

**MINUTES**  
**of the**  
**WATER RESOURCES COMMITTEE**  
**Icicle Village Resort**  
**Leavenworth, Washington**  
**July 17, 2019**

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**MEMBERS AND ALTERNATES PRESENT**

<b>ALASKA</b>	--
<b>ARIZONA</b>	Tom Buschaztke Kyle Miller
<b>CALIFORNIA</b>	Jeanine Jones
<b>COLORADO</b>	Patrick Pfaltzgraff
<b>IDAHO</b>	Jerry Rigby
<b>KANSAS</b>	David Barfield
<b>MONTANA</b>	Tim Davis Jan Langel
<b>NEBRASKA</b>	Steve Goans
<b>NEVADA</b>	--
<b>NEW MEXICO</b>	John D'Antonio Greg Ridgley
<b>NORTH DAKOTA</b>	Garland Erbele Jennifer Verleger
<b>OKLAHOMA</b>	Sara Gibson
<b>OREGON</b>	Tom Byler
<b>SOUTH DAKOTA</b>	Kent Woodmansey
<b>TEXAS</b>	Jon Niermann L'Oreal Stepney

**UTAH**

Todd Stonely

**WASHINGTON**

Mary Verner  
Mike Gallagher  
Buck Smith

**WYOMING**

Chris Brown  
Kevin Frederick  
Steve Wolff

**GUESTS**

Tom Tebb, Office of Columbia River, Washington Department of Ecology, Olympia, WA  
Dan Partridge, Washington Department of Ecology, Olympia, WA  
Keeley Belva, Washington Department of Ecology, Olympia, WA  
Sage Park, Washington Department of Ecology, Union Gap, WA  
Jim Davenport, JH Davenport LLC, Buena, WA  
Andrew Dunn, RH2 Engineering, Inc., Bothell, WA  
Sue Lowry, Interstate Council on Water Policy, Cheyenne, WY  
Tracy Streeter, Burns & McDonnell, Kansas City, MO  
Ernest Carlsen, Recharge Development Corp., Idaho Falls, ID

**WESTFAST**

Deborah Lawler, Federal Liaison, Murray, UT  
Kevin Werner, NOAA Fisheries, Seattle, WA  
Doug Curtis, Bureau of Land Management, Washington, DC  
Mindi Dalton, U.S. Geological Survey, Atlanta, GA

**STAFF**

Tony Willardson  
Michelle Bushman  
Adel Abdallah  
Cheryl Redding

**WELCOME AND INTRODUCTIONS**

Tom Byler, Chair of the Water Resources Committee, called the meeting to order, and requested introductions be made around the room. He thanked Mary Verner and Tom Tebb for their Washington State presentation.

### **APPROVAL OF MINUTES**

The minutes of the meeting held in Chandler, Arizona on March 21, 2019 were moved for approval by Steve Wolff. Jen Verleger seconded the motion, and there was no discussion. The minutes were unanimously approved.

### **PROPOSED AND SUNSETTING POSITIONS**

#### **A. Proposed Position**

Tony Willardson provided a brief overview of the proposed position regarding Preservation of Radio Frequencies Necessary for Weather Forecasting and Water Management. He explained that the Federal Communications Commission (FCC) is looking at expanding the 5G network and the WSWC proposed position states strongly that we need to protect the bandwidth and communications frequencies for the water and emergency management related spectrum.

Michelle Bushman noted that Utah Senator Mike Lee has proposed legislation requiring an evaluation for “foregone” frequencies. A concern is that the FCC will say the frequency use is set to a certain monetary value, and the federal use would be valued much less than that. We should be able to say that we use the frequency to manage our water, and that matters in terms of flood protection and other dollar values that should be considered. Drought, hurricane and super storm economic losses raise an interesting point in terms of practitioners and the value of water information for public safety, which is imbedded in this debate over frequencies use as well.

Jeanine Jones moved approval of the position. The motions was seconded, and unanimously approved.

#### **B. Sunsetting Positions**

Position #392 – Supporting expanded and enhanced west-wide extreme precipitation monitoring. Tony Willardson provided a very brief overview. Jeanine Jones offered a motion to continue supporting the position as revised by the Executive Committee. Mary Verner seconded the motion. The Committee unanimously approved moving the position forward to the Full Council.

Position #393 – Regarding hydraulic fracturing. Tony noted this resolution was adopted initially in 2013. Fracking has been a technology used for many years. It is a big issue for the Southern Plains States, and in North Dakota as well. The 2015 fracking rule, which led to the resolution, has been withdrawn.

