

MINUTES
of the
WATER RESOURCES COMMITTEE
KwaTaqNuk Resort-Casino
Polson, Montana
August 4, 2022

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MEMBERS AND ALTERNATES PRESENT

ALASKA	Emma Pokon Julie Pack
ARIZONA	Amanda Long-Rodriguez
CALIFORNIA	<i>E. Joaquin Esquivel Jeanine Jones</i>
COLORADO	Jeremy Neustifter
IDAHO	John Simpson Jerry Rigby
KANSAS	<i>Connie Owen Kenneth Titus Matt Unruh</i>
MONTANA	Anna Pakenham Stevenson
NEBRASKA	Jim Macy Tom Riley
NEVADA	Jennifer Carr Micheline Fairbank
NEW MEXICO	<i>Nathaniel Chakeres Mike Hamman</i>
NORTH DAKOTA	Andrea Travnicek Jennifer Verleger

OKLAHOMA

Sara Gibson
Julie Cunningham

OREGON

SOUTH DAKOTA

Nakaila Steen

TEXAS

Jon Niermann

UTAH

Candice Hasenyager

WASHINGTON

Mary Verner
Buck Smith

WYOMING

Jennifer Zygmunt
Jeff Cowley
Chris Brown

GUESTS

Justin Lavene, Nebraska Attorney General's Office
Renee Spooner, Utah Attorney General's Office, Division of Water Rights
Kathy Alexander, Texas Commission on Environmental Quality

WESTFAST

Heather Hofman, Federal Liaison
Lauren Dempsey, US Air Force
Mindi Dalton, U.S. Geological Survey
Roger Gorke, Environmental Protection Agency

STAFF

Tony Willardson
Michelle Bushman
Erica Gaddis
Adel Abdallah
Ariel O'Callaghan
James Ryan

WELCOME AND INTRODUCTIONS

Mary Verner, Chair of the Water Resources Committee, called the meeting to order. Introductions were made around the room.

APPROVAL OF MINUTES

The minutes of the meeting held on April 5, 2022 in Washington DC, were moved for approval by Micheline Fairbanks (NV) and seconded by Andrea Travernick (ND). The minutes were unanimously approved.

SUNSETTING POLICIES

Position No. 434 – Radio Frequencies for Weather forecasting and Water Management

Tony Willardson provided a summary of several additions to the position that were proposed by the Executive Committee. John Niermann (TX) moved to recommend that the amended position be adopted by the full Council. This was seconded by Jeff Cowley (WY), and the motion was approved with no opposition from the committee.

Position No. 435 – Resiliency of Our Nation to the Impacts of Extreme Weather Events

Tony Willardson provided a summary of several additions and edits to the position that were recommended by the Executive Committee. These include recognition of new areas of the West that have recently experienced widespread flooding, the continued need for improved subseasonal to seasonal precipitation forecasting, and the need for improving precipitation forecasting at all time scales to support implementation of Forecast-Informed Reservoir Operations (FIRO). Additional edits were recommended by Chris Brown (WY) for the 6th clause related to the Colorado River to recognize the need to implement Drought Contingency Plans as well as recognizing recent calls by the Department of Interior for water use reduction. Chris Brown moved to recommend that the modified position be adopted by the full Council. This was seconded by Jen Verlager (ND) and the motion was approved with no opposition from the committee.

Position No. 437 – Supporting Water Research Department of Energy National Laboratories

Tony Willardson provided a summary of several additions and edits to the position that were recommended by the Executive Committee. Jen Verlager (ND) moved to recommend that the modified position be adopted by the full Council. This was seconded by Anna Pakenham Stevenson (MT) and the motion was approved with no opposition from the committee.

LOWER SNAKE RIVER DAMS BENEFIT REPLACEMENT REPORT

Jeff Potter, Deputy Director for Federal Affairs, Washington Governor Inslee's office provided an introduction to Washington's interest in investigating issues surrounding the Lower Snake River dams. Heather Bartlett, Deputy Director, Washington Department of Ecology, presented a summary of a report titled *Analysis of benefits of lower Snake River Dams* which includes four of the eight dams in the Columbia River system (Ice Harbor Dam, Lower Monumental Dam, Little Goose Dam, and Lower Granite Dam).

