The Water Report

Water Rights, Water Quality & Water Solutions in the West

In This Issue

Upcoming Stories

Colorado River Basin Update

Agriculture in the Colorado River Basin

Law of the Colorado River

& More!

UTAH WATER BANKING

UTAH'S WATER BANKING ACT — PILOT PROJECTS UNDERWAY

by Emily Lewis and Robert DeBirk, Clyde Snow Attorneys at Law (Salt Lake City, UT)

Introduction

Utah is often cited as being the second driest state in the nation, while also being one of the fastest growing. Utah is also in the unenviable position of being situated between the competing potential catastrophes of a diminished Colorado River and a drying Great Salt Lake. These circumstances require new and innovative tools to address the demands of growth, environmental needs, changing land use patterns, and the desire to preserve Utah's robust agricultural community.

Across the Western US, water users are looking for flexible means of adapting to changing and challenging conditions. Water marketing is increasingly being explored as one such dynamic tool. Water markets can facilitate the voluntary transfer of water between users, while honoring the principles of the Prior Appropriation Doctrine and maintaining the value of private property rights. Such conditions can lead to "win-win solutions" that retain the economic value of water in the local community, provide needed water for new uses, and strengthen relationships between users.

Recognizing the potential benefits of water marketing, the State of Utah has recently embarked on a bold project to pilot its novel Utah Water Banking Act and create a Statewide Water Marketing Strategy Report. The goal of this effort is to: assist water users in understanding how water marketing works; provide practical guidance in how to apply and use water markets where appropriate; and add a suite of tools to help address Utah's complex water needs.

This article discusses: 1) the development of Utah's water banking concept; 2) the Utah Water Banking Act's key provisions and operations; 3) Utah's three-year effort to pilot the Utah Water Banking Act and draft a broader Statewide Water Marketing Strategy; and 4) lessons learned and the five "Water Marketing Milestones" Utah is using to organize and guide water users interested in exploring water marketing.

Developing the Utah Water Banking Concept

Utah has a long and proud history of water planning: it is part of the State's pioneering DNA and contemporary character. Seeing the need to directly address looming water challenges, in 2017 several working groups began to explore means and methods to manage the State's water.

In particular, four independent groups began parallel discussions about what was legally and practically possible. First, Democratic Senator Jani Iwamoto ran a bill to give municipalities the ability to use municipal water for instream flow to address water quality and environmental concerns. This bill did not pass in the 2017 Legislative Session, but a study group was formed to continue exploring the topic. Second, Republican Representative Tim Hawkes began an agricultural efficiency study group to study how Utah's agricultural community could implement the means to better manage and conserve water. Third, Central Utah Water Conservancy District — the largest wholesaler of

The Water Report
(ISSN 1946-116X)
is published monthly by
Sky Island Insights LLC

Editors
Shaina Shay,
David Light,
David Moon

Phone
602/ 456-2127

Email
Info@TheWaterReport.com

Website
www.TheWaterReport.com

Subscription Rates
$299 per year
Multiple & Electronic
Subscription Rates
Available

Postmaster
Please send address
corrections to:
The Water Report
3615 W. Hills of Gold Dr.
Tucson, AZ 85745

Water Bank

Market Concepts

Forfeiture Protections

Change Applications

water in the State — began reviewing ways to manage the Bonneville Unit of the Central Utah Project and adapt the State's administrative Change Application process to quickly and efficiently move water between water users. Fourth, Governor Gary Herbert convened a working group of 40+ water experts to draft the 2017 Governor's Water Strategy Report outlining various priorities, methods, and tools for managing Utah's water.

All four groups independently identified "water banking" as a possible solution to Utah's water challenges. However, the term "water banking" remained a novel and undefined concept without the necessary specifics to implement concrete actions or programs. To move ahead, the groups combined their study efforts into an unprecedented 70+ member Stakeholder Working Group organized for the purpose of studying "water banking" concepts across the West and developing a Utah-specific water banking program tailored to Utah's particular needs. The Stakeholder Working Group consisted of a wide range of water users and water interests from the Utah Farm Bureau, municipalities, **n**on-**g**overnmental **o**rganizations (NGOs), water conservancy districts, State agencies, and interested citizens.

The Stakeholder Working Group met regularly throughout 2018 and 2019 to develop a Utah water banking concept and draft the Utah Water Banking Act. Central to the Stakeholder Working Group's efforts was an early push to study and understand what kinds of water marketing or "water banking" activities were already occurring in Utah and its sister states. Subcommittees were formed to talk to local water users in key Utah watersheds. These subcommittees summarized local water marketing activities and asked local water users what obstacles were present in the existing law that had the effect of depressing water marketing activities.

The subcommittees found that most water marketing in the State of Utah consisted of independent water leases between water users. There were only a few formally organized water markets, such as water auctions or local irrigation company "rental pools" — a system whereby some irrigation companies provided shareholders not immediately needing to use their water shares during an irrigation season an opportunity to place those shares up for lease. Rental pools allow the company to maintain their water rights in good standing, provide water to those who need it, and create a revenue stream for shareholders.

The most important finding of the subcommittee work was that local water users were most interested in water marketing activities that honored three key concepts:

Local: Water users wanted local solutions and did not want a top-down or state-administered water marketing program. Users wanted to keep their water in the local community and under local control.

Voluntary: Water users were very clear that any water marketing activity needed to be voluntary. Concepts that deprived water users of dominion over their water were non-starters and would not receive the necessary public buy-in and support.

Temporary: Water users were most interested in water leasing programs and were not interested in water markets that permanently sold water. Temporary transactions were preferred because they keep the water's economic value with the water right owner and avoid permanent sale of agricultural water rights for other uses — a process known to have devastated rural communities in other Western states ("buy and dry" transactions).

Using these three guiding principles the Stakeholder Working Group went to work designing a Utah water banking concept that reflected the water user community's needs.

The Stakeholder Working Group also endeavored to address several desires expressed by the water user community during the subcommittee studies. In particular, agricultural users wanted a means of protecting water rights from forfeitures in the face of changing land use patterns including development of their historical places of water use. This desire was particularly acute as Utah previously granted forfeiture protections to municipal water rights held for future public use. Agricultural interests wanted equal treatment.

Additionally, there was a strong desire to expedite the State Engineer's Change Application process. At the time, the pace of the Change Application process — which has improved greatly in the intervening years — prevented quick changes in water use or the development of any kind of "spot market" for water transactions.

Spot Markets

Spot markets are markets specializing in quick transactions that provide immediate delivery and receipt of a resource. Spot markets are used in the energy sector to stabilize the power grid and provide immediate power needs. A spot market for water could be used in similar emergency situations for temporary needs (e.g., for construction), or during periods of peak demand (e.g., hot summer days).

Water Bank

Instream Flows

Legislative Buy-In

Water User Buy-in

Leasing

Board Evaluation

Preventing Speculation

Contract Provisions

A third primary consideration was to increase the ability to use water for environmental and instream flows. At the time, Utah's stringent instream flow statute was challenging to use and had limited application. Water users wanted to address condemnation protections for leased water, "piggy-backing" on existing administrative process and known water use models, and add guardrails to avoid speculative practices.

Between 2018 and 2019 the Stakeholder Working Group spent hundreds of hours debating nitty gritty water law concepts, balancing a diverse set of wants, and drafting what would become the Utah Water Banking Act. To vet their ideas as they progressed, the Stakeholder Working Group also conducted a Statewide "road-show" — conducting over 40 presentations across the State to interested local water users to solicit feedback on the working concepts. This iterative working model proved incredibly valuable in troubleshooting potential pitfalls in the draft legislation and ensuring that the concepts truly reflected the values and desires of local water users. The Stakeholder Working Group kept the Legislature apprised of its work by seeking a Joint Resolution in 2019. This Resolution endorsed continued study and development of the Utah Water Banking concept and appropriated $400,000 to support and pilot the eventual Water Banking Act (discussed below).

Most importantly, the ubiquitous nature of the statewide discussions created a community of engaged participants. These extensive efforts led to widespread buy-in and acceptance from the water user community. By the time the final Water Banking Act Bill (SB 26) was voted on in the 2020 Legislative Session it only received one "no" vote. Notably, even that single vote was due to the unique local politics in that region and was not a substantive reflection on the bill.

The Utah Water Banking Act

The efforts of the Stakeholder Working Group resulted in the creation of the Utah Water Banking Act. As noted above, the Utah Water Banking Act is primarily focused on promoting the three guiding principles of creating local, voluntary, and temporary water transactions: in other words, promoting water leasing. The Water Banking Act also sought to address the other policy priorities noted by water users during the stakeholder sessions. The Utah Legislature passed the Water Banking Act in 2020, codified as Utah Code Ann. Title 73 Chapter 31.

The Utah Water Banking Act operates under the general premise that qualifying leasing arrangements can be approved by the Utah Board of Water Resources as a Utah Water Bank and thereafter extend benefits defined under the Act. Importantly, local water users expressed a strong desire for the autonomy to design their own leasing arrangement. As a result, the Board of Water Resources' review of Water Bank applications is solely a completeness review and the Board does not opine on the substance or structure of a proposed water bank. As long as the Water Bank Application meets the criteria of the statute it is approved.

The Water Banking Act primarily works by establishing two "kinds" of water banks that leasing arrangements can be organized under: Contract Water Banks and Statutory Water Banks.

CONTRACT WATER BANKS

Understanding that most water leasing occurs under independent lease contacts between discreet parties, the Stakeholder Working Group created a means for similar contracts to be recognized as a Utah Water Bank and be extended the benefits of the Water Banking Act. To be eligible for approval as a Contract Water Bank the applicant must be a public entity. This stipulation is to: prevent water speculation; provide a public process for interested parties to review the contract at the entity level; and to make the leasing contract subject to Utah's Open and Public Meetings Act.

Interested applicants file a specific Contract Water Bank Application form with the Board of Water Resources. The Contract Water Bank Application requests that the applicant summarize key information and include a copy of the leasing contract. The leasing contract must include specific provisions intended to protect the water users, including:

- A description of how the banks governing body will be structured and operate
- A description of the bank service area and map
- A description of how water delivery requests and loaned water rights are to be administered
- Criteria for the participation of any non-public entities
- Whether groundwater or surface water is going to be leased
- The process the Contract Water Bank will follow if the water bank terminates, including how the Contract Water Bank will return deposited water rights to the water right holders.

Water Bank

Key provisions such as lease length, lease pricing, and leasing process are determined by, and agreed to by the parties. As long as the contract satisfies the statutory criteria, the Board of Water Resources will approve the Contract Water Bank Application to be a Contract Water Bank and extend the benefits of the Act. It is anticipated that the majority of water banks, especially in the early stages of development, will be Contract Water Banks.

STATUTORY WATER BANKS

Regional Middleman

The second type of water bank created under the Water Banking Act is a "Statutory Water Bank." A Statutory Water Bank is intended to be a legal entity organized for the express purpose of facilitating leases between generally unknown parties. Whereas under the Contract Water Bank there is a discrete set of known parties, the Statutory Water Bank may act as more of a "middleman" in a local area connecting those people who have water with those who want water. A Statutory Water Bank may be as simple as a bulletin board platform or a fully organized spot market for water. A good example of how Utah envisions a Statutory Water Bank would be the Idaho Department of Water Resources Water Supply Bank (https://idwr.idaho.gov/iwrb/programs/water-supply-bank/) — except that, in Utah, the entity running the Statutory Water Bank could be either a local public entity or a private entity.

Articles & Bylaws

Applicants for a Statutory Water Bank must own a perfected water right within the Bank's proposed service area. Utah defines a perfected water right as a fully developed water right that has been certificated by the State Engineer, decreed by a court of law, or has been legislatively defined as such and is considered real property. Since the participants in a Statutory Water Bank are likely to be unknown — as opposed to discreet parties in a contract that have mutually agreed to the terms of the contract — the Water Banking Act requires Statutory Water Banks to provide much more information about how the entity is to operate and facilitate water leasing. Modeled after Utah's strong reliance on private non-profit irrigation companies — which use Articles and Bylaws to govern operations — it is anticipated that Statutory Water Banks will establish the criteria in organization documents. Based on early experiences piloting the Water Banking Act, discussed later, it is anticipated that Statutory Water Banks may develop at a slower rate than Contract Water Banks as they require substantial commitment and resources. Despite these constraints in certain areas of Utah, Statutory Water Banks may be a very useful tool.

OTHER KEY PROVISIONS OF THE UTAH WATER BANKING ACT

In addition to establishing Contract Water Banks and Statutory Water Banks, there are several other notable elements of the Water Banking Act:

Reporting Requirements

Annual Reports

Approved water banks must make an annual report to the Board of Water Resources detailing information like: the volume and Change Application number of water rights deposited in the water bank; the nature of use and volume of water before being deposited into the water bank; tabulation of the characteristics of water rights loaned from the bank; and financial information about water leasing and bank operations.