The States of Oregon and Washington have prohibited fracking. California also has concerns with fracking, and they have filed suit over the rule withdrawal. The resolved clause in the position states it should be up to states that allow or prohibit fracking.

Wyoming previously took the lead addressing fracking issues and federal regulation, and EPA has been unable to substantiate any significant impacts on drinking water.

### Discussion

**Pat Pfaltzgraff:** The Colorado Department of Public Health and Environment is looking closely at oil and gas operations, including fracking. I think Colorado would abstain given the resolved clause. The Oil and Gas Conservation Commission is concerned with actions that would impact groundwater. In the past, the focus was on the extraction of the mineral. The legislature reorganized the commission to ensure protection of human health and the environment. We would not oppose the position, but since I don't know where the State stands, we would just abstain.

**Mary Verner:** I cannot support the resolution as currently written as the whereas clauses are very supportive of fracking.

**Tom Byler:** Oregon has a prohibition on fracking. Our legislature passed a moratorium until 2025 for exploration and fracking, so from a value position, Oregon is not interested in supporting the whereas clauses. We would support and offer some edits to the clauses.

**Jeanine Jones:** Since the regulatory action has been withdrawn, I would suggest that maybe the position should sunset until it is necessary.

**Jon Niermann:** I would offer to work on the whereas clauses.

**Kevin Frederick:** I appreciate the comments from Washington and Colorado. I also understand Jon's concerns. I don't think many states would have an issue with the majority of the whereas clauses as they are factual and the resolution is intended to clarify that federal efforts should defer to the states. Wyoming would support the continuation of the position.

**Jeanine Jones:** I have questions about the middle three resolved clauses, and she asked . Tony if he could provide a history on this.

**Kevin Frederick:** There was a study of Pavillion, Wyoming. The study found there were not impacts on the drinking water supply. There was a lack of significant widespread effects on the drinking water supply.

**Jon Niermann:** I would suggest we draft some alternative whereas clauses for the states with any concerns.

**Mary Verner:** I would like to take Jon up on his suggestion and focus on the common denominator. I have already drafted some language.

**Tom Byler:** I would be interested in other states' perspectives and process options.

**Jeanine Jones:** We can work on language today or this evening. Or we can let folks caucus with their other agencies, and may need to bring this up at the next meeting.

**John D'Antonio:** Limiting comments to the water resources group is not the only focus. We need to allow our water quality counterparts to weigh in.

**Tom Byler:** Interested States will get together to discuss changes to bring to the Full Council tomorrow.

**Tony Willardson:** I would like to review the process with respect to positions. The WSWC staff gives notice of the positions 30-days prior to the meetings, following which a conference call of the Executive Committee is held prior to the meetings. Tony encourages WSWC representatives to talk with their respective WGA Staff Council representatives to ensure their State's position is reflected in our discussions.

Position #394 – Regarding the authorized purposes of the Missouri River Mainstem Reservoir System. Tony commented that this position is one of those that has been adopted more than one time. Given the recent flooding, the Midwest, system operations are under review.

Dave Barfield noted this is complex, and at the time the position was initially adopted, a review of uses was not yet completed. The flooding this year may not provide the best context for that now. Kansas believes this position should be allowed to sunset.

Jeanine Jones remarked that if the position is not current, she's inclined to allow it to sunset.

A motion to allow the position to sunset was offered by Dave Barfield, and seconded by Jan Langel. With no further discussion, the position was unanimously allowed to sunset.

Position #395 –Urging the Administration and Congress to support water research and development programs at the Department of Energy National Laboratories.

Tony Willardson noted this was part of the genesis for our Water Data Exchange (WaDE) project. The position also speaks to leveraging resources for computing power for things such as sub-seasonal to seasonal precipitation and remote sensing.

John D'Antonio moved to approve the position as revised. Steve Wolff seconded the motion, which was unanimously approved.

### **UPDATE ON WESTERN GOVERNORS' ASSOCIATION (WGA) ANNUAL MEETING**

Tony Willardson reported that under Tab S in the briefing materials is a WSWC write up on the WGA's annual meeting. There was a panel specifically related to Data and Forecasting in Western Water Management, which was introduced by Governor Little (ID). The session looked at the science. Forrest Melton with NASA's Western Water Applications Office (WWAO) discussed NASA's earth sciences program and scientific insights, including tools for mapping wildfire risk and monitoring water use to sustain agriculture. He also discussed Landsat 8, and the importance of images for providing information on both flooding and drought. There are other remote sensing technologies used to complement ground-based measurements and monitor water supplies and water quality. Forrest also leads an Open Evapotranspiration (ET) effort with significant support among private foundations. ET represents consumptive use to grow food.

