



PRESIDENT'S NOTES

We're in the thick of summer, which means well-earned vacations for some, and hard work for others that are managing water for habitat, power, and summer demands. At the time of this article, the State Legislature was down to the wire, writing the 2017-2019 budget. When you read this, hopefully, things have calmed down in Olympia. As we pass the mid-year mark for 2016, the AWRA-WA Board's summer activities are in full swing.

100 years ago, the Washington State Legislature had just adopted Chapter 90.03 RCW, the Washington State Water Code that established prior appropriation as the mechanism to prioritize the right to use waters of the State, and the water right permit and certification process to authorize that use. Since then, "first in time, first in right" has governed water use appropriation and legal decisions related to priority of water use. Over the years, the Water Code has been revised, supplemented with new code and interpreted by the State Supreme Court to address new issues related to water use and protection, such as the adjudication process to establish priority and quantity, the right to use groundwater, permit-exempt wells to supply rural residences, instream flow rules to protect habitat flows, Tribal water right priority, and municipal water use protections. The AWRA-WA annual conference committee has just finalized the program for our 2017 AWRA-WA State Conference on the 100-Year Water Code, to look back at the history of the Code and to look forward to the challenges of water availability, demand, and priority that the Water Code will have to address. The conference will be held a little earlier than previous years on October 3rd, and at the Mountaineers in Seattle (see the announcement on page 4).

We have a few more dinner meetings scheduled for September and November, and will advertise the details in upcoming newsletters, our website, and through email. Mark your calendars, and join your colleagues to attend some or all of our events. We encourage you to brush up on the history of the Water Code by reviewing the "100 Years of Water Law" summary at Ecology's Water Resources <http://www.ecy.wa.gov/programs/wr/hq/waterlaw-100.html>.

It's the middle of the year, which is an appropriate time to consider your



In this Issue:

April 12 Ellensburg Dinner Meeting Recap	p 2
April 25 Dinner Meeting Recap	p 3
2017 Annual AWRA-WA State Conference Details and Keynote Speaker Introduction	p 4-5
May 23 UW Spring Networking Event Recap	p 5
May 16 Dinner Meeting Recap	p 6

potential interest in joining the AWRA-WA Board. We likely will have a few new spots opening up through "retirement", and we look forward to the energy and insights of new Board members. The Nominations and Elections Committee will notify AWRA-WA members to consider applying for Board membership sometime in the Fall, and in November, the Board will review the interest and qualifications of potential new Board members. We are looking for a diverse board membership from across the State, with private, public, and NGO backgrounds, and a variety of technical, legal, and social disciplines. The basic qualification is an interest in understanding, promoting, and managing the water resources of Washington State and networking with likeminded professionals. Prospective Board members should also have shown some consistent member activities, including committee participation and meeting attendance. Look for the announcement, ask Board members about their experience, and attend a Board meeting either personally or through teleconference.

Send any questions about the conference, board membership, or AWRA-WA to me at snelson@rh2.com.

Steve Nelson is a licensed hydrogeologist and engineering geologist with 25 years of experience involving water resource assessment, development, management, remediation, and protection. Steve's project experience includes characterization of groundwater systems for groundwater supply; water reuse; water rights evaluation; aquifer testing and modeling of groundwater flow, contaminant fate and transport. Steve conducts geologic investigations to evaluate foundations for water infrastructure, geologic hazards and slope stability; and designs infiltration and construction dewatering systems. Depending on the season, find Steve trail running, skiing, climbing in the Cascades or Sierra, and/ or fly fishing.

*APRIL 12 ELLENSBURG AWRA-WA DINNER MEETING SUMMARY
KITTITAS COUNTY WATER RESOURCE MANAGEMENT
PRESENTED BY KITTITAS COUNTY COMMISSIONER PAUL JEWELL &
DAN HALLER, ASPECT CONSULTING*

By Dave Christensen

AWRA-WA's April 12th dinner meeting featured two presentations on water banking- one by Commissioner Paul Jewell focused on the Kittitas County water banking, and a second by Dan Haller from Aspect Consulting talking about water banking in Washington more broadly.

In an entertaining and informative presentation, Commissioner Jewell outlined the requirements for all new domestic and commercial uses in Kittitas County in the Yakima Basin. Kittitas County has faced with a unique challenge in Washington State, including periodic droughts, and adjudicated surface water rights that are over-appropriated. Based on petition from senior water right holders, Department of Ecology closed a portion of the basin to all new uses, including permit-exempt uses, in 2009. Add to that a USGS groundwater study in 2012 that showed clear hydraulic connectivity between aquifers and surface waters.