Change Application

Transaction Cost

To deposit water rights into the water bank, the water bank and water right owner must: 1) file a Change Application with the Utah State Engineer establishing that the water right can be used in the bank service area without impairing other water users; and 2) add "water bank" as a use for the water right. The Change Application process is an established public process well known by water users. Once a water right is approved for the water bank, no additional change applications are needed and the water right can be distributed according to water bank policies. This "one-time" Change Application process expedites the ability to move and deliver water within the bank service area. This concept is similar to the treatment of water rights approved for use in an irrigation company or municipal service area.

Forfeiture Protections

Protections

Water rights approved for use in a water bank are protected from forfeiture. This was one of the primary requests of water users and was intended to incentivize the use of water banks and accommodate changing conditions. As noted above, this forfeiture protection also places agricultural uses on an equal footing with municipal uses and allows companies to retain their water rights in good standing.

Condemnation Protections

To ensure that water rights made available for lease are not viewed as "excess" or "unnecessary" — and thus vulnerable to a government taking — water rights approved to be in a water bank are extended protections from condemnation for the time they are in the water bank and for five years after the lease term ends and the water right is no longer active in the water bank.

Water Bank

Environmental Flows

In 2020, when the Water Banking Act was passed, Utah had a very limited instream flow statute. The statute only allowed certain parties (select fishing groups and certain state agencies) to file instream flow Change Applications. These Change Applications could only be approved if there were no intervening diverters in the desired flow reach and applications received the most junior priority date in the system. Accordingly, these restrictions severely dampened the usefulness of the instream flow Change Applications.

The Water Banking Act allowed water rights to be used "for any purpose identified in the Act." The Stakeholder Working Group explicitly identified some of the objectives of the water banks as to facilitate "water quality improvement" and a "healthy and resilient natural environment." These provisions were intended to act as a work around to the restrictive instream flow statute by allowing water rights to be used for instream flow and environmental purposes.

New Statute

In 2022, the Utah Legislature passed HB 33, significantly changing the State's instream flow statute to remove many of the constraints noted above. Much of the incentive for using the Utah Water Banking Act as a means to achieve instream flows may now be diminished. The water user community will be watching this instream flow development to determine if it affects the overall desire to use water banks or if the other benefits of the Water Banking Act will prevail in keeping the statute in use.

Sunset Period

Timeline

The Water Banking Act is intended to be a pilot effort to test the water banking concepts and will sunset in 2030 if not renewed. Whether the State of Utah determines it is prudent to review the Water Banking Act will depend on the extent to which it is determined to be a useful tool being utilized by water users.

Statewide Water Marketing Strategy Report

Funding

To ensure the Utah Water Banking Act will function well for Utah water users, the State of Utah secured $800,000 in funding to pilot the Water Banking Act and draft a complimentary Statewide Water Marketing Strategies Report. Funds for this effort came from a $400,000 appropriation from the State of Utah and a $400,000 US Bureau of Reclamation WaterSMART Water Marketing Grant. The goal of the Statewide Water Marketing Strategies Report is broader than just piloting the Utah Water Banking Act. It aims at studying water marketing principles more generally and providing water users with tools, tips, and tricks to explore and implement water marketing in their region.

Project Team

To oversee the piloting effort and draft the State Water Marketing Report, the Utah Division of Water Resources selected a Project Management Team (Project Team) consisting of the law firm of Clyde Snow & Sessions, WestWater Research, and HDR Engineering. The Project Team brings experience in engineering, economics, law, public facilitation, and familiarity with the water banking effort. The Project Team is also working closely with other state agency partners, like the Utah State Engineer, to create administrative tools and practices to facilitate water marketing activities.

Water Bank Pilot Projects

To provide content for the Statewide Water Marketing Strategy Report, the Project Team worked with water users in three pilot areas to test the concepts of the Utah Water Banking Act and explore broader water marketing themes. This was a three-year effort starting in July of 2020 and will be culminating in a final Report, website, and materials in the fall of 2023.

Pilot Markets

Three pilot areas were chosen based on local water user interest: Price River Area, Cache Valley, and the Snyderville Basin. In addition to the three official pilot areas, the Project team also worked with interested water users in several other areas of the state to answer questions about the Water Banking Act and water marketing principles. In particular, the Project Team also worked with water users in Southern Utah County through the Mt. Nebo water authority, groundwater users in Iron County, and the Ashley Valley Sewer Improvement District in Vernal, Utah. The lessons learned in the three pilot areas were invaluable.

Water Bank

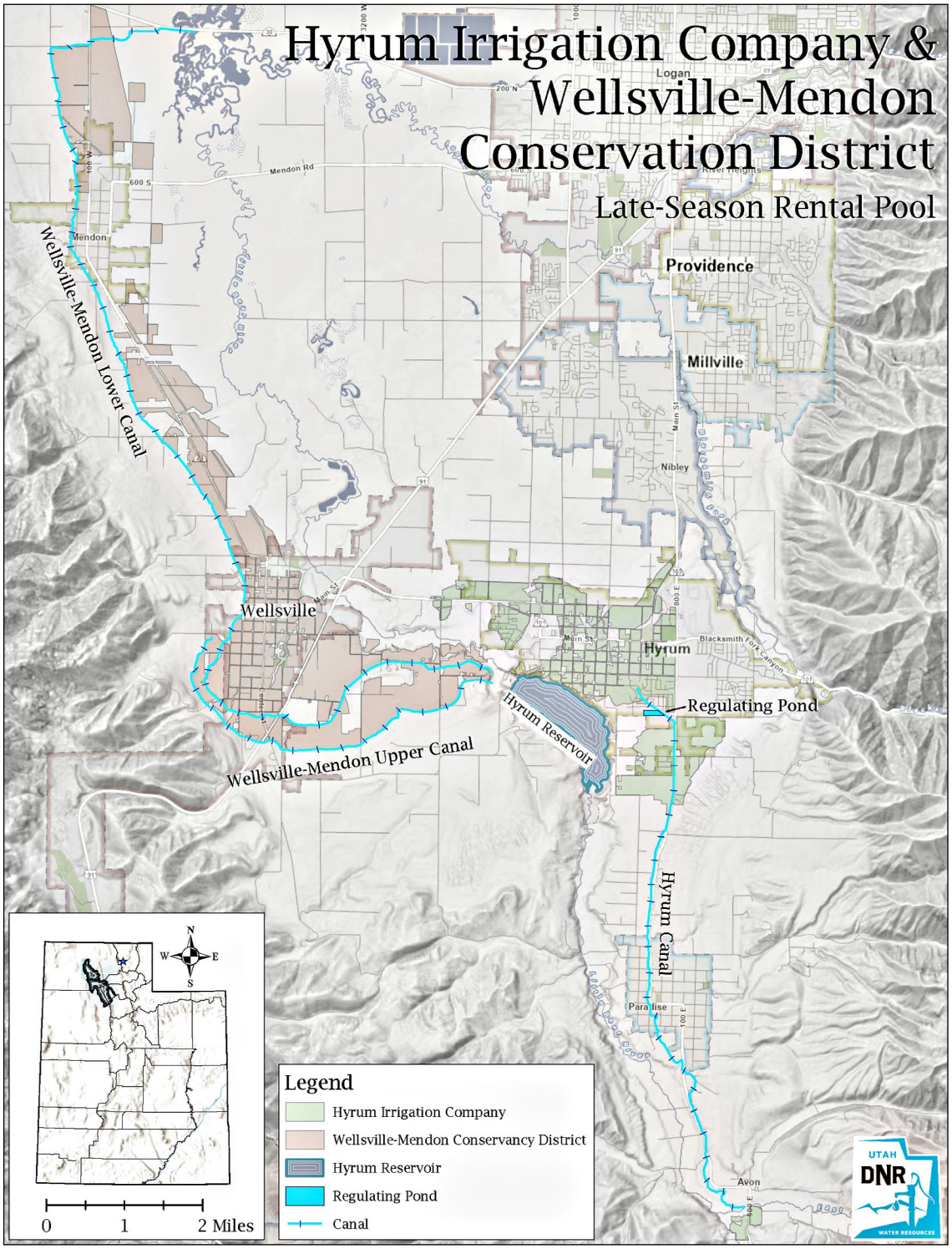


Figure 1.

Water Bank

Geography

Conservancy District

Local Issues

Federal Involvement

Lease Agreement

Results

Geography

CACHE VALLEY PILOT PROJECT

Cache Valley is located in northern Utah along the eastern portion of Cache County. The Cache Valley Pilot Project centered on the southern Cache Valley — south of Logan and near the cities of Paradise, Hyrum, Wellsville, and Mendon. This area is extensively irrigated but is also witnessing rapid municipal growth. The Little Bear River and its tributaries are the principal drainages. The river drains approximately 185,000 acres and is impounded by Hyrum Reservoir near Hyrum, Utah. Monthly flows of the Little Bear River are typical for a snowmelt driven river system in the Western US, with a spring runoff peak and monsoon rainstorms in late summer. Annual streamflow volumes in the Little Bear River show a long-term average (1992-2022) of 61,000 acre-feet per year.

Initially, the Cache Water Conservancy District volunteered Cache Valley as a pilot area to explore whether water banking could address local issues such as inadequate late-season irrigation water, growth within ditch systems, and scattered water owners. The Cache Water Conservancy District offered to spearhead and coordinate meetings to explore water banking.

Several local water needs were investigated. In particular, there was interest in exploring whether irrigation companies in Southeast Cache Valley could be "knitted together" to facilitate deliveries across a broader service area. As the process and discussions progressed, it became clear that there was a mismatch of supply and demand — everyone wanted water at the same time. It was determined that without a clear and available supply to meet demand, a water bank organized under the Utah Water Bank was likely not the best fit.

However, the discussions in Cache Valley were ultimately fruitful as two of interested entities, Hyrum Irrigation Company and the Wellsville-Mendon Conservation District, determined that they had the right configuration of supply and demand to create a late season rental pool in Hyrum Reservoir. Hyrum Reservoir is a federal facility and to ensure no Federal water contracts were needed to execute this concept the parties invited the US Bureau of Reclamation to the discussion. It was determined that since both entities were members of the Southern Cache Valley Water Users Association, the entity that held the Federal Warren Act contract to store privately held water rights in the federal facility, a new federal contract was not needed. The members could simply trade their storage allocations amongst themselves.

The discussion resulted in the Hyrum Irrigation Company and the Wellsville-Mendon Conservation District entering into a two-party water lease agreement. The terms of the agreement generally set an annual process for how Hyrum Irrigation Company was to alert Wellsville-Mendon as to whether they had surplus late season water to lease and at what price. Since the water was being delivered to the same Place-of-Use and for the same Nature-of-Use — irrigation — no Change Application changing the parameters of Hyrum Irrigation Company's water rights was needed. Accordingly, the administrative burden of the lease pool was relatively small.

While the Cache Valley pilot area did not result in the creation of a Utah Water Bank, it was a successful pilot project and produced several valuable lessons informing broader water marketing strategies. It also resulted in a working water leasing contract that provides a template for other parties looking to arrange a similar water transaction. Due to dry conditions, water was not leased in 2022; with record-setting snowfall, it is expected that water will run in summer 2023. The local stakeholders were happy with the results of the effort and the Cache Valley now has an additional tool to meet local water demand.

PRICE AREA PILOT PROJECT/CARBON CANAL COMPANY WATER BANK

The Price River Basin is a significant drainage basin of the Wasatch Plateau and Book Cliffs in east-central Utah. The Basin covers approximately 1,900 square miles, varying from mountainous landscape to desert canyons. The Price River flows from Scofield Reservoir near the headwaters down to a confluence with the Green River and ultimately to the Colorado River. Monthly flows of the Price River are typical for a snowmelt driven river system in the Western US, with a spring runoff peak and monsoon rainstorms in late summer. Annual streamflow volumes in the Price River show a long-term average of 79,000 acre-feet per year; however, more recent data since 2001 shows a reduced flow volume of 52,000.

