

RIPPLE EFFECTS  
COLORADO'S WATER PLAN IN ACTION

2017

COLORADO'S  
**WATER PLAN**  
IMPLEMENTATION UPDATE



# A MESSAGE FROM THE DIRECTOR



This November 2017 marks the two-year anniversary of the release of Colorado's Water Plan. As I reflect on the past two years, I would be remiss not to also reflect on the many years leading up to Governor John Hickenlooper's executive order calling for Colorado's Water Plan in 2013. Efforts toward a statewide plan were initiated years before this formal anniversary, and I am deeply thankful for the countless hours Coloradans put into planning, developing, and implementing Colorado's Water Plan.

The water community galvanized in an unprecedented way to rise up to the task, revealing the irrefutable importance of water to our state's economy, environment, and quality of life. The state's basin roundtables, the Interbasin Compact Committee, entire water community, and general public stepped up to ensure the plan balanced the many needs and stakeholders relying on water and ecosystem services throughout our state. These partners continue to inspire me daily with their dedication to preserving and protecting our natural resources.

As a state, we set long-term, forward-thinking goals in the plan to ensure that we build a resilient future. In two short years, we have seen a remarkable uptick in both local and statewide projects and programs aimed at tackling our state's water challenges. In this, we have seen immense progress. We all know the implementation of Colorado's Water Plan will never be "finished" in the exact sense of the word; there will always remain work to do as the world evolves. The determined, cooperative energy that drove the water plan process toward success will continue to lead us down the long-road of implementation.

It is our mission at the Colorado Water Conservation Board to ensure that Colorado has adequate water supplies for all of our state's needs, for present and future generations. We commit ourselves to that imperative daily to ensure that we can all continue to enjoy the things we love about living, working, and playing in Colorado. The Colorado Water Conservation Board staff present this report with dual objectives: to recognize the tremendous implementation efforts happening all around the state, and to embolden the water and innovation communities to continue to lead the ripple effect of transforming Colorado's Water Plan from words to actions.

Sincerely,

Rebecca Mitchell  
Director, Colorado Water Conservation Board

# RIPPLE EFFECTS

## COLORADO'S WATER PLAN IN ACTION



# INTRODUCTION

**O**n November 19, 2015, the Colorado Water Conservation Board (CWCB) delivered Colorado's Water Plan (CWP) to the CWCB Board of Directors and the Colorado Governor's Office. The 567-page document represented the collective effort and vision of hundreds of stakeholders, dozens of state agencies, nine basin roundtables, thousands of meetings, and over 30,000 comments from interested persons across the state. Public input and outreach is at the very core of CWP initiatives.

Governor Hickenlooper's executive order in May 2013 called for the creation of Colorado's first water resource plan. The final document synthesized several decades' worth of evolution in resource management research and planning, including those elements of progress hardest to quantify and highest in value: relationship-building, compromise, and cooperation.

Colorado's Water Plan was a colossal exercise in bringing the water community and public at large together to address our state's diverse challenges in managing one of humankind's most basic needs. Colorado faces drought, wildfire, flooding, climate change, exceptional growth, and unique challenges as a headwaters state. The imbalance between our growing water demands and our variable water supply is evident. Especially alongside the management of natural hazards and shifts in historical patterns, reconciling Colorado's supply and demand gaps remains a complex task. However, our collective power is promising.

"Colorado has long been on the leading edge of water innovation and solutions" (Hickenlooper, Executive Order D2013-005). This year, the U.S. News and World Report ranked Colorado as the number one economy in the United States.<sup>1</sup> This October, the Bloomberg Brain Concentration Index ranked three Colorado cities in the top 10 destinations for the nation's top talent in science, technology, engineering and mathematics.<sup>2</sup> If we can coalesce the advantages of Colorado's current prosperity with the ethic of wise, forward-looking water resource management, Colorado has enough water to meet our state's future needs. Colorado's Water Plan is a monumental example of this collective energy to organize; and this report is proof of our united commitment to continued innovation and determination in the face of complex tasks and responsibilities.



# COLORADO'S WATER PLAN GOALS

## MORE THAN WORDS

Colorado's Water Plan is not intended to be a set of directions. Directions lead us from some known location to a specific destination. Rather, Colorado's Water Plan is a strategy roadmap. It is a values- and vision-driven tool to understand where we are, where we want to be, and the many potential routes and modes of transport to get there such as strategies and action steps.

## A STRATEGY ROADMAP

A roadmap offers a guide into the future, describing a destination in terms of goals, timelines, and significant signposts to look out for. It is important to remember that strategies and actions we pursue don't happen in a vacuum. They are influenced by a variety of external and internal drivers of change, such as improvements to technologies and data, shifts in politics and public ethics, budget constraints, or competitive market forces. This is where iterative monitoring, measurement, and feedback helps us course correct by revisiting or revising our roadmap. All strategic plans require adjustments along the way to recognize events that elicit a change in direction; this is adaptive management in action.

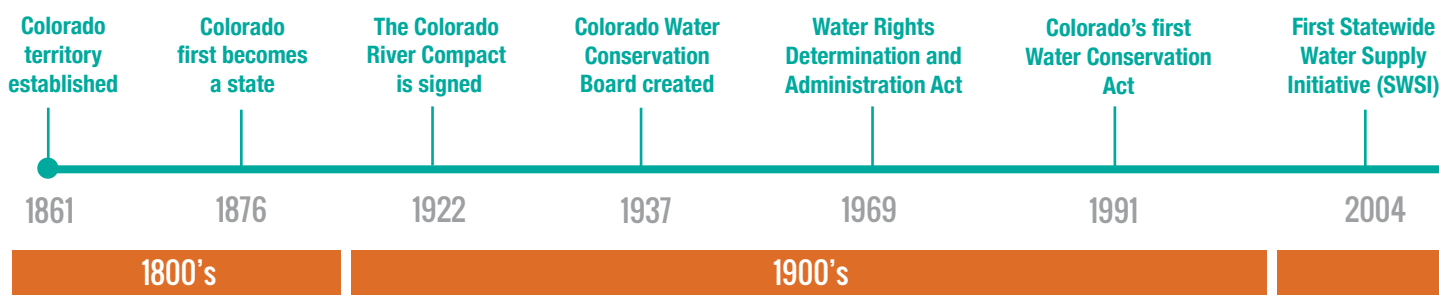
**Colorado's Water Plan is a living document. It is the responsibility of all Coloradans to help implement the plan and maintain Colorado as one of the best places in the nation to live, work, and play.**

## COLORADO'S WATER PLAN IS A LIVING DOCUMENT

The plan and its measurable objectives will be updated periodically as part of the planning cycle that includes the supporting work of the Basin Implementation Plans (BIPs) and the Statewide Water Supply Initiative (SWSI). To respond to our state's changing conditions with improved information, the CWCB is currently updating the SWSI study. This effort will provide a statewide hydrologic analysis of water supply and demand under different future scenarios, with data and tools designed to help local basin roundtables better target solutions to meet their needs. As such, it is designed to dovetail with subsequent updates to the BIPs, beginning in 2018. This evolving framework of CWP, SWSI, and the BIPs will provide enhanced insights and tools to more effectively identify and address water supply needs throughout the state. This effort will ultimately help measure success for each CWP action and inform how we need to adapt our efforts over time.

## TAKING THE LONG VIEW:

Change Takes Time. Here's Where We're Going.





## COLORADO'S WATER VALUES ARE THE FOUNDATION

The goals within Colorado's Water Plan are numerous: to meet the water supply and demand gaps; defend Colorado's compact entitlements; improve regulatory processes; and explore financial incentives—all while honoring Colorado's water values and ensuring that the state's most valuable resource is protected and available for generations to come. The state's following core water values shape every measurable objective, goal, and action in the plan:

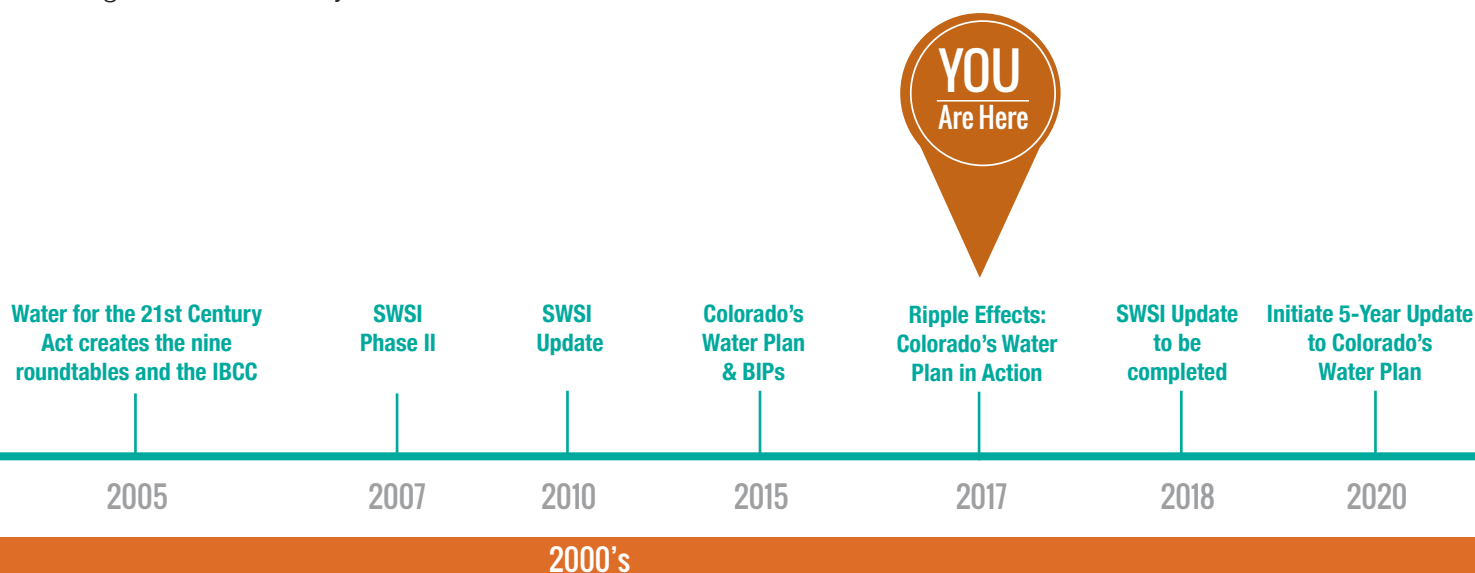
- ♥ A productive economy that supports vibrant and sustainable cities; viable and productive agriculture; and a robust skiing, recreation, and tourism industry;
- ♥ Efficient and effective water infrastructure; and
- ♥ A strong environment that includes healthy watersheds, rivers, streams, and wildlife.