In October 2021 Governor Inslee and Sen Murray announced a joint initiative to evaluate whether there are options to replace the services of lower Snake River Dams. The [draft report](#), released in July 2022, represents a synthesis of costs and benefits realized from the presence and operation of dams as well as alternatives to these services. The report considers the following issues: status of natural salmon stocks, dam impacts to tribes, navigation and transportation, irrigated agriculture, energy, tourism and recreation, economic impacts, and uncertainty associated with climate change. More details can be found in Ms. Bartlett's presentation on the Council website and in the draft report.

Jerry Rigby, Rigby, Andrus & Rigby Law, PLLC, presented an Idaho perspective on Lower Snake River Dams as well as the draft report presented by Washington. Jerry noted that the decisions made regarding these dams may set a precedent for other water users in other western river basins. Various groups in Idaho have raised concerns about dam removal including the challenges of replacing clean energy currently provided by the dams while still meeting carbon reduction goals, energy reliability and ramping power provided by the dams, shipping benefits to Idaho's wheat producers, and the costs of dam removal. Idaho opposes the dams being removed and wants to partner with Washington to further explore the issues.

Mary Verner indicated that the resolution of this issue could have implications for federal dams in other western states.

DOE NATIONAL LABS AND WATER RESOURCES RESEARCH

The Council heard from a suite of presenters from the Lawrence Berkeley National Laboratory (the lab) regarding water resources research and management. Newsha Ajami, Chief Development Officer for Research, introduced the team and gave an overview of the comprehensive water research going on at the lab. The lab works to increase our level of understanding of changes to the water cycle, groundwater management, and alternative water supply sources aimed to improve the resilience of western water. The lab has a team of people working on climate modeling, hydroclimatic modeling, integrated waters, watershed science and management, and sustainable groundwater management. The lab also had a team working on natural and green infrastructure, smart systems resilient infrastructure, water reuse, and desalination.

Erica Siirila-Woodburn, Research Scientist, briefed the committee on current hydroclimatic modeling of snowpack and water resources. Water management in the western US is based on an assumption of a reliable snowpack. Western water and energy infrastructure is also constructed around this assumption. One of the biggest shifts away from stationarity due to climate in terms the water cycle is the loss of snow. There has been a loss of snowpack in the western US since the 1950s with an average decline of 23% in snow water equivalent at 90% of stations. This volume is equivalent to the storage in Lake Mead. Hydrologists are working to project future water budgets that account for changes in snowpack and related parameters such as shifts in vegetation, high elevation wildfire, and changes in reflexivity. A synthesis and meta-analysis of hundreds of papers in the peer-reviewed literature indicates a further decline in snowpack in the western US of 25% by mid-century and 50% by the end of the century. Hydrologists are working to project future water budgets which is challenging because the loss of snowpack imposes a series of cascading impacts onto the landscape.

The Department of Energy is supporting the world's most comprehensive atmospheric observatory in the Upper Colorado River Basin. The East River Watershed is a high elevation headwater catchment located near Crested Butte, Colorado that is the flagship site of the lab. This is a \$7 million per year project to study how watersheds retain, release, and restore waters, metals, and nutrients. Instruments measure precipitation, clouds, aerosols, winds, and other atmospheric parameters at a high spatial-temporal resolution.

Craig Ulrich, Research Geophysicist, discussed water resilience and building strategies to prepare for future shifts in climate and changes in snow. There will be a need to change our traditional approach to water resource management. Aquifer storage will play an important part in our future water resiliency solutions. In California, water use greatly exceeds surface storage capacity. One way to help divert heavy river flows and to mitigate flooding is Agricultural Managed Aquifer Recharge which is recharging aquifer water on agricultural lands using existing irrigation infrastructure. The lab is researching and modeling fast paths or commuter lanes of water infiltration down to deeper depths. The lab is also working to understand the quantity of water that could be recharged. They are using recycled water as an opportunity for year round recharge. In some cases recycled water originated as desalinized water. Recharge capacity can be improved significantly by removing less porous surface soils. These concepts are also applied to green infrastructure size with the goal of providing datasets in a library of hydrological models for water managers to assess locations for placement of green infrastructure. The lab is also monitoring large scale sites using a combination of satellites and groundwater well data to estimate observed pumping effects at discreet depths and identifying areas of overpumping. We have the technology and the motivation but need to be able to map recharge locations and have a fast response capability to recharge locations.

