Colorado Municipalities

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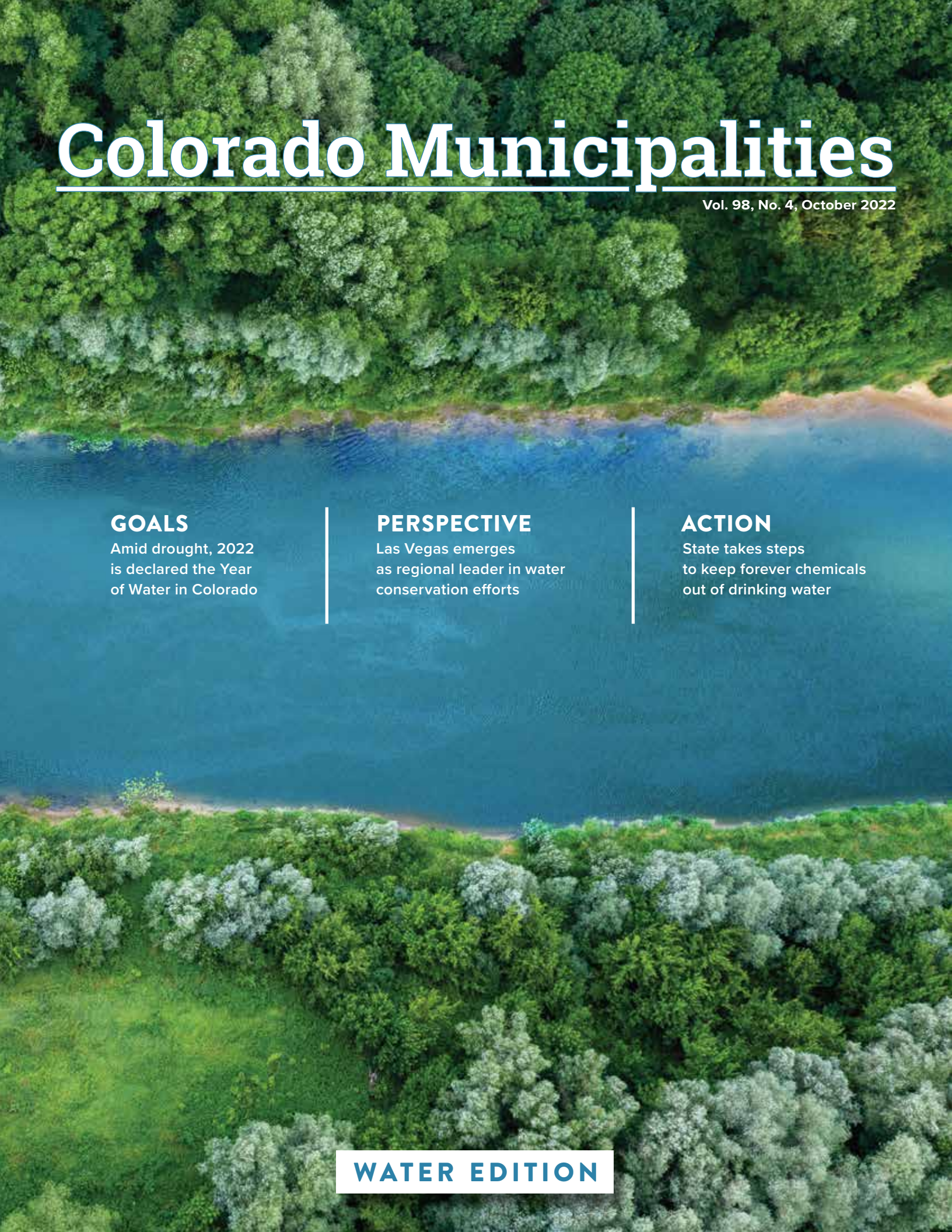

GOALS
Amid drought, 2022 is declared the Year of Water in Colorado

PERSPECTIVE
Las Vegas emerges as regional leader in water conservation efforts

ACTION
State takes steps to keep forever chemicals out of drinking water

WATER EDITION

Executive Board

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The Colorado Municipal League is a nonprofit association organized and operated by Colorado municipalities to provide support services to member cities and towns. The League has two main objectives: 1) to represent cities and towns collectively in matters before the state and federal government; and 2) to provide a wide range of information services to help municipal officials manage their governments.

MISSION

Colorado Municipalities is published to inform, educate, and advise appointed and elected municipal officials about new programs, services, trends, and information to help them perform their jobs and better serve their citizens and communities.

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CML welcomes thought-provoking letters to the editor! Send comments to CML Engagement & Communications Manager Jennifer Stone at *jstone@cml.org*.

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For associate membership information, contact CML Training and Marketing Specialist Makenna Sturgeon at *msturgeon@cml.org*.

ABOUT SOME OF OUR CONTRIBUTORS

JULIE BAXTER IS THE WATER RESOURCES MANAGER FOR THE CITY OF STEAMBOAT SPRINGS. SHE LEADS WATER RIGHTS AND SUPPLY PLANNING, WATER CONSERVATION, WATERSHED AND STREAM PROTECTION, AND WATER QUALITY PERMIT COMPLIANCE FOR THE CITY. SHE SERVES ON BOARDS FOR THE ROUTT COUNTY WILDFIRE MITIGATION COUNCIL, THE YAMPA RIVER FUND, AND THE YAMPA/WHITE/GREEN BASIN ROUNDTABLE. PRIOR TO JOINING THE CITY, JULIE WORKED AS A CONSULTANT FOR FEMA'S RISKMAP PROGRAM, ON PROJECTS SUPPORTING COLORADO AGENCIES FOLLOWING THE 2013 FLOOD DISASTER, AND ASSISTING LOCAL GOVERNMENTS WITH SUSTAINABILITY PLANNING PROJECTS. SHE ALSO MANAGED THE HAZARD MITIGATION PLANNING PROGRAM FOR FEMA REGION 8. SHE HOLDS A MASTER IN COMMUNITY AND REGIONAL PLANNING FROM THE UNIVERSITY OF OREGON AND A BACHELOR OF SCIENCE IN NATURAL RESOURCES FROM THE UNIVERSITY OF MICHIGAN.

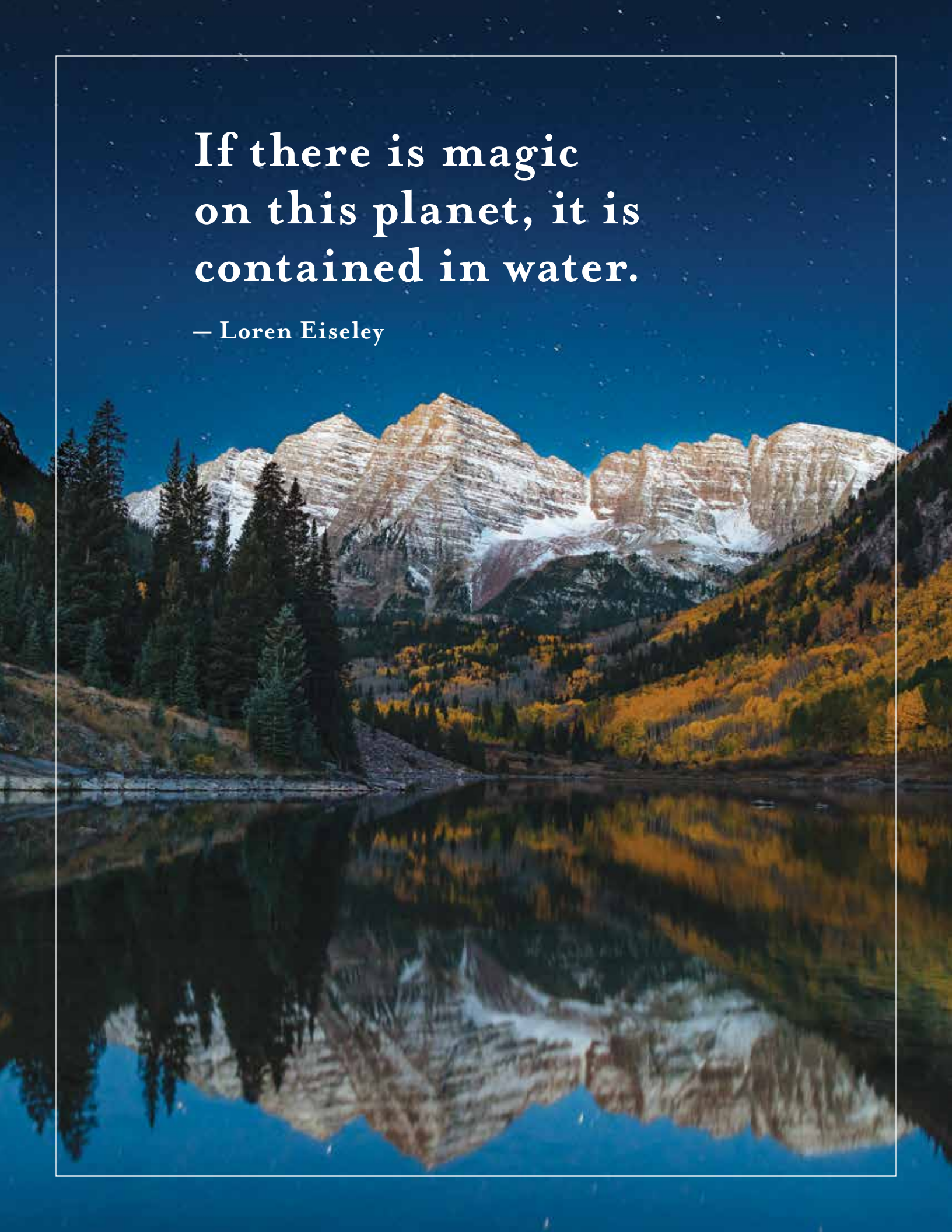
MELANIE KILPATRICK SERVES THE CITY OF CRAIG AS THE PROJECT MANAGER FOR THE YAMPA RIVER CORRIDOR PROJECT AND EXECUTIVE ASSISTANT TO THE CITY MANAGER. MELANIE HAS A BACHELOR OF SCIENCE IN BUSINESS MANAGEMENT WITH A BACKGROUND IN MARKETING AND THE CREATIVE ARTS. A NATIVE TO THE YAMPA VALLEY, MELANIE HAS A GENUINE PASSION FOR NORTHWEST COLORADO, RIVER RECREATION/STEWARDSHIP, AND ADVENTURING WITH HER FAMILY.

