

# COLORADO **WATER PLAN**

## EXECUTIVE SUMMARY



2023



**COLORADO**  
Colorado Water  
Conservation Board

Department of Natural Resources



# The Water Plan needs you.

We meet our challenges together.  
All Coloradans are part of the solution;  
whatever your background,  
whatever your role.







### **Water connects us all.**

Nearly 6 million Coloradans across diverse cultures and geographies depend on the water from our major river basins. Water originates in the Colorado mountains and flows from snow-capped peaks, through forests and streams, to cities and farms, and then returns to streams. Along the way, our water supports habitat, wildlife, recreation, food production, energy, industry, drinking water supplies, and more. The importance of water in Colorado has also long been recognized by the ancestral and Indigenous peoples of Colorado – the 48 Tribes that historically were the original stewards of this land include Colorado’s two federally-recognized Tribes, the Southern Ute Indian Tribe and the Ute Mountain Ute Indian Tribe. As noted by the Tribes and acknowledged in the Water Plan, “Water is life.”

### **Our water supply is at risk.**

Population growth, long-term warming and drying trends known as “aridification,” major wildfires, and multi-year droughts strain our system like never before. We must understand these challenges, their associated risks, and the tools we have to mitigate those risks and reshape our future. We must also be collaborative and value the perspectives of water users from across the state. Work done on the regional level, such as Basin Implementation Plans developed by Colorado’s nine basin roundtables, summarize local challenges and strategies to overcome them.

### **The need for action has never been more urgent.**

While Colorado faces enormous water challenges, we can address them if we act quickly and collaboratively. The Water Plan will guide our actions. A secure water future will depend on all Coloradans working together to implement these actions.

# The Purpose of the Water Plan

The Colorado legislature directed the Colorado Water Conservation Board (CWCB) to develop the Water Plan to determine state policy regarding the optimal conservation and development of Colorado's water resources. The CWCB leads the development and implementation of the Water Plan through a multi-year, iterative process that prioritizes inclusive stakeholder engagement. The plan analyzes the potential for both conservation and development alongside constantly changing factors that drive water needs. It evaluates current and future risks that we can model within Colorado to help make decisions. At a high level, risks and factors include:

**Colorado is Warming.** Colorado's average temperature could increase by more than **4.2°F** by 2050. Of the drivers modeled, climate change plays a major role in increasing water demands. The Water Plan uses a maximum of 4.2°F warming to model future conditions. Actual projections range from 2°F to 5°F by 2050.

**Demands are Increasing.** If no new water projects or strategies are implemented, modeling for the driest periods shows Colorado communities could need **230,000 - 740,000 acre-feet** of additional water per year by 2050. The upper-end need is about enough water to fill 370,000 Olympic-sized swimming pools each year. Water will be needed across the state.

**Water Conservation is Critical.** The way Colorado prioritizes water conservation as it grows will affect the environment, wildlife, outdoor recreation, agriculture, economy, and communities. Water conservation and efficiency efforts could reduce future annual water needs by up to **300,000 acre-feet** per year by 2050 under the warmest scenarios. To achieve these upper-end water savings, Colorado will need to employ every tool - going beyond water conservation and efficiency to embrace a One Water ethic. In the context of the Water Plan, One Water means not only matching the right water to the right use but investing in sustained water conservation efforts and integrated water and land use planning.

**Storage is Necessary (and There Are Options).** The Water Plan supports traditional and non-traditional storage. Traditional water storage (e.g., reservoirs) is a needed tool. On paper, existing water rights could double the current storage in the state (up to **6.5 million acre-feet**). Traditional reservoirs are not the only tool available to increase storage, though. A range of alternatives exist including aquifer storage and recovery, enlargement or rehabilitation of existing reservoirs, and reallocation of existing storage space. Additionally, tools like water conservation, efficiency, and collaborative water sharing agreements can help mitigate or delay the need for additional storage. Stream and forest health improvements using nature-based solutions can support both the natural environment and existing water infrastructure and storage by building resiliency for drought, fire, and floods; reducing sedimentation; improving water quality; attenuating high flows; and enhancing groundwater recharge. In all cases, both traditional and non-traditional storage projects should involve thoughtful, thorough, collaborative, and inclusive planning that can uplift all water uses.

## Colorado's Legal Framework Guides Local Solutions.

Colorado's legal framework includes state water law (the prior appropriation system), statutes, and regulations. Colorado is also a "local control state" with **64 counties**, nearly 300 cities and towns, and a variety of other authorities that play a major role in shaping Colorado's water future. Local bodies have authority (1041 powers) to review and permit projects of statewide significance. Local governments, entities, and water providers advance projects using an array of financing mechanisms like bonding, user rates, loans, grants, and more.

## A Focus on Grassroots Project Implementation.

Local water users know their water issues best. They help identify and implement projects that optimize conservation and development using many of the tools outlined in the Water Plan. To build local input, the legislature created nine basin roundtables (local water users in each major river basin and the Denver metropolitan area). These groups have identified over \$20 billion in potential projects - but not all of those projects will advance to implementation or need CWCB funding. The CWCB estimates the expected level of project funding it will need to support local water projects is **\$1.5 billion by 2050**.

## Our Water Values Guide Our Approach

*The Water Plan is based on the following four values:*

- 1 A productive economy that supports vibrant, sustainable cities, agriculture, recreation, and tourism.
- 2 An efficient and effective water infrastructure system.
- 3 A strong environment with healthy watersheds, rivers, streams, and wildlife.
- 4 An informed public with creative, forward-thinking solutions that are sustainable and resilient to changing conditions and result in strong, equitable communities that can adapt and thrive in the face of adversity.

## We Need to Proactively Manage Risk.

Coloradans must work collaboratively to sustain a robust economy and way of life. By managing risks, we can support our Colorado values to keep agriculture productive, sustain ecosystems and recreation, allow urban green spaces to thrive, and foster greater equity and engagement. The Water Plan promotes informed, collaborative, and expansive local decision making by setting a statewide vision to align diverse interests.