Peter Fiske, Executive Director, discussed desalination in terms of treating ocean water, industrial water treatment, and other sources of salty water available not at the coast line. This is an exciting potential resource to discuss especially for water reuse. Water efficiency and water reuse are going to be critical for western states in the future. Desalination can also remove other contaminants, such as PFAS. The rate at which this new source of water becomes available as a

marginal supply is a function of research and the degree to which state agencies engage in the trials and research. Although desalination is a marginal supply, it can provide a relatively small fraction of climate resilient water and in that way represents a diversification of your water portfolio.

The National Alliance for Water Innovation (NAWI) is a project funded by the Department of Energy representing the largest federal investment in desalination water reuse since the 1960s. The lab has been asked by DOE to set up a national program over the course of 5 years with a \$110 million budget. California water agencies have contributed \$23 million in cash cost share to support the research and pilot projects. The goal is 75% reduction in the cost of energy for desalination with the target cost for brackish groundwater desalination to be below \$800/acre-foot. NAWI believes that there are non-ocean sources of brackish water around the west that are attractive targets for energy efficient desalination. These include produced water from the oil and gas industry, brackish groundwater, municipal wastewater, cooling water for power plants, and irrigation return flow. The goal of NAWI is to develop a new portfolio of desalination technologies to economically treat non-traditional waters and enable us to use and reuse water over and over again. They see a big frontier as building a new portfolio of small scale modular desalination systems that can be deployed throughout a community, even in rural environments. They need to explore a combination of centralized and distributed water treatment approach to improve resilience, much like the energy grid. There is also a need for public policy innovation. Membership in the NAWI alliance is free and state agencies are encouraged to engage with the group to identify opportunities in other states.

SUBSEASONAL TO SEASONAL (S2S) AND RUNOFF FORECASTING MEETINGS

Jeanine Jones briefed the council on the WSWC-hosted May 2022 workshop in California focused on supporting sub-seasonal to seasonal forecasting which is important for drought response. Workshop participants included NASA and universities in California, Arizona, New York, and elsewhere. The purpose of the ongoing annual workshop series is to build momentum for NOAA to take the necessary steps to put some emphasis on S2S precipitation forecasting. In 2017, the Council was among those working on a coalition to secure passage of the Weather Research Act which was an omnibus measure to direct NOAA to take action in a number of weather research areas. One requirement of that act is for NOAA to submit a report to Congress identifying actions that could be taken to improve S2S forecasting. The report was submitted in 2020 and we have been working to get funding for the recommendations in the report. The recommendation of greatest interest calls for a pilot project in the western US for improving winter precipitation forecasting, including precipitation falling as snow. Unfortunately, this has not been a priority for NOAA. In the most recent congressional budget cycle, we got a Dear Colleague letter led by Grace Napolitano on the House side that got a couple of dozen signatures to the relevant appropriations committee asking for this funding. However, it appears that NOAA is not interested in this effort as their primary focus is short-term (7-10 day) forecasting for disaster response type applications rather than the longer term forecasting needed for water supply management. The Council has been requesting \$15 million in new funding and only a \$1 million earmark was included on the Senate side. There is a lot more work to bring NOAA to the table. California has

been funding some of the applied research in this area but they don't have the expertise to improve weather models.