Kittitas County was challenged in court for not meeting Growth Management Act obligations, which led to a Supreme Court decision that ruled the county's regulations were not adequate. In response, Kittitas County adopted new regulations. Under these new regulations, new water users must obtain mitigation certificates so that their new use is offset by a portion of a senior water right that is retired. In the Yakima Basin, a "senior water right" is a right that predates the Bureau of Reclamation right, which is dated May 10, 1905. In addition, all new water users must install and report water use, and pay a data management fee to the County to ensure that their mitigation offset is adequate to protect other water right holders from being impaired from their new use.

Kittitas County's water mitigation program also includes a county-operated water bank. Privately owned water banks were created in response to the basin closure by Ecology in 2009. The cost of water and concerns about transparency led Kittitas County to obtain senior water rights and begin to operate a public bank option. The public bank operated by Kittitas County only provides mitigation for up to 300 gallons of water use per day, for indoor domestic and some outdoor use. Larger users of water, including landowners that want to subdivide their land, must find mitigation from private banks. The final element of the Kittitas County program includes mitigation of existing users. Kittitas County has a goal to acquire sufficient senior water rights to offset the use from residential and commercial uses that have occurred since 1905. Completing this acquisition would provide certainty and security for homeowners in the basin to ensure they aren't at risk for future curtailment.

Dan Haller discussed the status of water banking in Washington as a whole. Did you know that in our state there are 19 water banks in 14 water resource inventory areas (WRIAs) operating or in development phase? Water banks have been created primarily out of regulatory necessity, including Supreme Court decisions, which contributed to actions such as the closure of the Upper Kittitas basin in 2009. This type of

water bank formation is one that many people think about, and includes banking structures in the Dungeness, Walla Walla as well as the Kittitas basins.

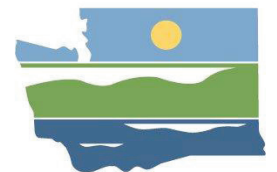
A lesser known water bank example Dan provided is the White Salmon Irrigation District. Back in the 1920's the District dug a canal to import water from the Lewis River basin into the White Salmon River basin. In 2011 when the Condit Dam was removed, the 8 cubic feet per second (cfs) of important water could be transitioned to new uses. The District and the City of White Salmon formed a water bank, with customers obtaining water for municipal supply and for long-term leases.

A second example of a lesser-known water bank is located in the Methow Basin. There, the Methow Valley Irrigation District formed a water bank to reallocate water savings from a large conservation project that included piping of canals and conversion from some users from surface water to wells. Savings included 11 cfs from the Twisp River, 2 cfs in Alder Creek and benefits to specific reaches of the Methow River.

Dan finished up talking about what actions would help improve water bank effectiveness in Washington, which included: streamlining processes, evaluating priorities, providing clarity on mitigation standards and developing public interest criteria for bank operation.

-By Dave Christensen, Program Development Section Manager for the Washington Department of Ecology Water Resources Program, and AWRA-WA Board of Directors Member (davic461@ecy.wa.gov).

THANKS TO OUR BASIN SPONSORS!



APRIL 25 AWRA-WA DINNER MEETING SUMMARY
 NORTHWEST VISION FOR 2040 WATER INFRASTRUCTURE REPORT
 PRESENTED BY RHYTH ROTH, CSI DIRECTOR

By Felix Kristanovich

At the April 25th 2017 AWRA dinner meeting, Rhys Roth, director of the Center for Sustainable Infrastructure (CSI) at the Evergreen State College, provided an overview of the “Northwest Vision for the 2040 Infrastructure” report. This report summarizes the most comprehensive effort to date to construct a regional shared vision for the future of water-related infrastructure in the Northwest.

In the development of this shared vision, CSI formally interviewed over 40 Oregon and Washington innovative infrastructure leaders with a focus on water supply, wastewater treatment and stormwater and flood prevention. Roth emphasized that the shared vision includes both (a) new model and investment discipline, and (b) the new investment portfolio (providing more choice and more opportunity). The new vision rethinks infrastructure investment strategy using six principles: (1) aiming for affordable, resilient, and sustainable, (2) encouraging silo busting (or cross-sharing information; CSI refers to a “silo” as the isolated system incapable of connecting to other systems, and unable to share information), (3) building a better business case, (4) choosing multi-decade investment for a changing world, (5) getting smart in investing (utilizing advances in information technology), and (6) building community prosperity.