# A Broader Vision for Collaboration

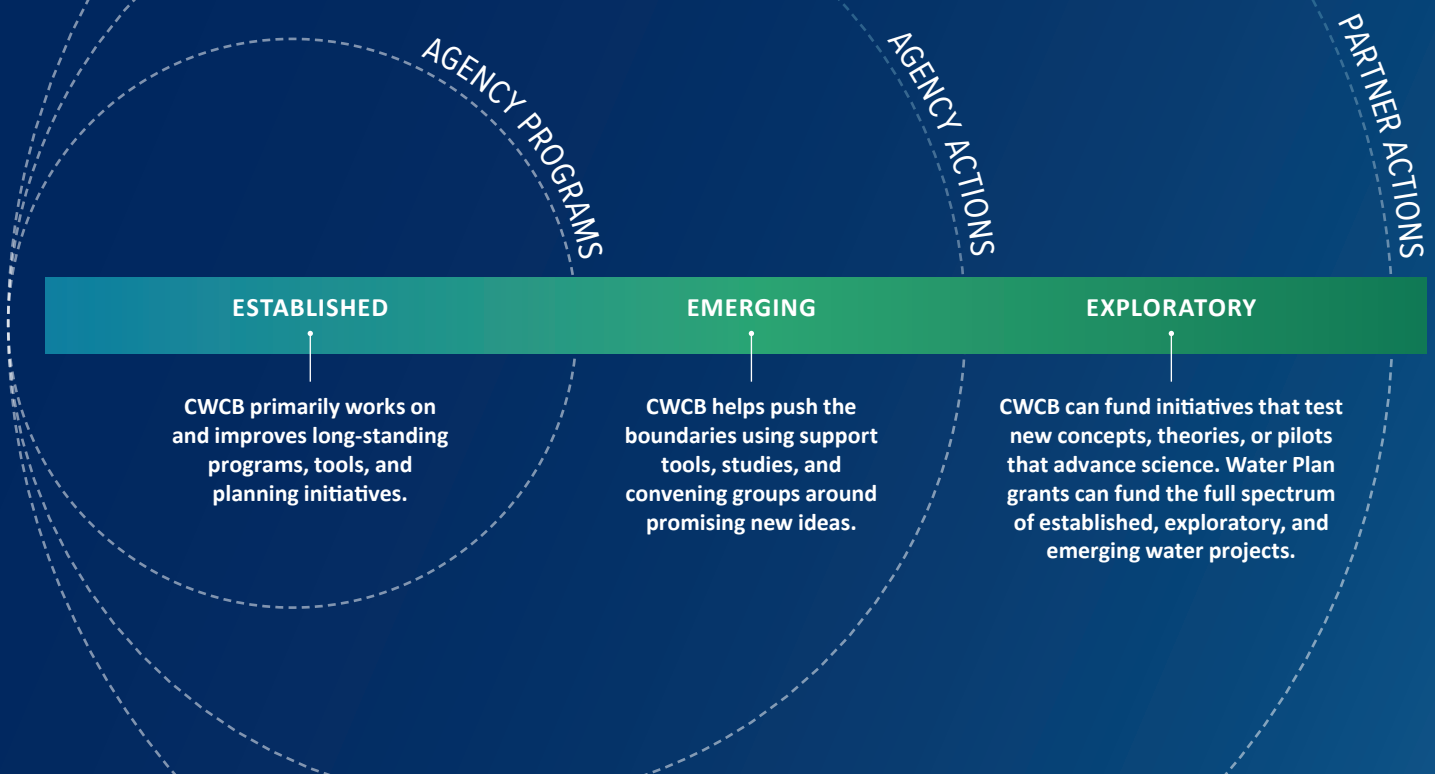
Beyond its primary purpose of balancing water conservation and development, the Water Plan sets a vision for meeting Colorado's water challenges. It identifies a wide range of state and local actions and also directs stakeholders to Water Plan grants that help implement the plan. Water Plan updates provide opportunities to coordinate with other agencies and stakeholders who are implementing their own complementary water-related plans. Some of those plans, like the Department of Local Affairs' Colorado Resiliency Framework, are similar to the Water Plan in their approach to working within an agency's capacity but also focusing on cross-agency and external collaboration.

## An Inclusive Vision for Cities, Farms, Streams, and People

The Water Plan strives for holistic planning that considers multiple stakeholder relationships, shared purposes, and benefits. Equal focus is placed on four action areas that relate to cities, farms, streams, and people. The action areas are called Vibrant Communities, Robust Agriculture, Thriving Watersheds, and Resilient Planning. While each action area is distinct, they are functionally interconnected. Each area has a future-looking vision of the work that needs to be achieved by 2050 (the Water Plan's planning horizon) including ten agency actions that support the vision. Additionally, the Water Plan includes a fifth set of agency actions CWCB will take that are largely administrative. Collectively, the Water Plan has **50 agency actions** - the actions CWCB and collaborating agencies will implement. There are also project-level examples that make up approximately **50 partner actions** - actions stakeholders can take to advance the Water Plan.

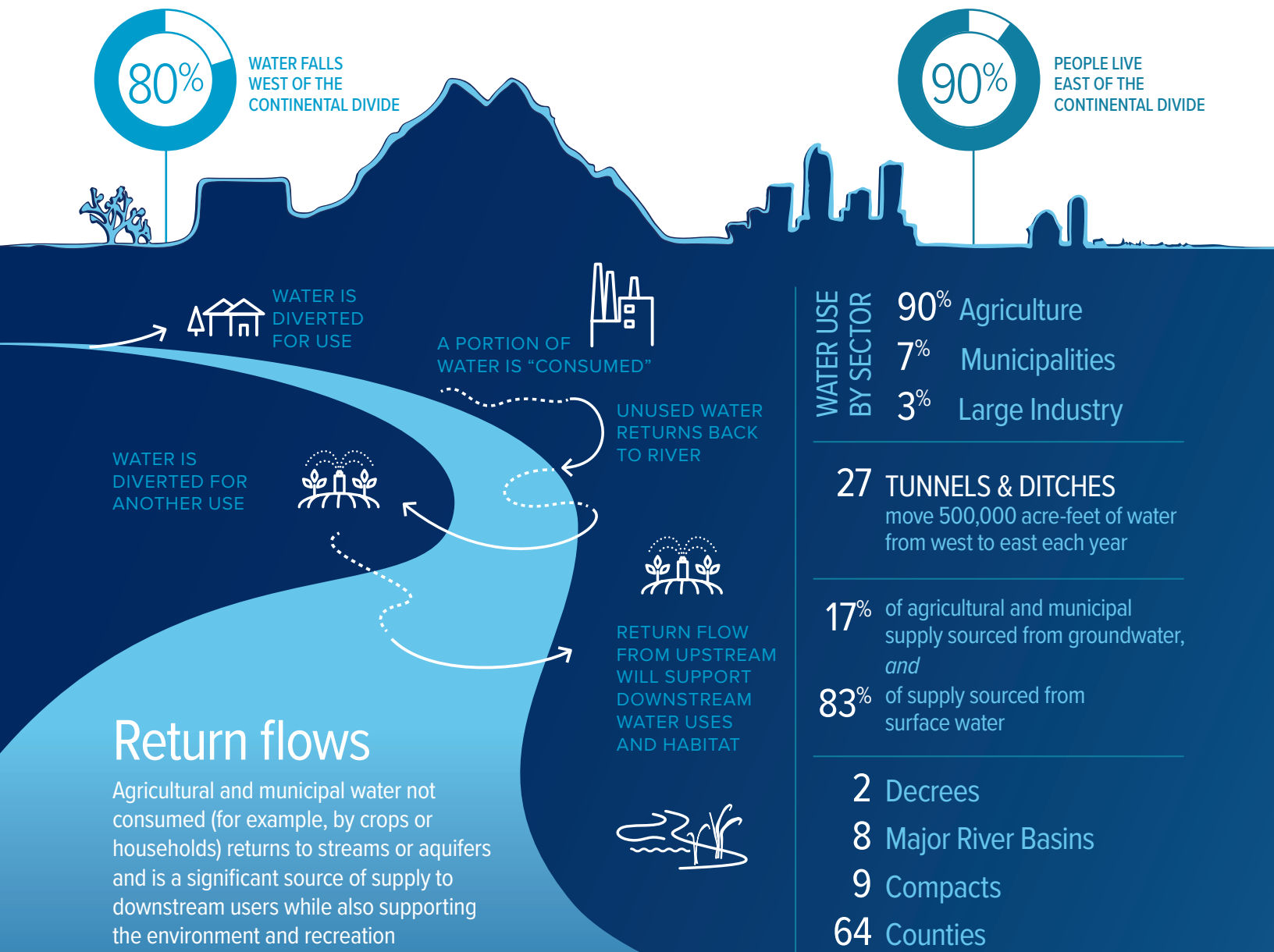
## Ongoing Bold Action is a Shared Responsibility

Local stakeholders as well as federal, Tribal, state, and local governments take actions every day that shape our water future. Truly bold action requires continued commitment to a shared vision by a wide range of water users. The CWCB does not build projects, but it funds many. The Water Plan Grant Program aligns with Water Plan implementation. The CWCB uses its own agency resources to support established programs and implement new actions it has committed to in the plan. Often these actions help advance promising emerging ideas, supporting tools, and analysis. However, stakeholder action through grants or other means can work across a full range of established, emerging, or even exploratory concepts - testing ideas that push technology, research, and thought to new limits.