Jay Jasperse, Chief Engineer with the Sonoma County (CA) Water Agency, described the challenges of balancing reservoir operations for both flood control and a reliable water supply. He discussed innovative approaches to reservoir management, including the use of Forecast Informed Reservoir Operations (FIRO) at Lake Mendocino.

Tony remarked that he works closely with Ward Scott, Policy Advisor for WGA, and they have a good working relationship. Tony further noted that Governor of Lujan-Grisham of New Mexico is interested in open water data, and the WSWC's Water Data Exchange (WaDE) program was discussed. WSWC has received substantial foundation grant funds for the WaDE program, and we have been able to move funds to the States to help with their water data programs.

### **UPDATE ON USGS INTEGRATED WATER AVAILABILITY ASSESSMENTS**

Mindi Dalton, Water Availability and Use Science Program Coordinator with the U.S. Geological Survey, addressed Integrated Water Availability Assessments (IWAAs). She noted the sequencing of basin activities, depicted on a slide on the [website](#). Basin plans will be developed and implemented with stakeholder engagement.

IWAAs are part of a new activity that stems from the SECURE Water Act. The IWAAs Framework supports nationally consistent integrated modeling and assessment, which provides nationally consistent information and synthesis. It also includes regionally specific integrated modeling and assessment, with regionally specific data and decision support tools. The Next-Generation Water Observing Systems (NGWOS) lends support for characterizing regional ecological and human data and needs.



IWAAs address requirements outlined in the SECURE Water Act: (1) identifying the status and trends in water resources, both quantity and quality; (2) developing national scale indicators of availability; and (3) developing and applying predictive tools.

Four main objectives will be implemented through IWAAs: (1) evaluate current water supply and demand, quality and use; (2) evaluate long-term trends in water availability, inclusive of water quantity and quality; (3) provide seasonal to decadal forecasts of availability; and (4) inform water resource decisions through development of socioeconomic tools.

IWAAs will use 2WP as the framework. 2WP is a Integrated Hydro-Terrestrial Modeling Framework (IHTMF) and will be a national asset supporting the Nation's earth and biological system prediction capability for evaluating system structure, function and evolution over a range of temporal and spatial scales. It will be a national resource and tool.

Incorporating water use science, USGS will respond to the widely recognized need for improved water use data and information on a temporal and spatial basis. They plan to develop daily withdrawal models to account for 90% of the total water use in the Nation. A modified compilation will be done by 2020. The Water-Use Data and Research program (WUDR) is a huge component of this. Water quality is another aspect of the integrated assessments.

Ten pilot projects will be selected, beginning in FY19. Some topics include: drought, visualization, IWAAs pilot in the Trinity River Basin, informing a process for incorporation of data into models, and development of GSFLOW processes.

The data playground includes: (1) the San Joaquin Valley; (2) the Columbia Plateau; (3) the Russian River; and (4) the Trinity River Pilot.

Mindi concluded her presentation with a slide on the Presidential Memo on Western Water Availability, under which USGS has several activities. A plan to implement the memo is at the Commission on Environmental Quality (CEQ) and its status is pending.

See the presentation slide entitled Initial IWAA Deliverables which shows targets for national and regional plans.

## **QUESTIONS**

**L'Oreal Stepney:** Can you help me understand what you mean by water availability?

**Mindi Dalton:** We are generally talking about physical availability.

**L'Oreal Stepney:** Are you using USGS gage data?

**Mindi Dalton:** Yes.

**L'Oreal Stepney:** But not, for example?

**Tom Byler:** We may need to be cautious with our messaging using the term water "availability."

**Mindi Dalton:** We understand that. If someone has another word to suggest.... There is a need for consistent vocabulary.

**Jim Davenport:** Why are you focusing on daily targets?

**Mindi Dalton:** We need to have a sliding scale. We have a performance measure we have to report to OMB.

**Jim Davenport:** Do you presume you will go to volumetrics?

**Mindi Dalton:** It will not be on a national level by volume. It will be by indice.

**Steve Goans:** How will that impact this?

**Mindi Dalton:** I'll let Chad answer in more detail, but nationally it is in terms of our priority stream gages.

### **UPDATE ON THE USGS NEXT GENERATION WATER OBSERVING SYSTEM**

Chad Wagner, Program Coordinator for the Next Generation Water Observing System (NGWOS), used a powerpoint presentation that can be found on the WSWC's [website](#).

