

MINUTES
of the
WATER RESOURCES COMMITTEE
Wild Horse Pass – Gila River Hotel & Casino
Chandler, Arizona
March 21, 2019

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MEMBERS AND ALTERNATES PRESENT

ALASKA	--
ARIZONA	Einav Henenson Trevor Baggioire
CALIFORNIA	Jeanine Jones
COLORADO	Amy Moyer
IDAHO	Jerry Rigby John Simpson
KANSAS	Kara Hendricks
MONTANA	--
NEBRASKA	--
NEVADA	--
NEW MEXICO	John D’Antonio Greg Ridgley
NORTH DAKOTA	Jennifer Verleger
OKLAHOMA	Julie Cunningham
OREGON	Doug Woodcock
SOUTH DAKOTA	Kent Woodmansey
TEXAS	--
UTAH	Todd Stonely

WASHINGTON

Buck Smith

WYOMING

Pat Tyrrell
Chris Brown
Steve Wolff

GUESTS

Ward Scott, Western Governors' Association, Denver, CO
Virginia O'Connell, Arizona Water Banking Authority, Phoenix, AZ
Tracy Streeter, Burns & McDonnell, Kansas City, MO
Jeri Sullivan Graham, University of New Mexico, Los Alamos, NM
Caitlin Parker, Arizona Department of Water Resources, Phoenix, AZ
Kyle Miller, Arizona Department of Water Resources, Phoenix, AZ
Theresa Johnson, Arizona Department of Water Resources, Phoenix, AZ

WESTFAST

Kevin Werner, National Oceanic and Atmospheric Administration, Seattle, WA
Patrick Lambert, U.S. Geological Survey, Salt Lake City, UT
Chris Carlson, U.S. Forest Service, Washington, DC
Andrew Hautzinger, U.S. Fish and Wildlife Service, Albuquerque, NM
Doug Curtis, Bureau of Land Management, Washington, DC
Cherilyn Plaxco, U.S. Army Corps of Engineers, Little Rock, AR
Deborah Lawler, U.S. Bureau of Reclamation, Salt Lake City, UT
Mindi Dalton, U.S. Geological Survey, Atlanta, GA
Bob Joseph, U.S. Geological Survey, Austin, TX
Tim Stryker, U.S. Geological Survey, Reston, VA
Stephen Bartell, U.S. Department of Justice, Washington, DC

STAFF

Tony Willardson
Adel Abdallah
Michelle Bushman
Sara Larsen
Cheryl Redding

WELCOME AND INTRODUCTIONS

Tim Davis, Montana, WSWC Vice-Chair, called the meeting to order. Tom Byler, Oregon, Committee Chair was unable to attend due to the State legislative session. Tim requested introductions be made around the room.

APPROVAL OF MINUTES

The minutes of the meeting held in Coeur d'Alene, Idaho on October 25, 2018 were moved for approval by Jen Verleger. The motion was seconded and unanimously approved.

SUNSETTING POSITIONS

Position #391 regarding renewable hydropower development with proposed revisions was brought before the Committee. There were no comments. Todd Stonely suggested a grammatical change.

Position #390 supporting actions to address rural water infrastructure needs and projects was also brought before the Committee with suggested revisions. Jeanine Jones commented as background about the inserted whereas clauses. She also referenced the second to last resolved clause and provided clarification for the additions.

Tim Davis proposed approving the additions and othe revisions to the positions. John D'Antonio seconded the motion. The Committee approved forwarding Positions #390 and #391 as revised to the Full Council for adoption.

Position #389 urging Congress and the Administration to prioritieze federal programs that translate science on climate and weather extremes to water resources management actions was discussed on the Executive Committee conference call. Jeanine Jones noted that the position could be allowed to sunset as the concept is duplicative of other positions. She commented that other positions do not call out Regional Integrated Sciences and Assessments (RISAs) specifically, but the RISA program could be added to an appropriate policy.

Jeanine Jones moved that position #389 be allowed to sunset. The motion was seconded and unanimously approved. Thus, the Committee will recommend that this position be allowed to sunset, and add RISAs into a future policy as appropriate.