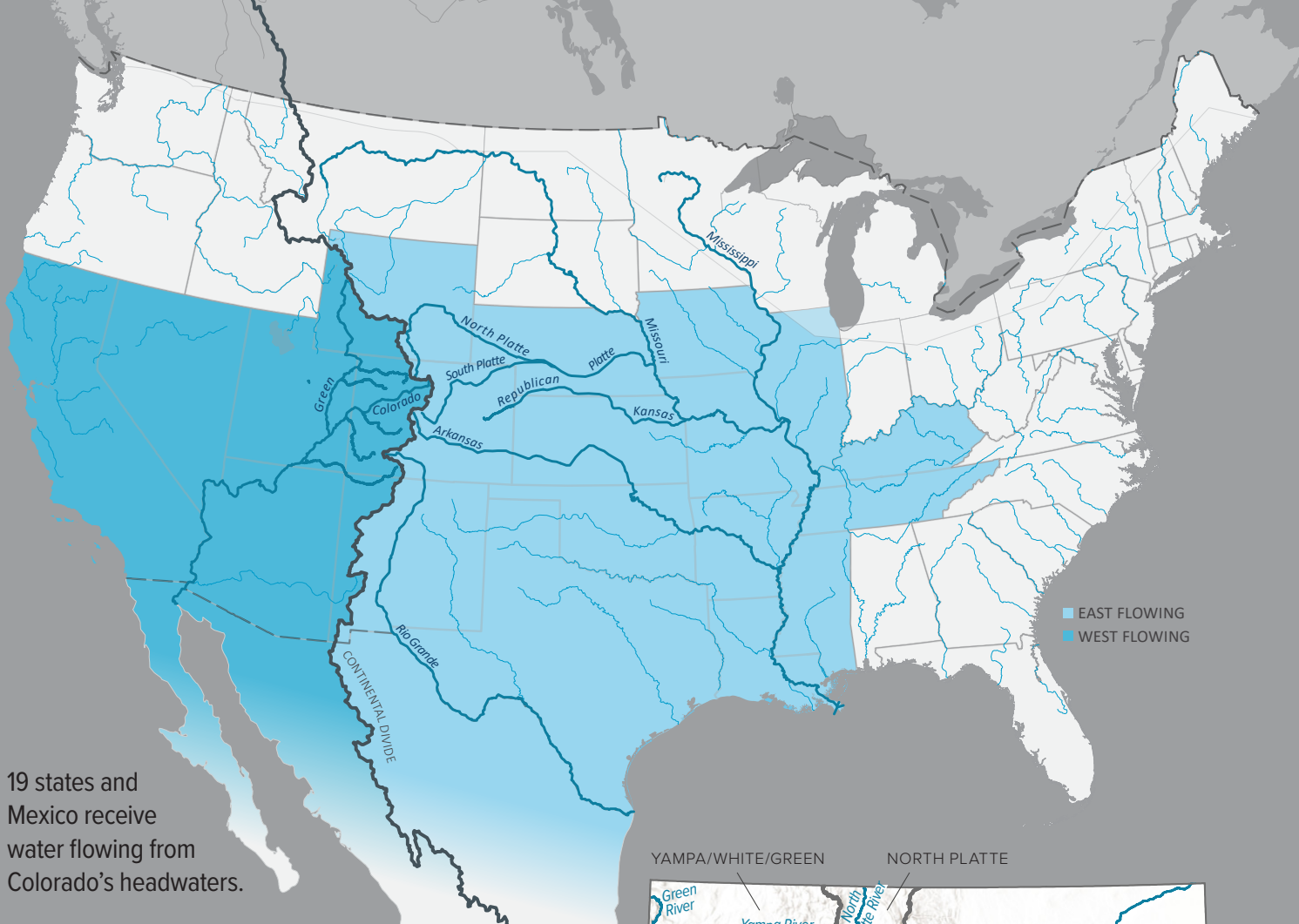


# Colorado's complex water system

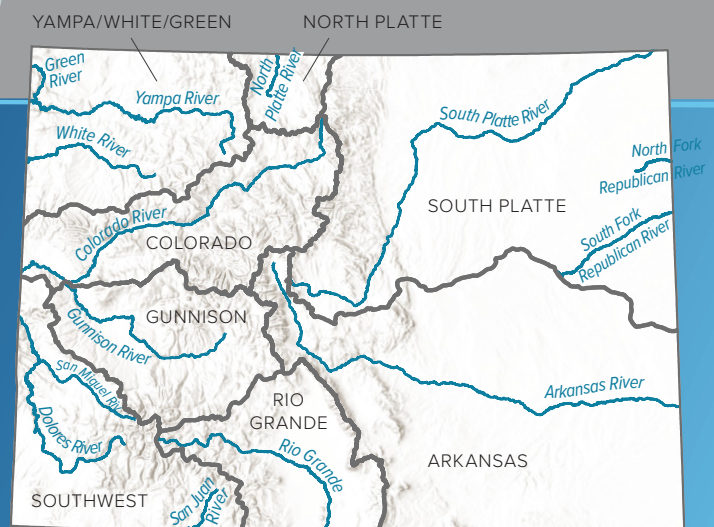
- Colorado's terrain and environment vary greatly across the state, as do its water resources.
- Climate change, extended drought, and other natural disasters alter the landscape, create uncertainty, and often require new thinking and increased collaboration.
- Precipitation (rain and snow), soil moisture, and surface water supply can vary significantly from year to year, from season to season, and between and within basins.
- Groundwater supplies are critical for drinking water, irrigation, healthy streams, recreation, and the environment.
- Colorado's legal and regulatory framework, anchored in the prior appropriation system, provides predictability, certainty, and flexibility in how Colorado manages water supplies.
- Coloradans navigate complex water issues by finding creative solutions within existing law and through regulatory and legislative discussions.
- Colorado's interstate compacts, agreements, and decrees define Colorado's legal entitlements and obligations to other states.







- Ranchers and farmers across the state drive Colorado's \$47 billion agricultural economy. At least one Colorado county is among the nation's top agricultural producers.
- Water-based recreation contributes nearly \$19 billion to Colorado's economy.
- More than 80% of Colorado's residents rely on forested watersheds for their drinking water supplies.
- Urban communities are economic engines as well as centers for culture, recreation, and innovation.
- While Colorado has seen significant population growth, recent overall water demand has remained steady largely due to significant investments in water conservation.
- 5.8 million people live in the state, and Coloradans reduced per capita water use by 5% from 2008 to 2015.
- 48 Tribes have historically called Colorado home, and Colorado has 2 federally recognized Tribes.
- Colorado has 24.5 million acres of forests and 150 watershed groups.
- If no action is taken, municipalities risk having shortages by 2050 of up to 740,000 acre-feet statewide during dry times, and existing shortage risks for agriculture, recreation, and the environment will increase.