Between now and 2040, Oregon and Washington will spend billions of dollars annually to maintain, operate and modernize water, wastewater, and stormwater infrastructure. However, the multi-billion dollar question is how to generate the most long-term community value from these investments. Some of the main challenges facing utilities include: costs to modernize the aging infrastructure (that are too big for current utilities revenues); vulnerability of the infrastructure to costly (and potentially catastrophic) disruptions to big earthquakes and extreme weather (causing potential disruption of up to thirty days), and agency silos that discourage integrated and innovative solutions. To make things even worse, there is an existing infrastructure funding gap of \$400 Billion on the Federal level, as our nation’s infrastructure is in dire need of repair.

At the same time, water agencies are undergoing tremendous change and reinvention. New technologies and systems are emerging that can expand the solutions portfolio, but also change the business model for water utilities. The new systems span all scales – from the building level to neighborhood and districts. The management of future infrastructure will include holistic management of water supply, wastewater, and stormwater; networks of micro-infrastructure optimally blended with traditional systems; smart sensors and cameras inside the infrastructure; and utilization of green infrastructure at all scales (replacing or complementing existing grey infrastructure).

An emerging industry-wide movement known as “One Water” is breaking down silos to integrate water supply, treatment, and stormwater sectors previously managed separately. And new investment tools are helping innovative water leaders plan and spend smarter. The prevailing theme of the new movement is optimizing community benefits of infrastructure

investment, including financial, social, and environmental benefits.

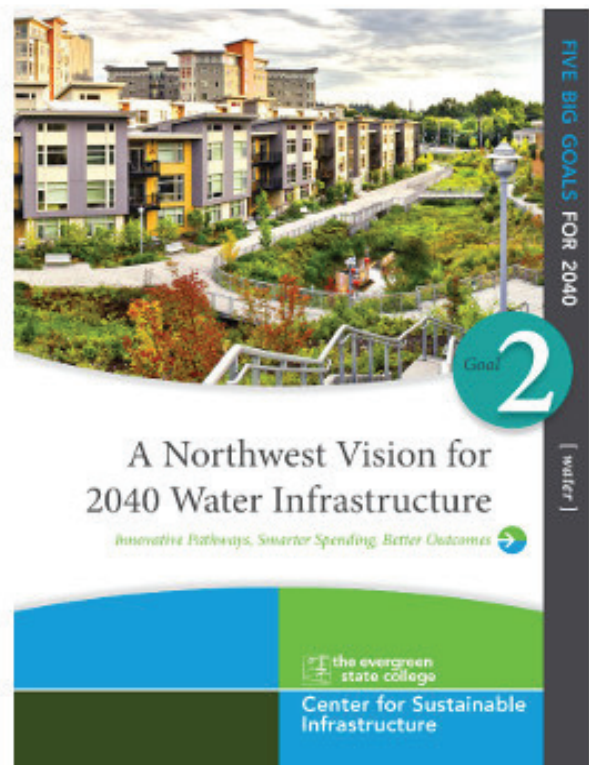
The new Micro-Infrastructure portfolio will be the backbone of the new vision. Typical examples include cisterns to capture rainwater for on-site use and buffer stormwater flows; green roofs and on-street bioswales; technology for purifying and recycling wastewater at building and district scale; and modernization of irrigation technology.

The report recommends five major action items for utilities:

1. Implementing New Investment Discipline (requiring rethinking of investment, and applying long-term investment strategy with better turn-around);
2. Implementing Rate-based Financing;
3. Bridging Silos and Forging Creative Cost-Share Partnership;
4. Committing to Capacity and Innovation; and
5. Tapping Private Innovation in investing in Multi-benefit projects.

A Northwest Vision for 2040 Water Infrastructure is the second in the Center for Sustainable Infrastructure’s “Five Big Goals for 2040” series. The Five Big Goals reports describe different aspects of the infrastructure in 2040, and show how we can rethink near-term investment to get where we want to go in the long-term. Roth concluded with “My hope is these reports provide inspiration and guidance to both current and future Northwest innovation leaders.” The reports are available from <http://www.evergreen.edu/csi>.

-By Felix Kristanovich, PhD, PE, Managing Consultant at Ramboll Environ Seattle office, and AWRA-WA Board of Directors Member (fkristanovich@ramboll.com).