THE STATE OF WATER SUPPLY RELIABILITY IN THE 21ST CENTURY

Tony Willardson referred to the testimony he gave before the House Natural Resources Committee's Subcommittee on Water, Oceans and Wildlife on February 26, 2019, which is included under Tab E of the briefing materials.

Drawing on previous WSWC positions, the testimony submitted expresses support for water data, climate adaptation, infrastructure, drought preparedness, subseasonal to seasonal precipitation forecasting, rural water projects and work on tribal settlements. All of those topics are related to water supply reliability, climate variability and adaptation.

With respect to tribal settlement issues, Tony reported that Michelle Bushman on the WSWC staff will be testifying on April 4, before the House Natural Resources Committee on H.R. 1904, a bill to amend the Omnibus Public Land Management Act of 2009 to make the Reclamation Water Settlements Fund permanent.

WATER INFRASTRUCTURE WORKSHOP SUMMARY/DISCUSSION/NEXT STEPS

Doug Woodcock of the Oregon Water Resources Department commented that he understands that the issues the WSWC takes up do not always align for various states at the same time. That said, infrastructure is swirling in Oregon right now. The WSWC put together a report in about 2011. Oregon would be interested in knowing how that publication was promoted. We now have a new Administration and they are talking about infrastructure. Is there an opportunity to dust off that report and update it for 2019? Would there be value in an effort to update the report?

Tony Willardson noted that the WSWC has in the past done a summary of state financing programs. The information is rather dated. We could begin with the presentations given at the infrastructure financing strategies workshop over the past two days, prepare a summary and also include information from the states that were not in attendance. Further, we are going to be meeting with the "Water Subcabinet" on April 3rd, and we will be discussing how to work with our federal partners to leverage resources for infrastructure.

Tim Davis recommended preparing a summary on the conversations with the Administration. Infrastructure funding has shifted dramatically over the last 8-9 years. Tim suggested linking to each of the member states' websites for further information. Someone suggested rather than doing a summary by state, to do the summary by types of funding programs. This would include things such as drinking water, wastewater, storage, etc.

Tony offered that the WSWC has not done a summary of the state programs for some time. It is hoped we can build some momentum with this Administration and their emphasis on infrastructure.

Tim reiterated that staff should put together a summary following the meeting with the Subcabinet.

NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS)

Tony Willardson provided an update, stating that the WSWC has been active and supportive, as has the Western Governors' Association on drought preparedness and planning. Together, we were a driving force behind Congress authorizing the National Integrated Drought Information System (NIDIS) Act. Tony co-chairs the NIDIS Executive Council, along with representatives from National Oceanic and Atmospheric Administration (NOAA) and USDA. In 2012, a National Drought Forum was held in Washington, D.C. Kansas Governor Sam Brownback was a prominent key note speaker. NIDIS is preparing for another National Drought Forum in July 2019. There is an announcement in your briefing materials under Tab F. This year's forum will be held July 30-31 in Washington, D.C.

Last year, Congress reauthorized the NIDIS program, although the President did not sign the legislation until January 2019. Some of the work done by our WestFAST partners on the Southwest Oklahoma Water Plan is an example of bringing together the federal, state, and local partners and interests to try to focus drought and related efforts.

S2S PRECIPITATION FORECASTING IMPROVEMENT EFFORTS

Jeanine Jones reported that in May, the WSWC and California Department of Water Resources will co-sponsor a workshop on the status of efforts to improve subseasonal and seasonal (S2S) precipitation forecasting, working in partnership with NOAA and the research community. The workshop will be held in San Diego, California on May 22-24. A number of folks from NOAA will be participating and attending.

The Weather Research Act of 2017 was reauthorized as part of the NIDIS reauthorizing legislation. It gives specific direction to NOAA to start improving the skill of their forecasts. The 2017 version of the Act directed NOAA to do a report to Congress on what it would take for them to improve S2S forecasting. That report is still pending in internal review stages within NOAA. One approach is to attempt some pilot projects, such as: (a) a pilot project for western winter precipitation forecasting; and (b) a pilot project for mid-western states for summer precipitation forecasting, where it is very important for agriculture.