- Colorado has 8 major river basins. Each major basin includes smaller watersheds with tributary streams, lakes, and wetlands within it.
- Each basin is different in terms of its topography, water supplies, interstate compact requirements, environmental and recreational characteristics, agricultural water uses, and tourism. These factors may vary greatly within and between basins.
- 90,000 miles of rivers and streams cross through public and private land in Colorado.
- To provide local stakeholder input, the Water for the 21st Century Act created 9 basin roundtables to represent each major river basin and the Denver metropolitan area.



# Scenario Planning Helps Us Understand Future Uncertainty

The Water Plan looks at the future through the lens of different scenarios. These scenarios describe a range of possible future water conditions, are based on the best available science, and were developed with stakeholder input. The approach considers future uncertainties like climate, social drivers (such as values and economics), water supplies, and water demands.

Identifying potential future risks to all sectors of water use is a key objective of the Water Plan. The CWCB developed analyses, tools, and statistics to help us evaluate future water-related risks for all water sectors.

Future risks are driven by a wide variety of factors that include population growth, climate change, urban land use, water efficiency adoption, social values, water needs for industry and energy, agricultural conditions, economic conditions, and regulatory oversight. Some of these factors act independently, but most are interconnected. Three significant drivers that increase our future risk if we don't take action include:

## CLIMATE CHANGE

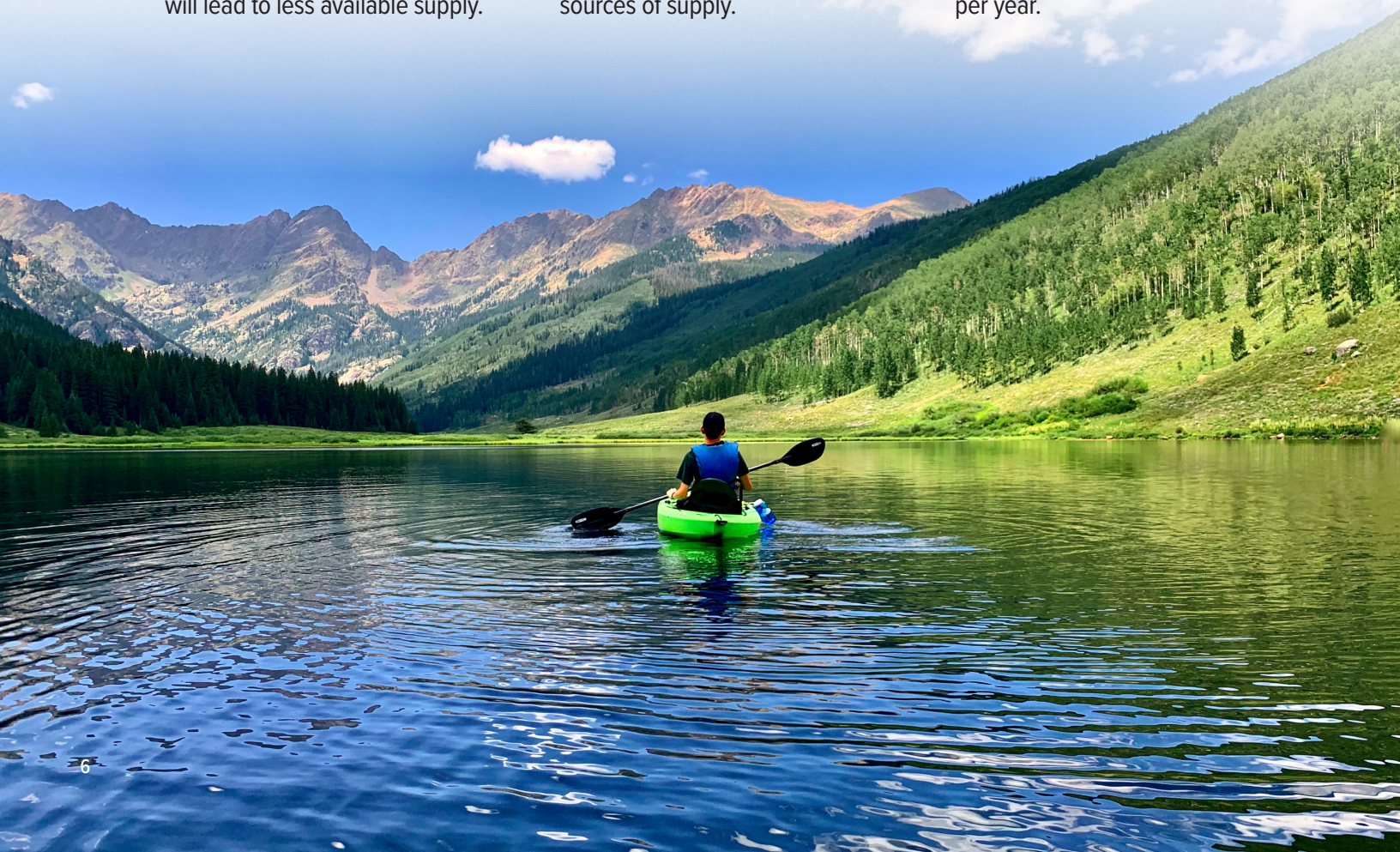
Our climate is changing, and parts of Colorado are becoming drier. While long-term precipitation trends are uncertain, long-term warming will lead to less available supply.

## POPULATION GROWTH

As population increases, so does water demand. Tools like water conservation can help delay or possibly mitigate the need for new sources of supply.

## WATER CONSERVATION

Wise water use is an important tool to reduce the risk of future municipal water shortages. Water conservation could save up to 300,000 acre-feet per year.





# Technical Updates to the Water Plan

The CWCB provides the underlying data and analyses that are foundational to the Water Plan through the Analysis and Technical Update to the Colorado Water Plan (Technical Update). The Technical Update supports statewide planning in the Water Plan and basinwide planning at a local level.

## Basin Level Planning Provides Local Vision

The CWCB supports stakeholder-led “basin roundtables.” Colorado has nine basin roundtables – one for each major river basin, and one for the Denver metropolitan area. The roundtables are made up of volunteers who represent a wide range of water-related perspectives including municipal, environmental, agricultural, recreational, and industrial interests. Roundtable membership categories and their role in leading local water conversations are defined in legislation.

Roundtables provide local perspectives and guidance that are important for both mitigating future risk and informing the Water Plan. Roundtables identify local accomplishments, challenges, and potential pathways for meeting future water needs. They also provide valuable perspectives on local basin needs and possible projects. While the State does not typically build water projects and cannot guarantee funding or implementation of basin plans, it can help fund projects identified by roundtables.

The basin roundtables and stakeholder groups identified more than 1,800 potential future projects. About half of these projects are multi-purpose and provide multiple benefits - a key consideration for Colorado Water Plan grants. While addressing Colorado’s future water needs will require ongoing effort, this work has improved understanding of potential project costs.

The identified projects include an array of municipal, environmental, recreational, and agricultural projects. Many focus on providing multipurpose and multi-benefit solutions. Some of these projects include construction, but many represent studies, research, educational efforts, water conservation planning, river health initiatives, and more.