CAROLYN BERNDT IS THE LEGISLATIVE DIRECTOR FOR SUSTAINABILITY IN THE FEDERAL ADVOCACY DEPARTMENT AT THE NATIONAL LEAGUE OF CITIES, THE NATION'S OLDEST AND LARGEST NATIONAL ORGANIZATION REPRESENTING MUNICIPAL GOVERNMENTS. AS A MEMBER OF THE FEDERAL ADVOCACY TEAM, CAROLYN LEADS NLC'S ADVOCACY, REGULATORY, AND POLICY EFFORTS ON ENERGY AND ENVIRONMENTAL ISSUES, INCLUDING WATER INFRASTRUCTURE AND FINANCING, WATER AND AIR QUALITY, CLIMATE CHANGE, ENERGY EFFICIENCY, BROWNFIELDS, SOLID AND HAZARDOUS WASTE AND MORE. CAROLYN SERVES ON THE BOARD OF DIRECTORS FOR PACENATION, A NATIONAL NONPROFIT WHOSE MISSION IS TO PROMOTE PROPERTY ASSESSED CLEAN ENERGY (PACE) FINANCING. SHE IS ALSO A MEMBER OF THE CARY INSTITUTE FOREST PEST ADVISORY COMMITTEE, HELPING TO INFORM POLICY TO REDUCE THE IMPORTATION OF INSECT PESTS AND DISEASES INTO THE U.S. THROUGH INTERNATIONAL TRADE. PRIOR TO JOINING NLC, CAROLYN SERVED AS ASSOCIATE DIRECTOR OF GOVERNMENT AND PUBLIC AFFAIRS AT THE AMERICAN SOCIETY FOR INTERIOR DESIGNERS, WORKING WITH COALITIONS THROUGHOUT THE COUNTRY TO SECURE INTERIOR DESIGN REGISTRATION AND LICENSURE LAWS. FORMERLY, CAROLYN WORKED FOR BURNS AND ROE, A PRIVATE ENGINEERING AND CONSTRUCTION COMPANY, IN THEIR GOVERNMENT AFFAIRS OFFICE IN WASHINGTON, DC. CAROLYN RECEIVED HER MASTER'S DEGREE IN PUBLIC ADMINISTRATION FROM AMERICAN UNIVERSITY IN WASHINGTON, DC AND HER BACHELOR OF ARTS IN POLITICAL SCIENCE FROM TRINITY COLLEGE IN HARTFORD, CONNECTICUT.

BRONSON MACK IS THE PUBLIC OUTREACH MANAGER FOR THE SOUTHERN NEVADA WATER AUTHORITY AND THE LAS VEGAS VALLEY WATER DISTRICT. HE JOINED THE ORGANIZATION MORE THAN 20 YEARS AGO. BRONSON IS RESPONSIBLE FOR OVERSEEING THE ORGANIZATION'S COMMUNICATIONS AND PUBLIC OUTREACH INITIATIVES RELATED TO WATER RESOURCES, CONSERVATION, WATER QUALITY, AND UTILITY OPERATIONS. BRONSON IS A GRADUATE OF THE UNIVERSITY OF NEVADA, LAS VEGAS, WITH A BACHELOR'S DEGREE IN CORPORATE COMMUNICATIONS. MARRIED WITH TWO GREAT KIDS, HE ENJOYS FISHING, SNOWBOARDING, AND GOLFING IN HIS SPARE TIME.

REBECCA MITCHELL SERVES AS THE DIRECTOR OF THE COLORADO WATER CONSERVATION BOARD AS WELL AS THE COLORADO COMMISSIONER TO THE UPPER COLORADO RIVER COMMISSION. SHE IS AN ACCOMPLISHED WATER LEADER WITH OVER 20 YEARS OF EXPERIENCE IN THE WATER SECTOR AND HIGHLY KNOWLEDGEABLE IN COLORADO WATER LAW. MITCHELL PLAYED A SIGNIFICANT ROLE IN DEVELOPING THE COLORADO WATER PLAN, WORKING WITH THE STATE'S NINE BASIN ROUNDTABLES, THE INTERBASIN COMPACT COMMITTEE, AND THE PUBLIC. SHE HAS WORKED IN BOTH THE PUBLIC AND PRIVATE SECTOR AS A CONSULTING ENGINEER; SHE RECEIVED BOTH HER B.S. AND M.S. FROM THE COLORADO SCHOOL OF MINES.

ERICH SCHWIESOW GREW UP IN BOULDER (WHEN IT HAD A RODEO) BUT MOVED TO THE SAN LUIS VALLEY STRAIGHT OUT OF LAW SCHOOL AND HAS BEEN PRACTICING THERE FOR 29 YEARS. HE HAS BEEN THE ALAMOSA CITY ATTORNEY SINCE 2007, AND PRIOR TO THAT WAS IN PRIVATE PRACTICE WITH A FOCUS ON WATER AND AGRICULTURAL LAW.


If there is magic
on this planet, it is
contained in water.
— Loren Eiseley

THE YEAR OF WATER

BY REBECCA MITCHELL

DIRECTOR OF THE COLORADO WATER CONSERVATION BOARD

Governor Polis declared 2022 the Year of Water in Colorado. This unique year marks the 100th anniversary of the Colorado River Compact, the 85th anniversary of the Colorado Water Conservation Board, the 50th anniversary of the Clean Water Act, and the publication of the newly updated Colorado Water Plan, which will be final by year's end. Yet, 2022 will also be remembered as a year of unprecedented stressors for Colorado's rivers, watersheds, and water users. Our state sits on the front lines of climate change. Impacts ranging from drought to record-breaking wildfires directly affect Colorado's water users and its environment.

UNPRECEDENTED STRESSORS

Colorado is called the Headwaters State, because 18 states and Mexico depend on water that originates as rain and snow in our Rocky Mountains. Those waters flow east to the Mississippi River, south to the Gulf of Mexico, and west to the Pacific Ocean. Accordingly, Colorado is party to nine interstate agreements, plus two U.S. Supreme Court decrees, governing the way Colorado shares water with our neighbors. The oldest of these agreements—the Colorado River Compact and the La Plata River Compact—celebrate their 100th anniversaries this year.

A lot has changed in 100 years. Socially, politically, environmentally, and economically, the American Arid West has challenges and opportunities that were unimaginable to the authors of the interstate compacts. However, the American Arid West has always held a tenuous relationship with water. In 1276, the Pueblos at Mesa Verde moved south during a long term drought. In the 1500s, a multidecadal drought limited the Spanish Empire's reach into the southwest. And in 1878, John Wesley Powell reported that there was not enough water to irrigate all the western lands of the United States. Water in the West has always been variable and often insufficient.

Many of our current problems stem from demands that exceed supply. Climate change is affecting the water supplies of major river systems, and yet demand for water in the hot, dry American southwest has remained unchanged. This imbalance between supply and demand is most obvious in the Colorado River Basin. In 1922, after a historically wet few decades, the Colorado River states agreed to split the river between the Upper and Lower Basins. The Compact apportions 7.5 million acre-feet of water to Colorado, New Mexico, Wyoming, and Utah (the Upper Basin), and 7.5 million acre-feet to Arizona, California, and Nevada (the Lower Basin). The Lower Basin was apportioned an additional 1 million acre-feet for tributary use, and Mexico was later allocated 1.5 million acre-feet. In total, 17.5 million acre-feet of water was allocated. Climate change has resulted in flows much lower than this.

The modern Colorado River is a system designed to level out the river's historical variability. Reservoirs like Lake Powell and Lake Mead serve as giant spigots for regulating water releases downstream. When farms and cities in the desert southwest need water, they place orders with the Bureau of Reclamation and see that water at their headgates in a few days. The Lower Basin states draw this water directly from Lake Mead, and in turn from Lake Powell, so the impacts of this overuse are apparent in the storage elevations at these reservoirs. Meanwhile, smaller reservoirs in the

Upper Basin catch surplus water in wet years and store it for dry years. Because Colorado water users typically do not have large reservoirs upstream of them, they respond to real world hydrology produced by melting snowpack and rain. Last year, the Upper Basin states used approximately 47% of our Compact entitlement and the Lower Basin states used approximately 130% of their Compact entitlement, according to estimates by the Upper Colorado River Commission.

The realities of climate change, the insecurities brought about by drought, and the stressors weighing on Colorado's water users are not limited to the Colorado River Basin. The entire state is stressed by unprecedented changes to the climate and water resources. Colorado temperatures have warmed by approximately two degrees since 1977, and are projected to warm by up to five degrees by 2050. Increasing temperatures impact snowmelt runoff, water quality, ecosystems, recreational opportunities, and create extreme weather conditions.

These stressors have real impacts on Colorado water users and their businesses. The Ute Mountain Ute Farm & Ranch Enterprise faced a second year of water cuts: in 2021, the farm received only 10% of its water allocation, and, this year, it received only 25% of its allocation. In the Colorado River Basin, boating and fishing outfitters ended their summer trips early due to low river flows and turbidity.

The 20 largest wildfires in Colorado have all occurred in the last 20 years. Four of the five largest wildfires occurred in the last three years. Post-wildfire watersheds have water quality challenges, increased risk of flash floods and flood damage, loss of healthy rivershed functions, and soil erosion. This summer, more than 30 flash flood warnings were issued to areas affected by the Cameron Peak burn scar, resulting in two casualties. Last summer, Glenwood Springs restricted water use because it was so debris-laden from the Grizzly Creek burn scar that local water treatment infrastructure was overwhelmed.

UNPRECEDENTED TOOLS

The Year of Water in Colorado is not all bad news: we are equipped with unprecedented tools to meet our unprecedented challenges. The federal government, the state of Colorado, and local entities are mobilizing staff, funding, and projects to address water security and mitigate drought. The year 2022 has underscored the value of water.

The federal government has allocated billions of dollars to addressing drought and water resources. Last month, Congress passed the Inflation Reduction Act of 2022 to provide $4 billion to drought relief, with a priority for the Colorado River Basin. The Act also provided hundreds of millions of dollars for water projects related to water supply, water efficiency, disadvantaged communities, and the Tribal Nations. This is on top of federal funds for water in the Bipartisan Infrastructure Investments and Job Act (IIJA), which was signed into law in June 2022. IIJA provides $8.3 billion for Western water, including $50 million for the Colorado River.