Meanwhile, the S2S Precipitation Coalition was in Washington, D.C. last month and met with the Acting Administrator of NOAA and talked about the atmospheric rivers research work being done in California and the use of forecast-informed reservoir operations (FIRO). With FIRO, the idea is that if you were able to use forecasts, you could operate the reservoirs much more efficiently than is now allowed under U.S Army Corps of Engineers' rule curves, for example.

Tony commented that he was in Washington, D.C. and joined with the S2S Precipitation Coalition on a number of visits, including meeting with California Senator Diane Feinstein. She specifically asked for something in writing related to the challenges the Corps faces given many of their rule curves are set by legislation. The group also met with the staff of House Speaker Nancy Pelosi. In California, there is great interest in moving S2s and FIRO forward.

Tony highlighted materials under Tab G. There is a flyer on improving long-range precipitation forecasting. A separate sheet summarizes the conclusions of the Bureau of Reclamation's subseasonal forecast rodeo.

WSWC/NASA TECHNOLOGY TRANSITION WORKSHOP

Under its Applied Sciences Program, the National Aeronautics and Space Administration (NASA) has established a Western Water Applications Office (WWAO), which is headquartered at the Jet Propulsion Laboratory (JPL) in Pasadena, California. It's function is to work to facilitate development and application of NASA science to western water issues. Jeanine Jone reported that about ten years ago, NASA started using California as a "guinea pig" for some of the JPL research projects. California's Department of Water Resources partnered with them in using a type of Light Detection and Ranging (LIDAR) remote sensing method that uses light in the form of a pulsed laser to measure distances for monitoring land subsidence due to groundwater extraction. It was a very useful exercise.

A workshop will be held this summer with NASA that is intended to spark a discussion with NASA researchers about how they can practically transfer their basic research to applications. This may be the first in a series of workshops to try to get their research into useful hands, so the data can be functional and sustained over the long term. NASA has access to very large high performance computing systems and when they wish to transfer a project such as evapotranspiration estimating, for example, to a state agency, the state agencies often don't necessarily have those kinds of computing resources or access, etc.

Tony Willardson added that the Management Subcommittee discussed this workshop during their meeting. CDWR and NASA have also been working together on aerial snow surveys, using LIDAR to map the topography in the summer, and then the depth of the snowpack in the winter. Tony pointed out that the Western Governors' Association has supported additional appropriations for USDA's Natural Resources Conservation Service (NRCS) and their snow survey program. The NRCS budget is relatively small portion and gets little attention or consideration. It has not been increased for a number of years. Further, there are staffing challenges, and the offices cannot continue operations at the current funding levels. Even if fully functional, the NRCS program and similar in situ programs operated by CDWR and other can only instrument a relatively small area, compared to the extensive, but expensive coverage provide by aerial snow surveys. Together, NRCS can corroborate remote sensing data.

WaDE UPDATE/INTERNET OF WATER

Sara Larsen, WSWC Senior Program Manager, provided an update on the Water Data Exchange (WaDE) Program and water data gathering and visualization in general. Under Tab H in the briefing materials, Sara included: (1) a leaflet on new member resources available on our website; (2) a “save the date” announcement for the 2019 Water Informatino Management Systems (WIMS) Water Use Workshop; (3) links to upcoming reginal and national events related to water data and hydroinformatics; (4) a description of the “Internet of Water”; (5) information on some new legislation; and (6) a review of the entire WaDE program from 2018.

The WaDE portal is found online at *wade.westernstateswater.org*. Most Council member states have some water-related data in WaDE. Our goals for this year are to get more watershed-based information and beef up the water use component.

Over the past year, there have been some changes. The states are creating more sophisticated and more readily available open water data portals on their own. This makes the data very accessible and easy to add documentation to. Some states are sharing data using other platforms. Due to that shift in data availability, the WSWC will be requesting the states list their own data platforms, and then we will just interact with the states. This gives us a lot of flexibility. We will be coming to your portal and bringing information to our regional WaDE portal. WaDE can become the West’s “standards setting body” for water data.