Chad began with an overview of the USGS Water Mission Area Priorities, which consist of (1) Integrated Water Availability Assessments; (2) the Water Prediction Work Program; (3) the NexGenWater Observing System; and (4) National Water Information System (NWIS) Modernization. The four systems build on each other with collaborative priorities.

The Presidential Memo on Western Water states as follows.

Sec. 3. Improve Forecasts of Water Availability. To facilitate greater use of forecast-based management and use of authorities and capabilities provided by the Weather Research and Forecasting Innovation Act of 2017 (Public Law 115-25) and other applicable laws, the **Secretary of the Interior and the Secretary of Commerce shall convene water experts and resource managers to develop an action plan to improve the information and modeling capabilities related to water availability and water infrastructure projects.** The action plan shall be completed by January 2019 and submitted to the Chair of the Council on Environmental Quality.

**III. Create a next-generation water observations system for the nation.** USGS, Reclamation, and NOAA will collaborate to develop the Next Generation Water Observation System (NGWOS), informed by water experts and resource managers, to provide real-time data on water quantity and quality necessary to support modern water prediction and decision support systems for water emergencies and daily water operations.

Advanced water models require high-density data. There are nearly 30 million stream reaches in the United States. The USGS operates about 10,500 streamgages (about 3/100 of one percent of the reaches).

Linking monitoring, assessments, and modeling, USGS identifies water monitoring gaps and data needs for advanced modeling, taking the information and talking to the stakeholders in the basin. They may have different perspectives. After that, USGS implements and integrates a set of fixed and mobile monitoring assets in the water, ground and air. As they collect the data, they integrate delivery of water quantity, quality and use data. Finally, the data is used to inform modern water prediction decision support systems.

When fully implemented, NGWOS will provide high temporal and spatial resolution real-time field and remote-sensing data on streamflow, snowpack, ET, rainfall, soil moisture, etc.

Data from NGWOS can help answer the following questions: What are the near-term and long-term risks of floods and droughts, and what scenarios change these risks? Are we in the early stages of a drought? How long will recovery take? How much water is stored in seasonal snowpacks, and how will changes affect water supplies? How much does groundwater contribute to streamflow, or vice-versa? What is the quality of water and how does it change during wet/dry periods? How long will it take for a spill to reach a location?

USGS can't afford to monitor everywhere, so the idea is to implement NGWOS in about ten medium-sized watersheds that are representative of larger water-resource regions and augment the existing streamgage network elsewhere in the region with more modest enhancements. This will lead to more accurate predictions of streamflow, aquifer levels and water quality conditions at unmonitored locations across the nation.

The USGS's team is winnowing down the basins to determine the other nine basins. The NGWOS basin selection criteria was described. Some 204 HUC14 basins will be the starting point for consideration for NGWOS. The Basin Selection Team is charged with developing the criteria for winnowing these to 50 candidate basins, which will be put through a stakeholder engagement process to further refine the list for NGWOS deployment. The Delaware Basin has already been selected and work progresses. Nine more basins will be selected for NGWOS deployment, and planning will then begin on specific instrumentation and system design.

The NGWOS budget design for a ten-year cycle was shown. Also, NWIS modernization consists of \$0.5M in FY18; \$5.1M in FY19. Based on availability of new funds, in FY20 \$3.7M

additional is planned for the Delaware River Basin. A western NGWOS basin will be selected by the end of September and a monitoring plan developed.

## **WASHINGTON WATER RESOURCES ISSUES**

Mike Gallagher, Water Resources Section Manager, Washington Department of Ecology addressed Washington's water challenges. He noted that water availability is driven by precipitation, which varies across the State. The geology across the State is vastly different. There are 62 watersheds in Washington, and 53,000 water rights, most of which are certificated and old. Claims to use surface water and groundwater pre-date modern water law (1917 and 1945) and are called *claims* – not water rights.

Instreamflow regulations establish a minimum flow in the Columbia mainstem and many of the tributaries. Case law has made hydraulic continuity between surface water and groundwater more complex. Pumping water may impact the river, and even if water is physically available, it may not be legally available.

Washington State Supreme Court decisions drastically impact water management. In *Postema v. PCHB* it was determined that there is no “de minimus” impairment of existing water rights (Oct 2000). In *Swinomish Tribe v Ecology* (Oct 2013) – the court ruled that Overriding Consideration of the Public Interest (OCPI) cannot be used to justify water use that impairs existing instream flows. In *Foster v. City of Yelm and Department of Ecology*, the ruling stated Ecology cannot use “out-of-kind” mitigation to offset impairment of instream flows or use OCPI to justify permanent allocations of water (Oct 2015). In an Oct 2016 lawsuit, *Whatcom County v. Hirst and Futurewise*, the court ruled that a county has an independent obligation to ensure that new private wells do not impair flows and closures.