## WHERE ARE WE NOW?

November 2017 marks Colorado's Water Plan two-year anniversary. Many of the goals and objectives may not be realized for decades to come, but a multitude of actions, those first necessary steps, are well underway. In these early years, far before we approach our 2030 or 2050 benchmark goals, it is important to reflect on our successes to acknowledge how far we have come, but also assess where we need to refocus, prioritize, and mobilize to get where we need to be. Reviewing our progress also reveals which actions have been slow to take form – important information that lends itself to larger conversations about barriers to change, such as missing partnerships, prohibitive market conditions, or shortfalls in seed money. These barriers may present opportunities for high-impact policies and initiatives that activate our communities. Alternatively, barriers may reveal a need to revisit the original roadmap to reformulate specific goals and actions for a particular objective.





While the CWCB has a critical role to play in implementation, all Coloradans share in the responsibility to help implement it as we all have a stake in our state's water future. As such, this report is not an exhaustive update on all implementation efforts from all partners around the state. Instead it showcases collaborative and innovative efforts as part of our statewide story. The update focuses on the specific actions found throughout the plan and compiled in Appendix H.

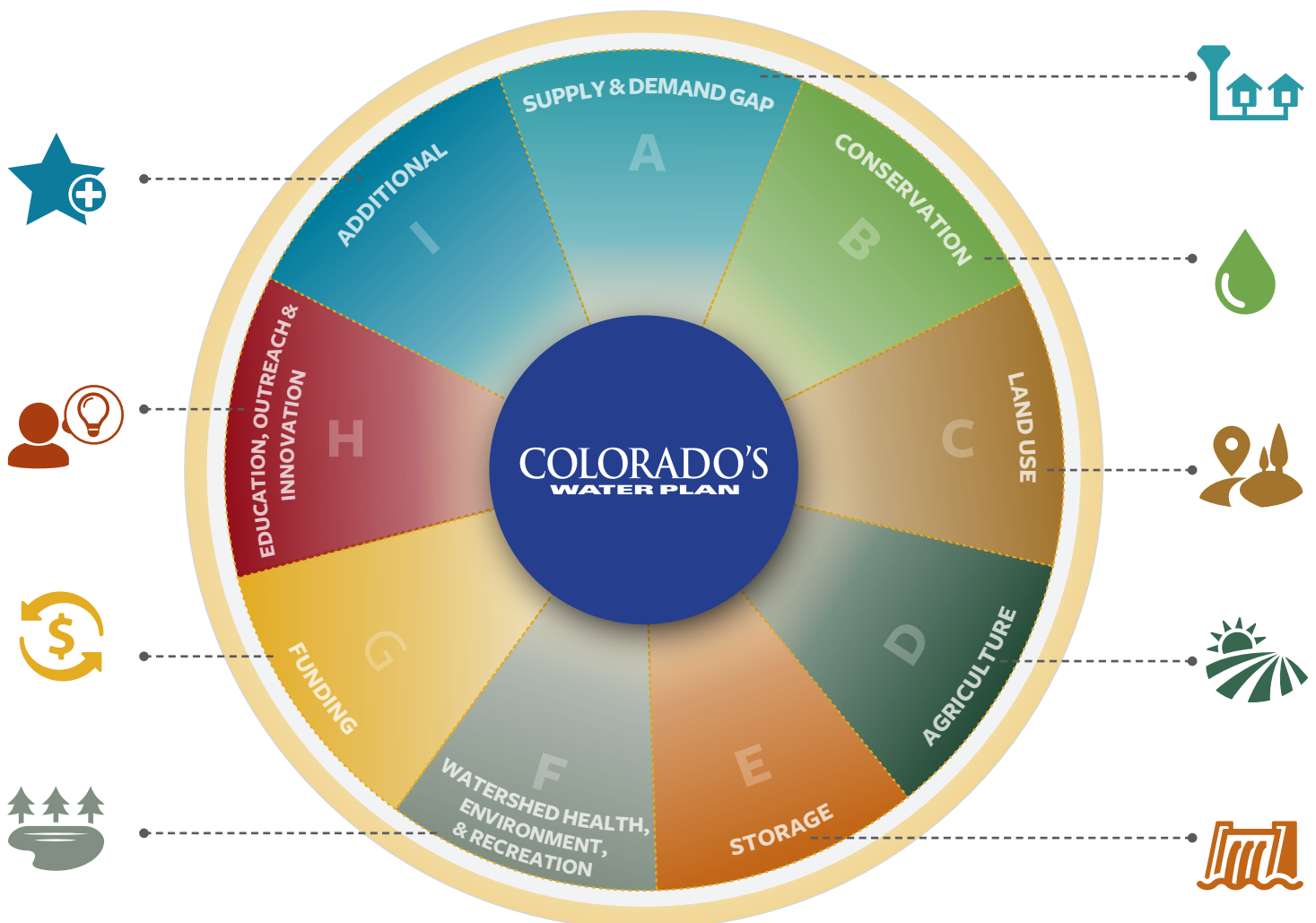
The state's nine basin roundtables have been dedicated to executing their BIPs, which were foundational to Colorado's Water Plan. The BIPs bring focus to strategies to meet local consumptive and nonconsumptive water supply needs. As a result, much of the success of "implementation" is basin specific – where local governments, water utilities, elected officials, community organizations, and citizens are involved on-the-ground with locally-tailored efforts.



## A GUIDE TO THIS REPORT

This action report documents many programs and activities already underway to implement Colorado's Water Plan. The structure of this report follows the structure of CWP: Chapters 2 through 5 focus on the foundational elements that guide Colorado's water management and Chapters 6 through 11 establish goals and action steps to help Colorado respond to future challenges. These sections focus on how Colorado can advance conservation, reuse, alternative agricultural transfers, and multipurpose and collaborative projects while protecting the health of rivers, streams, and watersheds. Chapter 10 distill the fifteen different goals and 159 actions found in Chapters 6 through 9 into nine measurable objective categories, each supported by a few critical actions.<sup>3</sup>

	<b>VALUE</b>	An overarching tenet that guides how CWP will work to shape Colorado's future.
	<b>OBJECTIVE</b>	A measurable result or benchmark expected to be achieved from the implementation of CWP.
	<b>GOAL</b>	A purpose toward which CWP is directed.
	<b>ACTION</b>	A necessary step to achieve the measurable objectives and goals, and ultimately to maintain Colorado's water values. Actions are the foundation of implementation.





# COLORADO'S WATER PLAN

## ACHIEVEMENTS





# Water Supply Management

**C**hapter 6 discusses the dynamic strategy Colorado envisions to meet its future water needs – including projects, methods, and actions. The chapter includes topics on scenario planning; meeting Colorado’s water gaps; conservation and reuse; alternative agricultural transfers; municipal, industrial, and agricultural infrastructure projects and methods; and environmental and recreational projects and methods. Five measurable objectives stem from the goals and actions identified in this chapter, including A: Supply-Demand Gap; B: Conservation; C: Land Use; D: Agriculture; and E: Storage.

## SCENARIO PLANNING AND SWSI

Following the drought of 2002, the Colorado legislature authorized the CWCB to conduct an in-depth technical study of Colorado’s future water supplies and demands. The first Statewide Water Supply Initiative (SWSI) was approved by the CWCB Board in 2004, and updated in 2010. The current SWSI update is unique because it is the first time the study has been completed in the context of CWP and the BIPs. SWSI 2010 was a relatively straightforward update of the original SWSI 2004 analysis and did not focus on methodology refinement. In addition to complementing CWP and the BIPs, this SWSI update will include a number of new approaches and additions, such as quantifying a scenario planning approach, providing a more detailed and scientifically rigorous hydrologic modeling approach, and addressing agricultural, environmental, and recreational gaps.