There has been an influx of interest from philanthropic groups in WaDE and data sharing. We have received funding grants from the Water Foundation, the Mitchell Foundation and the Moore Foundation. Some of those are consortiums of other philanthropic groups like Bechtel and the Walton Family Foundation. This will allow us to keep the WaDE program going with current budgeting thru at least 2021. It also allowed us to hire Adel Abdallah on a full-time basis as a Senior Hydroinformatics Specialist. The WSWC will also be hiring a couple of summer interns as well. The interns will be working for the states of Wyoming and Utah. Further, we have hired a contractor to help move our architecture from a distributed node and put it into a cloud architecture that will be much easier to manage.

One of the use cases we are looking at is the Upper Colorado River Basin water budget. To help with that effort, we held an Aspen Institute-sponsored Colorado River Basin Data Roundtable on January 28-29, 2019 in Salt Lake City, Utah. The notion of water use and consumptive use was the topic du jour. A second group attending this meeting was the open evapotranspiration (ET) group, stemming from NASA and the Desert Reseach Institute. They are trying to show consumptive use ET information online. There was a third group called the Internet of Water who also participated. We discussed how the three groups could work together. We will try to convene folks on the Colorado River Basin to look at consumptive water use and methods.

A Water Information Management Systems (WIMS) Water Use Workshop is planned for September 16-19, 2019 in Fort Collins, Colorado. This year's WIMS meeting will be co-hosted with the United States Geological Survey (USGS). We will be contacting speakers for the workshop in the coming months. WSWC members are welcome to come and participate.

There is a new section on our website called WSWC Member Resources. This will be a place to post materials for subcommittee activities and workgroups. Please look under Tab H in your briefing materials for more information. We have put together some dashboards, which makes it possible for you to search for specific information.

The Internet of Water is a data group funded by the Moore Foundation. They basically act as a library. So, if you have data you want to share, but you don't know what to do with it, or where to go, or how to process it, you can go to this group which will be acting as a catalogue. Peter Colohan, formerly with NOAA is the Executive Director, and "librarian" for this effort.

Sara highlighted a couple of pieces of legislation that were passed on open data, including the Geospatial Data Act of 2018, which was signed into law by the President on October 5, 2018. The GDA was included as a component of the FAA Reauthorization Act (H.R. 302, P.L. 115-254). The GDA reflects growing recognition of the essential role of geospatial data and technology in understanding and managing our world. It highlights the need to support continuing development as critical investments for the Nation.

A letter from WGA is in the packets regarding data sharing.

WATER RESOURCES RESEARCH: PROGRAM & POLICY SOLUTIONS

Sharon Megdal, Director of the Arizona Water Resources Research Center (WRRC) addressed the group. She noted that the WRRC is a bridging organization. We bridge the work of students and academia to the real world.

States rely on groundwater to different degrees across the West. The WRRC focuses on governance and management of groundwater, and we are looking at recharge and banking. Arizona has a model framework for water banking, and has been at it for a very long time. The WRRC will be doing some case studies on recharge projects. Sharon has been working on recharge since prior to 2002.

Water governance is decentralized in the United States. Having prepared a presentation about the U.S. and groundwater, Sharon realized one cannot paint the U.S. with one brushstroke. There is a lot of variation across the states and how they handle water governance. Sharon looked for surveys and found the WSWC had done a report in the early 1990s. The WRRC did their own survey as they couldn't find the information they wanted "out there." Sometimes describing what is available is important to people, even within the same state. It is hard to get funding for these types of studies. With respect to studies, insufficient capacity was a topic that

came forward in the water quality and water quantity areas. It could be a useful study given some collaboration with the WSWC and a university. There is a tremendous interest in groundwater governance.

The WRRC would be interested in partnering with the WSWC in collecting information. We tend to be experts in our own area, but we may not know what is going on in other states or other arenas. There is a lot of interest in recharge. There are internships available for students. There is great value in using interns. It is important to train people.