Colorado is bringing resources to the table, too. In July, with support from Governor Polis, the Colorado Water Conservation Board approved $17 million in severance tax revenues to fund local water projects that align with the updated Colorado Water Plan, with a specific focus on aging infrastructure and drought mitigation. And, in the spring session, the Colorado Legislature allocated $60 million to finance groundwater use reduction efforts in the Rio Grande River and Republican River basins, $14 million for post-wildfire watershed restoration and technical assistance, $2 million for a new program to incentivize the replacement of turf grass with water-wise landscaping, and $6 million for conservation programs designed to protect threatened or endangered species, including fish in the Platte River, Colorado River, and San Juan River.

Each of these new financial resources are supported by the Colorado Water Plan, which outlines a statewide framework for solutions to our state's water challenges. It breaks down the state's water planning vision into four major action areas: Vibrant Communities, Robust Agriculture, Thriving Watersheds, and Resilient Planning. The Water Plan is an excellent tool for state government and basin-level decision makers, as it offers ways for Coloradans to become more informed about water, more engaged in Water Plan actions, and more involved in the ways the state is advancing the Water Plan collectively.

By far the most important tool available to Colorado is the people who care for and depend on our water resources. Over the past few years, we've expanded the number of communities engaged in water policy to reflect the diversity of Coloradans. This includes intentional consultation and collaboration with the Southern Ute Indian Tribe and Ute Mountain Ute Tribe, Spanish-language engagement, and outreach to traditionally underserved communities.

The Colorado Water Conservation Board convened the Water Equity Task Force in March 2021. The Task Force's purpose was to help CWCB shape guiding principles around equity, diversity, and

inclusion to inform the Water Plan Update. The Task Force brought together 21 diverse Coloradans who blended traditional stakeholder groups and new voices, including a member representing the acequia community. The group's central objective was expanding opportunities to new audiences—an outreach strategy that was undertaken in the Water Plan Update. This outreach gathered important information to shape the draft plan and expanded beyond the CWCB's traditional stakeholder base to connect with more than 1,200 Coloradans from a range of backgrounds.

The draft Water Plan document as well as CWCB's listening sessions were available in English and Spanish. CWCB staff have participated in more than 60 events across Colorado during the Plan's rollout (so far!) to share how Colorado is planning for its water future with a range of communities.

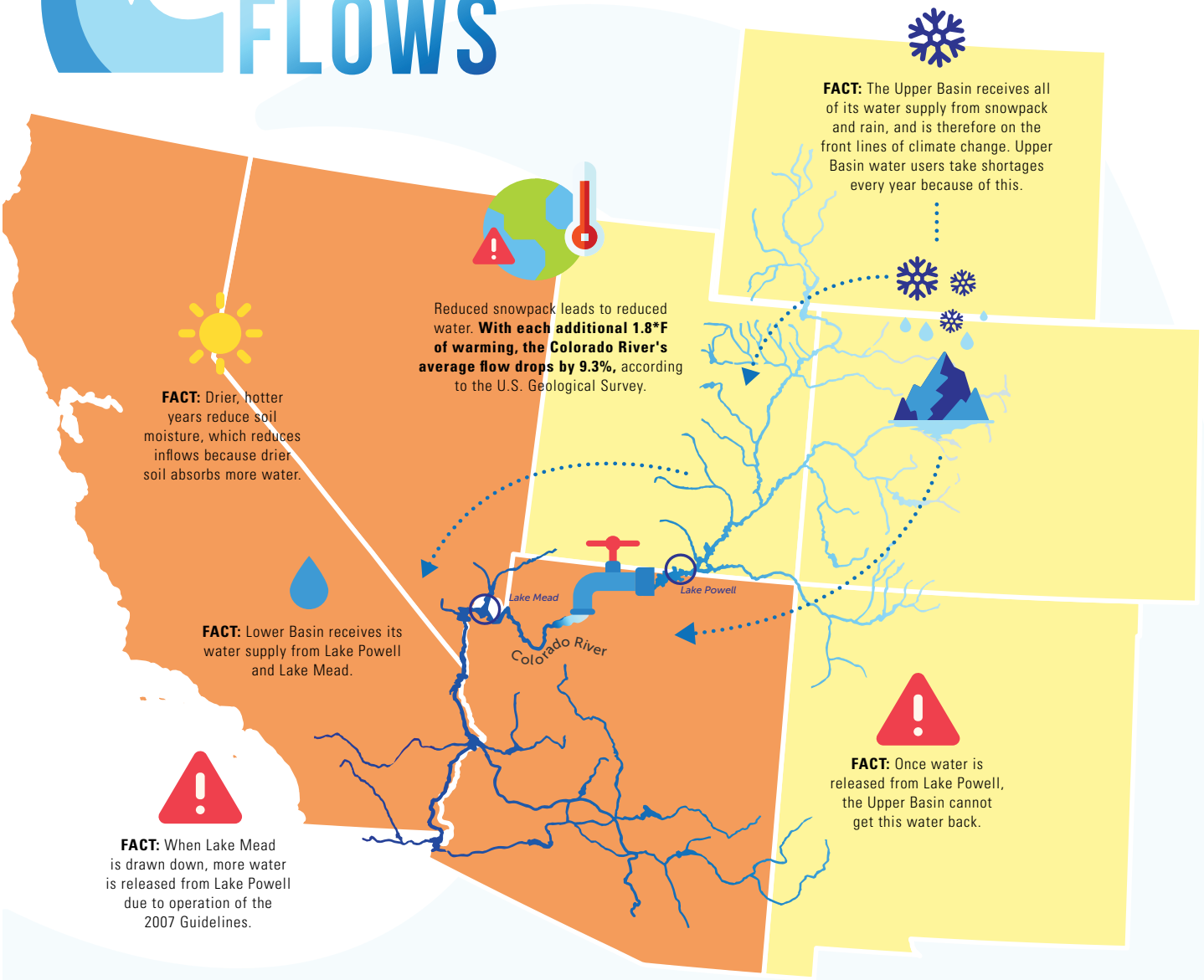
IN CONCLUSION

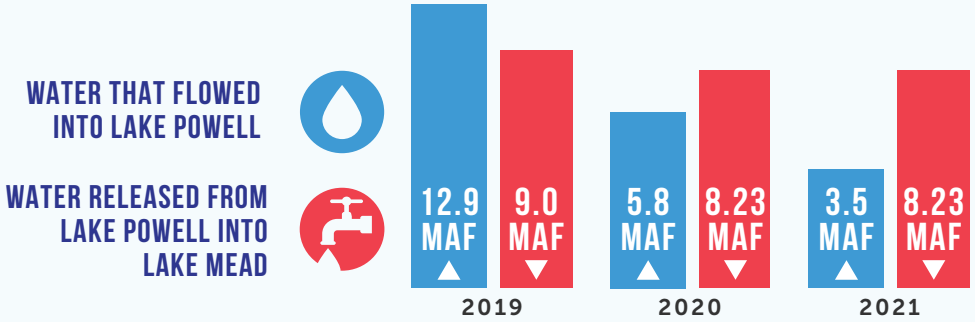
2022 is the Year of Water in Colorado, highlighting the dichotomy between our unprecedented challenges and unprecedented tools. This year highlights the seriousness of drought, climate change, and water scarcity. It also celebrates water milestones including the 100th anniversary of the Colorado River Compact, and accomplishments like continuing to drop the statewide gallons of water per capita per day by more than 5% since 2008 despite significant population growth. It recognizes that our state is well-situated to respond to the challenges. New funding, new direction, and new communities create an unprecedented toolkit to meet the challenges of the future. I am confident we will rise to the occasion.

Rebecca Mitchell is the director of the Colorado Water Conservation Board and the Colorado Commissioner to the Upper Colorado River Commission. She represents the state in interstate Colorado River negotiations.

WHERE THE WATER FLOWS

COLORADO RIVER BASIN





COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Unregulated Inflow, 24-Month Study, Bureau of Reclamation

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CML COLORADO MUNICIPAL LEAGUE

ASPEN | CONSERVING THE ROARING FORK

The City of Aspen owns and operates its water supply system, providing treated, i.e., potable, water to all customers in its service area and raw, i.e., non-potable, water for irrigation purposes to a small subset of customers. Aspen also provides water for snowmaking from both treated and raw water supplies. The city meets its joint commitments to sustainability and to providing a quality potable water supply to the community through a combination of planning efforts and programs that encourage the efficient use of water at all times.

One city program, the Qualified Water Efficient Landscaper training, led to the city being recognized as a WaterSense Partner of the Year two years in a row by WaterSense, a voluntary partnership program sponsored by the U.S. Environmental Protection Agency. Aspen offered virtual trainings throughout the pandemic and even developed a customized Spanish version of the training. The city also offered a "train-the-trainer" program to prepare two certified QWEL graduates to lead 2020 trainings.