Ecology is working with tribal governments. Washington is home to 29 Federally-recognized tribes. Given 1855 treaties between the U.S. and the Puget Sound area tribes, the United States Supreme Court held: “The right of taking fish, at all usual and accustomed grounds and stations, is further secured to said Indians in common with all citizens of the Territory....” Tribal water rights priority date is time immemorial.

Ecology is also concerned with five ESA-listed fish, chinook, chum and sockeye salmon, as well as steelhead and bull trout.

Many areas in the State of Washington are under drought declarations. The declarations took effect on April 4, 2019 and May 20, 2019. There are drought conditions in several watersheds. The definition of drought is less than 75% of the normal supply, plus hardship, such as curtailments of farmer irrigation diversions.

Mike summed up his presentation noting that Washington faces challenges to work within the State's various laws, statutes and court decisions, wide variations in precipitation, and complex hydrogeological conditions in managing their water resources.

### **REPORT ON THE S2S PRECIPITATION FORECASTING WORKSHOP**

Jeanine Jones reported that in May, the WSWC brought together folks from the research community for another sub-seasonal to seasonal (S2S) precipitation forecasting workshop. She noted such workshops have been ongoing for some time now. It's her observation that the research community seems to be shrinking particularly at the National Oceanic and Atmospheric Administration (NOAA), who spearhead efforts on the long-term prediction scale.

California has signed a five-year contract with NOAA to support efforts focusing on weather modeling prospects. This builds on the Bureau of Reclamation's (BOR) Forecast Rodeo competition. The BOR will be holding its second rodeo, which Jeanine believes is encouraging. The State of California just received an additional \$9M for more research. Researchers would like to take newer technologies and methods in big data science and apply them to S2S forecasting efforts.

### **NASA TECHNOLOGY TRANSFER & APPLICATIONS TRANSITION WORKSHOP**

Jeanine Jones reported that the State of California has been working with the National Aeronautics and Space Administration (NASA) for some time, and commented that they really are "rocket scientists"!

NASA had made a plane available for use with respect to snow observing, and then they notified the State of California that they needed their plane back for some other operations.

We are trying to figure out how to sustain applied research programs. The WSWC and NASA are partnering to sponsor a workshop in Irvine in August. We'll look at the projects they are trying to transfer, find an institutional home for these research programs, and try to determine how to use the research and sustain it going forward. Harmful algal blooms will be one focus area included on the agenda.

### **WATER DATA EXCHANGE (WaDE)**

Adel Abdallah explained that the Water Data Exchange (WaDE) is a platform to share data across the states. The data available through WaDE includes: (1) water rights; (2) aggregated water budget estimates; (3) site-specific use and withdrawals; and (4) regulatory overlays.

This is WaDE 1.0, which Sara Larsen started. We are working to bring WaDE to the next level, which would be WaDE 2.0. WaDE 2.0 would be designed to answer the following questions: What are the appropriated water rights in an area sorted by priority date? Can we list beneficial uses? What is the annual water budget in a watershed over time? How much water is being used in a location over time and for what purpose? and What are the regulatory constraints in a watershed?

Strategic partnerships have been put into place to help move this effort forward. The WSWC has partnered with the Consortium of Universities for the Advancement of Hydrologic Sciences (CUAHSI); the Internet of Water; Don't Panic Labs; and the U.S. Geological Survey (USGS). The WSWC will be cosponsoring a Water Information Management Systems (WIMS) workshop with the USGS in September in Fort Collins, Colorado.

Adel mentioned that three interns have been working this summer on WaDE-related matters for the states of Wyoming and Utah. He intends to hire interns for additional work this Fall.

### **DRAFT COMMITTEE WORK PLAN**

Chairman Byler noted that some changes, edits, and additions have been made to the work plan since we met in the Spring.

Tony Willardson reviewed the items in the draft work plan. He encouraged direction with respect to prioritizing the items. He then remarked that the newly listed items may take a lesser priority.

Tom Byler moved adoption of the work plan. The motion was seconded and unanimously approved.

### **SUNSETTING POSITIONS**

Sunsetting Positions were included in the briefing materials for the 2019 Fall meetings for members' reference. The current listing of WSWC positions is also available on the Council's website.

### **OTHER MATTERS**

There being no other matters, the meeting was adjourned.