Water Bank

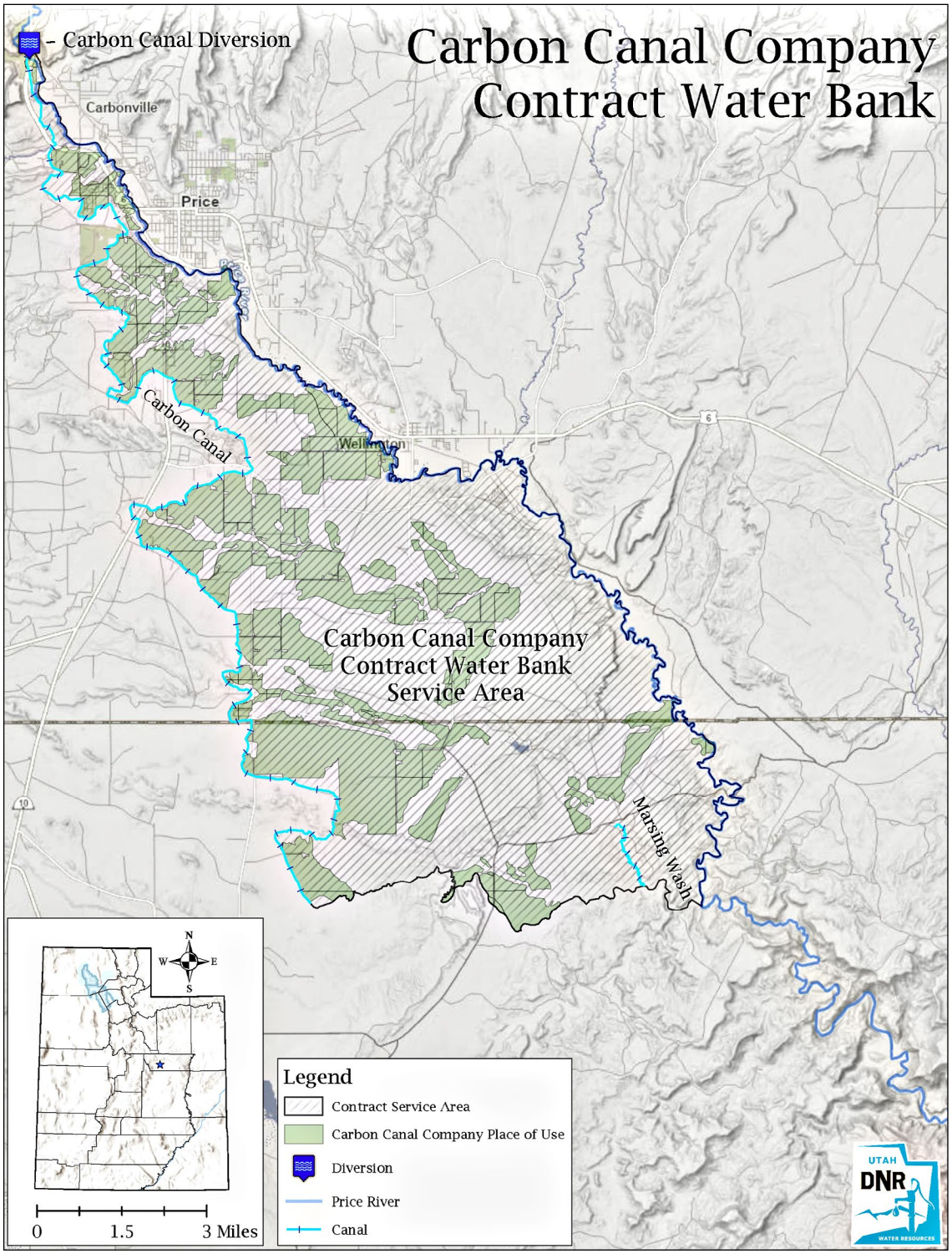


Figure 2.

SCPP Program

The Price area was chosen as a pilot project because local water users had previous experience with water marketing activity. For example, the Price River Water Users Association runs an annual water auction that makes water rights held by PacifiCorp and recently retired from a local coal plant available for lease. Similarly, the Carbon Canal Company previously participated in the System Conservation Pilot Program (SCPP). SCPP was a four-year pilot program (2015-2018) designed to explore potential solutions to address declining water levels in Lakes Mead and Lake Powell and the potential for long-term drought in the Upper Colorado River Basin. Water users in the area participated in a successful fallowing program under SCPP.

Since the initial SCPP program had concluded, local water users were interested in testing Utah's new Water Banking Act to see if a water bank could be used as a more permanent water marketing tool. The parties — Trout Unlimited, The Nature Conservancy (TNC), the Utah Division of Wildlife Resources,

Water Bank

Fallowing Program

Price River Water Users Association (who did not ultimately participate), and the Carbon Canal Company — sought to explore a voluntary and compensated fallowing program that would meet the dual goal of: 1) improving stream flows in the lower Price River to support recovery of threatened and endangered fish species; and 2) to provide local irrigators an alternative source of revenue while protecting their water rights from abandonment.

As there was already pre-existing water marketing activity in the area, the early discussions in the Price Area centered on whether those activities could be transitioned into a water bank under the Utah Water Banking Act. For example, TNC already had an agreement in place to lease the tail water from the Carbon Canal Company and send that water to Marsing Wash, a nearby TNC wetland project. Similarly, there was discussion about whether a future project to pipe the Carbon Canal Company earthen ditches could be used as a source of water for a water bank.

Refining Scope

These conversations were incredibly helpful in determining what the scope and scale of a Utah Water Bank could be. Ultimately, in consultation with the Utah State Engineer, it was determined that only the consumptive portion of a water right could be leased in a Utah Water Bank and that water would most easily be made available through a fallowing program.

Leasing Process

Having set the boundaries for what kind of water could be leased through a Utah Water Bank, the parties next endeavored to draft a contract outlining how water leasing between the parties was to occur. Since Carbon Canal Company is a shareholder owned mutual irrigation company, it was determined that the leasing arrangements would be made directly with the Company and not individual shareholders. If individual shareholders wanted to participate, they needed to work through Company and could not individually lease to the interested lessees.

To facilitate the transaction, the parties included provisions establishing a Water Bank Management Committee and Manager and established duties between the parties. The parties organized the transaction by setting a series of dates by which the parties would exchange critical information.

Marketing Timeline

The Information Exchange Dates are:

December 1: The Bank Manager sends an "Interest Statement" to Carbon Canal Company Shareholders (not obligate participation) that asks Shareholders to identify the number of shares they are willing to lease/deposit into the Bank, acres they wish to fallow, and a lease price the Shareholder will accept.

January 1: The Bank Manager prepares a summary of the Interest Statements.

January 15: Lessees determine the "Annual Lease Price" they are able to lease water at and inform Carbon Canal Company.

February 1: Shareholders submit a "Deposit Form" indicating number of Shares they want to deposit/lease at the Annual Lease price set by the Lessees. Carbon Canal Company reviews and approves the Deposit Forms and endorses the amount of water available for lease that year.

February 21: The Bank Manager informs lessees of the number of Deposited Shares available for lease for the calendar year.

March 1: Lessees inform Carbon Canal Company of the number of shares the shareholders each will lease. They provide the proposed delivery point for the Annual Lease Shares. Parties execute a lease form for the Annual Lease Shares. Carbon Canal Company adjusts the amount of the water its members receive under their shares throughout each Irrigation Season based on water availability.

Irrigation **S**eason **B**egins: If not all water is leased, Bank Manager notifies Shareholders that their Deposited shares were not leased and Shareholder can use the water as before for irrigation.

November: The Bank Manager reviews water accounting and prepares annual Board of Water Resources Reporting.

December 15: The depositor/shareholder receives the Annual Lease Price, minus operating costs (10%).

Contract Bank

Once the parties completed their leasing contract, the Project Team worked with the parties and the Price River Watershed Conservation District (a local public entity who offered to act as the water bank applicant as required by statute) and Utah Division of Water Resources staff to create a Contract Water Bank Application form and approval process. As this water bank approval process was new and novel, it was determined to model the process as closely as possible to the existing Board of Water Resources loan program process to which water users and the Board of Water Resources are familiar. For example, the forms visually look similar. Staff at the Division of Water Resources will first work with the applicants on the application and provide a recommendation to the Board, and the application can rely on an attorney letter certifying that the application meets the requirements of the statute lessening the burden on the Board to make legal determinations. This formal process and Contract Water Bank Application is approved and ready for public use.

The other important aspect of the Price Area pilot project/Carbon Canal Company Water Bank is that it was the first water bank Change Application in the State of Utah. This presented a number of new challenges.

Water Bank

New Process

First Bank

Though the State Engineer had been involved in the discussions, distributing the consumptive portion of a water right in an area with limited telemetry and little existing flow data proved to be difficult to assess and slowed the approval process. Additionally, while the parties to the contract and the Project Team did significant outreach to the local community to explain the water bank application and process, the Change Application still received almost 80 protests (all but five being a form letter opposing the water bank on general concerns that it would hurt the community and not citing the Change Application criteria under Utah Code Ann. 73-3-8). Ultimately, the parties were able to quell local fears and address the few substantive concerns. However, the process was useful in identifying that both the State Engineer and interested parties needed more information about the water bank approval process and where to express their concerns or ask questions.

The Carbon Canal Company Contract Water Bank is now the first fully approved water bank in the State of Utah. Unfortunately, the Change Application was not approved in time to run water during the 2023 season but it is likely the parties will seek to do so during the 2024 season.

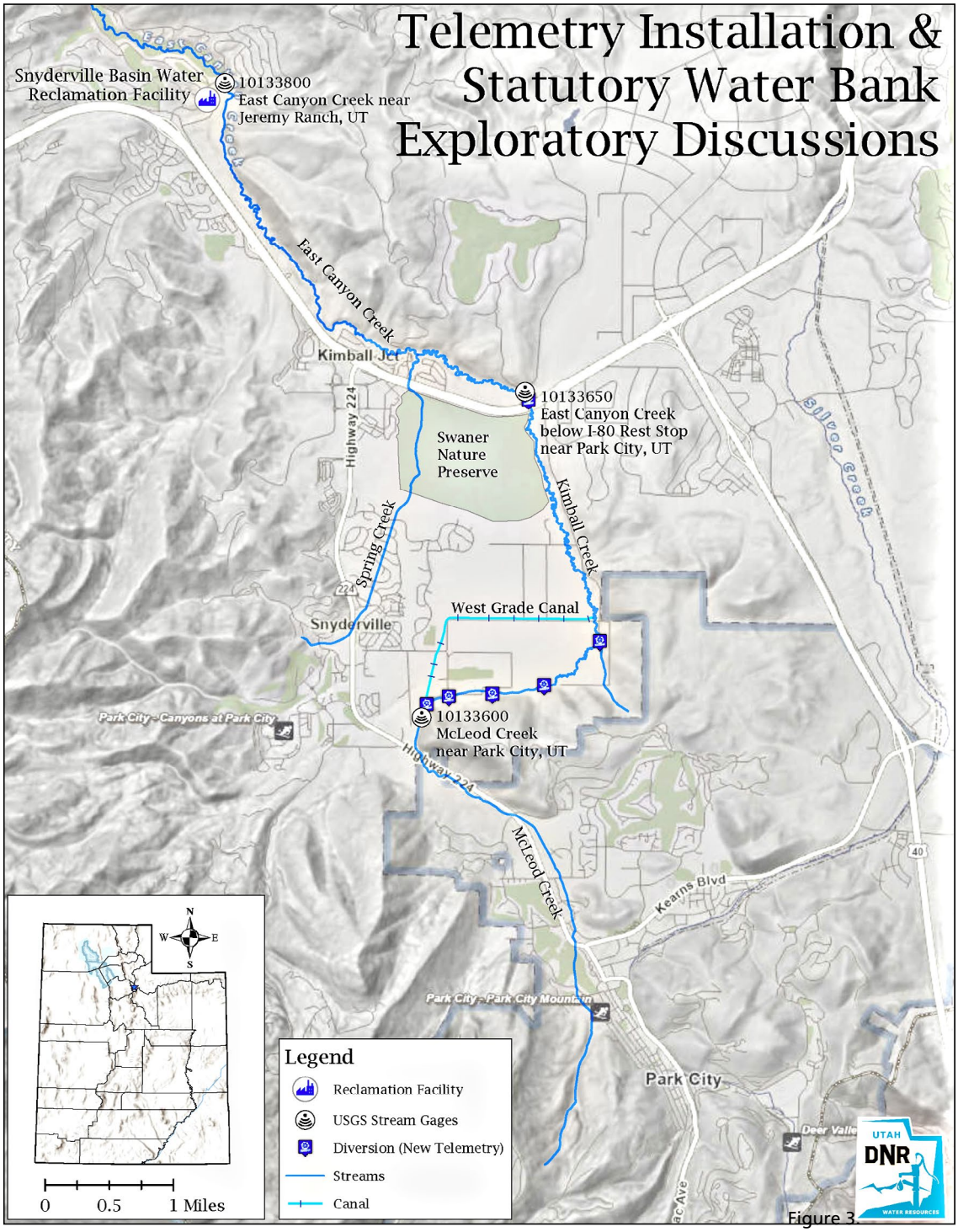


Figure 3.