1993

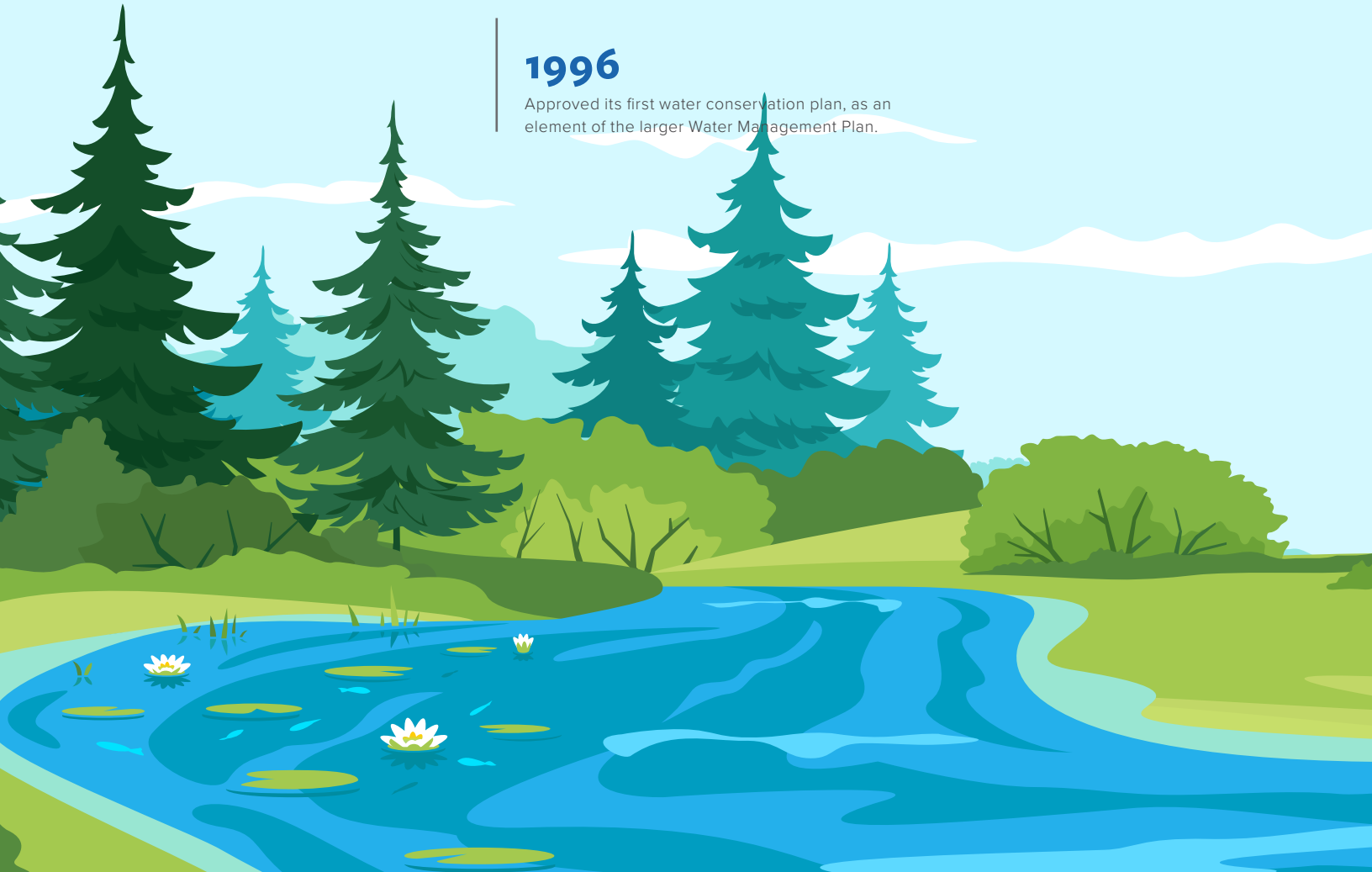
Adopted water management policies intended to provide for current and future municipal water needs while at the same time maintaining decreed minimum streamflows and aquatic habitat.

2006

Added a Utilities Efficiency Division including a dedicated staff manager. The Utilities Administrative division oversees the water efficiency program with support from other staff members.

1996

Approved its first water conservation plan, as an element of the larger Water Management Plan.



WATER EFFICIENT LANDSCAPING OBJECTIVES

- Promote efficient development and use of water within the City of Aspen's water service area.
- Promote the values and benefits of healthy landscapes while recognizing the need to invest water and other resources as efficiently as possible.
- Establish a structure for planning, designing, installing, maintaining, and managing water-efficient landscapes in new construction and renovated/rehabilitated projects.
- Use water efficiently without waste by setting a Maximum Applied Water Budget as an upper limit for water use and reducing water use to the lowest practical amount.

2015

Developed Water Efficiency Plan in accordance with the Colorado Water Conservation Act of 2004 so that it meets or exceeds all statutory requirements according to Colorado Revised Statute § 37-60-126.

2017

Adopted Ordinance 16, Series 2017 to create 18-month pilot phase of Water Efficient Landscaping Ordinance and Standards.

2020

Adopted Drought Mitigation and Response Plan to support the wise use of water under all conditions, help preserve essential public services, and minimize the adverse effects of a water supply emergency on public health and safety, environmental resources, economic activity, and individual lifestyles.

2022

Latest update of Water Efficiency Landscaping Standards.

2035

City estimates the WEP will reduce treated demand by about 583 acre feet—an overall 14% reduction in demand from 2015, even as population is projected to increase 1.2% a year.

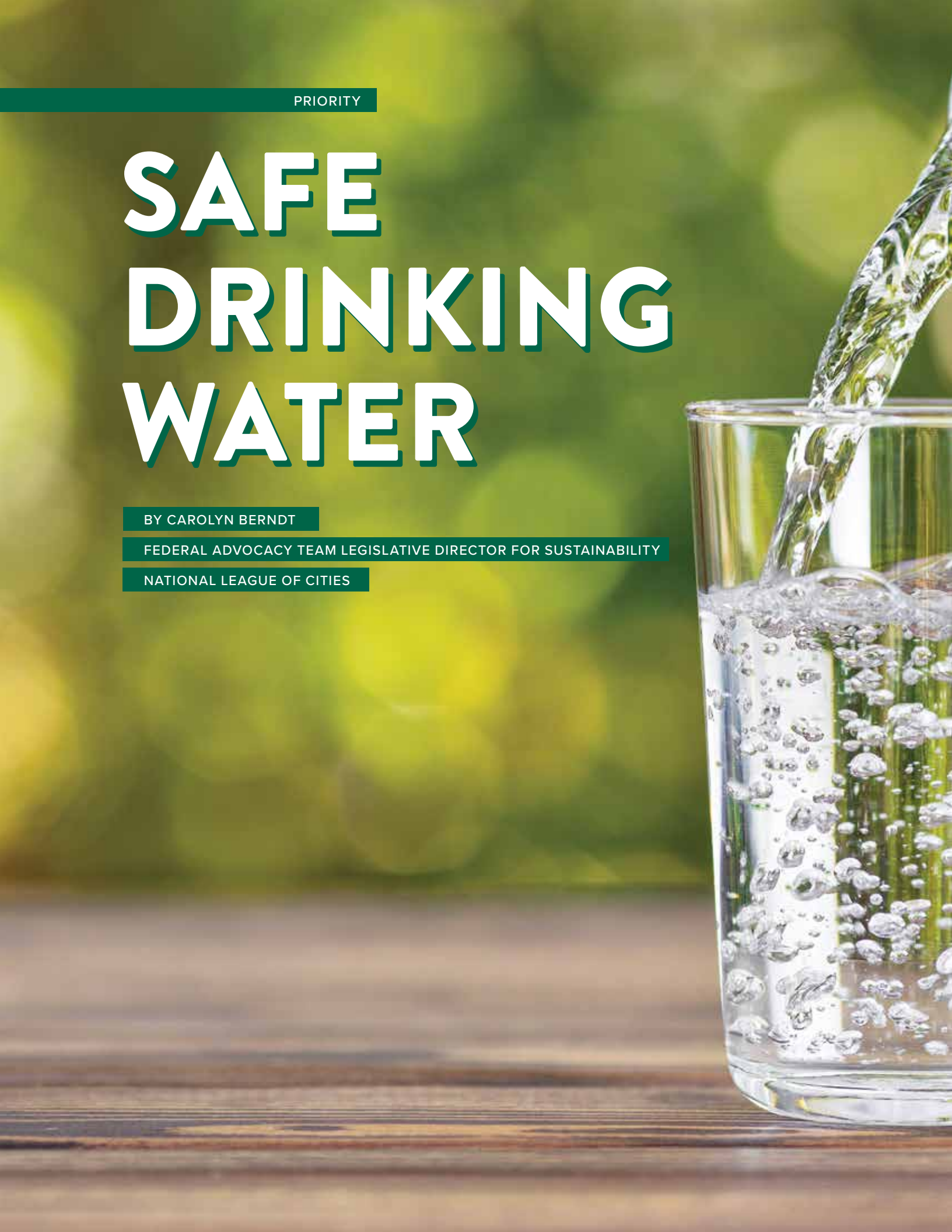
PRIORITY

SAFE DRINKING WATER

BY CAROLYN BERNDT

FEDERAL ADVOCACY TEAM LEGISLATIVE DIRECTOR FOR SUSTAINABILITY

NATIONAL LEAGUE OF CITIES



Bipartisan Infrastructure Law invests in reducing exposure to forever chemicals

If you look for it, you will probably find it. Per- and polyfluoroalkyl substances, or PFAS, are a class of nearly 5,000 man-made chemicals manufactured and used in a variety of industries. PFAS have become pervasive in the environment, with over 2,858 locations in 50 states and two territories known to be contaminated as of June 2022, according to an interactive map from the Environmental Working Group. Many of these sites are located in Colorado.

PFAS contamination is found at and around military bases, airports, manufacturing sites, landfills, and in local water supplies obtained from rivers and groundwater. PFAS chemicals were widely used in firefighting foams, particularly for airports, and were used in frequent training exercises at military air bases. Runoff from these sites has contaminated water resources and soil.

PFAS chemicals are known as “forever” chemicals because they do not easily break down in the environment or the human body. They have also been linked to harmful health effects including effects on prenatal development, low infant birth weights, early onset of puberty, negative effects on the immune system, cancer, liver damage, and thyroid disruption.

Because of these health implications, the federal government, primarily through the U.S. Environmental Protection Agency and the U.S. Department of Defense, and many state governments, including Colorado, are taking action to protect the environment and safeguard human health. Earlier this year, Governor Jared Polis signed a bill into law to restrict the sale of PFAS in certain consumer products. In the absence of federal regulations, Colorado has adopted maximum contaminant levels for several of the PFAS chemicals.

At the federal level, in June the White House released a fact

sheet on actions across agencies to safeguard clean drinking water. In particular, the Department of Defense is assessing and in the process of cleaning up 700 military sites with known PFAS contamination and conducting research and development on new cleanup technologies and alternative materials. Additionally, EPA's PFAS Strategic Roadmap, released Octover 2021, outlines a whole-of-EPA strategy and specific actions to research, restrict, and remediate PFAS.

EPA's strategic roadmap contains a number of actions of note for local governments. First, earlier this year the agency lowered the lifetime exposure health advisory level for PFOA and PFOS from 70 parts per trillion to near zero and established new health advisories for GenX and PFBS. This is significant because not only is it significantly lower than Colorado's state action level, but also because there are technical challenges in detecting, measuring, and removing PFAS in water and other environmental media at the levels where health effects can occur. While treatment technology for removing PFAS from water is not well-developed, the more effective methods use technologies that are not conventionally available in existing water treatment plants, so removing these PFAS chemicals from water could require costly investments by local governments and other local water suppliers, which would be passed onto ratepayers.

Other actions of note for local governments in the EPA strategic roadmap pertain to forthcoming regulations and rulemakings to establish a National Primary Drinking Water Regulation for PFOA and PFOS under the Safe Drinking Water Act, to designate PFOA and PFOS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act, and to regulate four PFAS chemicals as hazardous under the Resource Conservation and Recovery Act. For drinking water and CERCLA, EPA is also considering whether to regulate additional PFAS chemicals under each law.