This SWSI update will use the scenarios previously developed by the Interbasin Compact Committee (IBCC) as part of CWP as the foundation for updating the supply and demand gap analysis. The five scenarios are shown graphically in Figure 1 and defined through narratives for the year 2050 in CWP Chapter 6.1. The new scenario planning approach will focus on hydrologic modeling to enable detailed, site-specific analyses of impacts to water resources throughout the state. The modeling will also help provide increased consistency across the subject matter areas. The result will be a wealth of data on “hydrologic gaps” at specific locations under each of the five planning scenarios. This approach will leverage the state’s considerable investment in Colorado’s Decision Support System tools and incorporate other modeling tools as appropriate. The methodology development process included review of prior SWSI methodologies, initial drafting of new or enhanced methodologies, and collaborative workshops involving the CWCB, consultant staff, and Technical Advisory Groups to further develop and refine proposed methodologies through a representative peer review process.

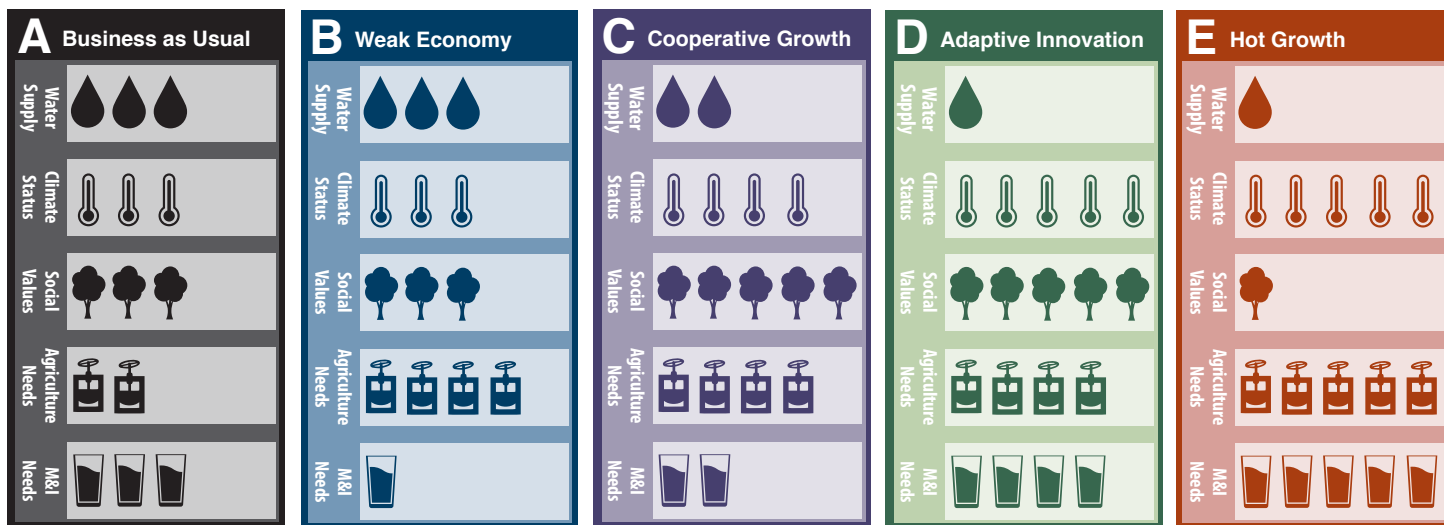




Due to data gaps, consistency issues, and basin roundtable feedback concerning planned projects (i.e. IPPs), the analysis will not interpret or include projects in the modeling analysis and, consequently, will not calculate an “infrastructure gap” similar to prior SWSIs. Instead, this SWSI update will prepare basin roundtables for the forthcoming BIP updates by working towards compiling and standardizing project information. This will give basin roundtables the opportunity to further evaluate projects in more detail in their forthcoming BIP updates and make locally-appropriate decisions about the details and assumptions concerning the modeling of specific projects.

The ongoing SWSI update will serve two primary purposes: 1) provide a consistent statewide framework for examining future water supply and demand under different scenarios, and 2) provide tools and data for basin roundtables to use in updating their BIPs and developing detailed local solutions to identified gaps. The update will serve as the technical basis for water supply planning at the state level moving forward. As such, it is in preparation with an eye toward future iterations and updates to BIPs and CWP.

**Figure 1: CWP Planning Scenarios Key Drivers Graphical Summary**





## OBJECTIVE A

# SUPPLY-DEMAND GAP



Colorado's Water Plan sets a measurable objective of reducing the projected 2050 municipal and industrial gap from as much as 560,000 acre-feet to zero acre-feet by 2030.



## GOAL

*Meet Colorado's Water Gaps:* Use a grassroots approach to formulate projects and methods that avoid some of the undesirable outcomes of the supply-demand gaps.



## CRITICAL ACTION 1

Support and assist the basin roundtables in moving forward priority municipal, industrial, environmental, and agricultural projects and methods identified in their BIPs through technical, financial and facilitation support.

- *Water Supply Reserve Fund Grants:* The state's basin roundtables bring more than 300 citizens into water discussions across the state. The broad-based, collaborative nature of this process helps facilitate discussions on water management issues and encourage locally driven solutions in each of the state's eight major river basins and the Denver metropolitan area. The CWCB works daily to support the basin roundtables in implementing their BIPs. Since November 2015, \$13.8 million in funds have been approved for 110 projects, with over \$10.1 million in Water Supply Reserve Fund (WSRF) grants already distributed. These projects and programs utilize funds from both the statewide (\$6.4 million) and basin (\$3.7 million) accounts. Since the inception of the WSRF program in 2006, the CWCB has funded 476 projects, with over \$25 million in funds approved from the basin accounts and \$57.4 million in funds approved from the statewide account.
- With an effective date of September 22, 2016, the CWCB, IBCC, and nine roundtables collaborated to revise the WSRF grant criteria and guidelines to explicitly link funding requests to the goals and measurable outcomes identified in the BIPs and CWP. To complement the updated criteria and guidelines, a new and streamlined WSRF application was developed and released in May 2017.
- *Colorado's Water Plan Grants:* 2017 was the first year for water plan grant funding. Of the \$10 million, \$2 million was set aside for supply and demand gap multi-beneficial projects and those projects identified in the BIPs to address the water supply and demand gap. Nine CWP grants are currently under the CWCB review process with fund requests totaling over \$2.4 million and leveraging over \$18.2 million in matching funds. These projects include benefits to reduce the municipal and industrial gap an estimated 48,000 acre-feet.



## GOAL

*Protect and Develop Compact Entitlements and Manage Risks:* Protect Colorado's ability to fully develop compact entitlements, and continue to support agreements that strengthen Colorado's position in interstate negotiations while ensuring the long-term viability of Colorado's interstate compacts and relationships.



## CRITICAL ACTION 2

Develop a collaborative water management program for the Colorado River Basin, as described in the Conceptual Framework.

- *Upper Colorado River Basin Contingency Planning:* The CWCB continues to work with the other Upper Basin states on an ongoing drought contingency planning effort to reduce risks associated with reaching critical reservoir elevations at Lake Powell or Lake Mead. The goal of this effort is to identify methods for providing additional security in the Colorado River system in times of ongoing or additional drought. The CWP identified several important actions related to continued interstate



collaboration and identified programs and options to protect the existing and future uses of the Colorado River. CWP Chapter 9 discussed preliminary concepts of water banking, storage management, and demand management. The programs and concepts discussed in the water plan align with the efforts of the Upper Colorado River Commission and the basin states as a whole.

■ *Colorado River Development and Curtailment Risk Study:* At the December 2014 meeting of the four west slope basin roundtables, attendees cited the need for more technical data and modeling so that the west slope roundtables could better understand issues surrounding future Colorado River development, the risk to existing water users, and implementation of CWP framework principles. In March 2016, the Risk Study Phase I initiated that technical investigation process and served to validate previous work on the Drought Contingency Plans for both Upper and Lower Basins. Phase II, started in March 2017, explores potential voluntary preemptive actions and associated risks that Colorado water users could take as short term measures to respond to drought conditions and protect critical reservoir elevations, while avoiding concepts that implicate interstate issues. The project also examines partnering the two major water modeling programs used in Colorado (RiverWare (CRSS) and StateMod), with anticipated completion in spring of 2018.

**In Colorado, precipitation varies in both amount and distribution across the state and elevation, and the orientation of the mountains and valleys influences it. Our state's variable precipitation patterns have resulted in considerable hydrologic fluctuation, and floods and drought are possible within the same year.**





## OBJECTIVE B

# CONSERVATION



Colorado's Water Plan sets a measurable objective to achieve 400,000 acre-feet of municipal and industrial water conservation by 2050.



## GOAL

*Increase Municipal Conservation and Efficiency:* Implement long-term water efficiency strategies to meet local and statewide water needs that are cost-effective and promote a water efficiency ethic throughout Colorado.



## CRITICAL ACTION 1

Consider comprehensive, integrated water resource planning, conducted by water providers, as one of the components to achieve state support of projects and financial assistance. These plans should use the water conservation best practices at the high customer participation levels where possible, as defined in SWSI.

- *Water Efficiency Grant Program:* From January 2016 to November 2017, 22 water providers submitted Water Efficiency Plans to the CWCB. Of these, 18 have been approved and 4 are in review. By developing a Water Efficiency Plan, water providers are setting actions and goals at the local level that are tailored to the needs of their region. The plans include indoor and outdoor conservation activities including incentives, regulations, education, and pricing mechanisms.