Water Bank

Environmental Water

Telemetry

Transaction Activities

Understanding Needs

Learning Curve

SNYDERVILLE BASIN PILOT AREA

The Snyderville Basin is a valley in Summit County, Utah, adjacent to Park City and the eastern margin of the Wasatch Range. Many Park City residents live in the Snyderville Basin. Snowmelt from the Wasatch Range and precipitation are the primary source of water for the region. Rapid residential and commercial development are placing increased demands on the groundwater resources in the area and increased groundwater withdrawals could affect appropriated surface water resources.

The initial desire was to explore creating a Statutory Water Bank to facilitate instream flows for fish flows and water quality in East Canyon Creek during critical low flows in late summer. Interested Stakeholders included: Weber Basin Water Conservancy District, Swaner Preserve and EcoCenter, the Audubon Society, Mountain Regional Special Service District, Trout Unlimited, Snyderville Reclamation District, and Park City Municipal Corporation.

The project team helped organize and facilitate substantial multi-party stakeholder discussions on the potential of increasing instream flows through a water bank. Stakeholder discussions soon led to two distinct tracks of discourse: 1) water supply and technical questions as to whether there was enough information to understand the needed steam flows to ensure the Statutory Water Bank was meeting its goals; and 2) how to form a Statutory Water Bank.

In terms of the technical questions, the group explored several sources of water as potential depositors into the bank: surplus import water from Park City; private rights and a potential future Spring Creek water treatment plant and pump project; and larger conservation measures. However, the group found it difficult to get traction on securing any sources of water without installing additional telemetry to ensure the leased water was actually increasing instream flows. In response, the Project Team began working with the State Engineer and funded six new telemetry sites along East Canyon Creek: Quarry Mountain, JH Bailey, West Grade, Osguthorpe, Ranch Creek 3, and Glenwild. With this information local stakeholders will for the first time be able to measure flows in East Canyon Creek to an accuracy needed to facilitate a water lease for instream flows.

Regarding establishing a Statutory Water Bank, the Project Team supported the group by facilitating a discussion about what the Water Banking Act required to satisfy the Statutory Water Bank requirements. The Project Team identified three categories of activities that would need to occur: activities that are required by the Water Banking Statute, tasks that are implicit for successful water transactions but are not required by the statute, and tasks that are not necessary to facilitate a water transaction but are helpful or useful. The Project Team then created a survey that asked each of the stakeholders to assess whether they had expertise to complete the identified task, how many hours it would take to complete the identified task, and what level of investment they had from taking that task on. The results of the survey were incredibly informative as it was determined that each of the interested stakeholders wanted to participate in and support a Statutory Water Bank but no stakeholder had the resources to spearhead creating a Statutory Water Bank. With a fuller understanding of time and costs, the local stakeholders decided not to commit to develop a formal Statutory Water Bank.

While no formal Statutory Water Bank was formed, the Snyderville Pilot Project was very successful in better understanding the needs to develop such a water bank. Additionally, with the installation of telemetry the parties will have the raw data available to test instream flow conditions and seek sources of supply. For now, the local stakeholders will use the new telemetry stations and explore private leasing activities under Utah's new instream flow statute.

The Pilot Project's activities over the last three years have been incredibly helpful in not only informing the application of the Utah Water Banking Act but also the broader goals and content for the Statewide Water Marketing Strategy Report.

Water Marketing Milestones and Tools, Tips, and Tricks

The efforts of the Project Team are broader than just exploring the Utah Water Banking Act. The goal of the Statewide Water Marketing Strategy Report is to include recommendations about water banking, but also provide thoughts and recommendations about supporting greater water marketing in the State of Utah. As part of this effort, the Project Team has learned that for many water users starting to explore water marketing activities can be overwhelming. To assist water users the Project Management has organized its recommendations and the Statewide Water Marketing Strategy Report around five key milestones needed to navigate water marketing.

Water Bank

Key Players

Supply & Demand

Transport

Template Lease

Forms

Key Milestones:

PEOPLE: To have a successful conversation about water marketing, participants needed to not only identify those who wanted water and those who had water, but also key supporting players like attorneys, Regional State Engineers, and key decision makers. It was also critical to identify who had the interest, resources, and capacity to participate in the discussion and to identify a champion of the effort.

MARKETS: Essential to any water marketing activity is understanding whether there is a need for a potential water market to exist. Does the region have the right match of willing lessees and lessors (i.e., the basic components of supply and demand). The Project Team has distilled a series of key questions for water users to ask to determine if a viable water market exists.

LOGISTICS: The next critical step in the process is to assess the ability and means of moving water between potential lessors and lessees. This analysis includes assessing the physical means of moving water, the legal constraints of participating water rights, and governance issues that might impact the movement of water.

TRANSACTIONS: A market transaction is the formal recognition of the who, what, where, when, and how water is going to move between parties and can take many different forms. Most market transactions will contain several key elements such as the means of pricing, timing and availability of water, and governance issues. The Project Team has prepared a template lease that includes many of these terms that can be adapted for local uses.

APPROVALS: Even if the parties have agreed on their market transaction, often additional approvals are needed to realize their goals. The Project Team has worked with the Utah Board of Water Resources to have final approved Water Bank Application forms and to create an administrative process for Water Bank Approvals. Most leasing transactions in Utah will also require a Change Application be filed with and approved by the Utah State Engineer.

The Project Team will be releasing its Statewide Water Marketing Strategy Report in the fall of 2023. The Report will include summary information similar to this article but also include specific activities, tasks, and resources to assist water users exploring water marketing and further unpacking the five Key Water Marketing Milestones.

Conclusion

The Water Banking Act is the result of hundreds of hours of stakeholder labor and dedication. It is designed to specifically address the needs and wants of the water user community. Championing the central tenets of voluntary, temporary, and local, the Act is meant to be an engine of local change and activity. It is anticipated that in leaving most of the control to water users, no two water banks will look the same. It is an exciting chapter of Utah water law that promotes pragmatic solutions, strengthens local ties, and invites creativity.

For Additional Information:

Emily Lewis, Director and Shareholder of Clyde Snow, 801/ 433-2409 or eel@clydesnow.com
Please continue to watch for more information at https://water.utah.gov/water-marketing/

Emily Lewis assists clients in navigating complex water problems. She advises individual water right owners, water conservancy districts, municipalities, mining companies, and mutual shareholder irrigation companies. Her strategic projects practice extends to innovative policy work and specialty project management. She presently acts as the Utah Water Banking Project Manager and hosts Ripple Effect – A Podcast Putting Water in Context.

Robert DeBirk's practice focuses on water, natural resources and environmental law. Mr. DeBirk clerked with the Salt Lake City Attorney's Office from 2018 to 2021, assisting the Department of Public Utilities with water law and water quality matters, including the ongoing General Adjudication before the Third District. In addition to water and natural resource issues, Mr. DeBirk assisted Salt Lake City in land use and planning items ranging from updating groundwater source and watershed protective ordinances to creating assistance programs for low-income residents. Mr. DeBirk graduated from the University of Utah's S.J. Quinney College of Law in 2021. Before attending the College of Law, Mr. DeBirk spent a decade acting as a Policy Director for Utah based organizations focusing on legislative relations, land use planning, and air quality.

Infrastructure

Water Transport

Infrastructure Failures

Funding

Irrigation Surveys

Results

Response Rate

CRITICAL AGING IRRIGATION INFRASTRUCTURE

by Chace Tavelli, P.E., Wyoming Water Development Office (Cheyenne, WY)

Introduction

To say that irrigation is important to Wyoming would be an understatement. Wyoming is known for its extensive agricultural sector — the backbone of the state's economy — with irrigation systems playing the key role in the sustainability of the industry. Irrigation activities date back to before 1890, when Wyoming became a state, and helped shape the communities around the area and region. The majority of appropriated water in the state is for irrigation use.

One of the underpinnings to irrigation is its infrastructure, which is used to move water from its source to irrigated acreage. Much of the irrigation infrastructure in the state is aged. It has reached, or is reaching, its useful life expectancy and is beginning to show signs of the need for rehabilitation or replacement.

In 2019, the condition of two major structures shined the spotlight on the topic of the aged irrigation infrastructure in Wyoming. A structure serving over one hundred thousand acres suffered a collapse. This caused a 40-plus day interruption in water delivery. In addition, a 112-year-old high hazard dam impounding irrigation water was found to have structural issues which led to a reservoir elevation restriction. The elevation restriction decreased the amount of stored water in the reservoir, resulting in less water for irrigation purposes.

The reservoir restriction affected irrigation deliveries and the structural conditions of both facilities, concerning the public as well as decision makers. Both situations required extensive study and evaluation of options for rehabilitation or replacement. These efforts cost the state a significant amount of money. More funding is slated for the ultimate replacement of the structures.

The Wyoming State Legislature wanted to get ahead of any future problems. A legislative interim topic was identified during the 2020 legislative session to evaluate aging irrigation infrastructure in the state. The Wyoming Water Development Office, acting on behalf of the Wyoming Water Development Commission, was asked to play a role in helping the legislature with the evaluation of such infrastructure statewide.

Background

The Water Development Commission (Commission) provides for the planning, selection, financing, construction, acquisition, and operation of water related projects in the state. Every two years the Commission conducts a survey of irrigation entities (districts, canal companies, ditch companies, etc.) to gather information about the entities, providing important information for the agency's funding criteria. Such information aids in prioritizing the funds available for feasibility studies and project construction. It also allows irrigation districts and companies to compare operational issues, financial data, and general information with each other.

In 2021, the irrigation system survey was modified to include questions regarding: infrastructure age and type, size — defined by **c**ubic **f**eet per **s**econd (cfs), overall condition, planned projects, and the estimated cost for those planned projects. The survey was sent to all 157 entities in the Water Development Office (Office) irrigation database that receive the survey every other year. This 2021 survey was receiving a modest return rate, so the Office staff followed up with phone calls and additional emails. Through the extra effort, 78 entities eventually responded to the survey, representing more than 50% of the irrigated acreage in the state.

Results from the irrigation system survey showed that 88% of the reported three thousand plus miles of conveyances, and 38% of the reported eight thousand structures, were 50 years of age or older. Reported conditions of the conveyances and structures indicated that 21% of the conveyances, and 42% of the structures, were in poor to very poor condition. Planned projects and those projected costs were estimated at $173 million over the next 20 years, with $93 million of that anticipated for state funding.

It should be noted that there was a 50% response rate to the survey so it can be assumed that there are many more miles of conveyance, thousands more structures, and larger costs associated with anticipated projects yet to be identified. While the survey provided valuable information, further understanding of the critical aging irrigation infrastructure situation in the state was desired — leading to what would become a much larger project.

Infrastructure

Legislative Support

Consultant Selection

CAII Scope

Outreach

Emergency Fund

Public Engagement

Critical Aging Irrigation Infrastructure Study

The Water Development Office began planning to build upon the 2021 survey and set in motion a request for funding for a Critical Aging Irrigation Infrastructure (CAII) study. The 2022 legislature authorized a $500,000 appropriation for the study through the Commission Omnibus Water Bill – Planning (www.wyoleg.gov/Legislation/2022/HB0073). The CAII study is a reconnaissance level investigation to identify, prioritize, evaluate, and estimate costs for the critical irrigation infrastructure in the state. During that legislative session, the Office started solicitation for statements of qualification and letters of interest from consultant teams in anticipation of the bill's passage and the eventual signature by the Governor making the bill a law.

Following these approvals, the competitive part of the consultant selection process began in earnest. Trihydro Corporation's Laramie, Wyoming based office — and their team of additional experts — was ultimately selected based on their approach to the execution of the study's scope of work. This scope of work was developed by several office staff and required: a review of existing information; project meetings; defining criticality; and ranking criteria for infrastructure projects.

The scope of work included ten total tasks, with the review of existing information (reports, surveys, etc.) being the foundation from which to build on for the study. The Commission has completed approximately 120 master plans and feasibility studies that are relevant to the CAII study. The majority of these studies are irrigation system master plans where entire irrigation systems are inventoried and evaluated and mapped in a **g**eographic **i**nformation **s**ystem (GIS). Recommendations are generated and identify projects the entity can pursue to improve their system and/or operations with cost estimates developed for each of the recommendations. Identified projects include: rehabilitation or replacement of structures; ditch/canal improvements; and operational modifications. The inventory, evaluation, and cost estimates fed directly into the CAII study. In addition to information collected by the Commission, it was anticipated that there would be other potential sources for gathering existing information about Wyoming's irrigation infrastructure.