The WRRC bridges the real and academic world. There are many needs for bridges. I serve on the American Water Resources Association (AWRA) Board. AWRA has a Policy Committee on State Water Plans, which is under the direction of Brenda Bateman of Oregon. A monogram addressing water planning in seventeen states is available on the AWRA website. AWRA has three conferences a year and some specialty conferences. They may hold a conference on land and water planning in 2020.

Sharon also mentioned the Universities Council on Water Resources (UCOWR), which she sits on as well.

In response to a question, Sharon noted she has done a lot of work in Israel, and in Jordan. She has found that people value knowing what is going on in other places around the world. Sharon has studied Israeli water management and shares lessons learned. Israel's technology is cutting edge.

STATE GROUNDWATER RECHARGE PROGRAMS/POLICIES

Arizona Water Banking Authority Manager, Virginia O'Connell, used a powerpoint presentation. She began providing background information on groundwater programs and policies in Arizona. The Central Arizona Project (CAP) came online in 1985, bringing surface water from the Colorado River to central Arizona. It was intended to relieve pressure from pumping ground water resources. However, CAP water was very expensive, too expensive for agricultural use. Further, cities did not at the time have sufficient demand to put all the water to municipal use. Arizona was not then using their full allocation of Colorado River water.

The Ground Water Management Act of 1980 had no framework for groundwater recharge. In 1986, the legislature passed the Underground Storage & Recovery Act. A few years later, in 1990, the Indirect Groundwater Storage & Recovery Act was enacted. In 1994, they streamlined all of the recharge programs and came up with the Underground Water Storage, Savings and Replenishment Program. This establishes a separate permitting system for recharge facilities, water storage, and recovery.

The Arizona Water Banking Authority (AWBA) was established in 1996, and its mission was to store all unused Colorado River entitlements. The objectives of this effort are to: (1) assist in fulfilling water management objectives in Active Management Areas (AMAs); (2)

provide back-up supplies to municipal Colorado River contractors and CAP subcontractors during shortages; (3) support the settlement of certain tribal water rights claims; (4) provide a mechanism for interstate water banking with Nevada and California; and (5) facilitate loan credits and provide water banking services.

There are different types of underground storage facilities (USFs). Some facilities have been constructed, such as percolation basins or recharge and recover wells, while others are managed, including use of the natural river course, requiring no construction. Other so called groundwater saving facilities (GSFs), include works to deliver renewable surface water supplies “in-lieu” of pumping groundwater. Groundwater use is curtailed by an equivalent amount saving groundwater. Renewable supplies are only accessible through storage partnerships.

There are 101 recharge and storage projects in Arizona, with 84 USFs and 17 GSFs. In total, Arizona has stored 11.8 million acre-feet (Maf) for future use. Further, the AWBA has stored 600,000 acre-feet for Nevada. Cities, utilities and other entities have stored another 6.1 Maf, and tribes 1.5 Maf. Under new interstate agreements, Arizona is also hoping to store water in Lake Mead. In 2017, they recovered 222,850 acre-feet of water. Over a 20-year period from 1993-2013, the water table in certain sub-basins has risen over 58 feet.

In summary, Arizona’s recharge and recovery programs promote use of renewable water supplies, augment future water supplies, improve local aquifer conditions, accommodate seasonal demand patterns, and provide greater flexibility, efficiency and cost-effective water management.

Questions and Answers

Kevin Frederick: The WSWC has a Water Quantity/Water Quality Nexus work group. Are there water quality issues you have had to deal with and how do you manage to do that?

Virginia O’ Connell: There is a rigorous program with specific metrics that must be met. Some concerns have been addressed through monitoring.

Kevin Frederick: Many western states are oil producers. How can we eliminate some of the permitting processes or streamline them.

Virginia O’ Connell: The more you can do upfront, the better.

John D’Antonio: Can you explain Arizona’s policy as it relates to recharge and storing water as a beneficial use? What about the use to which the water is put once you take it back out? How do you reconcile that?

Virginia O’ Connell: Recharge is a beneficial use. When you pump the water, you can use it any way you would have used surface water. Effluent or reclaimed water can also be used for recharge – with some management.

Todd Stonely: You have 101 recharge facilities. Do you invest in recharge wells and management facilities?

Virginia O'Connell: I would say both. A lot of infrastructure was already in place.