Regarding runoff forecasting, there was an ad hoc workshop held in Salt Lake City that brought together federal agencies that fund or have some involvement in using runoff forecasts to talk about ways to focus more attention and resources on this area of coordination. Recently, work developed as a NASA research project called the airborne snow observatory (ASO) enabled the development of gridded data sets that can be used to improve runoff forecasts. This work has transitioned from a NASA research project to a commercial application with significant costs. The cost to transition from old snow monitoring and forecasting methods to the new ASO technology could increase California's budget from \$1 million per year to \$25 million per year. One of the purposes of the Salt Lake City workshop was to talk about opportunities to better coordinate and leverage the budgets of the multiple federal agencies that participate in snow measurements and forecasting including NRCS, BOR, and NOAA. There appears to be good potential but there is a need for a champion to bring all of the federal and state partners together. Although the Council could serve this role, there is currently not sufficient staff time to lead this effort.

SPECTRUM COORDINATION, MANAGEMENT AND VALUATION LEGISLATION

Tony Willardson briefed the Council on Spectrum Coordination, Management and Valuation Legislation (Tab K in the briefing book). There is a concern that expansion of broadband for 5G networks could result in interference of frequencies used by emergency management agencies and data collection frequencies - including data relevant to water management - used by USGS and NOAA. In June, the House passed legislation called "Spectrum Coordination Act" which would require the FCC and the National Telecommunications and Information Administration (NTIA) to update a memorandum of agreement about how the radio spectrum will be used. There are several other bills related to this issue including one from Senator Mike Lee (UT) that would call for the federal agencies to perform an evaluation of their use of part of the spectrum and conduct a cost benefit analysis to evaluate the value of that agency to use a particular channel or frequency.

WADE/WESTDAAT PROGRAM UPDATE

Tony Willardson and Adel Abdullah gave a brief update on WaDE and the WestDAAT tools. The Council is working to finalize several philanthropic grants. The program is in a better financial situation due to a WaterSMART grant from BOR. Thus far, the program has completed over \$1 million in contracts. The Council is wrapping up the tool development for WestDAAT and has conducted several stakeholder meetings to solicit prospective user feedback. The Western Governors Association (WGA) staff is interested in the work and a presentation to WGA staff is forthcoming.

Legislation passed in the House this week to authorize OpenET. There is also a proposal with NASA to integrate OpenET with field boundaries and water rights and possibly with WaDE. Some in the farming community have expressed concerns about this effort leading to weaponizing data about their water rights and water use, but also recognize that it provides information to empower farmers and managers to improve the ability to administer water rights on a factual basis. As scarcity becomes more prevalent, it will become more important to quantify actual water use.

The Council's August National Water Use Data workshop is scheduled for mid-August and has 55 registered attendees and 30 speakers.

DROUGHT MANAGEMENT AND MITIGATION STRATEGIES AND BIPARTISAN INFRASTRUCTURE LAW ROUNDTABLE DISCUSSION

States gave updates on drought management and bipartisan infrastructure law implementation.

Mary Verner (WA): Washington recently rescinded the drought emergency because they have received some good precipitation.

Chris Brown (WY): Wyoming is spending a lot of time and effort on Colorado River activities after the June announcement from the Bureau of Reclamation Commissioner requesting Colorado River basin states to cut 2 million acre-feet of water in 2023. States took 6 years to put together the Drought Contingency Plan and it will be challenging to get this much water savings in such a short amount of time. Recognizing that hydropower generation from Lake Powell is critical, the states agreed to release 500,000 acre-feet to Lake Powell as well as to reduce withdrawals by about the same. This will result in a net improvement of 1 million acre-feet. States have been meeting regularly to discuss the challenges of the Colorado River and so far have focused on voluntary actions. Discussions continue on how to implement the 2019 Drought Contingency Plan and ideas for how to put money on the ground very quickly. Wyoming is continuing with strict implementation of prior appropriation doctrine. All states recognize that litigation is the worst way to reach a resolution although that threat becomes bigger as pressure goes up. Although there is a desire to get another 500,000 acre-feet from Flaming Gorge, states can't make any decisions about further releases until we know how much water there will be next year. People are also evaluating options for release from Blue Mason or Navajo reservoirs.