The project meetings task was considered critical for introducing the project to owners of the irrigation infrastructure across the state as well as the general public. Such public outreach was determined to be crucial for the project's success. Similarly, defining criticality and developing ranking criteria for comparing structures from one area of the state to another was also deemed essential. Additional to the scope of work was a discretionary task with a defined amount of funding. This task was included in the event that an unforeseen critical infrastructure issue was discovered that would require immediate attention. The amount of funding in this task was intended to advance a feasibility level design and cost estimate for the replacement or rehabilitation of identified structures. Other tasks were included to further the planning, information disseminating, and reporting.

Evolution of Modern Water Data Exchange

CONSULTANT APPROACH

Early in the CAII project a scoping meeting was held. This meeting was attended by several Office staff and the entire consultant team consisting of Trihydro (the primary consultant) and Trihydro's sub-consultants: WWC engineering and Follom Hydrologic Solutions. At the scoping meeting the consultants elaborated on their approach, discussed the goals for the study, and began planning for the public meetings.

One important topic was that it would be impossible for the consultant to visit every structure identified in the study. Therefore, significant outreach was going to be required. Participation from the irrigation entities would be crucial to the identification and evaluation of structures. As part of this outreach, the consultants proposed contacting all of the 157 aforementioned entities in the Office's irrigation system survey database. The thought was that this personal contact would generate enthusiasm for the study and, more importantly, entities would help identify their critical infrastructure and its condition. As of this writing, the consultants have attempted contact with every entity. Contacting the entities directly has been successful and invaluable to the study as it did generate interest in the public meetings and facilitated study participation.

OUTREACH

There were 10 public meetings held around the state, the locations of which were strategically selected due to their proximity to irrigated lands. The consultants also contacted conservation districts who helped advertise the meetings on their social media platforms, and advertisements in local newspapers were published two weeks prior to every meeting. The meetings were regional enough in nature to allow for

Infrastructure

Statewide Meetings

state-wide attendance. They included a description of the CAII study, followed by presentations of potential funding opportunities through the Commission, Natural Resources Conservation Service, Bureau of Reclamation, and non-governmental organizations such as Trout Unlimited and The Nature Conservancy.

The meetings also included open discussion to gather input from the attendees about what they thought defines a structure as critical, as well as to discuss specific structures and their condition. Some of these structures were visited by the consultants for further evaluation. The meetings were well attended at each location with up to 45 attendees made up of irrigators, conservation district personnel, state and federal personnel, Wyoming State Legislators, Wyoming Water Development Commissioners, the general public, and occasionally the media.

DEFINING CRITICAL INFRASTRUCTURE

Criticality

Defining criticality was a major component to the study as it was necessary to narrow down the number of structures into something manageable, compare structures across entities, and finally, identify the most critical structures. A half-day workshop was held with the consultant team and Office staff to define criticality as related to the CAII study. The team discussed criteria which needed to be measurable, defensible, and easily attributed to thousands of structures.

Criteria

The initial attributes were structure type, overall condition, and — when possible — irrigated acres served. Of these, the initial criteria applied to the database was whether or not the structure was in poor or failing condition. Structures in good to fair condition were immediately eliminated from consideration. The next criteria were termed the Structure Class Index (Index). The Index is the consideration of the type of structure and its importance to irrigation within the system. As an example, the failure of a measurement device in the system will not have an impact on the delivery of water for irrigation, whereas the failure of a main diversion could stop irrigation completely for the entire system. Additionally, a structure further upstream in the system could be considered more critical than structures further down system.

A second phase of criteria yet to be developed will help inform decision makers, but not necessarily rank the most critical structures. Those criteria include, but are not limited to: acreage, environmental impacts caused by failure, overall cost, permitting issues, funding opportunities, and collateral damage caused by a structure's failure. The consultant is currently working on criticality and further refinement of criteria is expected.

DATA CONSOLIDATION

Infrastructure Inventory

As stated earlier, there are over 120 Commission studies relevant to this study. Additional sources of information were the Bureau of Reclamation (Reclamation) and the Wyoming State Engineer's Office (Engineer's Office). From the Commission studies, information from Reclamation and the Engineer's Office, direct contact with the entities, and information gathered at the ten public meetings the consultant populated a database of structures foundational to the study. The database is visualized in GIS and consists of spatial data collated from the previously mentioned Commission surveys. The team determined that it was important for the database to be a living source of information. The consultants are currently designing the GIS/database so that the Office can continue to populate it with new data as future studies are completed. To date, the GIS and accompanying database capture over seven thousand structures and it is anticipated to grow. During development of the database, the consultants began defining the critical nature of the structures to narrow the focus of the database.

FUNDING IDENTIFICATION

Funding

A consistent comment from irrigators was that they knew what structures needed rehabilitation or replacement. What was unknown were the options for funding projects. Therefore, identification of potential funding options was considered vital to the study.

Conclusion

CAII Report

Once the consultant team has refined the database to capture poor and failing structures, and application of the Index discussed above is applied, the consultants expect to see a significant split in the database. Further application of the criticality criteria will then help to define the most critical structures. Once the most critical structures are identified, conceptual cost estimates will be developed to help inform decision makers. A CAII study draft report is expected in September 2023, and a final report due date of December 31, 2023 has been set. In November, the consultant will be presenting the results of the study to the Wyoming Water Development Commission and Legislative Select Water Committee. The presentation will be streamed online.

TWR Interview

For Additional Information:
Chace Tavelli, P.E., Wyoming Water Development Office, 307/ 777-7626 or chace.tavelli@wyo.gov
CAII website, Please visit the CAII website — https://wwdc.state.wy.us/critical_infrastructure/CAII.html — for additional information about the study and to see the presentations that were provided at the state-wide meetings.

Chace Tavelli graduated from the University of Wyoming with a bachelor degree in Civil Engineering in 1996 and promptly began working for the State of Wyoming and has spent the past 27 years of his professional career working with Wyoming's water resources. The past 20 years he has been a Project Manager with the Wyoming Water Development Office managing numerous water development projects across Wyoming to include both municipal and agricultural master plans and project feasibility studies. He currently serves as the Office's Technical Resource Coordinator and serves as the Office's lead in federal and state funding assistance programs while also managing the Critical Aging Irrigation Infrastructure program. Prior to his employment with the Water Development Office, Chace worked for the Wyoming State Engineer's Office where he assisted with Wyoming's River Basin Planning efforts, and worked for the Wyoming Department of Transportation in their Bridge Hydraulics division.

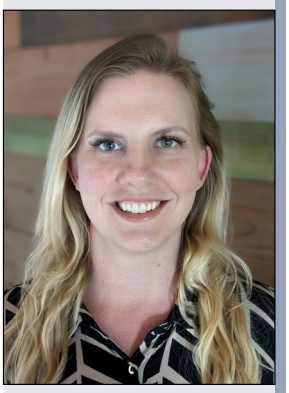
THE WATER REPORT: YEAR 20

AN INTERVIEW WITH RETIRING EDITORS DAVID LIGHT AND DAVID MOON

Interview Conducted by Shaina Shay, Editor and Owner of The Water Report


David Light


David Moon


Shaina Shay

Introduction

This is the 20th year that *The Water Report* has been in publication. This article was inspired by this significant milestone and conducted to celebrate retiring editors and founders David Light and David Moon and all the work they have done. In 2022, after posting an editor's note in *The Water Report Issue* #221 advertising the sale of this publication, David Light and David Moon selected Shaina Shay to assume the publication. All three have been working together closely during this transition period and will continue to collaborate.

The Water Report is a periodical with a rich history. There have been over 700 articles published in 231 issues and approximately 500 contributing authors throughout the past 20 years. *The Water Report* would like to again thank all of our authors, whose generous contributions have provided the original expert source material vital to *The Water Report (TWR).*

The mission of this publication is to educate and enlighten the professionals who work in the water world, be they water lawyers, engineers, regulatory agencies, tribes, municipalities, environmental organizations or anyone interested in water law, water rights, and water quality in the western United States. *TWR* accomplishes this by providing detailed analysis and practical information on the myriad of water management issues and emerging developments in the American West, purposely edited to be understood across all water disciplines.

Shaina Shay: How did you end up in the water industry? Tell us a little about your personal backgrounds leading up to *The Water Report.*

David Light: I studied Political Science and Economics at Fairhaven College and Western Washington University in Bellingham Washington. For several years after graduating I held a number of various jobs before fatherhood settled me down. I was an owner/operator restaurateur in Eugene, Oregon, for 15 years. Ready for a change, I sold the restaurant, took on an editing job, and shortly thereafter bought the involved publication.

Prior to starting-up *The Water Report,* I had been editing and publishing the newsletter — the *Oregon Insider* — since 1993. The Insider covered the full range of environmental regulation, but only as it pertained to activities in Oregon.

David Moon: For my undergraduate degree I attended Colorado College in Colorado Springs, CO from

TWR Interview

Water Law

Multi-Disciplinary

Solutions

Outreach

Multi-Tasking

1971-1975, and then went to law school at the University of Idaho, graduating in 1979. I moved to Bozeman, MT following law school and began practicing water law beginning in 1980 with Moore, Rice, O'Connell & Refling. I worked extensively in Montana's statewide water rights adjudication, preparing hundreds of water rights claims covering the entire state of Montana. I became a partner at Moore, O'Connell & Moon and later moved to Oregon in 1989, where I continued my water law practice as a sole practitioner. I specialized in water law throughout my legal career in Montana and Oregon, focusing on water quantity ("water rights") issues. I became embroiled in a long, involved contingency case, resulting in a nearly four-year long litigation battle. The case centered around a Clean Water Act citizen suit, filed on behalf of a rancher against the neighboring motel and RV Park complex (*see Knee Deep Cattle Co. v. Bindana Inv. Co.*, 94 F.3d 514 (9th Cir. 1996)). Following this case I decided to take a sabbatical (Fall 2001 to Summer 2002) to explore a change in my career. My water rights legal practice was becoming more and more litigation oriented and I no longer wanted to pursue that path.

Shay: You were able to build this publication from the ground up. How did you get inspired to start *The Water Report?*

Light: Mr. Moon had contributed articles to the *Oregon Insider* and we had developed a friendship. It was his idea to develop a publication covering water issues in the American West. While there were publications covering various water disciplines separately, we thought there was a place for covering water management issues as a whole. We hoped to help water professionals in various water sectors (water quantity v. water quality, for instance) to better understand different water practitioners' viewpoints and concerns.

Moon: The origin for *The Water Report* was the *Oregon Insider.* David Light contacted me to write a yearly article for the *Insider*, covering the state's leading water law conference. For several years I attended the conference and produced articles for the *Oregon Insider.* Through this contact, we established a friendship and professional relationship.

Following my sabbatical, I approached Light about starting a publication focusing on water. I believed that a publication like the *Oregon Insider*, which concentrated on water issues in the western United States, made sense. It would also allow me to utilize my water law expertise in a new career.

We discussed the concept and approach for *The Water Report* and agreed on addressing water issues as objectively as possible. We would inform our readers — not advocate — and seek out information germane to fashioning solutions to the water management challenges. We also wanted to take a multi-disciplinary approach for our readers no matter their profession (lawyers, engineers, municipalities, Tribes, etc.). We wanted to take the same approach the *Oregon Insider* took in always explaining the terms-of-art, acronyms, and specialized viewpoints utilized by different water professions. We intended engineers to understand the legal-oriented articles and water lawyers to understand the engineering articles. We would provide adequate background and context detailed enough to have every article be meaningful to whomever the reader.

Shay: Starting a business is hard, what was the biggest challenge you faced when getting started?

Light: For several years we were publishing both the *Oregon Insider* and *The Water Report.* Meeting two publication deadlines a month resulted in working some long hours. Moreover, having made the decision to have *The Water Report*— like the *Insider* — be a subscription-based publication beholden only to our subscribers, obtaining those subscribers was essential. Though participating in conferences and seminars helped, most of the subscription sign-ups were accomplished one-at-a-time following multiple phone calls. The saving grace was that our re-subscription rate rarely dipped below 90%.

Moon: Making time to begin the publication while working on existing jobs was a challenge. The *Oregon Insider* continued publication for another six years after the startup of *The Water Report* and I still had existing legal clients whose cases were pending.

The advantage we had at the beginning of *The Water Report* was our existing contacts amongst water professionals. David Light had been owner/editor of the *Oregon Insider* for many years and had an excellent reputation in the field in Oregon and Washington. Meanwhile, I had practiced water law in Oregon and Montana for several years.

Shay: Having a monthly periodical means you are always in production. What were your most and least favorite parts of the publication cycles?