Todd Stonely: Do you use injection and recovery wells?

Virginia O'Connell: Yes. Aquifer Storage and Recovery (ASR) wells.

Tony made a comment and raised a question about the possibility of a “run” on the water bank. Is there sufficient capacity to recover water stored by state and interstate participants when it is requested?

Virginia O'Connell: Up to now, that hasn't been a problem.

Roundtable Discussion

Other states around the room briefly described their own groundwater recharge efforts.

California

Jeanine observed California has had formal recharge programs since WWII, but groundwater was not managed at the state level. Case law has governed groundwater and recharge activities. There are some large 1Maf projects that have been built, but now you see more small projects using excess water for ad hoc recharge activities. You can flood almond orchards when they're dormant for recharge. Last summer a bond initiative included \$1 million for new recharge projects. Flood Managed Aquifer Recharge (Flood-MAR) is an effort to use green and grey infrastructure to take advantage of flood waters to redirect and use them to recharge aquifers.

Colorado

Amy Moyer reported Colorado has connected surface and groundwater under their water rights administration system. ASR is part of the State's water plan for addressing future needs.

Idaho

John Simpson described groundwater recharge and a big policy play arising out of the need for conjunctive management of surface and groundwater as a result of the settlement of the Eastern Snake Plain Aquifer adjudication. An initial recharge target of 250,000 acre-feet/year has exceeded by 100% up to 500,000 af/yr using recharge basins off the Snake River. Currently, there is no system in place for recovery of the water, just a process for recharge to sustain use of the resource and rebuild groundwater levels. Jerry Rigby noted that Idaho struggles to store “flashes” of water when runoff is high. Sometimes water can be incidentally recharged through

canals. During seasonal use no credit is given for incidental recharge, but intentional diversion of water into canals for recharge during the “shoulders” of the season are given credit.

Kansas

Cara Hendricks observed Wichita’s groundwater recharge program includes a number of projects that have led to some recovery of water levels, but gains are limited by storage space. Tracy Streeter, former Director of the Kansas Water Office, explained a proposal for developing aquifer maintenance credits. The intent was to treat surplus water and provide it to the system without the water having to be pumped, but it creates administrative concerns related to management water rights.

Montana

There isn’t much recharge in Montana, according to Tim Davis, but the state water plan calls for developing a program in the future.

New Mexico

John D’Antonio said that an ASR program was put in place in 2009. Some infiltration projects were approved on the scale of a few thousand acre-feet, but nothing much since then. The City of Albuquerque has focused on conjunctive aquifer management, including ASR, and reuse and recycling options. The City of Rio Rancho was the first to replenish groundwater by putting water back in the aquifer through a direct injection in 2011 recharging close to 1 million gallons of potable water, and in 2017 began injecting treated wastewater. The State is looking for ways to expedite the permitting processes. ASR is only available for public entities, and ways to open up opportunities for public-private partnerships are being considered. Upcoming meetings are designed to find practical solutions.

North Dakota

Jen Verleger, with the North Dakota Attorney General’s office, was not aware of any legal issues that had arisen on this topic, though there are some recharge projects. Of note, the state legislature is looking at storing oil and gas in pre spaces, like we do with water.

Oklahoma

Julie Cunningham noted that as part of a 2012 Update of the Oklahoma Comprehensive State Water Plan, the potential for recharge was considered. An earlier 2010 report addressed issues and included recommendations. The Oklahoma Water Resources Board has rules that address both quantity and quality concerns, including how much recharged water can be taken out. There is legislation now that would authorize a pilot study.

Oregon

Doug Wookcock explained Oregon's water rights system provides authority for ASR, with recharge and withdrawals covered under the same certificate. A separate water right is required for passive recharge. There are about 20 permitted projects, but they are very small. The State is looking for more opportunities. Recharge projects are permitted with a five-year test period that requires annual reporting, after which the permit may be extended or a water right may be applied for.

South Dakota

Kent Woodmansey said there hasn't been a need to spend much time on groundwater recharge issues in the State, though there are issues related to wastewater disposal.