## Common Challenges and Visions Identified in the BIPs

CHALLENGES	VISIONS
Balancing water risks across all sectors	Meet municipal/industrial needs and conserve water
Health of watersheds and forests	Protect and restore healthy watersheds, rivers, and forests
Potential reduction of irrigated agriculture	Sustain and enhance agricultural production
Uncertain impacts of climate change	Broaden education, participation, and collaboration
Lack of funding for water projects	Implement projects and meet multiple future needs

Find out more about your local roundtable and how to get involved.

[cwcb.colorado.gov/about-us/basin-roundtables](https://cwcb.colorado.gov/about-us/basin-roundtables)

# How We React to Risks Makes a Difference

The Water Plan describes current and future water-related risks that were identified in the Technical Update. While these risks are daunting, Coloradans have tools available to mitigate them. The Water Plan provides a vision to help guide decisions and develop innovative solutions needed to meet an uncertain future.

## How Should We Respond?

- **Prioritize conservation and efficiency.** Conversations on how to meet future water need should always start by looking to conservation and efficiency. All Coloradans can participate in strategies to lower water use.
- **Use the right water for the right use at the right time.** Integrated water planning should consider how to maximize water use benefit and efficiency.
- **Engage all voices.** All Coloradans need to work together to meet our future challenges in inclusive, equitable, and collaborative ways.
- **Restore and enhance our environment.** Watershed and stream health are critically important. Innovative strategies such as nature-based solutions can enhance water quality, lower wildfire risk, and improve ecosystem health while helping protect clean water supplies. Strategies for providing environmental benefits should be considered.
- **Increase recreational opportunities and waterway access.** Water-based recreation occurs across Colorado and is a cornerstone for our quality of life. Access to healthy waterways is also key to maintaining vibrant communities. We can increase recreation opportunities with innovative water management approaches and projects.
- **Protect agriculture.** Irrigated agriculture provides food to people within and outside of Colorado as well as ecosystem benefits from wetlands, return flows, and food for wildlife. Water supply strategies that use collaborative water sharing agreements (CWSAs) and/or provide multiple benefits should be prioritized. Efficiency improvements should be pursued thoughtfully, recognizing both benefits and secondary impacts.
- **Protect and enhance water quality.** Water quality will change with shifts in supply and demand. State and local agencies should maintain focus on water quality when considering supply strategies.
- **Use the whole toolbox.** Colorado has a wide variety of tools available to meet future needs and a flexible but reliable legal framework. Coloradans need to look for ways to use those tools in new, innovative, and collaborative ways.





While many factors can increase Colorado’s water risks, we have a wide variety of tools to address these risks. “Tools” are strategies and projects typically used to collaborate and meet water needs across Colorado. Tools are implemented at various geographic levels, for a variety of purposes, and by a wide variety of agencies, organizations, and water users.

## INSTITUTIONAL TOOLS

are often implemented at a statewide level or are conceptual strategies that can be applied to nearly any challenge. These tools may address significant statewide barriers to achieving water-related goals, enhancing collaboration, and supporting public knowledge of water issues.

## PLANNING TOOLS

are frequently implemented on a regional level by stakeholder groups, water conservancy districts, or other regional organizations. Regional planning solutions often rely on decision support tools and/or collaborative processes to creatively address competing water needs.

## ON-THE-GROUND TOOLS

are projects that local water managers use to deal directly with water at a local level. These projects are implemented at a variety of scales by water providers, watershed groups, ditch companies, and in some instances, state agencies.

BROAD SOLUTIONS



SPECIFIC SOLUTIONS



PUBLIC OUTREACH AND EDUCATION



FUNDING



POLICY AND REGULATORY CHANGES



COLLABORATION GROUPS



WATERSHED PLANNING



CLIMATE ADAPTATION



INNOVATION



EQUITY



ENDANGERED AND THREATENED SPECIES RECOVERY PROGRAMS



NATURAL HAZARD PLANNING



LAND USE AND WATER PLANNING INTEGRATION



DATA COLLECTION AND SHARING



WATER STORAGE



CONVEYANCE INFRASTRUCTURE



WATER EFFICIENCY AND CONSERVATION PROGRAMS



WATER REUSE



COLLABORATIVE WATER SHARING AGREEMENTS



STREAM/WATERSHED RESTORATION AND ENHANCEMENT



FLOW ENHANCEMENT AND MAINTENANCE

# 50 PARTNER ACTIONS

## PROJECT LEVEL EXAMPLES OF LOCAL WATER INITIATIVES CWCBC HELPS TO FUND AND/OR SUPPORT

Water Plan grants to advance partner actions are available in the following categories.



CONSERVATION  
& LAND USE



WATERSHED HEALTH  
& RECREATION



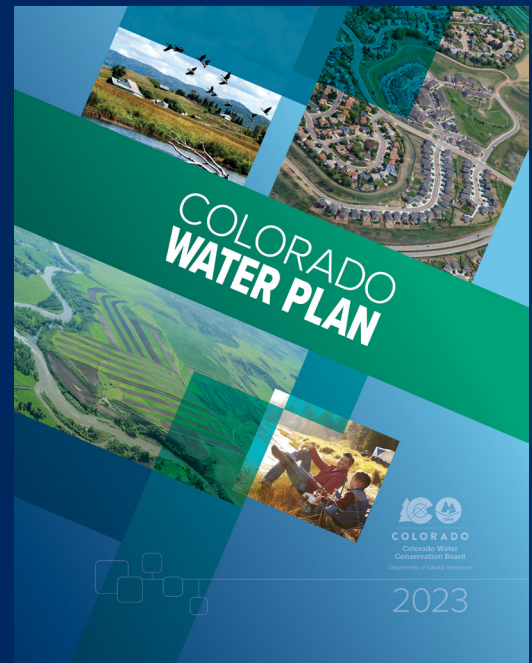
ENGAGEMENT  
& INNOVATION



WATER STORAGE  
& SUPPLY



AGRICULTURE



# 50 AGENCY ACTIONS



We build water resilience by bold action, one project and one discussion at a time. Working collaboratively across groups is critical to address water challenges. Federal, state, and local governments and Tribal Nations all have a role. While CWCB develops the Water Plan, promotes integrated planning, and fosters connections between groups, CWCB's role as a policy agency focuses on funding projects (like those described in the Water Plan's partner actions), convening discussions, and developing support tools (like research, models, plans, and frameworks). We rely on partners to help advance our work.

#### Federal Government

Groups like the Bureau of Reclamation, Environmental Protection Agency, and the U.S. Forest Service have major roles that impact Colorado water issues.

#### State Government

CWCB is a small agency under the Department of Natural Resources that works with other state agencies such as the Colorado Department of Public Health and Environment, Colorado Division of Water Resources, and the Colorado Department of Agriculture. Our state government has more than 150 agencies, some of which explicitly deal with water and some that engage in related work. Other agencies have their own plans that can work in concert with the Water Plan. In addition, water-focused work is supported by the Colorado General Assembly and Governor's office.

#### Local Government

Local leaders at the county and municipal level help shape local decisions around land use, water, and project permitting (largely through 1041 powers). Local entities and governments also lead development of local water projects and initiatives.

#### Colorado Tribes

Colorado has two federally recognized Tribes - the Ute Mountain Ute and Southern Ute. Both Tribes hold significant water rights and are strong partners on Colorado water issues.

#### Other State Entities

Groups like Great Outdoors Colorado and the Water Resources and Power Development Authority play a key role in water policy.

#### Other Governance

Many other groups help govern water, land, and funding decisions in Colorado. Examples include water conservancy districts, water utilities, and organizations and private companies that manage resources such as irrigation ditches and open lands.

