado co-authors. The purpose of the authorizing legislation would be to provide a five-year authorization for the program at $3 million per year in the USGS budget. Committee report language in the FY2021 House Appropriations bill, which is now moot, encouraged the Bureau to continue funding for this program. The legislation introduced were basically spot bills. They may find something to attach those bills to as they move through this Congress in the Lame Duck session. Otherwise, we'll be looking at trying again in the next Congress. An alternative approach is to seek funding at least until it's authorized through just a single year appropriation, in which case they would likely be looking at FY2022.

Tony mentioned that in Senator Feinstein's opening remarks about the legislation, she used an example of potential releases by the Turlock Irrigation District, given the uncertainty related to the snowpack. She opined that absent ASO information they would have had to release perhaps 150,000 acre-feet of water from storage, and compared that to the cost of water at the time in the district going at about $1,000 an acre-foot. So obviously, the more precise information on snowpack related to operations can have a very significant financial impact. Thank you, Jeanine.

WADE 2.0 UPDATE & DASHBOARD DEMONSTRATION

Adel Abdallah, Program Manager of the Water Data Exchange (WaDE), used a powerpoint presentation. We are interested in sharing the States' publicly shared data through WaDE in a consistent way. The four types of data we're sharing focus on water rights, aggregated water budget estimates, site-specific use and withdrawals, and regulatory overlays.

A slide depicted the amount of funding secured through federal grants for assistance to WSWC member states to share data. Adel encouraged WSWC members to direct their staff to help secure funding available through three funding sources. The USGS provides Water-Use Data and Research Program (WUDR) grants. The Bureau of Reclamation makes WaterSMART Applied Science grants available. This program focuses on sharing data to inform water management decisions, development of hydrologic databases or decision support tools, and making data available to a broader audience. Adel noted if states have any of these challenges, Reclamation may have up to $300,000 available for any single grant. They require 50% match funds. Another funding source is the EPA Exchange Network (EN) Grant Program. Sara Larson, Adel's predecessor, was successful in securing two EPA EN grants. The priority for this program is data availability projects – generally for environmental data and decision support systems – and enabling geospatial data and open data services.

Adel and Ryan James, our Hydroinformatics Specialist and Data Analyst, are working with the USGS, Environmental Protection Agency (EPA) and the Internet of Water on the interoperability of data in WaDE, basically making data services or data to talk to each other. Basically, think of the network linked data index as "Google" for water data – where you come to an online map, click at a location on a stream, and you are able to access the available data from USGS or EPA water quality sites, and so forth. There are opportunities for us to work together and share data in a more consistent way.

Adel also discussed the OpenET Beta release. On September 15, 2020, a press release announced that the Environmental Defense Fund (EDF), NASA, the Desert Research Institute (DRI) and Google plan to develop a new web application called OpenET to enable western U.S. farmers and water managers to accurately track water consumption by crops and other vegetation using data from satellites and weather stations. OpenET will fill a critical information gap in water management in the West. Today, access to accurate, timely satellite-based data on the amount of water used to grow food is fragmented and often expensive, keeping it out of the hands of many farmers and decision-makers. Water supplies in the western U.S. are critical to the health of our communities, food supply and wildlife, but they are facing increasing pressures in the face of population growth and a changing climate.

Ryan James gave a status update on the WaDE 2.0 front-end development, which is envisioned as a data rich dashboard, which would give users the ability to search for and export a variety of water specific data, including water rights information, aggregated water use, site specific water use, and regulatory boundary information all across the West. The WaDE 2.0 front-end is still in its early stages of development. As such, there is no working website to share. However, we have some in-house developed web applications for a proof of concept. These apps are produced within the R-shiny environment built upon the data generously provided to us by our WSWC member states. They represent the ongoing coordination between state agencies and the Western States Water Council.

Again, these in-house web apps are still under construction and are not for public use at this time, as they have not been fully approved by our member States. They are for demonstration use only to illustrate to our members the potential of the work and provide a roadmap of the direction we are taking with these applications. In addition, it is important to note that the individual state agencies we get the data from use separate methods to estimate water use. As a result, water use data comparison across state lines is not necessarily an exact science. Before drawing any conclusions or making any comparisons, be sure to consult with the local state agency on their chosen method for data creation.

The first application reviewed is called the Point of Diversion (POD) water allocation map, which is meant to provide a dashboard like tool and experience for users to search for water right information across natural borders and state lines based on baseline stitches, simple filters and other search parameters. Search parameters include state boundary lines and river basins, priority dates, beneficial uses, water source types, and site specific information. At this time, that site specific information is focusing on point of diversion, owner information, and a range of minimum and maximum allowed water views.