Texas

Jon Niermann reported that similar to other states' programs, Texas regulates ASR to protect sources of drinking water, as well as the storage capacity of the aquifer. In Texas, a water right owner has the right to inject that water and withdraw the recoverable portion. San Antonio has a recharge project co-located with a desalination facility.

Utah

Todd Stonely noted there are only a handful of recharge projects in Utah, using excess flows in the Spring. A few larger water districts have looked at ASR, including operation of Sand Hollow Reservoir by the Washington County Water Conservancy District. Incidental recharge from the reservoir was anticipated, with recovery of the water planned. The State has a permitting process in place, which includes consideration of water quality. A report was prepared to guide recharge efforts. We are taking baby steps. It is something that will likely expand in the future as water becomes more scarce. Another related consideration is preserving levels of the Great Salt Lake, so it doesn't dry up.

Washington

Buck Smith explained while western Washington is wet, the eastern half is dry. Recharge hasn't been very successful in the western part of the State, given it is wet, as well as leakage from unconfined aquifers. One project was recharging in the winter to meet demands in the summer, but the water did stay. There were also problems with water quality and mixing waters with different chemistry. In the Walla Walla basin in eastern Washington a recharge project was successful in augmenting flows, restoring flows in the summer that had been dry.

Wyoming

Pat Tyrrell said the State Engineer can permit ASR programs and projects, but there hasn't been much demand. Often there is no surface water source to recharge overdrawn aquifers. One

utility pilot program was discontinued after its completion. One application for a permit on an over-appropriated creek would have diminished the incidental recharge from the bed and banks that was the source of water for other junior and senior rights.

Kevin Federick reported the Department of Environmental Quality (DEQ) is seeing more interest in recharge related to management of wastewater and produced water from oil and gas. DEQ has a role in permitting injection wells, and replenishment and protection of drinking water supplies. They would like to promote successful applications, and hope to learn from the experience of other states that have demonstrated leadership such as Idaho, New Mexico and Oklahoma, which have legislation, rules and regulations.

DRAFT FY2019-2020 COMMITTEE WORK PLAN

A brief discussion of the draft 2019-2020 committee work plan led to a few suggestions for changes. Jeanine Jones asked that the first item related to WaDE and water observation programs be separated into two parts, one emphasizing support for snow surveys and water supply forecasting, streamgaging, and other critical federal programs.

It was also determined that rather than highlighting one workshop, the item related to subseasonal to seasonal precipitation forecasting should be more broadly focused on efforts to promote research and practical applications of the science to water management.

Regarding the energy and water nexus, possible work in partnership with Sandia National Lab was dropped as not yet “ripe” for consideration, at Jeanine’s suggestion.

Kent Woodmansey noted the earlier discussion on the need to update and summarize information shared on various state water project and program financing strategies.

Work to update a report on state ground water recharge programs and policies was also supported, together with related information on water quality.

Doug Woodcock asked if there would be interest in addressing well drilling regulations among the various states. Pat Tyrrell agreed it might be worthwhile, as there has been an ongoing debate over rules in Wyoming back and forth for 10 years.

A revised draft workplan will be considered at the summer meetings.

SUNSETTING POSITIONS FOR SUMMER 2019 MEETINGS

The positions adopted July 15, 2016 that will be considered for sunseting or renewal at the upcoming Summer meetings are listed below. All are under the purview of the Water Resources Committee.

- #392 - Expanded and enhanced west-wide extreme precipitation monitoring
- #393 - Authority of States over water resources used in hydraulic fracturing
- #394 - Missouri River Mainstem Reservoir System/Fish & Wildlife
- #395 - Department of Energy National Laboratories

OTHER MATTERS

Tim moved a resolution of appreciation acknowledging Pat Tyrrell's service with the WSWC. He has been a Council member for Wyoming since 2001 – so nearly 20 years. He served as WSWC Chair from 2014-2016, Vice-Chair two years prior, and Secretary-Treasurer before that. Tim remarked that although they have been on opposing sides in the courtroom in state battles, he has always appreciated Pat's insights and leadership on the WSWC.

There being no other matters, the meeting was adjourned.