#### Individuals and Organizations

People of all ages and walks of life participate in meeting our water challenges by adopting water conservation and efficiency in their homes (such as using low flow fixtures or xeriscaping), getting involved in local water issues and stakeholder groups, and being good stewards of rivers and lakes used for recreation. This work is often supported by nongovernmental organizations, businesses, industry, and other stakeholder groups, many of which may apply for a Water Plan grant.

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## CWCB's Mission

As the stewards of the Water Plan and the agency charged to conserve, develop, protect, and manage Colorado's water for present and future generations, CWCB works with partners to foster action by funding local water projects through grants and loans.

The CWCB is a policy agency – it is not a regulatory or enforcement agency. **It carries out its mission through:**

- Convening and collaborating with stakeholders
- Funding projects
- Leading and focusing attention on important water topics
- Supporting and developing tools for water planning

## Progress on Project Funding

**835** Since 2015, CWCB has helped fund over **835 water projects across the state** with various CWCB grant programs.

**\$134M** Since 2015, CWCB grants have funded more than **\$134 million for Colorado water projects**.

**107** Since 2015, CWCB has loaned money to over **107 statewide projects** through the Water Project Loan Program.

**\$502M** Since 2015, the CWCB Water Project Loan Program has supported over **\$502 million for Colorado water projects**.

# Building on Past Successes

The devastation of the 2002 drought and Hayman Fire launched a new era of resiliency planning and collaboration in Colorado, which led to the creation of many of the state's grassroots water stakeholder groups, the Water Plan, and a continued investment in water. These efforts have made real progress to better plan for, manage, and fund Colorado's water, as noted below:

- Water conservation has **decreased statewide per capita water use by 5%.**
- Annual municipal leasing of **25,000 acre-feet** of agricultural water has helped cities and farms coexist.
- **More than 25 new** stream management plans have been developed.
- **400,000 acre-feet** of storage has either been constructed or will soon be completed.
- Up to **2.7 million people** have learned about Colorado water through outreach, education, and messaging.
- **62% of Coloradans** now live in communities whose leaders have taken training to integrate water and land use planning.

While Colorado voters have approved additional funding for water projects, more is needed. The CWCB estimates an additional \$1.5 billion by 2050 may be needed to support future water projects. **It is increasingly important to make sure every water project or strategy uses water as wisely as possible, stretching our supply to realize its maximum value for cities, farms, streams, and people.** Doing so will require shared stewardship—a commitment to partnership in which the state government and every Coloradan must work together toward greater action.



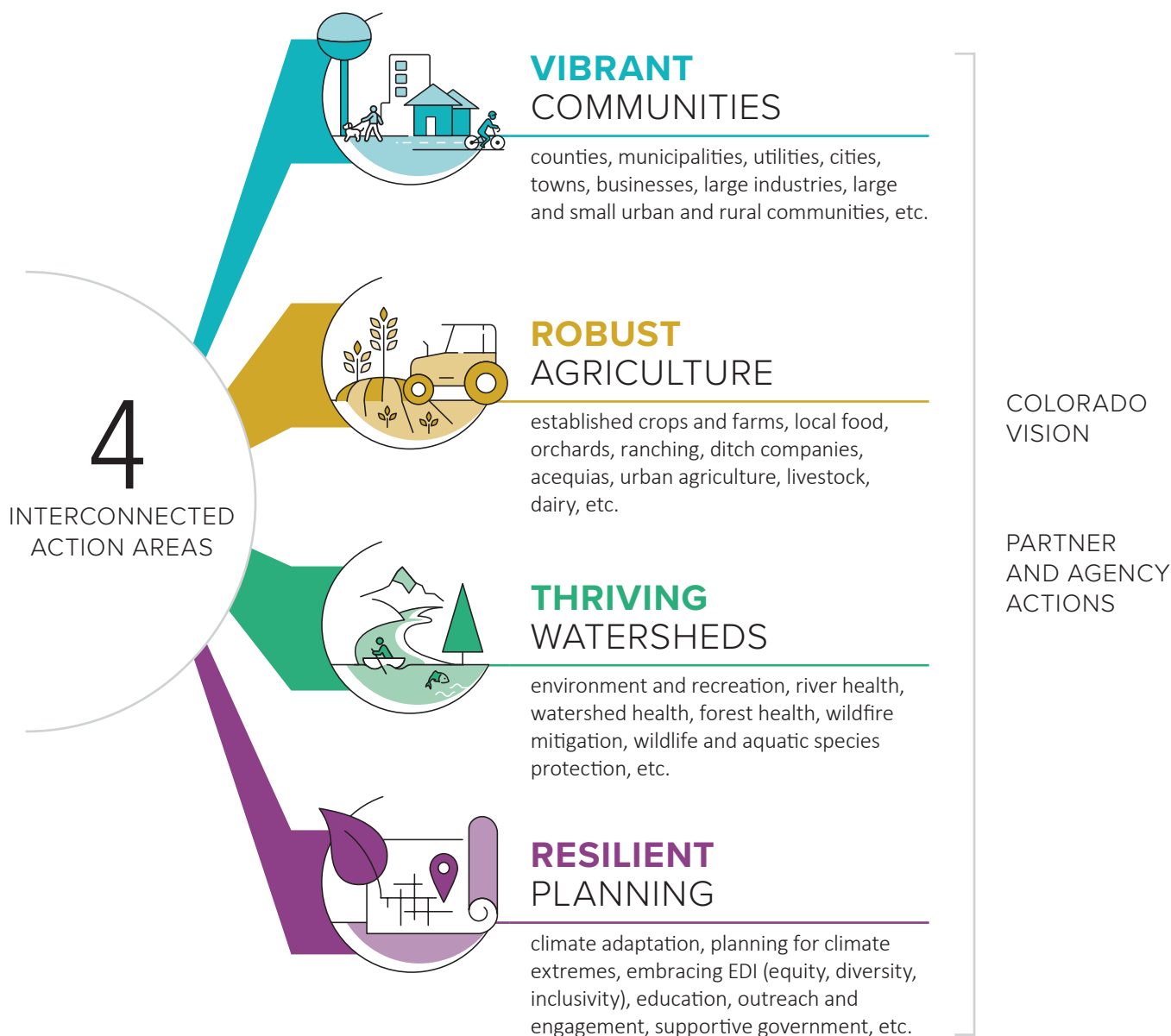
## Inclusive Planning

Until now, the Water Plan has not directly addressed equity, diversity, and inclusivity (EDI). The Water Equity Task Force, created in March 2021, developed a set of guiding principles around EDI to help inform the update to the Water Plan. Highlighting the principles developed by the Water Equity Task Force is historic and charts a path to committing to and continuing work in the EDI space now and in the years ahead.



## Four Interconnected Action Areas

The four action areas overlap in multiple ways. For example, much of our water for farming and people comes from mountain snowpack in forested watersheds. Just as streams cut through both farms and cities, we all are connected by Colorado's water supply.



The Water Plan is a bridge to action and seeks to create a clear linkage, or line of sight, between our water-related values and the actions that will protect those priorities. In each of the four action areas (shown above), the Water Plan describes a long-term vision as well as actions that both stakeholders (i.e., partners) and state agencies can take to move toward the long-term vision. The Water Plan also includes a set of general actions, which are administrative tasks CWCB will advance.