For the drinking water regulation, EPA would set a non-enforceable Maximum Contaminant Level Goal at which no known adverse effects on human health occur and which allows for an adequate margin of safety. The goal level does not account for limits of detection and treatment technology effectiveness. The agency would also set an enforceable Maximum Contaminant Level as close as feasible to the goal (taking costs and benefits into consideration). If it is not economically or technologically feasible to ascertain the level of the contaminant, EPA may propose a Treatment Technique in lieu of a Maximum Contaminant Level. EPA anticipates publishing the proposed rule for public comment in late 2022 and promulgating a final rule in Fall 2023.

Under the CERCLA rulemaking, the designations as hazardous substances would mean that facilities, such as drinking water and wastewater utilities or municipal landfills and airports, would be required to report on PFOA and PFOS releases that meet or exceed a certain limit. EPA is accepting public comments on a proposed rule and anticipates publishing a final rule in Aug. 2023.

CERCLA ensures hazardous substances that may endanger public health or the environment are cleaned up by holding responsible parties financially liable. Local governments, including municipal airports and fire departments, which were required by federal law to use firefighting foam containing PFAS chemicals, and drinking water and wastewater utilities and municipal landfills, which serve as receivers of PFAS chemicals and did not cause or contribute to contamination, should not be held liable for PFAS contamination or cleanup costs.

With several rulemakings underway that pertain to local drinking water and wastewater infrastructure management, the National League of Cities has urged the EPA to take a holistic and integrated approach and to consider the cumulative impacts that rules and regulations will have

on local governments in terms of costs, compliance and implementation timelines. NLC has also asked the EPA to ensure that local governments are afforded the maximum flexibilities and financial alternatives to minimize the burden on residential ratepayers.

Finally, NLC urged the EPA to provide new sources of funding to assist local governments with compliance and implementation if the agency moves forward with these proposed rules and regulations. While the Bipartisan Infrastructure Law provided increased funding for the State Revolving Funds, including to address PFAS contamination specifically, local governments will still face a water infrastructure needs gap that would exacerbate affordability and equity concerns for the many fixed- and low-income households that already spend a disproportionate amount of their income on water bills.

NEXT STEPS FOR LOCAL LEADERS

Local leaders should take advantage of the funding that is available today, including through the Bipartisan Infrastructure Law, to make progress toward meeting forthcoming regulations and requirements. If you or your municipality plans to comment on the EPA rulemakings, please share your comments with me at NLC.

The infrastructure law makes significant federal investments toward improving our nation's water infrastructure. With regard to PFAS, it provides $10 billion in grants over five years to address emerging contaminants and PFAS drinking water contamination. The law allocates $1 billion through the Clean Water State Revolving Fund with 100% in the form of principal forgiveness/grants, $4 billion through the Drinking Water SRF with 100% in the form of principal forgiveness/grants, and $5 billion through the states, but not through the State Revolving Fund programs, for underserved communities.

Local leaders should also understand the state process and timeline for applying for these funds. In Colorado, the Drinking Water and Clean Water SRFs are run through the Department of Public Health and Environment. The EPA sent an implementation memo to state agencies to provide guidance on how the infrastructure law funds should be given out. Local leaders should review the memo to get a better understanding of what to expect from your state agency and certain flexibilities the EPA affords the states.

The memo outlines how much funding each state will receive from the infrastructure law in FY22 (not including regular annual federal appropriations) under the various State Revolving Fund funding pots. For Colorado, the state will receive:

- $35,550,000 – Drinking Water SRF (traditional)
- $56,015,000 – Drinking Water SRF: lead service line replacement
- $14,927,000 – Drinking Water SRF: PFAS and emerging contaminants
- $14,236,000 – Clean Water SRF (traditional)
- $747,000 – Clean Water SRF: emerging contaminants.

This is a significant increase in funding that can go a long way toward improving water infrastructure in Colorado cities and towns. With the funding increase, it is likely that the state agency will need time to ramp up to review projects and get the funding out to communities. For local leaders, the time to begin conversations with your state is now.

Finally, NLC's Local Infrastructure Hub will provide technical assistance to help small and mid-sized cities and towns access federal infrastructure dollars available through the infrastructure law. An in-depth online curriculum on the State Revolving Fund programs will be available early next year.

Carolyn Berndt can be reached at berndt@nlc.org.


THE VENETIAN
澳门威尼斯人
Sands

LAS VEGAS WATER CONSERVATION IS NO MIRAGE

BY BRONSON MACK

PUBLIC OUTREACH MANAGER

SOUTHERN NEVADA WATER AUTHORITY

Some may think Las Vegas is a profligate water user. Images of dancing fountains along the resort corridor and expanses of suburban development often come to mind when the words "Las Vegas" and "water" appear in the same sentence. The reality, however, is that Southern Nevada has embarked on a water conservation journey spanning the past two decades that has helped it emerge as one of the most water-efficient communities in the desert Southwest—and its journey to remain so continues.

When climate change-fueled megadrought hit the Colorado River Basin in 2000, the Southern Nevada Water Authority launched a series of water-conservation initiatives that have enabled the community to consume far less water than its 300,000 acre-foot allotment from Lake Mead, the source of 90% of its supply. In fact, these measures have resulted in a 26 percent reduction in Colorado River water use since 2002—even as the region's population has grown by more than 750,000 residents.

These initiatives' importance has taken on added significance following the announcement in August of a tier two shortage declaration on the Colorado River. As a result, the amount of water Southern Nevada will be able to withdraw from Lake Mead will be reduced by 25,000 acre-feet, or about 8.1 billion gallons, beginning in January 2023. (An acre-foot is equal to 325,851 gallons of water.)

Southern Nevada's portfolio of water-conservation measures includes legacy programs that have enabled the region to successfully save billions of gallons of water annually, as well as new initiatives developed with an eye toward conserving its limited resources well into the future.

Chief among these conservation initiatives is the Water Smart Landscapes Rebate Program. Through the rebate program, qualifying residents and businesses in Southern Nevada can upgrade their water-intensive grass to drip-irrigated trees and plants, in exchange for cash incentives of up to $3 per square foot of converted landscaping. Since its launch in 1999, the rebate program has resulted in the conversion of more than 206 million square feet of turf with a total savings of more than 163 billion gallons of water.

In addition, local businesses can take advantage of the SNWA's Water Efficient Technologies program, which provides financial incentives to commercial and multifamily property owners who install water-efficient devices and technologies. Since 2001, participating businesses in the water efficiency program have saved more than 15 billion gallons of water.

While the two programs have been enormously successful, Southern Nevada continues to pursue and adopt water conservation initiatives geared toward becoming the most water-efficient city in the world.

In 2021, the Nevada Legislature passed a law that prohibits the use of Colorado River water to irrigate nonfunctional and useless grass from the community. This includes grass located in roadway roundabouts and medians, between streets and sidewalks, and other areas where the only reason to set foot on it is to mow it. The law requires the removal and/or replacement of this grass throughout Southern Nevada at commercial, multi-family, government, and other properties by the end of 2026. It does not apply to grass in homeowners' yards, or to grass used for recreation at schools and parks. The SNWA estimates that this conservation initiative will result in the removal of thousands of acres of decorative grass and help save nearly 10 percent of the community's water supply. Property owners converting their landscaping to comply with the new law are eligible to participate in the rebate program.

In 2004, SNWA and local jurisdictions approved development codes prohibiting the installation of grass in front yards of new residential construction and limiting grass in backyards to only 50 percent of the landscaped area. The codes also prohibited grass in any new commercial development. This year, the community updated those codes to now prohibit grass in all new development, including new residential backyards. While grass is still permitted at new schools and parks, these new development code changes are expected to save approximately 27,000 acre-feet of water over the coming years.

While landscape irrigation represents the single largest use of water in Southern Nevada, the second most water-intensive use is evaporative cooling, which consumes about 10 percent of the region's water supply. Currently, SNWA is working with Southern Nevada's diverse business sector to update codes that will prohibit the installation of evaporative cooling systems in all new commercial developments and require alternative cooling technologies to be installed that consume little to no water.

More recently, the SNWA and its member agencies modified building codes to limit all new backyard swimming pools and spas to no more than 600 square feet in surface area. The new codes, which took effect Sept. 1, do not apply to multi-family residential,

commercial, or resort properties. With this initiative, Southern Nevada can expect to save more than 3 million gallons of water per year.

The community also revised water budgets for golf courses, limiting the amount of water golf courses can use for landscape irrigation to 4 acre-feet per irrigated acre annually, down from the current 6.3 acre-feet per irrigated acre. Irrigated acreage includes all turfgrass and water features, including lakes and ponds with the golf course. In recent years, numerous golf courses have taken proactive steps to remove more than 900 total acres of grass from out-of-play areas, and in the process have already reduced their water consumption significantly.

Much of Southern Nevada's water conservation success also can be traced to seasonal watering restrictions, which limit the days of the week (as well as hours of the day) all properties can irrigate their landscapes. Residents and businesses found in violation of the seasonal watering restrictions can be subject to water-waste fines starting at $80 and ranging up to $5,120 for repeat violations.