Light: I found my "editing for readability" particularly satisfying — perhaps the result of having an English teacher for a mother. The information we dealt in was often new, always inherently interesting,

TWR Interview

and often downright exciting. Making it as easy to understand as possible seemed very worthwhile. I also enjoyed honing my PhotoShop skills as the *TWR* graphics department. Quite often the graphics supplied by the author offered a puzzle as to how to make them work in our format. I like puzzles.

My least favorite editing activity is the final proofreading prior to publication, which I was more than happy to hand over to Mr. Moon (and I should mention that I could not have dreamt-up a better partner). Other uncomfortable times involved scheduled articles not arriving — a rare, but invariably aggravating situation.

Moon: My favorite part of the publication cycle was the editing of the major articles as we prepared them for publishing. In dealing with important issues in both water quality and water quantity, as editors we were allowed to be "Renaissance men" as we attempted to make critical issues understandable and accessible to our readers. The worst part was COVID. COVID resulted in significantly less contact with our readers and authors, since we stopped going to water conferences across the West. I've missed those contacts with colleagues in the field tremendously!

Fact-Based Viewpoints

Shay: Twenty years is a long time! Was there anything that changed in *TWR* throughout the years?

Light: In terms of approach, I would say not much has changed. I believe we remained faithful to our mission to give any fact-based viewpoint a fair hearing. The generosity of our contributing authors' readiness to share their expertise remained undiminished, for which we are truly grateful. As to content, I would say there has been an increased understanding that adequately addressing many, if not most, water management challenges includes the need to factor-in climate change.

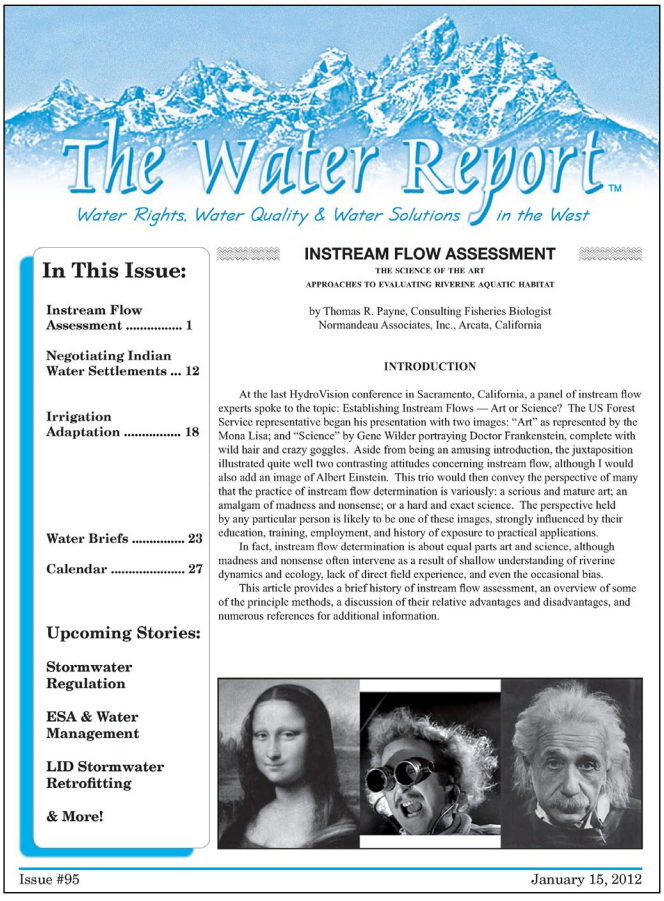
We did become more graphics-rich and our original hardcopy-only publication developed into having a majority of PDF-subscribers.

Moon: Other than Light and I defining our respective roles as co-editors and developing a great working relationship, not much really!

Sharing Accomplishments

Shay: So much content and so many articles have been produced over the years. Can you talk about one of your favorite issues/stories and why they stand out?

Light: The tired trope of having to pick your favorite child occurs to me. But in general, I suspect the articles outlining the processes by which extraordinary accomplishments were made under ridiculously trying circumstances might have been everyone's favorites. Our coverage of the Yakima River Basin Integrated Water Plan, the Snake River Basin Adjudication, and various Tribal Water Settlements spring to mind.


The Water Report™
Water Rights, Water Quality & Water Solutions in the West

In This Issue:

Instream Flow Assessment 1
Negotiating Indian Water Settlements ... 12
Irrigation Adaptation 18
Water Briefs 23
Calendar 27

Upcoming Stories:

Stormwater Regulation
ESA & Water Management
LID Stormwater Retrofitting
& More!

INSTREAM FLOW ASSESSMENT
THE SCIENCE OF THE ART
APPROACHES TO EVALUATING RIVERINE AQUATIC HABITAT

by Thomas R. Payne, Consulting Fisheries Biologist
Normandeau Associates, Inc., Arcata, California

INTRODUCTION

At the last HydroVision conference in Sacramento, California, a panel of instream flow experts spoke to the topic: Establishing Instream Flows — Art or Science? The US Forest Service representative began his presentation with two images: "Art" as represented by the Mona Lisa; and "Science" by Gene Wilder portraying Doctor Frankenstein, complete with wild hair and crazy goggles. Aside from being an amusing introduction, the juxtaposition illustrated quite well two contrasting attitudes concerning instream flow, although I would also add an image of Albert Einstein. This trio would then convey the perspective of many that the practice of instream flow determination is variously: a serious and mature art; an amalgam of madness and nonsense; or a hard and exact science. The perspective held by any particular person is likely to be one of these images, strongly influenced by their education, training, employment, and history of exposure to practical applications.

In fact, instream flow determination is about equal parts art and science, although madness and nonsense often intervene as a result of shallow understanding of riverine dynamics and ecology, lack of direct field experience, and even the occasional bias.

This article provides a brief history of instream flow assessment, an overview of some of the principle methods, a discussion of their relative advantages and disadvantages, and numerous references for additional information.

Issue #95 January 15, 2012

I do have a clear favorite *TWR* front page, however. In January 2012 (*see TWR* #95), author Thomas Payne posited that the practice of "Instream Flow Assessment" might be viewed as an art (represented by the Mona Lisa) or a science (represented by Albert Einstein) or as "madness and nonsense" (represented by Gene Wilder's portrayal of Doctor Frankenstein). The author did not provide these graphics, but Google tracked them down. There is something about the juxtaposed graphics that never fails to bring a smile to my face. The author was also good enough to include a much-appreciated reference to Dobie Gillis (titular character of a 1960's teenage-angst sitcom (*you ignorant whipper-snapper!*)) — I suppose my appreciation of this last reference is reason enough to put me out to pasture.

TWR Interview

Point/Counterpoint

Moon: Klamath Basin Point/Counterpoint (Hardy and Vogel, *TWR* #11, January 15, 2005). No other media outlet provides the scope of coverage that *The Water Report* provides. The point/counterpoint approach entailed an initial round of articles, whereby one sides' expert wrote an article detailing their position and rationales. The second round of articles allowed for a thorough examination and critique of the other sides' position taken in the initial round of articles. Participating authors loved the ability to write a substantial initial article and then follow up with the second article addressing the opposing parties' initial article. It gave the authors the opportunity to go into great depth and provide all relevant context for an argument/position, without fear of being quoted out of context or having enough space to fully address the issues. Naturally, both experts believed they had prevailed!

John Echohawk Interview (*TWR* #230, April 2023): Interviews are always excellent since they have the potential to explore issues with the experts in a more intimate fashion. The opportunity to get to know and understand the experts is also wonderful and this is exemplified by John Echohawk's Interview. A good interview results in some insight into the author's personality that wasn't otherwise apparent.

Shay: You have seen so many water issues discussed in *The Water Report.* Looking back and looking forward, what do you think are the most pressing issues facing the West and why?

Climate Change

Moon: Climate Change is clearly number one. My first "ah-ha" moment of enlightenment occurred at a water law conference at the University of Colorado Law School in 2006, which included a screening of "An Inconvenient Truth" about Al Gore's campaign to educate people about global warming. A panel discussion centered on the future and noted that there was still time at that point to address climate change successfully if we started seriously addressing it soon (THE WORLD STILL HASN'T DONE IT!!). We need climate change solutions to be aggressively pursued so that the world finally begins dealing with this existential problem.

Water supply: The supply of freshwater, particularly groundwater, is of utmost importance. Aquifer recharge is critical and will only grow in importance.

Water and Wastewater Reuse: The use of water by today's water users is woefully inefficient. Reuse of water and wastewater, on the other hand, gives the world some of the solutions necessary to go forward with water use.

Facts & Truth

Light: I agree. Climate change has to be considered the most pressing issue facing water management in the West. I believe that effectively dealing with climate change is tied-in with the more general threat of a post-truth world. A sizable portion of our population is convinced — by virtue of listening to talk radio, Fox "news" and/or the selective use of social media echo chambers — that they know more about climate than those professionals who have devoted their lives to understanding climate. Willful ignorance has morphed into an ersatz-expertise that is far worse than useless. Adherence to — and dissemination of — the facts will be of paramount importance going forward.

Shay: What do you hope to see in the future of *TWR*?

Objective Coverage

Moon: More of the same! Working with you, Shaina, over the last eight months has been an absolute joy. Your dedication to continue the mission and approach of *TWR* in the future is wonderful. Our thorough discussions of the role of the periodical and its focus on a multi-disciplinary approach convinced me that, under your guidance, *TWR* will help provide solutions to the pressing issues of the day.

Going forward, I'm sure that you'll continue with excellent and objective coverage of issues, which provides the base for TWR's high standards for in-depth and practical information.

We've talked about the need for an even greater focus on "SOLUTIONS," since more solutions will be needed given climate change.

I highly encourage our readers to support your management of *TWR*. I'm confident they will be rewarded with the great coverage they have come to expect from the publication!

Quality Content

Light: Again, I agree. Sustaining informed discussion on a factual playing field is vital to fashioning adequate responses to water management challenges. I believe *The Water Report* can continue to play a beneficial role broadening a shared understanding among water professionals. In this regard, I must say that you have done an admirable job taking up the reins, Shaina. Observing your commitment to quality content during our collaboration over the last few months leaves me with no doubt that TWR's future is in good hands.

TWR Interview

Facts & Collaboration

Shay: Thank you both for the kind words. I am excited to continue providing the in-depth information water professionals need to break down silos and develop creative solutions together. With that in mind, I have one last question for you both, if you could have readers take one thing away from *TWR*, what would it be and why?

Moon: Collaboration is always better than litigation. One can accomplish so much more by implementing solutions to our water problems and avoid ugly litigation battles.

Light: Respect facts. The "truth will out" one way or another.

For Additional Information:

Shaina Shay, Editor, 602/ 456-2127 or info@TheWaterReport.com

Shaina Shay is an accomplished water professional who has spent more than a decade developing expertise in water policy and management, conservation, and community outreach. Her passion for pragmatically sharing information has been a theme throughout her career. Shaina has worked as a Water Resources and Conservation Specialist for two investor-owned utilities (EPCOR Water and Global Water Resources) in Arizona. She also spent several years working in Victoria, Australia as a water market specialist and senior consultant with Aither. Shaina holds various leadership positions within prominent water organizations — such as the American Water Works Association (AWWA) and the American Society of Civil Engineers (ASCE) — as well as regional organizations like the Southern Arizona Water Users Association (SAWUA).

***The Water Report* website:** www.TheWaterReport.com

WATER BRIEFS

WETLANDS — US

SACKETT V. EPA

The US Supreme Court (Supreme Court or Court) released a decision in the case of *Sackett v. EPA*, 598 U. S. ____ (2023), on May 25, 2023. The case began when the petitioners, Michael and Chantell Sackett, were informed by the Environmental Protection Agency (EPA) that their property contained wetlands and that their backfilling activities violated the Clean Water Act (CWA). EPA ordered the Sacketts to restore the site, threatening penalties of over $40,000 per day. The Sacketts sued, claiming that their wetlands were not considered "waters of the United States" as defined by the CWA. The district court ruled in favor of the EPA, and the Ninth Circuit affirmed the decision, holding that the CWA covers wetlands with an ecologically significant nexus to traditional navigable waters and that the Sacketts' wetlands satisfy that standard.

The Supreme Court, in its ruling, held that the term "waters" in the CWA refers to "geographical features described as streams, oceans, rivers, and lakes," as well as adjacent wetlands that are indistinguishable from those bodies of water due to a continuous surface connection. To establish jurisdiction over an adjacent wetland under the CWA, it must be shown that the wetland has a "continuous surface connection" with a relatively permanent body of water connected to traditional interstate navigable waters.