Since the approval of CWP in November 2015, the CWCB has granted \$829,033 in water efficiency planning and implementation projects for conservation planning, plan implementation, and public education and outreach. These projects assist in attaining CWP measurable objective of 400,000 acre-feet of conservation savings by 2050.

Some standout projects include:

- Western Resource Advocates held three tap fee workshops in October and November 2016. The workshops educated communities how tap fees can be used as a tool for encouraging water efficiency in newly constructed developments and how to foster dialogue among neighboring communities on the topic of tap fees;
- South Metro Water Supply Authority (SMWSA) is developing an implementation plan for a regional landscape professional certification program for all SMWSA members and hopes to export the program to other parts of the state;
- The City of Aspen updated its municipal code to include a more robust set of landscaping and irrigation system requirements and associated enforcement mechanisms. This concept was included in the Roaring Fork Watershed Regional Water Efficiency Plan, and may be scalable to a regional program and/or for adopting similar regulations within other local jurisdictions.





- *Colorado's Water Plan Grants:* 2017 was the first year of water plan grant funding. Of the \$10 million, \$1 million was set aside for conservation and land use activities that implement long-term strategies for water reuse, drought planning, conservation (such as water meter replacements, projects to reduce system water loss), and water and land use planning integration (such as technical assistance to put conservation elements into comprehensive land use plans). Six conservation and land use CWP grants are currently under the CWCB review process with fund requests totaling over \$397,036 and leveraging about \$478,504 in matching funds. These projects include benefits to achieve approximately 88,000 acre-feet of municipal and industrial water conservation through reuse and incorporate over 245,000 Coloradans into land use planning efforts.
- *Colorado Water Loss Initiative:* In November 2016, the CWCB presented a proposal for \$1,100,000 in non-reimbursable funds to fund statewide water loss trainings. In July 2017, the funds became available through the 2017 Projects Bill. These trainings will bring water managers through a long-term, intensive water loss training based on the American Water Works Association (AWWA) industry standard for water loss reporting and accounting. CWCB staff has formulated a scope of work and convened a small steering committee to review the scope of work and assist with the project. At present, CWCB staff is finalizing the scope of work in order to publish an RFP with plans to start the trainings in spring 2018.
- *1051 Reporting:* In 2010, the Colorado General Assembly adopted HB10-1051, which requires covered entities (retail water providers who sell 2,000 acre-feet or more of water annually) to report, on an annual basis, water use and conservation data to be used for statewide water supply planning. To facilitate the data reporting process, the CWCB has created the Water Efficiency Data Portal for online reporting for water conservation and water use data. At present, staff has collected 4 years of 1051 data which is being incorporated into the SWSI update.
- *Alliance for Water Efficiency (AWE):* The CWCB and AWE developed and hosted two Financing Sustainable Water Workshops (February 2017 in Glenwood Springs and March 2017 in Lakewood). Approximately, 70 participants learned from experts about resources and strategies that can help Colorado water managers navigate the challenges of developing rate structures that successfully balance revenue management, resource efficiency, and fiscal sustainability.
- *Urban Water Innovation Network (UWIN):* The CWCB is on the Front Range Advisory Committee for UWIN. UWIN is a National Science Foundation (NSF) funded sustainability research network of 16 academic institutions and key partners across the nation. "The vision of UWIN is to create an enduring research network for integrated water systems and to train champions of innovation for water-sensitive urban design and resilient cities." This has direct connection to CWP implementation in that this consortium should generate many research projects and partnerships that will have a direct bearing on issues identified in the plan. The first meeting took place in August 2016 where research areas and next steps were identified. The 2017 UWIN annual meeting was held in Fort Collins in July.



## CRITICAL ACTION 2

Support legislation that would require retailers to sell only irrigation technologies that meet WaterSense specifications by providing technical details about the potential savings and hosting a stakeholder process.

- CWCB staff worked with various manufacturers to implement HB14-103, which required only WaterSense toilets, lavatory faucets, urinals and showerheads to be sold in Colorado. The CWCB posted FAQ's and a link to the reporting form on the CWCB website on December 31, 2016. The CWCB received 18 manufacturer submittals for their 2016 sales in Colorado. Of all fixtures identified in the bill that were sold by manufacturers in Colorado in 2016, WaterSense Lavatory Faucets comprised 60% of their sales, WaterSense Shower Heads comprised 38%, WaterSense Flushing Urinals comprised 43%, and WaterSense Tank-Type Toilets comprised 71%. DNR and CWCB continue to discuss options with stakeholders to extend WaterSense fixture specifications.



## OBJECTIVE C

# LAND USE



Colorado's Water Plan sets a measurable objective that by 2025, 75 percent of Coloradans will live in communities that have incorporated water-saving actions into land-use planning.



### GOAL

*Integrate Land Use and Water Planning:* Initiate the use of local land use tools, where appropriate, to reduce water demands for municipalities, and the need to urbanize agricultural lands.



### CRITICAL ACTION 1

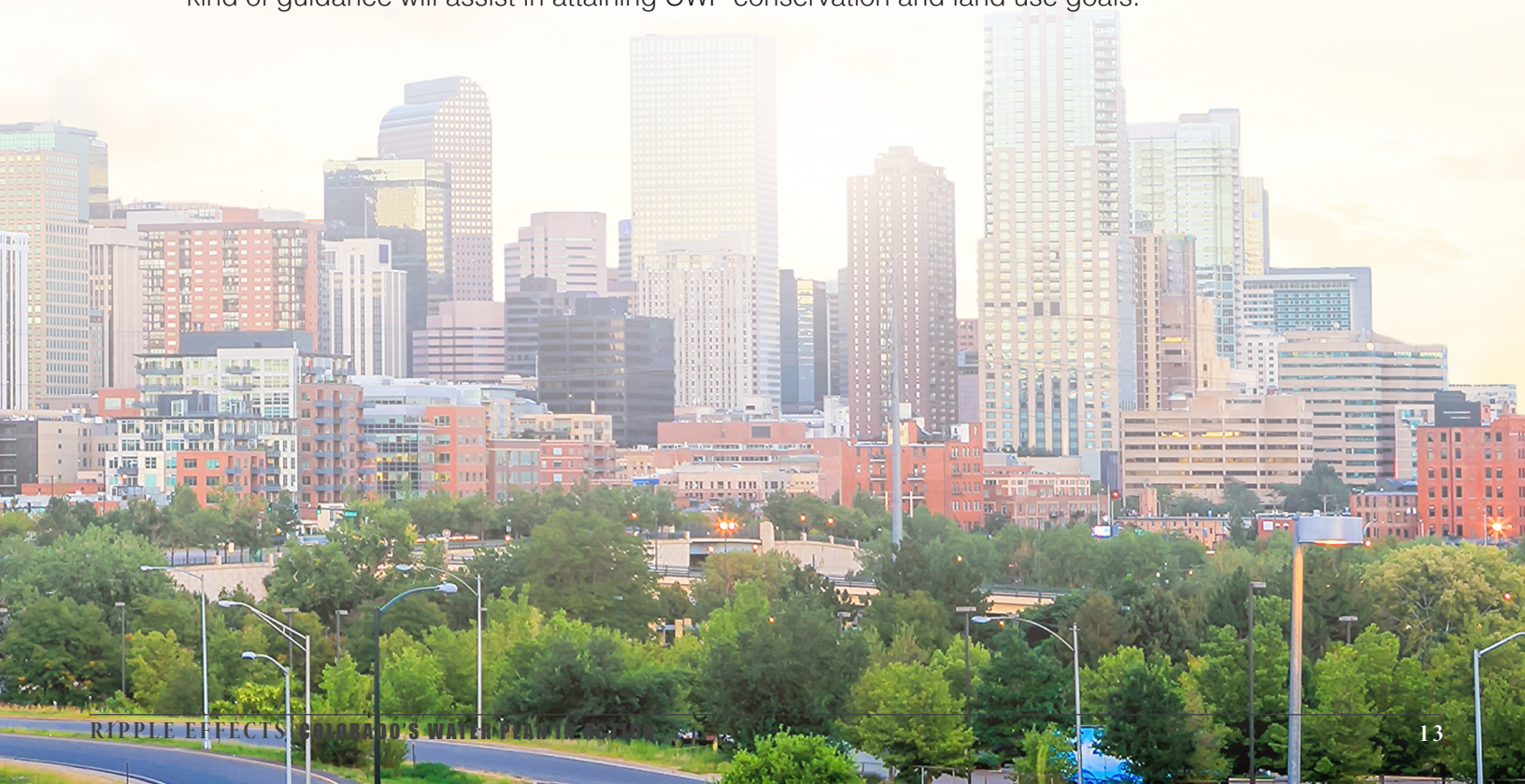
Through voluntary trainings for local governments, encourage the incorporation of best management practices in land use for water demand management, water efficiency, and water conservation.