Micheline Fairbanks (NV): In Southern Nevada, communities are looking to collaborate with the Southern Nevada Water Authority to stretch Nevada's portion of the Colorado River allocation. They recently implemented a regulation within their water district that prohibits properties from connecting to the municipal water supply if they are not also connected to the municipal sewer system. This is because Nevada gets credits for recycled for every drop of water returned to Lake Mead through the sewer treatment system. This has created some unique challenges because some properties now want to drill domestic wells so they don't have to connect to the municipal water supply. There are statutory limitations on the drilling of domestic wells if they are within a certain proximity to a municipal water supply. SNWA is pushing to expand

availability of sewer within the Las Vegas basin and connect existing septic to sewer system. This has multitudes of different benefits from responsible water resources management to water quality benefits. However, more domestic wells also results in increased demand on the ground water system in Las Vegas. SNWA has been able to restrict non-functional turf and impose limits on the size of new pools. Other communities are starting to look at these ideas. But the solutions are community specific and climate specific. For example, in Northern NV, Truckee isn't so interested in evaluating turf because they want the infiltration and ground water recharge. Overall, Nevada is managing the extreme drought in terms of surface water delivery and utilization of surface water supplies. It is difficult to get large irrigators on board in collaborative activities. Nevada doesn't have a lot of upstream storage but they are beginning to look at that more to help mitigate extreme drought conditions (e.g. ASR; groundwater reservoirs). Staffing and financial resources are very thin. In terms of overall drought condition reporting, there are challenges with wildlife to supplement water sources, impacts on stock watering, and forage availability. Nevada is updating the state water plan for the first time in 20 years. Recent flooding in Las Vegas resulted in a 3 inch raise in Lake Mead. Nonetheless, they are down to the third intake in Lake Mead.

BIPARTISAN INFRASTRUCTURE LAW AND WATER RESOURCES

Tony Willardson gave an overview of spending in the Bipartisan Infrastructure Law and invited states to give updates on their efforts to put funds on the ground.

Jennifer Carr (NV): There is a tremendous amount of money coming in each year for the next five years and we have 2 years to apply for each pot of money as it becomes available which presents some issues because there is a need for research or inventory work to be done before applying for the funds. There is insufficient time to do the work needed to prepare for the applications. CIFA is working on some of these issues. If there are concerns in other states, it would be great to coordinate on those concerns. Some of these concerns are policy decisions at EPA headquarters. Others would require statutory changes by Congress.

Jennifer Zygmunt (WY): EPA will start releasing funds as Intended Use Plans are approved. This is requiring a lot of planning up front for the various pots of funding and to comply with the new Build America and Buy America requirements. Wyoming has also been having conversations with BOR staff and they have been a great resource for WaterSMART grants that have a nice water quantity-quality nexus.

DRAFT FY2022-2023 COMMITTEE WORK PLAN

Tony gave an overview of the committee workplan which is in Tab G. The Council continues to work on all of the items with some being more active than others. There was discussion about how the workplan is ambitious but that all of the work is important to keep in the workplan. It was agreed without objection that the workplan would be maintained as it is recognizing that not all of the work can be completed in the next year.

WSWC HOUSE AND SENATE LEGISLATIVE TESTIMONY/UPDATE

Ariel O’Callaghan, WSWC intern from Duke University, gave a legislative update on several bills relevant to water and the Council. The update is summarized in a presentation on the Council’s website and includes the following:

- H.R. 6238 the WaterSMART Access for Tribes Act
- H.R. 7632 the Rural Water Supply Act of 2006 and Reclamation’s Program
- S. 953 Water for Conservation and Farming Act
- S. 2334 Large Scale Water Recycling Project and Drought Resiliency Investment Act
- S. 3539 Watershed Results Act
- S. 3693/H.R. 5001 Upper Colorado and San Juan Basins Recovery Act
- S. 4231 Rehydrate the Environment, Agriculture, and Municipalities Act
- S. 4236 Water Data and Security Act of 2022: Title 1 to Provide for a National Water Data Framework

SUNSETTING POSITIONS FOR 2022 FALL MEETINGS

Position No. 438, urges the Administration and NASA to enhance focus on research for water resources applications and promote long term engagement with the WSWC

Position No. 439, expressing support for implementation of the SECURE Water Act

OTHER MATTERS

There being no other matters, the meeting was adjourned.