Ryan demonstrated a scenario for someone looking for the water rights associated with fish and wildlife and instream flows. Another use case might be if someone was interested in state-recognized federal water rights. Another example demonstrated if someone was interested in the state-recognized U.S. and Forest Service water rights for groundwater

State agency information is available. A comprehensive return of all the data information on a particular site can be filtered through the search. Anything in our database, given to us by our member States, would be returned in a series of tables that would include the state agency that provided the data.

The second application focuses on aggregated water use data mapping. Aggregated water use includes the total consumption or withdrawal within a state defined boundary. Currently we have seven states that have provided aggregated water use data. Rather than site specific information, we are now looking at the aggregated water use over a given space over a span of time.

Aggregated water use includes water budget information on withdrawal or consumptive use within a state defined specific boundary. Currently, we have state defined boundaries for four separate shapes. Those include by county, Hydrologic Unit Code (HUC) 8, state specific shapes, or what we call custom boundaries. An example of a user's specific case might be, if a user was interested in looking for the highest annual water use in 2010, in Texas. The user would be able to simply select the reporting year for 2010 and filter down to the State of Texas. Through a simple, visual, cursory glance of the app, you are able to find the State or the county that had the highest water use. A few other examples were provided in the presentation.

Adel thanked Ryan and commented that he has been very helpful and instrumental in the development of WaDE. Adel and Ryan have been working with an IT consultant, Don't Panic Labs (DPL), to take the portal to the next level, where it would be professional and posted online. Three phases have been identified with respect to the portal.

Many WSWC members have witnessed WaDE's growth from the beginning when Sara Larsen led the program in 2012. Phase I of the WaDE data system consisted in large part of establishing the program, building relationships, and creating the WaDE 1.0 schema. In the next phase, Phase II (2019-2021), we are working on improving the schema, leveraging hosting in the Cloud, and having metadata comply with USGS standards and so forth. In the third phase, which would begin in 2022, we hope to launch the WaDE portal, demonstrate interoperable use cases, automate data imports, and explore options to sustain WaDE program operations.

We are working with a philanthropic organization through the Internet of Water to secure funding beyond 2021. Our plan is to connect more states and include more data. We are using assistance from our

IT contractor and we're continuing to work with the Internet of Water and USGS. Hopefully, we can beta release this soft WaDE portal next summer. We express appreciation for our funders. We look forward to working with our collaborators and partners: USGS, Internet of Water, DPL, and the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI). Thank you all.

WATER USE METERING, MONITORING AND REPORTING

Mary remarked that the WaDE presentation was a good segue into the roundtable discussion on the topic of water use metering, monitoring and reporting. Please share with us what is now being done in your states and what you anticipate in the area of metering monitoring and reporting on water use.

Utah

Tony noted that the metering is something that is just beginning to take effect in some portions of Utah. The state legislature passed a requirement for metering secondary water systems. Tony remarked that having moved to the southern part of the Salt Lake Valley, he is on a pressurized secondary water system. Just this week, a meter was installed. Where his community has been billed on a flat rate heretofore, he expects that next summer, he will see a separate notation on the water bill for outdoor water use, as well as indoor culinary use.

Todd Stonely of Utah provided a little more insight on Utah's legislation. The legislation that Tony referred to only requires new meters on secondary systems or dual systems with untreated water. It didn't require retrofits of all existing systems that don't have meters. The legislation authorized the Board of Water Resources to provide low interest loans at 1% interest for secondary metering projects. There has been a great deal of interest in this funding, and they've funded projects in the range of $20-25 million over the last three or four years. They anticipate this funding will continue as long as there is a need.

North Dakota

Jen Verleger stated that the North Dakota State Water Commission requires monitoring of most uses, including all industrial uses. Most of the industrial uses are required to have real time monitoring. Thus, the State can look at people's water use on a real time basis. We tend not to do that unless problems have been reported. Nevertheless, we have that ability, which is uploaded into the water permitting system, where the use is recorded. Over the last couple of years, the State Water Commission has been working on a technological initiative to expand data collection capabilities, while saving time and money, and without additional staff. This initiative involves a solar-powered remote sensing device called Pushing REmote SENSors (PRESENS). PRESENS was designed and tested by an existing staff of IT professionals, hydrologists, and technicians. They're now working with a vendor to manufacture the sensors, which cost about $300. These remote sensor units have been deployed in the field for our own use. Though originally designed to provide real-time water level and streamgage data, many other sensors are being added to monitor soil moisture and temperature, and atmospheric data such as rainfall. I believe the data is uploaded to the State Water Commission system's database on about an hourly basis. As I understand, it's a pretty advanced program.

Washington

Mary Verner remarked that Washington State has a less well organized system than that just described in North Dakota. In Washington, they have authority to require metering for most of the industrial uses, and large irrigation and municipal uses are metered. Recently, there have been some forays into metering smaller quantity usage for permit-exempt domestic wells in a couple of pilot basins to determine what metering of those smaller quantities tells us about the impacts on streamflow. We have a lot to learn from other States.