- *Bridging Silos Integrating Water into Land Use Planning Webinar Series:* Throughout 2016 and 2017, the CWCB, Pace University Land Use Law Center, and the Department of Local Affairs (DOLA)'s Community Development Office hosted five webinars and a train-the-trainer session focused on integrating water into land use planning. These trainings had over 300 participants from communities statewide. The webinars covered an introduction to water and land use planning, comprehensive planning, zoning codes, water efficiency and landscape requirements, and Planned Unit Developments. The train-the-trainer session educated local government planners and water providers who wanted to provide educational workshops in their community to explore issues of water and land use planning and how to develop effective plans and implementation strategies for water conservation. All the materials are posted on CWP website. The CWCB and DOLA are convening a small working group to strategize next steps for the training.
- *Growing Smart Resilient Communities and Watersheds:* This 2 ½ day workshop was put on by the Sonoran Institute and the Lincoln Institute of Land Policy. The CWCB acted as a technical advisor. The workshop brought together six diverse communities (with six to eight team members on each team) to discuss and plan their water and land use integration future. This training was a direct spin-off of the Breaking Down Silos webinars and resource materials. Each community walked away with an action plan for their land use and water integration work to be funded in part by the Sonoran Institute. A follow-up workshop is already planned for September 2018 with six to seven new communities.





- *Colorado Land and Water Advisory Group:* With many projects and trainings occurring, there's a need to organize and coordinate efforts in the land use-water planning integration arena. It will be beneficial for all entities to work from a synchronized strategy and draw from similar messaging as to the purpose, goals, and potential outcomes. Consistency of evaluation systems will be especially important for tracking against the statewide goal; many Colorado communities have now undertaken training in this area, but there is not currently a system to track who has been trained and whether they implemented integrated planning approaches. With facilitation from the Keystone Policy Center, the CWCB and DOLA staff will convene a one-day advisory workshop to bring agencies and organizations together to discuss next steps for Colorado land and water planning integration in December 2017.
- *Colorado Water and Growth Dialogue:* The Colorado Water and Growth Dialogue began as a study of what water consumption would look like in the future if new growth manifested as more compact single-family homes; a shift from single-family homes to more multi-family housing; and as more dense multi-family housing types. Additionally, the project group examined the effects of changes in landscaping laid over the top of these different housing types. A land use-water planning tool was created by Denver Water to help quantify the different variables that affect water consumption. The tool will allow local planners to assess how changes in future development could affect their local planning and water usage. The group also went through an exploratory scenario planning process to investigate what drivers could affect the land use-water nexus in the future. Finally, a report is being drafted on the findings, opportunities, and barriers along with the land use-water planning tool. It will be provided to a larger group of stakeholders. The hope is that the report will spur more work on this topic and help guide future management decisions for local governments.
- *Water Research Foundation Water Supply and Land Use Project:* The CWCB is a member on the Water Research Foundation Water Supply and Land Use Project Advisory Committee. The project explores methods of securing new water supply through land use decisions. This is a nationwide research project with implications for closing the supply-demand gap in Colorado and helping to achieve the CWP conservation goal. The project's objective is to provide a framework and case studies for how water utilities can work with other water resource agencies and the land use and development community to diversify water supplies through joint planning. Ultimately, the project created a guide and summary report to assist water providers and land use planners with contemplate alternative water supplies that can be garnered through land use decisions. This kind of guidance will assist in attaining CWP conservation and land use goals.





## OBJECTIVE D

# AGRICULTURE



Colorado's Water Plan sets an objective that agricultural economic productivity will keep pace with growing state, national, and global needs, even if some acres go out of production. To achieve this objective, the state will work closely with the agricultural community, in the same collaborative manner that has produced agricultural transfer pilot projects, to share at least 50,000 acre-feet of agricultural water using voluntary alternative transfer methods by 2030.



## GOAL

*Maintain Agricultural Viability and Support Agricultural Conservation and Efficiency:* Maintain Colorado's agricultural productivity, support of rural economies, and food security through meaningful incentives and grassroots efforts. Support Colorado's agricultural industry to make it more efficient, resilient, and able to reduce water consumption without impacting agricultural productivity



## CRITICAL ACTION 1

Establish an education and assistance program for farmers and ranchers to help realize more market-competitive transactions that promote implementation of Alternative Transfer Methods (ATMs), and enable Coloradans to enter the agriculture industry.

- The agricultural viability subcommittee of the IBCC focused on exploring ways to assist farmers and ranchers in realizing more market-competitive transactions that promote ATMs, and enable interested Coloradans to enter the agricultural industry. The topic was discussed at the Ag Water Summit, jointly hosted by the IBCC and the Colorado Ag Water Alliance (CAWA) in November 2016. A number of recommendations are summarized in the Colorado Water Institute's report, titled: "Where Now with Alternative Transfer Methods (ATMs) in Colorado." The CWCB continues to work with CAWA and other organizations to promote ATMs.



## CRITICAL ACTION 2

Encourage ditch-wide and regional planning to explore system-wide conservation and efficiency opportunities and tradeoffs, the potential for water sharing, and long-term infrastructure maintenance needs.

- *Long-term, Regional Infrastructural Assessment:* Water Plan Grants, ATM Grants, and WSRF funding are being approved and expended in pursuit of regional studies, often leveraging multiple funding sources to complete these projects and methods. Examples include the Cucharas Basin Collaborative Storage Study in the Arkansas Basin and the Upper Uncompahgre Basin Water Supply Protection and Enhancement Project in the Gunnison roundtable. These efforts seek to maximize use of existing infrastructure, identify necessary improvements, and plan for the future of these facilities.
- *ATM Workshops with Colorado University Getches-Wilkinson Center and Agricultural Viability Summit:* The CWCB participated in multiple workshop meetings in 2016 and 2017 to address the ATM goal in Colorado's Water Plan. Discussions focused on creative ways to support and facilitate ATM projects. On November 29, 2016, the IBCC, CWCB, and CAWA, held an Ag Water Summit with 175 participants from across the state. The summit focused on identifying concrete ways to achieve the CWP measurable objective to share at least 50,000 acre-feet of agricultural water using voluntary ATMs by 2030. The day included discussions on successful current ATM projects from the perspective of agriculture, municipal and industrial, and environmental and recreational water users; discussions on common denominators and obstacles to adopting ATMs; legal and legislative issues related to ATMs; and best next steps to move ATMs forward. On April 20th, 2017, the IBCC convened in Keystone to debrief from the Ag Water Summit and discuss ways in which to foster the implementation of successful alternative ATMs.



- Recommendations resulting from the meetings are summarized in a report prepared by the Colorado Water Institute, “*Where Now with Alternative Transfer Methods (ATMs) in Colorado.*” The report was released in April 2017, co-authored by Anne Castle, MaryLou Smith, John Stulp, Brad Udall, and Reagan Waskom, and outlines a number of these recommendations. It is intended to provide a foundation for further progress toward meeting CWP’s ATM goal. Some “next step” ideas include potential partnerships to invest in storage and delivery infrastructure, development of regional infrastructure and incentives, state leadership on specific areas, and field trials. In addition, the CWCB continues to work with CAWA, Ditch and Reservoir Company Alliance (DARCA), and Colorado Cattlemen’s Association (CCA) on ATM education and development.



### CRITICAL ACTION 3

Provide grants, loans, and technical support to update and improve Colorado’s aging agricultural infrastructure, especially where improvements provide multiple benefits.

- *Water Supply Reserve Fund Grants:* Basin roundtables examined the use of WSRF program funding for infrastructural upgrading. Some basins modified their own evaluation criteria to ensure funds are being used responsibly and to maximum efficiency.
- *Colorado’s Water Plan Grants:* 2017 was the first year of water plan grant funding. Of the \$10 million, \$1 million was set aside for projects that improve aging agricultural infrastructure while providing multiple benefits such as assistance for programmatic ATM development, water banking projects, or agricultural efficiency programs. Eight CWP grants are currently under the CWCB review process with fund requests totaling over \$1.6 million and leveraging over \$26.3 million in matching funds.

**“In Colorado, nearly one-half of the land mass, 33,000,000 acres, is owned and managed by agriculture producers. These working landscapes truly are the front lines of conservation. Farms and ranches provide vast acreages of wildlife habitat, open space and viewsheds.”**

-Terry Frankhauser  
Executive Vice President  
Colorado Cattlemen’s Association



- *Bureau of Reclamation Funding for Salinity Control Projects:* The Bureau of Reclamation held three listening sessions to help applicants understand the requirements of a Funding Opportunity Announcement (FOA) for projects that reduce salinity contributions to the Colorado River system. These federal grants reduce salt-loading into the Colorado River system by improving water delivery efficiency throughout canal and ditch systems and improving aging infrastructure. This program leverages a significant amount of federal funding for the benefit of agricultural water users in western Colorado. CWCB staff are working with conservation districts in salt-loading areas on the west slope, providing technical assistance grants to assist prospective grantee; the FOA application process opened in August 2017.
- *Technical Assistance for Federal Cost-Share (TAFC):* 2017 was the first year of the TAFC program, which provides technical assistance grants to entities applying for federal cost-share programs, and for successful applicants to use in the design and project management of specific project elements when federal funding for those activities is limited. Through this program, the CWCB and partner institutions have improved the success rate of Colorado water users applying for these federal funds and helped accelerate the actual implementation of projects. In 2017, TAFC grants were distributed to three partner conservation districts on the western slope to assist in preparation of applications for the Bureau of Reclamation's FOA for the Salinity Control Program.



#### CRITICAL ACTION 4

Develop model voluntary flow agreement language, facilitation, and technical support to encourage the use of these agreements when paired with irrigation efficiency practices.