The SNWA and its member agencies also employ water-waste patrols throughout the community. These water-waste investigators respond to reported water waste violations, which are defined as:

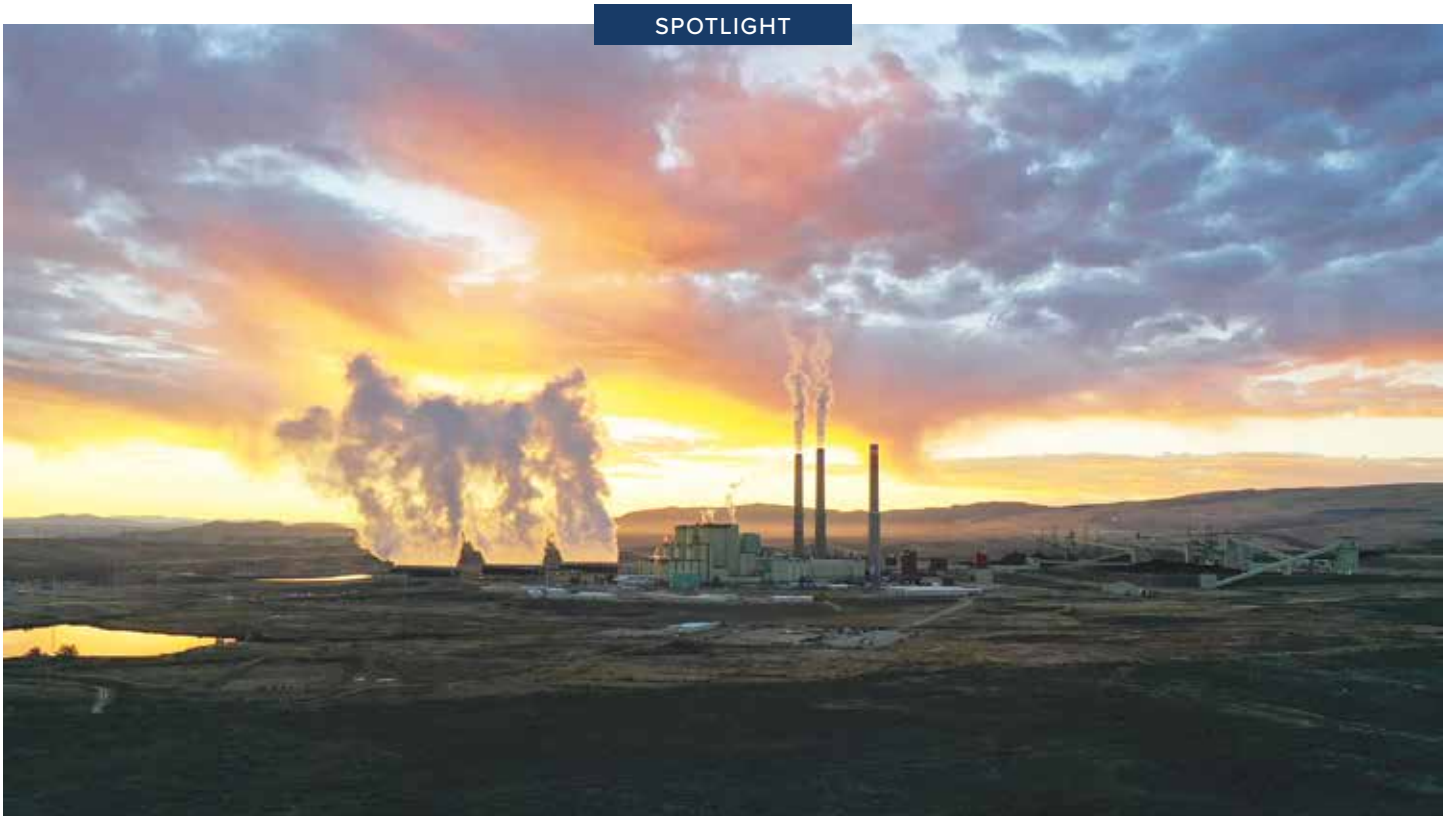
- Any water that sprays or flows off a property
- Watering outside of assigned watering day(s) and/or times
- Failure to drain a swimming pool or spa into a public sanitary sewer, if available.

The primary focus of these programs is to reduce outdoor water consumption, which accounts for about 60 percent of the region's overall water use. All water used indoors is reclaimed and safely recycled back to Lake Mead where it is used again. Treating and reusing this "non-consumptive" water allows Southern Nevada to stretch its limited supply.

While the glitz and glamour of the Las Vegas Strip projects an illusion of excess and decadents, from a water perspective, that's all just a mirage. Under its progressive and comprehensive water conservation programs and policies, Southern Nevada has learned how to make the most of its limited water resources and demonstrates that communities can grow and diversify their economies while using less water.

For more information about the SNWA and its water-conservation programs and policies, visit *snwa.com*.

SPOTLIGHT



CRAIG IN TRANSITION

A HEALTHY YAMPA RIVER CAN GROW AND DIVERSIFY A RURAL ECONOMY

BY MELANIE KILPATRICK

YAMPA RIVER CORRIDOR PROJECT MANAGER, ASSISTANT TO CITY MANAGER, CITY OF CRAIG

This fall, construction begins on a set of improvements in the City of Craig's water and recreational infrastructure. Celebration of the Yampa River Corridor Project ensued in August after receiving a $3.3 million grant from the U.S. Economic Development Administration's Assistance to Coal Communities initiative, which supports communities impacted by the declining use of coal.

That declining use of coal sets the context. Moffat County has one of Colorado's largest power plants, Tri-State Generation and Transmission, which runs on coal from two local mines, Trapper and Colowyo. The power plant and mines are scheduled to close by 2030. These energy facilities have been the largest and highest paying employers in our rural community, providing hundreds of jobs and a massive share of the tax revenue for Craig and Moffat County. The closure and job losses have cascading effects and can be devastating for the economy and culture in the Yampa River Valley.

THE RIVER AS RESOURCE

The Yampa River Corridor Project grew out of processes intended to help the city respond to this crisis by growing and diversifying its economic base. The project centerpiece is a new whitewater park, located one mile south of Craig, on the Yampa River.

The project replaces Craig's current water intake diversion dam—a 200-foot wide low-head dam made of concrete and rip rap boulders—with a sloping natural channel design. This lets the city continue drawing its allotted water even in low flows, while creating conditions suitable for a whitewater park. The new approach maintains enough river flow for recreational paddling or floating. Two "drop structures," submerged in narrow river channels, will give paddlers and floaters fun hydraulic features to navigate, along with multiple eddies and chutes.

A new riverside park—with picnic shelters, nature-based play areas, and other amenities—will be built adjacent to the whitewater park. A new concrete boat ramp, access road, and parking will be added to Loudy-Simpson Park, a cornerstone location roughly two miles downstream. Improved public access points will enhance the connectivity of the Yampa River Valley for a variety of recreational users. Craig, already a destination for river runners, will attract and accommodate many more.

The project has other benefits. The city's current intake dam, built in 1991, is in disrepair, is a hazard for boaters, and blocks passage for several threatened or endangered fish species. Converting our existing degraded water infrastructure to a multifaceted recreational asset cuts our liability, promotes safer boater passage, enhances aquatic and riparian habitat, and improves fish passage.

CONSTANT COMMUNICATION & CONSISTENT PLANNING

We've been talking about this project for more than a decade—and the nature of those conversations may be key to our success, on this project and on future ones.

A feasibility study and conceptual design was funded by the Northwest Colorado Parrotheads back in 2016. A community non-profit dedicated to music, education, and the environment, they saw the fun in a whitewater park, but also envisioned recreational, environmental, and economic benefits for Northwest Colorado.

Since then, every major planning process for the river and for the city's economic development has acknowledged the potential value of what became the Yampa River Corridor Project. It fits the city's Parks, Recreation, Open Space and Trails Master Plan as well as the Moffat County Vision 2025 Transition Plan. Both planning documents see a healthy Yampa River as a natural resource that can sustainably serve as a foundational economic asset for the city and region.

The project also meshes with the work of the Yampa-White-Green Basin Roundtable, a stakeholder-led group that created the Yampa Integrated Water Management Plan to address water scarcity and improve recreation and river health.

FINDING HELP FOR A FAST TIMELINE

We've had help along the way, much of it timely.

The Yampa River Fund, a collaborative community-based organization, made supporting grants in 2021 and 2022; they saw we were proving the case that a healthy Yampa River could be a vital component of Northwest Colorado's lifestyle and economy. Friends of the Yampa, another non-profit group, was instrumental in providing match funding support for the project as well as technical support.

Resources Legacy Fund helped cover the cost of final engineering plans, provided economic modeling to calculate the potential jobs benefits of the project, and helped produce key portions of our application. They said the quality of our local engagement is what led to their commitment, which may offer an important lesson: We had plenty of help because we asked for it, but also because we were poised to use it.

The Economic Development Administration's timeline for grant applications and awards was fast—a primary rationale was to get money into the economy quickly. This can be a challenge for small towns, as it can be hard to muster the resources required to submit a strong application. In our case, this crunch was more difficult because neither the city nor county had economic development officers in place at the time. But our partnerships allowed us to move quickly once a tight timeline was set.

Inflation, construction industry volatility, and supply chain blockages wreaked havoc on the initial cost estimates—in two years, estimated costs nearly doubled. Many of our partners helped us find money to bridge the gap. Early this year, Colorado's Office of Just Transition, which helps communities with energy transitions, committed $397,916—financial support that matched the strategic advice they had given us. Craig committed $658,656; Moffat County is committing $150,000. The City Council knew the city's dollars were key to securing the much larger amount; they also knew our partners would help us find additional funding sources to reduce the actual out-of-pocket amount for the city. City and county staff collaborated closely throughout.

CHANGING THE ECONOMY; MAINTAINING THE CULTURE

Craig today sits at the confluence of several trends. The shift from fossil fuels is the most obvious, and those high-paying jobs will be hard to replace. But we are also seeing the movement to rural communities by people who are finding they can work from home. These new residents often bring high earnings and spend those dollars in town, but they also gobble up available housing, making for a tight real estate market with escalating prices. We're also seeing the continued explosion of the recreation economy all along the Western Slope. Bureau of Land Management campsites that once seemed like the exclusive province of locals are now full for weekends much of the year—more evidence that we are well-positioned to host more visitors for higher-end activities.

A new whitewater park is not the sole answer to Craig's challenges. But it's an important step as we reach for more tourism dollars—and do so in ways that match our sense of what makes Craig special. The weekend Yampa floats many of us have enjoyed for much of our lives may be more crowded—but they will also be largely the same. And after the float, we can enjoy more and better restaurants and shops—we're already seeing some of that.

But more important, from my perspective, is how this project has brought so many together—and we're moving on to other projects, together. We had an idea, we talked it through, we made it happen, and Craig is better for it. Success will come for us if we do this again and again, if we keep taking steps to grow and diversify, if we keep making sure each new piece fits with others. We'll do that, and we'll do it together.

SPOTLIGHT

FIRESTONE TAPS NEW SOURCES OF WATER

BY KATIE HANSEN, DIRECTOR OF MARKETING & COMMUNICATIONS, TOWN OF FIRESTONE

Colorado-Big Thompson Project has traditionally been Firestone's sole water source. It has been the primary provider of water rights for most cities, towns, and municipal water districts in Northern Colorado. Its high-quality, reliable water supplies have been essential for new development projects and expansion efforts. Yet, after decades of dominance, the project's water shares are running out.