Oregon

Tom Byler commented that this is an area of great frustration in Oregon. Working with our state legislators, we often find that they assume that the Water Resources Department (WRD) has the same ability that a municipality might have in terms of being able to track the use of water across the State. We are very far from that ability. As a point of reference, we began in the mid-1990s to require new permits, new water rights, to measure and report their uses. Unfortunately, most of the water rights that we manage pre-date the 1990 requirement. Thus, a category of junior users have measurement reporting requirements, while many of our senior users do not. The WRD has the authority to require measurement devices, but we don't have the authority to require reporting. We can go to more senior users and require them to install measuring devices, and we do that on a fairly regular basis in areas of great need. However, getting the reporting and getting the data can be a challenge if we're working with an uncooperative water right holder.

We have some other programmatic tools that we can bring to bear. One is called the Serious Water Management Problem Area. It allows us to work with our Commission to adopt rules on a larger landscape scale. Both require measurement devices and require reporting. To date, we've used that sparingly. I anticipate that may be a tool we use more as we face increasing scarcity across the State.

We strive to be as collaborative and cooperative as we can be in working with our water right holder community. We recognize that when we require measurement devices, there are costs associated with that. In recent years, a cost share fund has helped us to be a partner in helping the individual water users install devices. That, of course, has been suffering in recent years, especially this current year given budget reductions. We are hopeful that we'll be able to find more state resources, as well as leverage other funding sources, to help communities modernize their systems and have appropriate measuring and reporting. Thank you.

Kansas

Earl Lewis spoke to Kansas' water metering and permitting. Kansas has had a water use reporting requirement since about 1986. Meters have been required at some level since the early 1990s. In the state of Kansas, at least 95% of our water users are metered. Obviously, the majority of those are for irrigation. There remain a few pockets here and there that are not metered yet, but we're working towards full metering.

In the early days of water use reporting in Kansas, it was a law that everybody with a non-domestic water right had to turn in a report by March 1 each year. At that point, as you might expect, compliance was not great, maybe 40-60%. In the late 1980s, early 1990s, a fine was put in place of no more or no less than $25 per water right, if their water use report was not turned in by March 1. Correspondingly, the number of folks complying with that jumped as well. Nowadays, the Division has fewer to follow up on each year. Further, over the last 5-7 years, the State has moved towards online reporting. Formerly, a postcard was sent out to water right holders. One would fill out the postcard and send it back, and staff with the Division of Water Resources would enter the information into the State's database. Working with the U.S. Geological Survey and the Division database folks, this is now an online reporting system. Two years ago, we instituted a fee of $20 per water right for those that still turned in a paper water right. The number of folks turning in their reports online went from about 25% to 75% in a single year. Folks didn't want to pay the $20 fee to have somebody put their water use information in for them.

The State also has a QA/QC agreement with the USGS to run district statistical evaluations to see if there are folks that have turned in information that appears to not be in line with their historic use or that of their neighbors. This way we can try to clean up the outliers and improve the water use report. It usually takes about six to nine months to get that done.

Overall, we have a good reporting process in Kansas. We don't have the real time data that Jen in North Dakota spoke about, as our process is done on an annual basis. We have had some discussions about going to remote metering, but we have not gone that direction yet. Having this data has helped us to make a lot of good decisions over the years.

Arizona

Kyle Miller said that in Arizona, they require non-exempt wells inside the Active Management Areas (AMAs) to meter and report their well pumpage. Any well with a pumping capacity of under 35 gallons per minute, does not have to be reported. That being said, about half of our estimated statewide water use is outside the AMAs. There are no reporting requirements there. Some rural communities have expressed concerns that the estimates might not be that accurate. Thus, as part of the Governor's Water Augmentation, Innovation and Conservation Council, we've created a subcommittee focused on groundwater outside the AMAs. We're following that closely but so far there has not been much political will to require reporting or metering outside of the nine AMAs. That subcommittee has only suggested voluntary conservation measures.

Similar to some of the previous commenters, in Arizona, we have started to improve our online reporting. Most can report online. However, the number of people who file online isn't that high. I like the idea of charging a fee for a paper form. I'll bring that back to our Water Resources Department. Many of the older individuals in the agricultural community prefer to have a piece of paper to write down their water usage and send it in.

Mary noted that it sounds like all of the States will benefit from advances in technology and the pilot programs and experiments. We've heard about great work going on that eventually will make its way to the States for our own implementation.

WALLA WALLA PARTNERSHIP

Mary Verner and Tom Byler shared their work on a transboundary basin. This area is increasingly known for its Walla Walla wines, whereas previously it was known for its Walla Walla onions. We want to report out to all of you on a multi-faceted undertaking that is involving increasing coordination and collaboration between our two states, Washington and Oregon, and as well a federally recognized tribe with land and ancestral territory on both sides of the state line. That is the Confederated Tribes of the Umatilla Indians.