- *Holistic River Systems:* A few efforts to look at how flows can be maximized for multiple benefits are underway. These include recent WSRF, Colorado Watershed Restoration Program (CWRP), and water plan grant funds for stream management plans and watershed health efforts. Some examples of these include the Arkansas River Watershed Collaborative, the Integrated water planning project in the Colorado Basin, and developing efforts on stream management planning in the Colorado, Gunnison, Yampa/White/Green, South Platte, and Rio Grande basins.



#### CRITICAL ACTION 5

Explore the development of administrative means to track and administer agricultural conserved water for the purposes of marketing these waters.

- *Alternative Agricultural Transfers:* The CWCB continues to work with the Division of Water Resources (DWR) and other partners on developing administrative means for tracking and administering conserved agricultural water. For example HB16-1228 created a new ATM tool in the form of "agricultural water protection water rights" managed through "agricultural water protection programs" (AWPP) and administered via DWR's substitute water supply plan (SWSP) program. In July 2017, the CWCB finalized criteria and guidelines for AWPPs and is coordinating with DWR as they promulgate rules governing review of the SWSPs.
- *Colorado's Decision Support Systems (DSS):* The South Platte DSS is complete with the finalization of the surface water planning model, which includes crop consumptive use. The development of Phase 1 of the Arkansas River DSS has begun which includes the crop consumptive use analysis and surface water model development.



#### GOAL

*Facilitate Alternative Transfer Methods:* Respect property rights and contributions of the agricultural industry by establishing alternative options that compete with, if not out-perform, traditional "buy-and-dry" transactions in the water market.



- **Ag Water NetWORK:** CWP estimates our state could lose up to one-fourth of its remaining irrigated agricultural land by 2050 due to ‘buying and drying’ of ag land for development. The plan recommends measures such as greater water conservation, storage, and agriculture water leasing to minimize further ‘buy and dry.’ In 2016, Colorado Cattlemen’s Ag Water NetWORK conducted the first statewide survey of ag water right holders to better understand their opinions and concerns related to ag water leasing. The Ag Water NetWORK is developing a web-based screening tool to help ag water right holders assess their water leasing potential; the tool will allow irrigators to input basic information about their water right and get a rating of its suitability for leasing water for other uses, such as municipal, industrial, recreational and aquatic life support. The tool represents a first step in helping to expand opportunities for ag water right holders to participate in compensated, temporary, voluntary ag water leasing.



## CRITICAL ACTION 6

Explore expanded grant funding that supports implementation of ATM projects, related infrastructure, or entities that would help facilitate alternative transfer methods.

- The 2017 CWCB Projects Bill included \$1M of funds to refresh the ATM Grant Program. The CWCB is currently reviewing new funding applications that include developing and implementing means for tracking and administering ATM water. The CWCB will continue working with partners to track, inventory, and report on progress to implement ATMs that deliver water.



## PROJECT HIGHLIGHT

### Point of Rocks Water Company

In November of 2016, the North Sterling Irrigation District began discussions with BNN Energy to determine the potential of providing 6,800 acre-feet of water per year for oil production in Northern Weld County. After several meetings, agreement and delivery negotiations, and jointly working through permitting requirements, the two parties reached an agreement and began construction. The North Sterling Board of Directors and District management educated and discussed the deal with the District’s farmers. In order to facilitate the deal and to make it completely voluntary, the Point of Rocks Water Company II LLC was formed, in which farmers representing 98.8% of the land in the District signed up to participate in the 10-year deal. In three short months, BNN Energy built a diversion structure at the reservoir and buried 37 miles of 18-inch pipeline with 4 pumping stations. Pumping began on May 31, 2017 and, after working through a few issues in the system, the first water was delivered to BNN Energy ponds on June 8, 2017.

# PROGRAM HIGHLIGHT



## OBJECTIVE E

# STORAGE



Colorado's Water Plan sets a measurable objective of attaining 400,000 acre-feet of water storage in order to manage and share conserved water and the yield of IPPs by 2050. This objective equates to an 80 percent success rate for these planned projects.



### GOAL

*Promote Additional Storage and Infrastructure:* Assess and promote opportunities for multipurpose and multi-partner storage projects that address strategic needs.



### CRITICAL ACTION 1

Provide financial support to technical and practical storage innovations.

- *South Platte Storage Study:* The CWCB is financially supporting a variety of storage efforts and innovations, including studying storage options in the South Platte (required under HB 16-1256), exploring groundwater storage technology, and conducting a spillway analysis to identify existing storage that could be expanded. The CWCB Board approved the WSRF grant request for \$211,168 from the Statewide Account for the HB16-1256 South Platte Storage Study at the September 2016 Board meeting. The CWCB and DWR, in cooperation with the South Platte Basin and Metro Roundtables, are utilizing this WSRF funding to identify water storage possibilities along the Lower South Platte River Basin, from Greeley to Julesburg. The study is on schedule for completion in December 2017 and will have recommendations for storage options that should be investigated in more detail. This is envisioned as the first of a multi-phase effort to increase South Platte storage; the CWCB has funding to move forward on a second phase based on the report recommendations. Out of 147 potential storage options identified in the initial literature review, 29 sites were selected for more in-depth analysis in this first phase. These water storage possibilities are located throughout the lower basin and include sixteen new reservoir sites, four existing reservoir rehabilitation sites, two existing reservoir enlargement sites, and seven aquifer storage sites.



### CRITICAL ACTION 2

Prioritize grants and loans to support the implementation of BIP-identified multipurpose projects and methods, taking into consideration locally identified geographic and seasonal gaps.

- *Colorado's Water Plan Grants:* 2017 was the first year of water plan grant funding. Of the \$10 million, \$3 million was set aside for projects that facilitate the development of additional storage, artificial recharge into aquifers, and dredging existing reservoirs to restore the reservoirs' full decreed storage capacity. Three CWP grants are currently under the CWCB review process with fund requests totaling about \$1.6 million and leveraging nearly \$8.9 million in matching funds.
- *CWCB Water Project Loan Program:* Since November 2015, 27 projects around the state have received over \$57.9 million in low-interest loans (see Table 1). Through these loans, 540,958 acre-feet of agricultural water supplies have been protected through ditch rehabilitation, improving the efficiency of water delivery, and updating aging infrastructure. Loans for two hydroelectric plants have been approved: one construction project at Pueblo Dam and the rehabilitation of the Grand Valley power plant.





**TABLE 1 - Board Approved Loans from November 2015 through October 2017**

Borrower	Project
Orchard Ranch Ditch Company	Orchard Ranch Ditch Piping Project
City of Grand Junction	Grand Junction Hallenbeck Reservoir No. 1 Dam Rehabilitation
Duke Ditch Company	Duke Ditch Piping Project
Dixon Canon Ditch and Reservoir Company	Dixon Reservoir Dam Improvement
Julesburg Irrigation District	Julesburg ID Reconstruction of the Harmony No.1 Measurement Structure
Union Well Augmentation Group	Union Reservoir Water Rights Purchase
North Poudre Irrigation Company	North Poudre Livermore Irrigation Tunnel
Larimer and Weld Irrigation Company	Larimer & Weld Headgate Structure Replacement
Grand Valley Water Users Association	Government Highline Canal Lining Project
Town of Firestone	Firestone Storage Development and Water Rights Purchase
Orchard Mesa Irrigation District	Orchard Mesa ID Grand Valley Power Plant Rehabilitation
Grand Valley Water Users Association	Grand Valley Power Plant Rehabilitation
St. Vrain & Left Hand Water Conservancy District	St. Vrain & Left Hand Lake 4 Outlet Pipeline Repair
Chilcott Ditch Company	Chilcott Ditch Jimmy Camp Creek Siphon Reconstruction
Town of Wiggins	Wiggins Recharge Facility at Glassey Farms
North Poudre Irrigation Company	North Poudre IC Mountain Supply Reservoir No. 10 Repairs
Florida Consolidated Ditch Company	Florida Hess Lateral Improvement
San Juan Water Conservancy District	San Juan WCD Dry Gulch Reservoir Land Acquisition
Church Ditch Water Authority	Church Ditch System Improvements
Left Hand Water District	Left Hand WD Southern Water Supply Project II
Consolidated Ditch and Headgate Company	Consolidated Diversion and Headgate Replacement Project
Corsentino Dairy Farms	Corsentino Holita Dam Rehabilitation
City of Walsenburg	Walsenburg City Lake Dam Rehabilitation & Enlargement
Fruitland Irrigation Company	Fruitland Tunnel and Canal Renovation
Fort Lyon Canal Company	Fort Lyon Adobe Creek Dam Rehabilitation
Bonus Ditch Company	Bonus Ditch St. Vrain Diversion Replacement
Centennial Irrigating Ditch Company	Centennial Diversion Replacement

*Critical actions 3 and 5 are addressed in "Framework for a More Efficient Permitting Process" (page 42).*



#### **CRITICAL ACTION 4**

Relevant state agencies will actively participate as cooperating agencies in federal NEPA permitting processes at the outset of the regulatory process to engage in scoping, developing alternatives, determining methodologies and data gaps, and developing mitigation and enhancement plans.