While Firestone's water supply includes 22.3 million gallons per day (MGD) from the project and Windy Gap Reservoir, Firestone made a historic decision to diversify its water supplies to include new and more affordable water delivery alternatives. Firestone plans to do this by converting irrigation water into residential tap water by building a flexible water treatment plant that could adapt to current and future water sources.

In the spring of 2020, the board of trustees approved the 2020-2050 Water Action Plan, which includes an investment of $50 million to diversify and treat its raw water portfolio and embark on a water course that affords the Town of Firestone greater independence and control.

The first step in the plan included the purchase of land, the construction of a new water treatment plant, and a deep injection well site in order to produce 1.5 MGD. Step two involves expanding the treatment plant's capacity to 2.25 MGD between the years 2025-2030. The final step aims to maximize treatment capacity to 5 MGD by the year 2050 to serve an additional 10,000 households.

WATER INDEPENDENCE

Expected to open in October, Firestone's St. Vrain Water Treatment Plant will capture and treat local alluvial water from the St. Vrain Creek—a tributary that runs through the town and has historically served as a source for irrigation water for local farmland.

Firestone engaged experts from the Colorado Civil Group, LRE Water, and Plummer to include reverse osmosis in the plant's design. Reverse osmosis will help the town adapt to the composition and treatment requirements of future water sources. Overall, the plant is designed to be robust, flexible, and resilient—with the goal of serving the highest quality water to Firestone's customers today and into the future.

DESIGN ACCOMPLISHMENTS

The new water treatment plant will allow Firestone to do something it's never done before: capture reusable water.

The Colorado-Big Thompson Project requires water to be returned to its previous supply level to fulfill its obligation to provide water to downstream users. The water collected from the St. Vrain Creek is categorized as reusable water that can be recaptured, treated, and returned for use in Firestone. This creates new opportunities for the town to develop long-term sustainable water alternatives with a facility that is designed to incorporate the newest water treatment protocols.

The project also includes a 0.5 MG welded steel raw water storage tank, a below-grade chlorine contact clearwell, a backwash recovery system with geotubes, a lined pond and recycle pumps, an approximately 20,000-square-foot metal building, and a 1.0 MG welded steel finished water storage tank. LRE Water and Plummer collaborated to evaluate reverse osmosis brine disposal options, and the facility has plans to use deep well injection disposal.

As additional raw water sources are developed and as demand increases, the plant's capacity will also increase. By adding additional pumps, ultrafiltration membranes trains, and building out the reverse osmosis skids now, the plant can be expanded to 2.25 MGD within its existing 20,000 square-foot footprint.

Then, by constructing a parallel flocculation and sedimentation train, further expanding the ultrafiltration membrane and reverse osmosis units, and adding 10,000 square-feet in additional building space, the St. Vrain Water Treatment Plant can achieve the up to 5 MGD treatment capacity by its goal year of 2050.

"We are actively implementing innovative strategies to develop and expand our raw water reservoir storage," said A.J. Krieger, Firestone Town Manager. "Our plan includes a requirement for our development partners to contribute to Firestone's water infrastructure costs, which means we can make smart growth decisions that pay for themselves."

FINANCIAL SECURITY

Under Firestone's Water Action Plan, the town will sell residential water taps from its new water treatment plant to developers, using the money to reinvest in the town's water infrastructure.

"This historic decision affords the Town greater water independence and control while also creating new revenue streams to pay for responsible growth and development," said former Firestone Mayor Bobbi Sindelar this past spring. "Our plan has already provided millions of dollars in new revenue through two new water agreements that were recently signed. We are also negotiating additional agreements that will produce the same outcomes of financial security and smart planning."

The decision to create redundant water supplies and to embrace a new level of water independence sets Firestone apart from other towns whose fates are still tied to Colorado-Big Thompson's dwindling water shares and soaring prices. Firestone's Water Action Plan can serve as a blueprint for other communities carving out their own water independence.

SPOTLIGHT

TREES KEY TO STEAMBOAT SPRINGS' EFFORTS TO COOL YAMPA RIVER

BY JULIE BAXTER

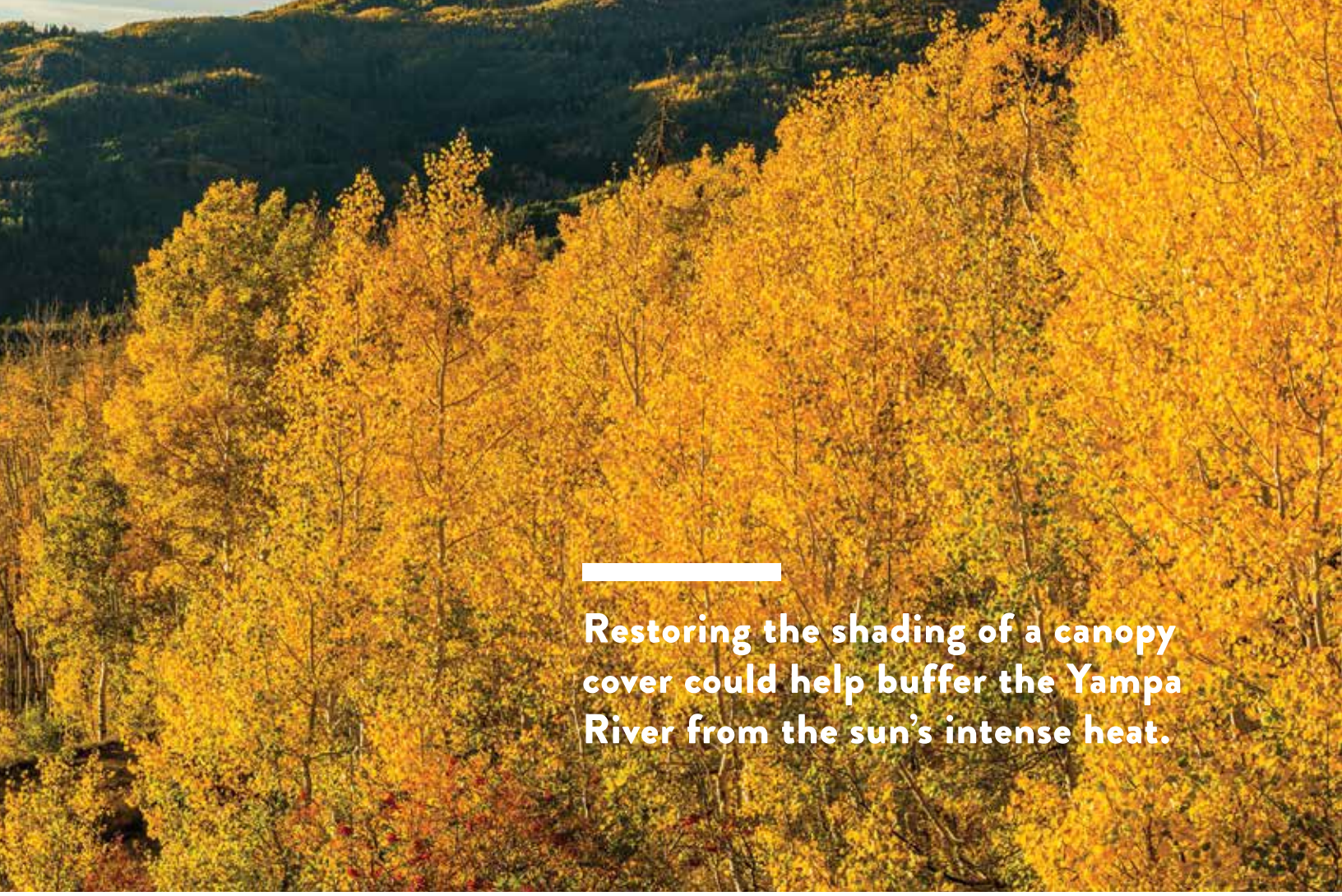
WATER RESOURCES MANAGER

CITY OF STEAMBOAT SPRINGS

Like many communities in Colorado, a river runs through the heart of Steamboat Springs—both geographically and figuratively. Famous for its "tube hatch" in late June, the Yampa River is treasured by locals and visitors alike for boating, floating, fishing, playing, or simply, quiet contemplation.

Also, like many communities in Colorado, the city is concerned about warming water temperatures in the river and the impacts to water quality. In 2022, for the sixth consecutive summer, high water temperatures led to extended commercial and recreational river closures to protect fish and aquatic wildlife. Temperatures in the upper Yampa River during late summer regularly exceed state standards intended to protect water quality, aquatic life, and cold-water fish species, including mountain whitefish, one of two salmonid species native to Colorado. The state placed the reach of the Yampa River near Steamboat Springs on the Clean Water Act Impaired Waterbody List for temperature in 2016.

From a financial perspective, this listing concerns the City of Steamboat Springs due to Clean Water Act requirements for more stringent temperature limits on point source discharge. The city operates a wastewater treatment facility with a discharge permit for its effluent. Achieving



Restoring the shading of a canopy cover could help buffer the Yampa River from the sun's intense heat.

even a small reduction in effluent temperature could cost millions in capital upgrades for energy-intensive cooling technologies at the plant. These costs would result in higher rates for customers.

From a broader perspective, warming stream temperatures are alarming to the community because water temperature fundamentally influences aquatic diversity and ecosystem health. Warm water holds less dissolved oxygen affecting the survival of fish and aquatic species. Warmer stream temperatures can stress plants and animals, favor invasive species, and worsen the effects of nutrient pollution.

INFLUENCES ON STREAM TEMPERATURE

Following the impaired waterbody listing, the city implemented a stream temperature monitoring program to learn more about the degree of impairment, the causes, and if wastewater treatment facility effluent temperature is impacting aquatic life. The influences on stream temperature are numerous—streamflow, air temperature, land use, plants along the bank—and mostly unrelated to traditional point source discharge. According to the U.S. Environmental Protection Agency website, an area's climate has the strongest natural influence on a stream's temperature.

Steamboat Springs recognized an opportunity to study the issue further, especially with the Colorado Water Plan goal for Stream Management Plans on 80% of prioritized streams. The city pursued a Watershed Restoration Grant from the Colorado Water Conservation Board to develop a plan for the Yampa River through town. Adopted in 2018, the Yampa River Health Assessment and Streamflow Management Plan assesses river health and develops a long-term strategy for working with partners to improve conditions and prevent exceedances of temperature standards.