2017 AWRA WASHINGTON STATE CONFERENCE

THE 100 YEAR ANNIVERSARY OF THE WASHINGTON WATER CODE: WHERE WE CAME FROM
AND WHERE WE'RE GOING

October 3, 2017
7:00 AM to 7:00 PM

Mountaineers Seattle Program Center, 7700 Sand Point Way NE, Seattle, WA

AWRA-WA welcomes you to join us for an interdisciplinary investigation of Washington water, from adjudication to technical analysis. This year's conference includes an intriguing reflection of the past 100 years of the Washington Water Code and a look forward to the next 100 years. Stresses from population growth and increasing uncertainty from climate change will test the state's ability to manage an over-allocated resource. How will we and the Code adapt?

AWRA-WA is proud to announce keynote speaker **Charles Wilkinson**, Distinguished Professor, Moses Lasky Professor of Law at the University of Colorado School of Law. Professor Wilkinson will present: ***Western Water Law and Policy in the Modern Era: Has Washington Made the Needed Changes?*** See the next page for a brief biography of Professor Wilkinson.

Our conference program includes the following five sessions:

Session 1: Early Water Code History – Reflecting on the historic cultural significance of water from time-immemorial through early statehood, including the early history of water right appropriation, establishment and development of the surface water code from 1917 through the Water Resources Act of 1971. This is the era of water appropriation.

Session 2: Contemporary Water Code History – Marking the change from water right appropriation to recognition of competing needs, including protecting the quality of the environment and the natural interrelationships of surface and ground waters, this session will reflect on establishment of the instream flows, management of water resources, and quantification through adjudications and market-based reallocation.

Session 3: Defining Future Risks – The water code must be able to respond to changes in water availability, water demand, population, and climate. This session will discuss some of the technical, legal, and social issues that will drive future water management and the need for collaboration and adaptability.

Session 4: Identifying Possible Solutions – Future solutions to challenges in water resources may be found in current actions that work with today's code; this session will look at conflict resolution, legal water right certainty, and solutions through infrastructure, including storage and conveyance.

Session 5: Panel on Legislative Change and Funding Needs – Our conference concludes with a facilitated panel including representatives from agency, legislative, and stakeholder groups discussing what changes need to be made to water management and the water code, and how they will be supported and funded in a time of shrinking state and federal budgets.

Early-bird registration is open now through September 8. To register, go to our website: www.waawra.org.

Registration Pricing:

- Standard - \$185 (early-bird through September 8), \$205 (after September 8)
- Agency/Non-profit/Unemployed - \$150 (early-bird through September 8), \$170 (after September 8)
- Student/Recent Graduate - \$40 (early-bird through September 8), \$60 (after September 8)

Please contact Conference Chair **John Chandler** at John.Chandler@pse.com with any questions.

See you there!

AWRA-WA 2017 STATE CONFERENCE KEYNOTE SPEAKER CHARLES WILKINSON BIOGRAPHY

Charles Wilkinson, Distinguished Professor and Moses Lasky Professor of Law at the University of Colorado, focuses much of his writing on land, water, and society of the American West. After graduating from Stanford Law School and practicing with Phoenix and San Francisco firms, Wilkinson joined the Native American Rights Fund in 1971 as a staff attorney. He has been in academia since 1975.

His fourteen books include the standard law texts in Federal Public Land Law and Indian Law; *The Eagle Bird: Mapping A New West*; *Crossing the Next Meridian: Land, Water, and the Future of the West*; and *Blood Struggle: The Rise of Modern Indian Nations*. Professor Wilkinson has received teaching awards from his students at every law schools where he has taught, and the Universities of Colorado and Oregon have given him their highest awards for leadership, scholarship, and teaching. He has also won acclamation from non-academic organizations including the Grand Canyon Trust's John Wesley Powell Award, for extraordinary vision, passion and commitment to the Colorado Plateau; The National Wildlife Federation's National Conservation Award; and the Federal Bar Association's Lawrence R. Baca Award, for Lifetime Achievement in Indian Law. Additionally, in its 10-year anniversary issue, Outside Magazine named him one of 15 "People to Watch," calling him "the West's leading authority on natural resources law."

He has served on several boards, including The Grand Canyon Trust and The Wilderness Society.

MAY 23 AWRA-WA AND UW SPRING NETWORKING EVENT SUMMARY

By Steve Nelson

The Student Chapter of the AWRA-WA Section hosted a speed-networking event for students, graduates and professionals on May 23rd at the UW campus. The event was an opportunity for current professionals to meet future professionals and offer insights and recommendations to pursuing a water resources career, and for future professionals to offer their insights on some of the latest research, ideas, and vision for managing water resources.