- *Wild and Scenic Rivers Alternatives Fund:* Since November 2015, the CWCB has distributed around \$300,000 to support the development of Wild and Scenic river alternative stakeholder groups. These groups have developed consensus recommendations to federal agencies during their resource management plan revisions, specifically related to the suitability of reaches for inclusion in the Wild and Scenic rivers system. These groups include: the Colorado River Protection Workgroup; Upper Colorado River Wild and Scenic Stakeholder Group; and the Lower Dolores Plan Working Group. Additionally, the CWCB staff worked directly with federal agencies throughout their NEPA processes as a cooperating agency on the Bureau of Land Management (BLM) Royal Gorge Field Office Resource Management Plan (RMP) Update, Rio Grande Forest Service Land Management Plan Update, BLM Uncompahgre Field Office RMP Update, and the BLM Grand Junction Field Office RMP update.

- *Platte River Recovery Implementation Program (PRRIP)*: The CWCB provides direction and financial, legal, and technical support to the PRRIP. The CWCB provided \$2.4 million over the last two years to support PRRIP activities. The PRRIP provides streamlined Endangered Species Act (ESA) Section 7 consultations for all member projects in the South Platte Basin. The implementation of PRRIP has resulted in average of 14 successful streamlined consultations per year through the South Platte Water Related Activities Program. Without PRRIP, all of these consultations are at risk of being reopened under Section 7 of the ESA. In addition, many Platte River water users (particularly municipalities and ditch companies) will require Section 7 consultations in the future when renewing special use authorizations (often on 20- to 30-year cycles), during the initiation of new water projects, or when needing to conduct maintenance and improvements on existing water projects which require federal authorizations.
- *Bear Creek Reallocation Project*: The CWCB has been authorized to provide funding (\$2,500,000) for a joint feasibility study with the Corps of Engineers (COE) to evaluate the reallocation of storage space at Bear Creek Reservoir. Work will proceed once internal COE approval is obtained. In the meantime, the CWCB has been working to identify project partners interested in the reallocated storage space. The future use of this existing storage space will provide a statewide benefit and may be used to meet future water needs within the South Platte River basin.
- *Fish and Wildlife Mitigation and Enhancement*: Northern Water submitted a fish and wildlife mitigation and enhancement plan for the Northern Integrated Supply Project (NISP) to the Colorado Parks and Wildlife (CPW) Commission and the CWCB for adoption as the official state position on the mitigation actions required of the project applicant. Fish and wildlife mitigation plans are required under Colorado Revised Statutes section 37-60-122.2. The plans are developed by the project applicant, working in cooperation with CPW and DNR staff. The CPW Commission and the CWCB Board voted to approve the plan in September 2017.

## PROJECT HIGHLIGHT:

### Storage Projects In Action

Large scale storage projects take many years to plan, permit, finance, and construct. While planning for the following storage projects began well before the release of CWP, each were identified as key projects in the BIPs.

The Northern Integrated Supply Project (NISP) is a proposed water storage and distribution project that will supply 15 Northern Front Range water partners with 40,000 acre-feet of new, reliable water supplies. The project includes construction of two reservoirs, Glade and Galeton, with capacities of 170,000 and 45,000 acre-feet, respectively.

The Chatfield Storage Reallocation Project will add an additional 20,600 acre-feet of water storage. The reservoir currently holds about 27,000 acre-feet of water.

The Windy Gap Project consists of a diversion dam, a 445-acre-foot reservoir, a pumping plant, and a six-mile pipeline to Lake Granby. The project would benefit ten cities, two water districts, and a power provider, and was endorsed by the State of Colorado in 2016 as a model, collaborative project.



# PROGRAM HIGHLIGHT





While snowpack is Colorado's greatest storage "facility," the State has taken measures to meet the year-round needs of agriculture, municipalities, recreation, and the environment.



# COLORADO'S WATER PLAN IS CREATING RIPPLE EFFECTS



LEAD

"This is how Colorado works: together, in partnership, to tackle head-on our toughest challenges."

-John Hickenlooper



Acre-feet Added

77,000  
GROSS  
RESERVOIR

40,000  
NISP

90,000  
WINDY GAP

DELIVER

24 tunnels & ditches move 500,000 AF of water from West to East



STORE

27 ATM Grants totaling \$4.7 million (most between 2008-2013)

CULTIVATE

"Where we grow is as important as how we grow."

-Jay Gallagher

9 Land use workshops

300+ Participants

"The plan starts here. The plan starts on the ground. The plan starts with the people."

-Becky Mitchell

90%

CO POPULATION ON THE EASTERN SLOPE

PLAN

## PROGRESS DASHBOARD

PROGRESS ON CWP ACTIONS\*



SUPPLY

10/11



AGRICULTURE

14/22



FUNDING

5/5

\* Numbers represent progress on the 159 CWP actions as they relate to the nine measurable objectives found in CWP Appendix H. They demonstrate those actions which are completed, in-progress, and ongoing.





## CO WATER ON THE WESTERN SLOPE

**\$1 M** in new engagement and innovation funding  
**18** Innovation Challenges



**NEW** funds available in 2017 through Projects Bill include:  
**\$130 M** for Loans; **\$25 M** for Water Plan Implementation

## CO Water Use:

**4%** Large Industry

**7%** Municipal

**86%** Ag/Food Production

## PROVIDE



**Over \$13.8 M** in Water Supply Reserve Funds (WSRF) have been approved for grants since November 2015 with **476 Total Projects** since the program began.

25 Construction

7 Design



35 Complete

Colorado Emergency Watershed Protection (EWP)

**52%** Projects Complete of **67 Total Projects**



"Implementing alternatives to drying up irrigated agriculture maintains the bounty of locally grown food and feed products that come throughout Colorado, but also preserves numerous environmental and economic benefits that would otherwise be lost."

-Jack Goble



## PROTECT

**80%** percent of the locally prioritized lists of rivers with stream management plans, and 80 percent of critical watersheds with watershed protection plans, all by 2030.



"We need to transform our water customers to become water stewards. Customers generally only passively consume, but stewards actively manage."

-Kevin Reidy

## CONSERVE

## INNOVATE



CONSERVATION

**19/26**



LAND USE

**6/10**



STORAGE

**17/33**



EDUCATION

**3/5**



WATERSHED

**3/3**



ADDITIONAL

**26/44**

# Water Resource Management and Protection

**C**WP Chapter 7 examines factors beyond supply and demand that affect water availability, such as natural hazards and disaster management, watershed health, and water quality. In particular, this section, emphasizes the ways in which stakeholders work together through collaboration and information-sharing. The measurable objective F: Watershed Health, Environment, and Recreation is derived from the goals and actions identified in this chapter, as well as the natural disaster and climate change critical actions from section I: Additional Critical Goals and Actions.



## OBJECTIVE F

### WATERSHED HEALTH, ENVIRONMENT, AND RECREATION



Colorado's Water Plan sets a measurable objective to cover 80 percent of the locally prioritized lists of rivers with stream management plans, and 80 percent of critical watersheds with watershed protection plans, all by 2030.



## GOAL

*Recover Imperiled Species:* Promote restoration, recovery, and resiliency of endangered, threatened, and imperiled aquatic and riparian dependent species and plant communities.



## CRITICAL ACTION 1

Continue to support and participate in collaborative approaches to prevent listings under the Endangered Species Act. Promote the sustainability of endangered, threatened, and imperiled aquatic- and riparian-dependent species and communities (e.g., recovery programs, cooperative agreements, and other efforts) by developing a plan that compiles and develops near-term projects and methods. At the same time, the CWCB will support the strategic implementation of currently identified projects with technical and financial assistance.

- *Financial Support for Fish-friendly Diversions:* Over the last two years, the CWCB has provided financial support (\$92,000) through the Species Conservation Trust Fund to reduce the sediment load and implement stream and riparian habitat improvement projects in Bear Creek (tributary to Fountain Creek) to benefit the federally threatened greenback cutthroat trout as part of the Bear Creek Watershed Restoration Project.







## GOAL

*Enhance Environmental and Recreational Economic Values:* Protect and enhance river-based environments and recreational opportunities that support local and statewide economies and are important for the enjoyment of current and future generations of Coloradans.



## CRITICAL ACTION 2

Develop a plan that compiles and develops near-term projects and methods to support economically important water-based recreation.

- *SWSI Update:* The current SWSI update includes an analysis of environmental and recreational needs, as informed by the basin roundtables. The SWSI update will develop an enhanced Environmental and Recreation Database and development of an environment and recreation flow tool designed to assess flow conditions in each basin. The tool will serve as a resource to help basin roundtables refine, categorize, and prioritize their current portfolio of environmental and recreation projects and methods.
- *CWCB's Existing Bear Creek Water Rights:* The CWCB's existing water rights in Bear Creek Lake provide fishing and other water-related recreation opportunities by maintaining a permanent pool at this Front Range park. Over the last two years, the CWCB staff has been working toward settlement of a water court case to make these water rights absolute.
- *Recreational In-channel Diversions (RICDs):* RICDs are unique water rights that allow water to be called for recreational boating purposes when in priority. All applications to water court for a RICD must be considered by the CWCB. In its analysis, the CWCB strives to balance the state's water needs with allowing local communities to increase their recreation-based tourism by the appropriation of a RICD. CWCB staff have been working toward settlement with the applicant and objectors in the Glenwood Spring RICD filing. Staff has also participated in Golden's, Eagle River Water & Sanitation District's, and Longmont's RICD diligences cases.
- *Whitewater Park Funding Assistance:* Over the past two years, roughly \$52,000 of Severance Tax funds have been used to assist local communities, such as Durango and Lyons, through supporting the design, construction, and repair of new or existing whitewater parks.