## VIBRANT COMMUNITIES

VISION: Holistic water management is essential for creating vibrant communities that balance water supply and demand needs to create a sustainable urban landscape. Colorado communities need resilient water supplies, water-conscious and attractive urban landscapes, planning that integrates land use and water solutions, and communities who understand the importance of water to their lives and economy. An integrated One Water ethic is necessary to create the transformative change needed to meet the moment and the future.

Cities and towns are implementing water conservation programs to stretch supplies. Overall municipal demands have generally remained steady in many cities despite recent population growth.

## PARTNER ACTIONS

- Develop strategically located storage projects that meet multiple needs
- Optimize investments in infrastructure and increase efficiency and conservation
- Invest in One Water and reuse (graywater, black water, stormwater)
- Plan for and create low water use landscapes

## AGENCY ACTIONS

- Identify a set of benchmarks for water-saving communities
- Expand water loss tracking and management initiative
- Explore, expand, and demonstrate water reuse
- Identify turf replacement options that support transformative landscape change





## ROBUST AGRICULTURE

VISION: Agriculture not only provides food and fiber, but it is also important to Colorado's culture, heritage, and economy, and it faces unprecedented challenges. Innovations are needed to sustain irrigated agriculture, including strategies to stretch available water supplies, increase resiliency, enhance local food production, and maintain profitability. Water supplies for Colorado's urban growth should not come at the expense of our rural communities through indiscriminate buy and dry methods. Collaborative partnerships among agriculture, environmental groups, and municipal water providers should be used to create multi-purpose projects that help keep irrigated lands in production and maintain ecosystem services.

Farmers continually work to improve the health of their soils, boost their productivity, sustain profitability, and use water more efficiently in the face of variable and, in many areas, decreasing water supplies.

## PARTNER ACTIONS

- Support storage to provide supply and flexibility for augmentation plans
- Rehabilitate aging agricultural storage facilities and diversion structures
- Build conveyance and on-farm efficiency improvements

## AGENCY ACTIONS

- Integrate soil health, water conservation, and adaptive practices that maintain or increase agricultural production with less water use
- Facilitate collaborative water sharing agreements
- Support peer to peer learning between farmers/ranchers



## THRIVING WATERSHEDS

VISION: Colorado's watersheds hold the future of our water supply security. Comprehensive water resources planning should incorporate conditions of forests, streams, wetlands, and wildlife habitat. As our state's water source, the health of watersheds affects agriculture, downstream communities, recreation, tourism, and ecosystem function. Colorado will continue to follow a shared stewardship ethic to plan and implement multi-benefit projects to enhance the health of our watersheds.

Grassroots coalitions are coming together to develop and implement management plans that improve the health of watersheds and streams that also provide benefits to agriculture and recreation.

## PARTNER ACTIONS

- Enhance streamflows using a variety of available tools
- Rehabilitate streams to improve habitat, reduce erosion, and support ecosystem needs
- Reconnect floodplains using nature-based solutions

## AGENCY ACTIONS

- Create a comprehensive stream construction guide
- Create Wildfire Ready Watersheds framework
- Reduce barriers to participating in the Instream Flow Program
- Strengthen multipurpose benefits of Water Plan grants





## RESILIENT PLANNING

VISION: Water security is critical to the quality of life, environment, and economy of Colorado. The future is uncertain, and Colorado needs to be adaptive and resilient to face the challenges ahead. Water security roadmaps, inclusively developed at a local level and informed by strong state leadership, can identify acute and chronic risks to water supply, integrate local planning strategies, prioritize collaborative solutions, and build adaptive capacity and resilience.



Colorado's increased warming and climate variability, including natural disasters like fire, flood, and drought, are driving advancements in climate adaptation. State government can support this by streamlining operations, leveraging funding, and advancing collaborative climate action. Inclusively engaging all Coloradans in these efforts will build more resilient solutions.



## PARTNER ACTIONS

- Protect storage infrastructure from effects of wildfire, flooding, and debris flow
- Conduct integrated planning that considers uncertainty and drought
- Provide conservation-oriented outreach and education

## AGENCY ACTIONS

- Create a collaborative Colorado Water Plan education and outreach campaign
- Support the long-term stability and impact of basin roundtables
- Advance science and update decision support tools
- Convene workshops on water and climate vulnerability, adaptation, and resilience

## GENERAL ACTIONS

VISION: As CWCB advances actions, it will continue to engage stakeholders and support local work. While the Water Plan focuses on Colorado, CWCB and Department of Natural Resources' work includes issues outside of Colorado like basinwide Colorado River discussions and other interstate compact issues. Though a small agency, CWCB's work aims to drive major change. Every dollar CWCB spends on grants creates at least three times as much value for Colorado through the matching efforts of stakeholders. Grants also fund local groups doing grassroots level work. As state water needs evolve, the agency will continue to respond and adjust actions in adaptive ways.

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The CWCB continues to fund millions in grants and loans that advance local water projects. We collaborate with stakeholders and partners and improve tools, processes, and capacity.

Many agency actions led by CWCB will include opportunities for stakeholder input to inform and shape planning efforts. Some examples include Action 5.1 (The Analysis and Technical Update), Action 5.2 (Updating the Basin Implementation Plans), and Action 5.3 (The 2033 Colorado Water Plan).

## AGENCY ACTIONS

- Update statewide water planning tools, analyses, documents, and future actions
- Support ongoing response to Colorado River issues
- Support integrated planning and multi-benefit projects
- Create annual operating plans that identify targeted CWCB work





# The Water Plan is Adaptive

Water management in Colorado will always be challenged by variable hydrology, our diverse geography and topography, growth patterns, and emerging issues. Coloradans must come together to address these challenges. The Water Plan provides a big enough vision to house all the discussions needed to forge a path forward.

## How do we know we're heading in the right direction?

The Water Plan provides a vision for where Colorado needs to go. Agency actions are commitments CWCBA and collaborating agencies have made to provide critical information, tools, and support as we move into the future. Many different drivers, each with their own uncertainties, will shape our water landscape. We need to regularly assess trends in these drivers to better understand future conditions and how our partner and agency actions have impacted the drivers. With regular assessments, we can adapt future actions to move us toward the Water Plan's vision.

## How do we come together?

Colorado has long realized the importance of collaboration and partnerships. The Water Plan describes a wide variety of coordinated efforts to meet Colorado's water challenges – from partnerships among state and federal agencies, to grassroots collaboration in basin roundtables or watershed groups. The Water Plan can be a tool for public outreach about managing Colorado's water. The more people know about our water and its complexities, the more effective we can be at identifying solutions to our challenges that work for everyone.

## What can I do?

Everyone approaches the Water Plan from a different walk of life and perspective. For some people, solving water challenges is the focus of their career. For others, water simply supports their daily life. **Regardless of your perspective, water is essential for all of us, and we can all take some basic steps to support the call to action in the Water Plan:**

- **Learn More:** Water issues are complex, and learning more about water helps us better understand the wide variety of perspectives that surround water issues. Understanding and engaging in local water conversations and staying up to date on water issues is an important first step.
- **Take Action:** All Coloradans can take action to meet our water challenges. We can implement water conservation and efficiency strategies at home, whether that be installing low-flow fixtures indoors or using less water on landscapes. We can play a part by reducing our water footprint through our water use, the products we buy, and how we participate in public decision making.
- **Get Involved:** Coloradans must work collaboratively to meet our future challenges. All voices need to be heard. Attending basin roundtable meetings, joining local water-related stakeholder groups, and working with local community leaders and applying for grants can help advance water projects.