Several departments of the UW were represented by approximately 25 students, including Earth and Space Sciences, Civil & Environmental Engineering, Marine and Environmental Affairs, Environmental Science and Resource Management, and Oceanography. Approximately 15 professionals from several local agencies and organizations attended, representing Army Corps of Engineers, Aspect Consulting, Brown and Caldwell, GeoEngineers, King County Land and Water Resources Division, King County Wastewater Treatment Division, RH2 Engineering, Splash (non-profit organization), Seattle Public Utilities, Washington Water Trust, and Water1st International. The professionals group presented a great range of focus, experience, and skillsets for the attendees. During the general Q&A portion of the event, the common themes offered by the professionals were: develop and sustain your passion for water resources from a scientific, social, and stewardship perspective, and develop and sustain a passion for the community you wish to serve, whether in a non-profit, government, or consulting environment.

The second portion of the event provided small group interaction between professionals and future professionals to ask specific questions, share ideas, and exchange contact information. Both groups apparently came away from the event with a better understanding of the future of the water resource community.

The UW Chapter of AWRA-WA hosts a spring networking event every year to provide students an opportunity to learn about the different career paths in the water resources profession, directly from practicing professionals.

-By Steve Nelson, AWRA-WA President

THANKS TO OUR MEDIA PARTNERS!



*MAY 16 AWRA-WA DINNER MEETING SUMMARY
USING THE SUSTAIN MODEL TO MAXIMIZE EFFICIENCIES IN THE
MANAGEMENT OF STORMWATER
PRESENTED BY JEFF BURKEY, KING COUNTY*

By Erin Thatcher (erin.thatcher@ch2m.com)

Jeff Burkey of King County presented a review of the County's partnership with the City of Redmond, with whom they share watershed boundaries and management priorities, to address NPDES permit requirements for watershed planning. Together they developed a stormwater retrofit plan using a model ensemble of HSPF (Hydrological Simulation Program-Fortran) and SUSTAIN (System for Urban Stormwater Treatment and Analysis Integration), both EPA model frameworks. SUSTAIN was developed by EPA as a decision-support system to facilitate the selection and placement of BMPs and Low Impact Development techniques at strategic locations. The model was utilized for a tributary in the Bear Creek watershed that predominantly lies within the City of Redmond jurisdiction. Most of the 359 acres in the drainage area is fully developed with urban level densities. The project was constructed to evaluate possible stormwater runoff control structures that included: deep well injections, bioretention, vaults, detention ponds, and Filtera). With the help of the model, ultimately the goal is to produce a watershed plan that "does not just collect dust," but is implementable.

Mr. Burkey provided a concise overview of the model, summarizing the abundant amount and types of data that can be merged. He reminded the audience that while this kind of tool are powerful in the hands of engineers and planners, you also "gotta sell it" – convince the rest of the community that it is useful, accurate, and just makes sense. To that end, calibration is key – we have to go beyond "it looks close" to reality, and for that you need metrics (e.g., flow flashiness or high pulse count, but also could be water quality parameters).

Using graphics and a well-tuned explanation, Mr. Burkey dug into some of the modeling details before the typical AWRA-WA dinner meeting crowd, composed of a diverse mix of students, professionals, and otherwise involved citizens. He showed how the project team was able to connect hydrology to biology using regression analysis, allowing the model to predict B-IBI scores (as a measure of stream health) under future development scenarios and thus determine target forested cover in a given area. SUSTAIN is a complicated model designed to select cost effective solutions, likely a suite or treatment train of best management practices (BMPs). Another lesson learned from this modeling venture is that we cannot always just engineer our way out of watershed problems with a big central facility – the best solutions are more often distributed and parcel-based.

The presentation concluded with a pragmatic discussion of the role of public engagement. This project (and likely others) have determined that if you can't sell the science to the public, projects aren't likely to get far, and simply telling people what they're getting vs. teasing out what they want isn't ultimately productive either. We're continuing to learn how best to educate, engage and recruit the public. Mr. Burkey shared an example of a recent public engagement effort which, with a direct mail communication, resulted in a 30% written response rate but only a 0.5% attendance rate (!) at a public meeting. He also encouraged us to not lose sight of the "human aspect" of watershed projects – the benefits such as trails and public spaces that we can all get excited about.

CLIMATE OUTLOOK FOR THE PNW

Update on 7/6/2017 - The Climate Prediction Center (CPC) is currently predicting warmer than normal late summer temperatures (July-August-September) and equal probabilities of below normal, normal, and above normal precipitation both west and east of the Cascades. Neutral El Nino-Southern Oscillation (ENSO) conditions continue.

Check out the website of the Office of the Washington State Climatologist for more details and updates:

www.climate.washington.edu/outlook