Oregon

Tom Byler remarked that Oregon is excited to partner with the State of Washington to approach water management more holistically in a basin that has a state boundary cutting through it. This is an area with an interesting history. I would add that it's an area of collaboration around water that dates back 20 plus years, in particular in terms of trying to find collaborative solutions around endangered aquatic species issues. It is also an area where there has been a strong culture and history of local collaborative work. I think that will continue. I also think we're in an interesting element of this partnership and I'm intrigued to see how it plays out. There needs to be a bit of a refresh and a reset of some of the collaborative structures. Working with the local community is going to be challenging in some respects because of the history though it shows a lot of promise.

On the Oregon side, we've been challenged with declining aquifer systems, in particular, basalt aquifers and wells. A few years back, we stopped issuing new permits in the area, with the exception of de minimis exempt uses. We approved rules to declare a serious water management problem area, which allows us to require metering of wells and reporting. We are likely headed to some sort of critical groundwater area designation, which would give us increased administrative tools to be able to manage the groundwater systems.

The opportunity has arisen for us to work on a more comprehensive knowledge of the basin system. We are embarking on a groundwater study in partnership with the USGS and the Washington Department of Ecology. It is currently being scoped out. In the next few years, Oregon and Washington, the Umatilla tribes and the users in the basin will get a much stronger baseline understanding upon which to figure out our longer term management approaches. This is an important element that will help us make good decisions down the line.

One of the things that we try to focus on when we work on improving our baseline understanding of the water systems, is to make sure that we bring the local community along. They are partners from the standpoint that we inform them about the process as we go, under the principle that the data is only as good as the trust and confidence that the local community has in it. This is something we will engage in as we go down the path. Our first public meeting relative to the study will be a virtual meeting. As I understand, participation will be really strong. So we're excited about that.

We look forward to opportunities to work collaboratively with the State of Washington. We've had really strong communication for some time. We realize that there are big challenges ahead in terms of how we make this work from a more holistic management standpoint. I'm encouraged because we're all

motivated and I believe we're pointed in the same general direction. Working through the jurisdictional issues is going to be difficult, but we look forward to the challenge and the opportunity.

Washington

Mary Verner commented that it has really been a pleasure to work with Oregon. We have appreciated the willingness to address the local politics, the state politics, the realities of our budgets, the realities of our capacities to take on big new initiatives and the need to get this work done.

As Tom mentioned, the area has really needed attention at the leadership level in both states for quite some time. About twelve years ago, the Washington State Legislature recognized the need for something to change with regard to water management on the Washington side and set up a local organization in statute for a ten-year pilot project. We've learned a lot from that pilot project.

Of significance, we've learned that delegating authority for actual water management to a local nonprofit entity just didn't work. As we wrap-up that partnership this year with a report back to the legislature, we anticipate resuming all of the authorities that the pilot had delegated out to the local organization. As all of you can imagine, that is causing a little friction between the idea of local control and the reality of just what the state agency really has the capacity and capability and authority to do that the local organization could not take across the finish line.

Notably for Washington, Oregon authorities and capabilities are also going to reach a point where we'll have to bring our authorities to bear to get some money into the basin for water infrastructure as part of the solution. The solutions that did not require major infrastructure authority have been examined numerous times. When the groundwater and surface water studies reach a point where they can justify and validate infrastructure investment, we expect to be there. We anticipate major investments on both sides of the state line.

As Tom mentioned, we have quite a few things to work through, not the least of which, is that our water laws are not exactly alike on both sides of the state line. There are some water rights status issues to work through, though we greatly appreciate the cooperation.

Likewise, I would have to note and commend the leadership of the Umatilla tribes. They have been very supportive of collaboration and have engaged with us collaboratively, even though they carry with them the Endangered Species Act big stick. They are keeping that as a knowledge base, while not refusing to cooperate with us, based on the authorities that they and the federal Endangered Species Act implementation agencies could bring to the discussion.

Tony Willardson pointed out that in the briefing materials, under Tab O, there is information as well as some links for anyone interested in finding out more about the Walla Walla and the Walla Walla Basin Watershed Council.

SUNSETTING POSITIONS FOR 2021 SPRING MEETINGS

For members' awareness, the positions that will sunset at our next meeting are shown below so that you can look at these in advance of the Spring 2021 meetings.

Position #417 – supporting Forecast Informed Reservoir Operations and Innovations
Position #418 – supporting Weather Station Networks
Position #419 – supporting Water Infrastructure Funding
Position #420 – regarding Integrating Water and Energy Planning and Policy
Position #421 – supporting Federal Research on Climate Adaptation

OTHER MATTERS

There being no additional matters, and hearing no objection, the Water Resources Committee meeting was adjourned at 11:20 a.m.