The Court noted that the meaning of "waters of the United States" has been a contentious issue, leading to agency actions and litigation over the years. The EPA and the Army Corps of Engineers had previously defined the term broadly to encompass all waters that could affect interstate or foreign commerce, including adjacent wetlands. The Supreme Court referred to previous cases, such as *United States v. Riverside Bayview Homes* and *Solid Waste Agency of Northern Cook Cty. v. Army Corps of Engineers*, to examine the agencies' interpretations and limitations of the CWA's jurisdiction over wetlands.

The Court also considered the extent of the CWA's geographical reach. It concluded that the term "waters" in the CWA refers to relatively permanent, standing or continuously flowing bodies of water, such as streams, oceans, rivers, and lakes. This interpretation is consistent with how Congress has used the term "waters" in other laws and aligns with the Court's previous rulings. The Court rejected the EPA's argument that "water" naturally encompasses wetlands and emphasized the importance of the adjacency of wetlands to covered waters.

The EPA's interpretation, which relies on a significant nexus test to establish jurisdiction over adjacent wetlands, was also rejected by the Court. The Court stated that EPA's interpretation is inconsistent with the CWA's text and structure, and it raises vagueness concerns due to the Act's criminal penalties. The Court emphasized that clear congressional authorization is required to alter the federal/state balance or the government's power over private property.

The Supreme Court held that the CWA's jurisdiction extends only to wetlands that are indistinguishable from waters of the United States, which requires a "continuous surface connection" with a relatively permanent body of water connected to traditional interstate navigable waters. The Court rejected the EPA's broad interpretation of "waters of the United States" and Justice Kennedy's "significant nexus test" from the *Rapanos* case. The ruling provides clarity on the scope of the CWA's jurisdiction over wetlands and significantly limits EPA's regulatory power.

The Water Report will be publishing a major article on the implications of the *Sackett* decision in an upcoming issue.

FOR INFO *Slip Opinion* available at: www.courthousenews.com/wp-content/uploads/2023/05/sackett-epa-opinion.pdf

AGREEMENT — WEST

COLORADO RIVER BASIN

The Department of the Interior (Department) announced on May 22 significant new developments in the Biden-Harris administration's efforts to protect the stability and sustainability of the Colorado River System now and into the future.

As part of the Department's continued efforts to address ongoing severe drought conditions and a changing climate in the Colorado River Basin, representatives from the seven Colorado River

Basin states have agreed to the submission of a Lower Basin, consensus-based system conservation proposal. They are requesting the proposal be fully analyzed as an action alternative under the Bureau of Reclamation's draft Supplemental Environmental Impact Statement (SEIS), published last month.

The consensus-based proposal – agreed upon by the three Lower Basin states – commits to measures to conserve at least 3 **m**illion-**a**cre-**f**eet (maf) of system water through the end of 2026, when the current operating guidelines are set to expire. Of those system conservation savings, 2.3 maf will be compensated through funding from the historic Inflation Reduction Act, which is supporting efforts to increase near-term water conservation, build long term system efficiency, and prevent the Colorado River System's reservoirs from falling to critically low elevations that would threaten water deliveries and power production. Under this consensus proposal, the remaining system conservation needed for sustainable operation will be achieved through voluntary, uncompensated reductions by the Lower Basin states.

In light of the Lower Basin states' conservation proposal, the Department today announced that it is temporarily withdrawing the draft SEIS published last month so that it can fully analyze the effects of the proposal under the National Environmental Policy Act (NEPA). Reclamation will then publish an updated draft SEIS for public comment with the consensus-based proposal as an action alternative. Accordingly, the original May 30, 2023, deadline for the submission of comments on the draft SEIS is no longer in effect. The Department plans to finalize the SEIS process later this year.

Early in June, the Department will formally advance the process for the development of new operating guidelines, replacing the 2007 Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead at the end of 2026. In the coming weeks, Reclamation will publish the Notice of Intent for the Environmental Impact Statement related to the post-2026 guidelines.

President Biden's Investing in America agenda represents the largest investment in climate resilience in the nation's history and is providing pivotal resources to enhance the resilience of the West to drought and climate change, including to protect the short- and long-term sustainability of the Colorado River System. Through the Bipartisan Infrastructure Law, Reclamation is investing $8.3 billion over five years for water infrastructure projects, including water purification and reuse, water storage and conveyance, desalination, and dam safety. The Inflation Reduction Act is investing an additional $4.6 billion to address the historic drought.

To date, the Interior Department has announced the following investments for Colorado River Basin states, which will yield hundreds of thousands of acre-feet of water savings each year once these projects are complete:

- $281 million for 21 water recycling projects that are expected to increase annual water capacity by 127,000 acre-feet annually
- Up to $233 million in water conservation funding for the Gila River Indian Community, including $83 million for a water pipeline project and an additional $50 million from the Inflation Reduction Act through the Lower Colorado River Basin System Conservation and Efficiency Program, which will also provide similar investments in 2024 and 2025
- Over $73 million for infrastructure repairs on water delivery systems, $19.3 million in fiscal year 2022 and another $54 million announced last month
- $71 million for 32 drought resiliency projects to expand access to water through groundwater storage, rainwater harvesting, aquifer recharge, and water treatment
- $20 million in new small surface and groundwater storage investments

FOR INFO https://doi.gov/sites/doi.gov/files/lower-basin-plan-letter-5-22-2023.pdf

DAM OPERATION WA

SKAGIT RIVER HYDROELECTRIC

Seattle City Light submitted a final license application to the Federal Energy Regulatory Commission (FERC) on May 1, detailing plans to operate the Skagit River Hydroelectric Project for the next 50 years. Although this is not the last step in the FERC relicensing process, the **f**inal **l**icense **a**pplication (FLA) is a significant milestone for City Light and its partners. Totaling approximately 15,000 pages, it represents years of collaboration among Treaty Tribes, Canadian First Nations, federal and state regulatory bodies, environmental groups, and nearby communities.

The Skagit River Hydroelectric Project is an integrated, three-dam system that generates about 20 percent of Seattle's electricity. In managing the dams, City Light also manages the flow of the Skagit River, providing flood risk management for Skagit County communities and ensuring appropriate flows for the many species of fish, as well as education, recreation and other public benefits.

"While there is still a lot to do, we are so grateful to the dozens of license partners, City Light staff, and experts who have worked extraordinarily hard to put together the FLA," said City Light General Manager/CEO Debra Smith. "The next license will dictate how we operate the dams for decades, and it's crucial that we carefully balance the need for renewable energy with the need to respect Tribal interests and be good stewards of the watershed."

About 30 license partners collaborated with City Light on the FLA, which reflects not only the need for safe and stable electricity, but regulatory requirements of agencies such as the National Marine Fisheries Service (NMFS), the US Army Corps of Engineers (USACE) and many others. It attempts to also reflect the interests of the Tribes and surrounding communities.

"This has been an extraordinarily deep and thorough process," said Scott Schuyler, Policy Representative for the Upper Skagit Indian Tribe. "Since time immemorial the river, the salmon and the wildlife have been central to our community life and very culture. This license makes progress in recognizing its connection to us. Adding fish passage is a logistic challenge, and we appreciate the hundreds of hours Seattle City Light has spent with us and other partners to determine an approach that will help reconnect the different parts of the river. The Upper Skagit people can now take pride knowing that a brighter future is on the horizon for the river and generations to come."

City Light manages the flow of water through the hydroelectric project according to the following priorities: flood risk management, fish habitat, recreation, and power generation. While those priorities won't change in the next license, there are new measures that reflect climate change, partner and regulatory agency requirements, and tribal cultural interests.

The FLA is based on $28 million in relicensing research studies. But even with all that data, the climate and the environment are changing faster than the license can adapt. The next license is built for more monitoring, more flexibility and more collaboration.

1) Whole-ecosystem approach: The next license takes a whole-ecosystem approach to managing the hydropower project's effects on the watershed.
2) Adaptive management: The next license will include a robust/long-term monitoring program, which is essential to a flexible and adaptive management program.
3) Comprehensive fish program that includes fish passage: City Light has worked with Tribes, NMFS, and other key partners to develop a comprehensive fish program that will contribute to protection and restoration of fish throughout the river. This includes considerations such as water quality, spawning beds, shade, food sources, and more. City Light has also been responsive to the interests expressed by the Upper Skagit Indian Tribe, NMFS and others, and has proposed a fish passage program for passage across all three dams.

The most significant investment in the new license is the development of a fish passage program designed to move fish completely around the three-dam project. The dams are 30, 39 and 54 stories high and thus too high for fish ladders and similar solutions. In order to get fish around the project to Ross Lake, City Light and partners are collaboratively developing a "trap-and-haul" program. This would involve building an upstream fish collector below Gorge Dam, downstream fish collector at Ross Dam, and building a road through the North Cascades National Park to Ross Lake. The collector and the road will allow trucks to transport fish to and from the Ross reservoir.

This is just one tactic of many to improve fish populations. City Light is also committed to estuary restoration, mainstem habitat restoration, and managing flows to reduce the risk of floods while protecting salmon habitat. The FLA identifies over $500 million in new environmental measures over

the next 50 years of the license, and recognizes other potential costs for projects, such as fish passage. Those costs will continue to be refined, as City Light's discussions with partners conclude and projects are finalized.

The final license application is not the final step in the relicensing process. FERC's public environmental review process will be completed over the next several years. Additionally, City Light will continue to collaborate with partners to develop agreements on operating the project and managing the complex ecosystem of the Skagit River. Once completed, those additional agreements will be presented to FERC and may be included in the FERC license.

FOR INFO: Jenn Strang, 206/ 677-6295 or jenn.strang@seattle.gov

GROUNDWATER AZ

PHOENIX AMA

After considerable data analysis and review, the Arizona Department of Water Resources has completed work on its new model of groundwater conditions in the Phoenix Active Management Area (AMA), a region of south-central Arizona encompassing 5,646 square miles and, with 4.6 million residents, the most densely populated area in the state.

The results of the numerical basin-scale groundwater flow model projection show that over a period of 100 years, the Phoenix AMA will experience 4.86 **m**illion **a**cre-**f**eet (maf) of unmet demand for groundwater supplies, given current conditions. The term "unmet demand" refers to the amount of groundwater usage that is simulated to remain unfulfilled as a result of wells running dry in the model. To show the physical availability of groundwater under the Assured Water Supply (AWS) program, existing and assured water supplies need to be fully met.

In keeping with these findings of unmet demand, the State will not approve new determinations of Assured Water Supply within the Phoenix AMA based on groundwater supplies. Developments within existing Certificates or Designations of Assured Water Supply may continue, but communities or developers seeking new Assured Water Supply determinations will need to do so based on alternative water sources.

The constraints regarding the physical availability of groundwater are attributable to the cumulative results of decades of groundwater overdraft and the continued reliance on groundwater resources.

This Phoenix AMA model is the most comprehensive, basin-scale numerical groundwater model developed for an AMA in the state of Arizona.

Since the implementation of Arizona's Groundwater Management Act of 1980, the objective of AMAs has remained consistent: to encourage the utilization of alternative sources for new development in order to reduce reliance on groundwater.

The new Phoenix AMA model shows that the primary goal of the 1980 Act is largely being met: existing homeowners are protected and will continue to receive their water deliveries into the future. The AWS program is working as intended – as a consumer-protection program – to ensure water supplies are available in advance of growth.

FOR INFO: https://new.azwater.gov/

EPA WIFIA CA

DROUGHT RELIABILITY

On May 16, in conjunction with Infrastructure Week, the US Environmental Protection Agency (EPA) announced a $128 million Water Infrastructure Finance and Innovation Act (WIFIA) loan to the City of Santa Cruz, California to upgrade their drinking water system to be more resilient to drought and climate change. With this WIFIA loan, EPA is helping the City of Santa Cruz protect its water supply and deliver safe, reliable drinking water to nearly 100,000 residents.

Located in a drought-prone region, the City of Santa Cruz is wholly dependent on local water supplies. With this WIFIA loan, the city will modernize critical facilities by converting existing groundwater wells into aquifer storage and recovery wells and updating its raw water conveyance pipeline. Ultimately, the city will be able maximize the use of all water sources in response to climate impacts. The project will also support treatment process upgrades to address current and emerging contaminants, as well as source water quality variability.

By financing with the low interest rate of a WIFIA loan, the City of Santa Cruz will save approximately $18 million. The construction and operations for the project are estimated to create over 1,000 jobs.

FOR INFO: https://www.epa.gov/wifia

PERCHLORATE REGULATION US

COURT OF APPEALS RULING

On May 9, 2023, the US Court of Appeals for the District of Columbia Circuit ruled that the US Environmental Protection Agency (EPA) must establish drinking water regulations for perchlorate, a contaminant with potential health implications. This decision marks a significant development in the ongoing regulatory process, which began when Massachusetts became one of the first states to regulate perchlorate in drinking water back in 2006. *Natural Resources Defense Council v. Michael Regan, EPA*, Case No. 20-1335 (May 9, 2023).