# Context for Water Planning

2003

2013

2023

## STATEWIDE WATER SUPPLY INITIATIVE

Legislation creates a 2004 Statewide Water Supply Initiative (SWSI); projects future water needs to 2030.

## WATER FOR THE 21<sup>ST</sup> CENTURY ACT

Legislation in 2005 creates nine basin roundtables and the Interbasin Compact Committee.

## SWSI II

The 2007 SWSI II report adds new tools and context.

## SWSI UPDATE

SWSI 2010 evaluates high, medium, and low future water needs projected out to 2050.

## EXECUTIVE ORDER

Governor directs CWCB to create a state Water Plan in 2013.

## BASIN PLANNING

To inform the Water Plan, the roundtables work on eight Basin Implementation Plans (BIPs) that identify local risks and needs.

## COLORADO WATER PLAN

The 2015 Water Plan combines SWSI data and BIP input with an overarching state vision driven by stakeholder engagement.

## TECHNICAL UPDATE

The Technical Update (rebranded from former SWSI analyses) creates new tools and uses state of the art methods identified in the Water Plan to project water risks out to 2050.

## BASIN UPDATES

Basin roundtables work with CWCB to update BIPs, creating shorter standardized versions with common layouts and improved project data and costs.

## WATER PLAN UPDATED

2023 Water Plan replaces the 2015 version, incorporating 2015-2022 input including extensive bilingual outreach with 143 events across all 64 counties reaching 9,500 diverse stakeholders.



The 2002-2003 drought and fires spurred new water policy and legislation as well as CWCB planning that continues. At the time, major cities like Denver saw water supplies stretched thin. Farms and ranches also suffered, and forests and streams were impacted.



The 2012-2013 drought and fires set the backdrop for the call to create a Colorado Water Plan. Water planners and users needed to rally behind a shared vision for collaboration. 2013 also ended in Colorado's largest flood - dropping a year's worth of precipitation in a single week.



Since the 2015 Water Plan, Colorado has seen some of its largest wildfires and deep prolonged drought. Climate change has strained local communities, agriculture, forests, natural habitat, and outdoor water recreation due to shifts in hydrology and soil moisture. Unique new challenges like winter fires, post wildfire flooding, and changing storage operations add to a constellation of impacts related to long-term drought and aridification.

## Iterative Advancements

The evolving and responsive nature of water planning often means major shifts in thinking or ways of planning can occur during interim years between Water Plan updates. With this in mind, the plan needs to be both adaptive and inspiring. The legislature and other state agencies have worked on an array of legal, policy, regulatory, and funding initiatives to support Colorado's water resilience in conjunction with CWCB. In turn, CWCB continues to advance policy through its work convening stakeholders and developing tools and funding. This plan acknowledges there is a nexus where local and state interests combine to advance emerging ideas through partner actions. Examples listed in this plan provide meaningful project-level work CWCB can fund through Water Plan grants. Counties, cities, towns, water providers, and all Coloradans can continue advancing conservation efforts that have decreased water use in spite of population growth. Agricultural technologies, innovations, and tools like conservation easements and collaborative water sharing agreements are yielding exciting new opportunities for farms, ranches, and cities to coexist. The proliferation of stream management plans, use of nature-based solutions, and new investments around forest health are uplifting the environment as well as Colorado's \$19 billion outdoor recreation economy - supporting jobs, nature, health, and resilience. These are all indicators of success in the face of adversity. Colorado will need to scale our success to realize a greater impact moving forward.



+20 +40 +60  
Counties with USDA drought declaration.



+100K +300K +600K  
Thousands (K) of acres burned



many +10/\$ +10/\$\$  
Counties impacted / relative cost;  
many = numerous post-wildfire floods 2018-2022





# COLORADO WATER PLAN

## NEXT TECHNICAL UPDATE PROCESS

The next Technical Update will begin in 2025 and engage stakeholders to produce a 2029 update.

## NEXT BASIN PLAN PROCESS

Building on the Technical Update, Basins will begin engaging in 2029 to review findings, identify needed strategy changes, and update project costs by 2031.

The CWCB, with your help and the efforts of many Coloradans, will work to strategically implement the Water Plan. The CWCB will advance agency actions, fund collaborative partner actions, and track progress. The Technical Update and basin planning processes are milestones where extensive stakeholder engagement can help inform data, tools, and direction. This work will inform the next Water Plan in 2033 when CWCB will revisit the planning horizon, trends, and actions. Collaboration, creativity, and innovation with stakeholder involvement will continue to advance state water planning.

## A BRIDGE TO ACTION

- The Colorado Water Plan sets the statewide vision for water management and creates a framework for action.
- For the State of Colorado, the Water Plan serves as a call to action through shared leadership and active partnerships that will be critical to advancing needed solutions.
- Coloradans must come together across diverse groups and geographies to implement actions that will move us closer to a more resilient water future.
- Education and outreach engages the public, partners, and leaders in integrated water planning to conserve and protect water for current and future generations.



# Learn how to get involved.



**Visit [cwcb.colorado.gov](https://cwcb.colorado.gov) to read the plan.**

Learn more and commit to helping build a more water secure future by taking actions, big and small, to conserve water and participate in the conversation. Make your voice heard by participating in future cycles of the Water Plan.



**Photo Caption/Credits**

- *Page i: (Cover)* Pueblo, Colorado\*; Gem Lake\*; Rafting on Cache La Poudre River, Photo credit: Rocky Mountain Adventures; Irrigated Lands below the Sleeping Ute Mountain, Photo credit: Eric Whyte, Ute Mountain Ute Tribe Farm & Ranch Enterprise; Elk\*
- *Page ii:* Scenic landscape view of South Boulder Creek at sunset in Rollinsville, Colorado\*
- *Page 6:* A kayaker on the picturesque Piney Lake, located near Vail, Colorado\*
- *Page 8:* Great Sand Dunes National Park, Colorado\*
- *Page 12:* Jose and Junita Martinez, Costilla County Acequia Community, Photo Credit: Luna Anna Archey
- *Page 14:* The 40-foot-high Blue Bear sculpture peers into Denver's downtown convention center\*; Aerial view of the Town of Glenwood Springs, Colorado in the Roaring Fork Valley\*
- *Page 15:* Autumn at a cattle ranch in Colorado near Ridgway-County Road 12\*; Corn field with Sleeping Ute Mountain backdrop, Photo credit: Eric Whyte, Ute Mountain Ute Tribe Farm & Ranch Enterprise
- *Page 16:* Osprey, *Pandion haliaetus*\*; The Grand Mesa National Forest, Grand Junction, Colorado\*
- *Page 17:* August 21, 2021 Northwest Drought Tour (Pearl Lake State Park), Photo credit: CWCB; Cameron Peak Fire from Lake Loveland at Sunset\*
- *Page 18:* Ute Mountain Ute Chairman, Manuel Heart, with CWCB Board Directors Paul Bruchez and Heather Dutton, and DNR Director Dan Gibbs. 2022, Photo credit: Kelly Romero-Heaney; Aerial/Drone photograph of a sunset over the Colorado state capitol building\*
- *Page 20:* A brilliant sunrise at the lower Blue Lake in Mount Sneffels Wilderness, Ridgeway, Colorado during the falls season\*
- *Page 21:* Maddox and Scarlett Sands getting ready to go tubing on the South Platte River, Photo credit: Russ Sands

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