Seth Mason of Lotic Hydrological, a consultant on the plan, developed a modeling system to identify management tools for reducing stream temperature highs in late summer. "The modeling indicates that solar irradiance (sunlight) is the most important factor in warming the river on this reach. Radiative warming can be reduced by increasing the amount of shading by riparian vegetation," writes Mason. The riparian forest is degraded on much of this reach of the Yampa due to rural and urban land uses. Restoring the shading of a canopy cover could help buffer the river from the sun's intense heat.

SHADING THE RIVER

Acting upon these findings, the city partnered with the Yampa Valley Sustainability Council and the Colorado State Forest Service to expand an existing volunteer tree planting program. The Yampa River Riparian Forest Restoration Program restores the riparian vegetation,

including narrowleaf cottonwood, alders, and willows, along the Yampa River corridor increasing shade and helping to keep the river cooler.

The plan identifies suitable planting sites on public open space parcels owned by the city or Colorado Parks & Wildlife. Landowners and technical experts develop the planting plans. The Colorado State Forest Service nursery grows the trees. Yampa Valley Sustainability Council manages the work and coordinates community volunteer planting events. Many other dedicated partners including resource managers, nonprofits, and government agencies are contributing to the program's success.

During the first three years from 2019-2021, 535 volunteers participated in planting over 1,300 trees on 3,312 feet of river length with a 60-foot buffer covering 4.57 acres at four sites. An immeasurable but meaningful benefit is the connection made with community members, especially youth, in the shared stewardship of the river.

The Colorado Water Conservation Board, Yampa White Green Basin Roundtable, and the City of Steamboat Springs provided initial funding for the first three years of the program. Several additional funders came on board, such as the Yampa River Fund and the Colorado Lottery Fund. For the next three years, 2022-2024, the Colorado River District Community Funding Partnership is providing the foundational funding with matching by supporting partners including the city. As suitable publicly owned planting sites reach completion, program partners will reach out to willing private landowners along the river.

WATER QUALITY COMPLIANCE

"Trees are a natural and practical option for reducing temperature along the river with a multitude of benefits," says Tim Sullivan, program lead and Natural Climate Solutions Director with YVSC. These benefits include improved water quality, wildlife habitat, bank stabilization, carbon sequestration, and resiliency to flood and drought.

Investing in river and watershed health costs far less and creates much greater ecological benefits in comparison to building a cooling tower to reduce effluent temperature at the wastewater treatment facility. The city is exploring the potential for expanding the restoration program as an alternative way to meet Clean Water Act compliance through nature-based, watershed improvements instead of end-of-pipe treatment.

Since 2019, the city has worked with the nonprofit Freshwater Trust with support from the Walton Family Foundation to evaluate the feasibility of a water quality trading program to quantify the benefits from restoration actions, including tree planting, into credits to offset any water quality impacts at the point of discharge. A water quality trading program for temperature has yet to be tested in Colorado, however federal and state policy guidance on trading exists, and the EPA reinforced its strong support for water quality trading in a 2019 policy memo.

NATURE-BASED SOLUTIONS

The city is restoring riparian forest as one piece of a bigger strategy for addressing warming rivers that also involves managing streamflow through reservoir releases, strengthening land use and development standards, participating in regional planning efforts, monitoring river health conditions, educating the community, and engaging stakeholders.

Riparian restoration is not a feasible approach to Clean Water Act compliance everywhere. In areas with greater population and urbanization, suitable planting sites may not exist on a sufficient scale. Colorado Front Range communities have addressed water quality temperature issues in a regulatory context for years. In many Western Slope communities, temperature and nutrients are growing water quality concerns. The primary causes are not traditional point sources, and the fixes won't be found there either.

Pursuing nature-based solutions may not be easy or expedient. These changes require a long view. But they can be many times more cost-effective and offer greater benefits to our communities, rivers, and ecosystems than gray infrastructure alone. You know how the saying goes, the best time to plant a tree was 20 years ago, the second best time is now.

SPOTLIGHT

ALAMOSA FINDS PARTNERS TO PROTECT WATER

BY ERICH SCHWIESOW

ALAMOSA CITY ATTORNEY

Sitting astride the Rio Grande, with a population of almost 10,000, Alamosa serves as a hub for services, education, and shopping for the rural valley of approximately 50,000 residents. Agriculture is the economic engine for Alamosa and the entire San Luis Valley and is directly connected to every other economic sector.

Because Alamosa serves as a regional hub, fully 36% of its economy is the "regional services" sector. Agriculture plays at least twice the role in every other county in the valley as it does in Alamosa, meaning that agriculture in the entire valley significantly affects those regional services, and Alamosa's bottom line. Recognizing that the agricultural engine for the valley lies outside its city boundaries, when the city has needed to acquire senior water rights to replace stream depletions, it looked to do so in a way that will not adversely affect the surrounding agricultural productivity that sustains the city's very existence.

Alamosa's main depletions to local rivers from pumping its municipal wells occur to the Rio Grande and the Conejos Rivers, but it also affects smaller streams, including the Alamosa River. As one component of its plan to enable continued pumping of its municipal wells and offset injurious stream depletions, Alamosa partnered with the Rio Grande Headwaters Land Trust (RiGHT) to work with Cactus Hill Farms along the Alamosa River to develop a lease intended to allow the City to replace depletions on the Alamosa River by diverting 5-10% of the farm's irrigation water back to the river, and Cactus Hill to move the unirrigated acres around the farm, keeping their land healthy and productive.

The three parties brought their own needs and perspectives to a process that they all saw as a winning alternative to agricultural "buy and dry." Here is a summary of the three perspectives:

CITY OF ALAMOSA

- Need for approximately 46 acre feet per year of augmentation water on the Alamosa River, some 20 miles to the south and west, to offset injurious well pumping depletions to that river.
- Senior water rights necessary because reliability is essential.
- Protect local agriculture as the economic engine of Alamosa.

CACTUS HILL

- Do not want to sell water or land, but rather keep it in the family.

- Needed capital for generational transfer.
- Interested in conservation and modeling new projects and strategies.
- Desire to minimize fallowing.
- Certainty about and input into what will happen on their land.

RiGHT

- Mission to conserve land, especially family farms and ranches.
- Do not want conservation to impede landowner success, new forms of water management in the San Luis Valley in Response to drought, or the City of Alamosa and other municipalities.
- Want good land management and prevention of water export outside the San Luis Valley.

RiGHT served as the binding agent to bring these perspectives together. It changed its conservation easement language to facilitate the lease, as its standard language would not allow for reducing water usage on historically irrigated lands as contemplated. It then provided funding and professional (and emotional) support for the easement in a way that allowed the city and Cactus Hill to realize their goals. Alamosa made an up-front payment and obtained a 30 year lease (with additional per-acre foot lease payments every year for water actually used by the city) on senior water rights sufficient to offset its contemplated depletions to the Alamosa River, automatically renewing for an unlimited number of 30 year terms in perpetuity unless terminated by Alamosa in its sole discretion. Cactus Hill obtained funds to facilitate the generational transfer its owners required, and retained the right to use, without charge or payment, all of the water rights not used by Alamosa for augmentation/replacement purposes in any given year.

Allen Law, executive director of RiGHT, summed the process up with: “Everyone involved brought so much creativity and energy to secure a balanced water future for the people of Alamosa, farmers and ranchers in Conejos County, and the Alamosa River.”

Cactus Hill is a win-win-win.

FUTURE OF WATER

Q&A WITH FORT COLLINS MAYOR JENI ARNDT

▸ What first piqued your interest in water issues in Colorado?

I was just starting to run for office in 2013, and I was bike riding with Randy Fischer—my predecessor and water engineer by profession. He explained to me that when he left the legislature there wouldn't be many people who were interested in water and the legislature really needed more expertise in that role. I had just quit my job as faculty member in education and was happy to switch gears and start studying water. I started by reading everything I could about Colorado water law, taking WeCo field trips, following the Interim Water Resources Committee around the state and learning from anyone who was willing to talk to me. I have always liked an academic challenge and Colorado water law proved to be a worthy endeavor—the gift that keeps on giving.

▸ Throughout your career in the legislature, you served as chair of House Agriculture and Natural Resources committee and also served as chair of that committee. You became known as one of the most prominent voices of water in the legislature. Is there one bill or issue that stands out to you when you look back at your time in the legislature?

Well, there were so many water bills. I think the one that really helped me learn a lot about the way water policy and politics work (in additional to the technical aspects of water and legislation) was the Colorado Agriculture Water Protection Act. Essentially, it's a new water right in Colorado that allows for more flexible use of water. Intuitively it was a good idea, based on solid water law and market principles. Technically, I needed help from a wide variety of water users, lawyers and various special interests. Politically, I needed to earn the trust of my colleagues across parties and across chambers. We had split chambers at the time—so nothing was going to pass unless I had very broad support. With heavy lifting from Ducks Unlimited, we got the bill passed. I used the lessons learned in that two year effort as the basis for the remainder of my time in the legislature.

▸ What are your thoughts (hopes, dreams, fears) on the future of Colorado water?

My biggest hope is that the water community continues to trust each other on a fundamental level. Of course, the discussions will be robust and the disagreements well-founded. But essentially, it's the trust of good people working in good faith that will keep us together as a state—with good outcomes. It's always going to be sort of messy and spicy, but it comes down to hard working smart people trying their best to do the right thing.

▸ As mayor of Fort Collins, has the lens in which you view water issues changed? What are your thoughts on the future of Fort Collins water and/or Colorado municipal water?

No comment. Just kidding. As Mayor I am no longer making the laws, I am living under them! I have adopted a role of promoting a regional approach to water sharing for the good of all stakeholders in Northern Colorado. We need to bring regional actors together to ensure environmental, municipal, industrial and agricultural needs are met in a water short area. My thoughts on the future of water are too numerous write here. But I'll mention again the need to work with all aspects and areas in mind, to search for understanding, to trust others and to think for the long-term as essential ingredients in times of increased shortage and variability.

▸ You were appointed to serve as a commissioner on the Water Quality Control Commission. What do you hope to accomplish as you serve on that commission?

Most of my work and learnings up until now have been in the area of water quantity. I really am in the learning chair from the division and the rest of the commission in the technical aspects of water quality. The regulatory and social aspects of water policy are places where I can hopefully lend a hand on the commission, and I really hope to be a good student in learning the finer points about water quality. As far as accomplishments? I just really want to be a good, fair, pragmatic voice on the commission.

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1144 Sherman St.
Denver, CO 80203-2207
(p) 303-831-6411 / 866-578-0936
(f) 303-860-8175

www.cml.org
cml@cml.org

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Colorado Municipal League
1144 N Sherman St
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