Perchlorate is a soluble compound commonly used in various industries, including rocket propellants, munitions, fireworks, and blasting materials. EPA initiated data collection on perchlorate in 1999 through the Unregulated Contaminant Monitoring Rule. In 2005, the National Research Council (NRC) conducted a study on the health effects of perchlorate ingestion and found that it inhibits the transport of iodide into the thyroid, potentially leading to reduced thyroid hormone function. This was particularly concerning for pregnant women and their fetuses.

In 2007, the EPA analyzed the perchlorate data but refrained from making a determination on the need for a national drinking water regulation. However, the agency expressed a high priority to regulate perchlorate and established a **r**e**f**erence **d**ose (RfD) and Health Reference Level (HRL) for the contaminant. Despite the HRL, the EPA published a Preliminary Regulatory Determination in 2008 stating that a national regulation would not meaningfully reduce health risks.

Following comments from various stakeholders, including the Massachusetts Department of Environmental Protection (DEP), EPA issued an Interim Drinking Water Health Advisory in 2008. This advisory provided non-regulatory guidance on perchlorate concentrations that were not anticipated to cause adverse health effects. EPA then sought additional comments on the potential for health risk reduction through a national regulation, receiving a significant number of comments.

In 2011, EPA issued a formal Regulatory Determination, concluding that perchlorate met the criteria for regulating a contaminant under the Safe Drinking Water Act (SDWA). It announced the initiation of the process for proposing a National Primary Drinking Water Regulation (NPDWR) for perchlorate. Further evaluation and scientific modeling were conducted, including advice from the Science Advisory Board (SAB). The SAB recommended addressing sensitive life stages explicitly due to the adverse effects of perchlorate on thyroid function and neurodevelopment, particularly in fetuses and infants.

In 2020, the EPA made a controversial decision to withdraw the 2011 Regulatory Determination and not issue a national regulation for perchlorate. This decision was based on the EPA's determination that perchlorate did not occur frequently or at levels of public health concern. However, the court ruled that EPA's withdrawal of the Regulatory Determination was improper, stating that the agency lacked statutory authority to do so.

The recent court ruling in May 2023 now requires the EPA to establish drinking water regulations for perchlorate. This ruling represents a significant milestone in the ongoing process and highlights the importance of addressing contaminants like perchlorate to protect public health. The decision may also have implications for EPA's upcoming proposal to regulate per- and polyfluoroalkyl substances (PFAS) in drinking water. EPA's actions in regulating perchlorate and other contaminants will continue to be closely monitored and debated to ensure the safety of the nation's drinking water supply.

FOR INFO: *Slip Opinion* available at: https://www.cadc.uscourts.gov/internet/opinions.nsf/

CALENDAR

June 15 CA

Water Conservation Showcase, San Ramon. San Ramon Valley Conference Center. 20th Anniversary Event. For info: www.waterconservationshowcase.com/

June 15-16 NM

2023 Next Generation Water Summit: "Water Reuse & Conservation - The New Paradigm", Santa Fe. Santa Fe Community Convention Center. Presented by Save Water Santa Fe. For info: https://ngws.vfairs.com/

June 21 CA

2023 Groundwater Law and Legislative Forum, Sacramento. Elks Tower. Presented by the Groundwater Resources Assoc. of California & Brownstein Firm. For info: https://grac.org/events/501/

June 22 TX

Dam Safety Workshop, Decatur. Decatur Conference Center. Presented by Texas Commission on Environmental Quality. For info: www.tceq.texas.gov/p2/events/dam-safety.html

June 26 MO

Wastewater Disease Surveillance Summit, Kansas City. Kansas City Convention Center. Implementation of Wastewater Surveillance Programs. Summit Organized by the Water Environment Federation in Cooperation with the U.S. Centers for Disease Control and Prevention. For info: www.wef.org/events--education/conferences/all-events/

June 26-28 CO

Western Governors Association Meeting, Boulder. Boulder Theatre. For info: www.westgov.org

June 27-29 MO

Stormwater Summit, Kansas City. Kansas City Convention Center. Presented by Water Environment Federation. For info: www.wef.org/events--education/conferences/all-events/

July 11 TX

Dam Safety Workshop, Austin. Commons Conference Center, The University of Texas at Austin. Presented by Texas Commission on Environmental Quality. For info: www.tceq.texas.gov/p2/events/dam-safety.html

July 11-12 AZ

Water Resources Research Center (WRRC) 2023 Conference: Solutions to Arizona's Water Challenges, Tucson. University of Arizona Student Union. For info: https://wrrc.arizona.edu/conference/2023

July 12-13 NM

New Mexico Groundwater Conference - 9th Annual, Albuquerque. State Bar of New Mexico. Presented by American Ground Water Trust. For info: https://agwt.org >> Events

July 13 WEB

Clean Water, Complicated Laws: Funding Stormwater & Wastewater Programs - 2023 Water Quality Webinar Series, Free Webinar on Water Quality Issues, Laws & Regulations; 10:00-10:30am Pacific Time. Presented by Best, Best & Krieger. For info: https://bbklaw.com/news-events/webinars

July 17-19 CO

American Water Resources Assoc. 2023 Summer Conference, Denver. Hyatt Regency Denver Tech Center. Connecting Land & Water for Healthy Communities. For info: www.awra.org

July 19-21 CO

Global Environmental Markets and Finance Summit, Denver. Westin Denver Downtown. Virtual Access Available. For info: https://environmentalmarketsandfinancesummit.com

July 20-22 UT

69th Annual Rocky Mountain Mineral Law Institute, Salt Lake City. Grand America Hotel. Presented by The Foundation for Natural Resources and Energy Law (formerly Rocky Mountain Mineral Law Foundation). For info: https://www.fnrel.org/programs

July 24-26 UT

Potable Reuse & Biological Treatment Symposium, Salt Lake City. Sheraton Salt Lake City Hotel. Presented by American Water Works Association. For info: https://www.awwa.org/Events-Education/Potable-Reuse-Biological-Treatment#8163822-attend

July 26 CO

Confluence - Colorado Water Summit, Loveland. Embassy Suites Loveland. Presented by BizWest. For info: https://events.bizwest.com/confluence-coloradowater-summit/

July 26 TX

Dam Safety Workshop, Conroe. The Lone Star Convention & Expo Center. Presented by Texas Commission on Environmental Quality. For info: https://www.tceq.texas.gov/p2/events/dam-safety.html

August 3-4 AZ

Arizona Water Law Conference: Planning for the Next 100 Years, Scottsdale. Hilton Hotel. For info: CLE International: 800/ 873-7130 or www.cle.com

August 8-9 WEB

WSWC-NARF 18th Biennial Indian Reserved Water Rights Symposium, Virtual Event. Sponsored by Western States Water Council and Native American Rights Fund . For info: https://westernstateswater.org/events/wswc-narf-18th-biennial-indian-reserved-water-rights-symposium/

September 10-13 PA

Water Infrastructure Conference & Exposition, Philadelphia. TBD. For info: https://www.awwa.org/Events-Education/Water-Infrastructure

September 11-13 CA

CASQA 2023 Annual Conference, San Diego. Paradise Point. For info: California Stormwater Quality Association, www.casqa.org

September 13-15 AK

Western States Water Council 2023 Fall (202nd) Meetings, Anchorage. Aloft Anchorage Hotel. Field Trip 9/13; Meetings 9/14-9/15. For info: https://westernstateswater.org/events/wswc-2023-fall-meetings/

September 14 WEB

Clean Water, Complicated Laws: Infrastructure & Federal Partnerships - 2023 Water Quality Webinar Series, Free Webinar on Water Quality Issues, Laws & Regulations; 10:00-10:30am Pacific Time. Presented by Best, Best & Krieger. For info: https://bbklaw.com/news-events/webinars

September 14-15 NM & WEB

Natural Resources Damages: 16th Annual "Santa Fe" Advanced Conference, Santa Fe. TBD; Interactive Online Broadcast. Legal & Policy Developments, Evolving Roles for States & Tribes, Emerging New Issues & Litigation Strategies. For info: Law Seminars Int'l, 206/ 567-4490, registrar@lawseminars.com or www.lawseminars.com

September 18-19 NM

New Mexico Water Law Conference (30th Annual): Latest Updates on Water Law & Water Quality, Santa Fe. La Fonda on the Plaza. For info: CLE International: 800/ 873-7130 or www.cle.com

September 19 TX

2023 Texas Rainmaker Award Dinner, Austin. Bullock Texas State History Museum. Presented by the Texas Water Foundation. For info: www.texaswater.org

September 20-22 TX

2023 WateReuse Texas Conference, Frisco. Hyatt Regency Frisco. Presented by WateReuse. For info: www.watereuse.org

September 21 WA

Celebrate Waters - Center for Environment & Policy Annual Event, Seattle. Ivar's Salmon House. Celebrating Water Hero Award. For info: www.celp.org

September 21-22 WA

Water Law in Central Washington Seminar, Ellensburg. Central Washington University. For info: The Seminar Group: 206/ 463-4400, info@theseminargroup.net or www.theseminargroup.net

September 25-27 CO

WaterPro Conference, Aurora. Gaylord Rockies Resort & Convention Center. Industry

The Water Report
Water Rights, Water Quality & Water Solutions in the West
3615 W. Hills of Gold Dr. Tucson, AZ 85745

CALENDAR

Event for Networking, Technology & Education. For info: www.WaterProConference.org

September 25-28 CA

WTW 2023 Annual Conference & Exhibition, Saskatoon. TCU Place, Hilton Garden Inn. Presented by Working Together for Water. For info: www.wcwwa.ca

September 28 WA

AWRA Washington Chapter State Conference, Seattle. TBD. Presented by American Water Resources Association - Washington Chapter. For info: Jessica Kuchan, 206) 755-4364 or kuchan@confluencelaw.com

October 3-5 NV

WaterSmart Innovations Conference & Trade Show, Las Vegas. South Pointe Hotel & Casino. Founded by Southern Nevada Water Authority (SNWA). For info: www.awwa.org/Events-Education/WaterSmart-Innovations

October 12 WEB

Clean Water, Complicated Laws: How to Effectively Work With the Army Corps - 2023 Water Quality Webinar Series, Free Webinar on Water Quality Issues, Laws & Regulations; 10:00-10:30am Pacific Time. Presented by Best, Best & Krieger. For info: https://bbklaw.com/news-events/webinars

October 17-18 MT

Montana Water Law Seminar, Helena. TBD. For info: The Seminar Group: 206/ 463-4400, info@theseminargroup.net or www.theseminargroup.net

October 23-25 OR

Oregon Brownfields & Infrastructure Summit, Bend. Riverhouse on the Deschutes. Presented by the Northwest Environmental Business Council. For info: https://theoregonsummit.com

October 26-27 OR

Oregon Water Law Conference, Portland. TBD. For info: The Seminar Group: 206/ 463-4400, info@theseminargroup.net or www.theseminargroup.net

November 5-7 CA

2023 WateReuse California Annual Conference, Indian Wells. TBD. Presented by WateReuse. For info: www.watereuse.org

November 5-9 TX

Water Quality Technology Conference, Dallas. TBD. Presented by American Water Works Association; Practical Forum for Water Technology Professionals to Exchange Latest Research & Information. For info: www.awwa.org/Events-Education/Water-Quality-Technology

November 6-8 WY

Western Governors Association Meeting, Jackson Hole. TBD. For info: www.westgov.org

November 6-8 NC

American Water Resources Association 2023 Annual Conference, Raleigh. Embassy Suites by Hilton-Raleigh Durham Research Triangle. Innovative, Practical & Applied Water Management Solutions, Techniques & Research. For info: https://members.awra.org >> Events and Education

November 6-9 NL

Aquatech Amsterdam, Amsterdam. RAI Amsterdam. World's Largest Trade Exhibition for Water Technology. For info: Annelie Koomen, Aquatech, a.koomen@rai.nl or www.aquatechtrade.com/amsterdam/

November 14-15 WA

Washington Water Code Conference, Tacoma. Greater Tacoma Convention & Trade Center - Room 318. Law, Policy & Planning. For info: The Seminar Group: 206/ 463-4400, info@theseminargroup.net or www.theseminargroup.net

November 28-30 CA

ACWA 2023 Fall Conference & Exhibition, Indian Wells. Hyatt Regency Indian Wells. P resented by Association of California Water Agencies. For info: https://www.acwa.com/events/