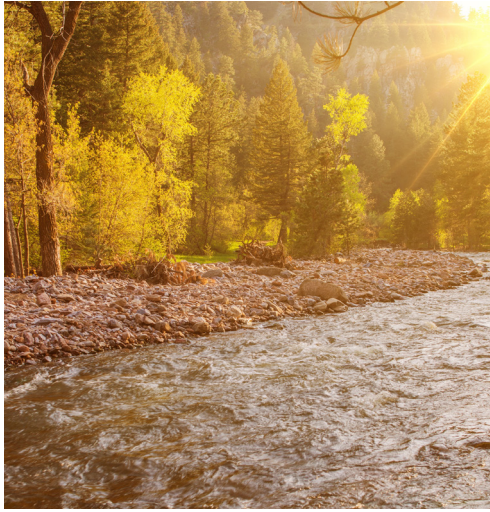
## GOAL

*Protect Healthy Environments:* Understand, protect, maintain, and improve conditions of streams, lakes, wetlands, and riparian areas to promote self-sustaining fisheries and functional riparian and wetland habitat to promote long-term resiliency.



## CRITICAL ACTIONS 3, 4, AND 5

Develop stream management plans for priority streams as having environmental or recreational value. As part of this work, the CWCB will provide guidelines and templates for developing stream management plans, and will conduct ongoing analyses through SWSI. Develop common metrics for assessing the health and resiliency of watersheds, rivers, and streams.



## PROGRAM HIGHLIGHT

### Colorado Watershed Restoration Program

Many CWP actions under Objective F: Watershed Health, Environment, and Recreation, describe efforts which help us better understand and promote watershed health, including the support of watershed coalitions and watershed master plans that address needs from a diverse set of local stakeholders. Much of this work is supported through the CWCB's Colorado Watershed Restoration Program (CWRP). CWRP was established in September 2008 with the program objectives to protect life and property, stabilize channel banks, reconnect floodplains with streams, manage sediment, reduce hazards and improve flood conveyance, enhance recreational opportunities, and improve habitat.

The program includes grants for watershed or stream restoration, flood mitigation, stream management plans, and monitoring. CWRP projects are expected to demonstrate 1) commitment to collaborative approaches, involving locally or regionally based diverse interests; 2) commitment to restoring or protecting ecological processes that connect land and water while protecting life and property from flood hazards; and 3) a multi-objective approach with broad support from relevant local, state, and federal agencies. The CWRP guidance has served as a template for several other grant programs developed since the September 2013 floods. This includes the Special Release of the CWRP, the CWCB Senate Bill 14-179 River Restoration Program, the Department of Local Affairs and CWCB Community Development Block Grant – Disaster Recovery, Watershed Resilience Program, and the NRCS – CWCB Emergency Watershed Protection Program.

Since 2015, the CWCB has approved \$906,883 in grant funds for 19 projects (see Table 2), leveraging \$2,081,461 in matching funds. The CWCB is dedicated to supporting these processes. In the 2017 Projects Bill, an additional \$5 million was dedicated to the CWRP Grant Fund.

A particular critical action that has received significant attention around the state is the “development of stream management plans for locally prioritized rivers.” While stream management plans (SMPs) are only one of four eligible grant types in the CWRP, the CWCB has made significant progress initiating this action; the CWCB approved six SMP grants in 2016 and 2017 with total funding support of \$491,788. CWCB staff anticipates the number of applications in this realm to increase after a methodology for prioritizing streams for SMPs is developed.

### TWO PLANS ARE IN THE INITIAL WATERSHED ASSESSMENT PHASE

- San Miguel River Stream Management Plan Pilot Project
- Upper Gunnison Basin Watershed Assessment and Management Planning: Initial Steps for Ohio Creek, East River, and the Lake Fork Sub-basins

### FOUR PLANS PROTECT 88 STREAM MILES COLLECTIVELY

- North Fork Environmental and Recreational Needs Assessment and Project Identification
- City of Steamboat Springs Stream Management Plan
- Crystal River Stream Management Plan Implementation
- Biological and Ecological Benefits from Chatfield Reallocation Environmental Pool Increased Releases

# PROGRAM HIGHLIGHT



**Table 2 - CWCB Board Approved Colorado Watershed Restoration Grants from November 2015 through October 2017**

<b>Applicant</b>	<b>Project</b>	<b>Location</b>
Wildlands Restoration Volunteers	Riparian Re-vegetation	North St. Vrain Creek
Mountain Studies Institute	Fen Restoration Design	Animas Watershed
Trout Unlimited	Diversion Reconstruction/Riparian Restoration	Tomichi Creek
Colorado Water Trust	Stream Management Plan Workshop	Statewide
Trout Unlimited	Stream Management Plan	San Miguel River
Steamboat Springs	Stream Management Plan	Yampa River
Colorado Basin Roundtable	Integrated Water Management Planning Framework	Colorado Basin
North Fork River Improvement Association	Stream Management Plan	N. Fork Gunnison River
Fountain Creek Watershed, Flood Control and Greenway District	WARSSS	Fountain Creek
Colorado Division of Reclamation, Mining and Safety	Mine Restoration	Lower Dolores
Rocky Mountain Field Institute	Riparian Re-vegetation	Waldo Canyon
Animas Watershed Partnership	Riparian Protection	Florida River
Grand Junction	Riparian Restoration	Colorado River
Summit County	Riparian Re-vegetation	Swan River
Rocky Mountain Field Institute	Riparian Re-vegetation	Waldo Canyon
Coalition for the Poudre River Watershed	Post-fire Watershed Restoration	Poudre River
Roaring Fork Conservancy	Stream Management Plan Implementation	Crystal River
Denver Trout Unlimited	Stream Management Plan	S. Platte Below Chatfield
Upper Gunnison River Water Conservancy District	Stream Management Plan - Assessments	Gunnison Basin





## GOAL

*Promote Protection and Restoration of Water Quality:* The protection and restoration of water quality should be a key objective when planning for Colorado's current and future consumptive, recreational, and environmental water needs.



## CRITICAL ACTION 5

Advance policy initiatives that allow for creative, solution-oriented actions while maximizing water quality protection, ensuring consideration of the net environmental benefit of projects, and evaluating the water quality impacts of water quantity management approaches

- CWCB staff have continued to participate in ongoing efforts of the Arkansas River Watershed Collaborative, which has been exploring opportunities for enhanced water quality through agricultural efficiency practices. These projects are supported by Colorado Department of Public Health and Environment (CDPHE) through a Nonpoint Source Program Clean Water Act Section 319 cooperative agreement. This \$1.3 million grant helps fund three projects to address water quality in the lower Arkansas basin through agricultural practices designed to lessen selenium loading to the river.
- CWP promotes waters that fully support their classified uses by 2050 through strategies designed to meet Colorado's current and future consumptive, recreational, and environmental water needs. These strategies incorporate the protection and restoration of water quality as a key objective. The Water Quality Control Division worked with the Colorado Water Quality Forum and the Water Quality Control Commission to develop recommendations. As the CWCB updates CWP in the future, these recommendations will serve as a starting point for implementation efforts focused on integrated water quality and quantity management, policy considerations, financial considerations, and stakeholder and public outreach.



## GOAL

*Protect and Restore Critical Watersheds:* Protect and restore watersheds critical to water infrastructure, environmental or recreational areas.



## CRITICAL ACTIONS 6 AND 7

Provide technical and financial support to local stakeholder groups to develop watershed master plans for watersheds that are critical to consumptive or nonconsumptive water supply and quality. Prioritize and implement projects identified in master planning efforts.

- *Colorado's Water Plan Grants:* 2017 was the first year of water plan grant funding. Of the \$10 million, \$1 million is designated for projects that include environmental and recreational benefits. The applications were quadruple the amount of available funding in 2017 with total requests coming in at \$4,153,437. These 18 projects leveraged over \$23.9 million dollars in matching funds and are currently under the CWCB review process. If funded, these projects would restore about 150,000 feet of stream, restore about 300 acres, assess 38 rivers for recreational opportunities, and more. The CWCB anticipates additional funding to be available in 2018 and 2019.
- *Colorado Watershed Restoration Program (CWRP):* The CWCB has proposed setting aside \$15 million dollars for the CWRP. The first \$5 million was authorized in the 2017 Projects Bill. Additional funding is anticipated in 2018 legislation. The funds will assist in achieving this measurable objective as stakeholders identify and prioritize critical watersheds, and then implement stream management plans, watershed protection plans, and projects and methods.
- On November 6, the CWCB's Watershed and Flood Protection Section and its consultant received an Honor Award at the American Council of Engineering Companies (ACEC) of Colorado 2018 Engineering Excellence Awards (EEA) program. The ACEC Colorado EEA Program annually recognizes engineering firms and their clients that demonstrate an exceptional degree of innovation, complexity, achievement, and value.





Colorado Trout Unlimited presented its 2017 River Stewardship Award to the CWCB in recognition of their leadership in promoting river and watershed health statewide.





## OBJECTIVE I

# ADDITIONAL CRITICAL GOALS AND ACTIONS



### GOAL

*Prepare for and Respond to Natural Disasters:* CWP promotes water resource resilience from natural disasters through strategic preparedness and response.



### CRITICAL ACTION 1

Implement the actions identified in the Colorado Resiliency Framework to build communities that are more resilient to natural disasters.

- The CWCB is working across state agencies to increase resilience to extreme events and variability as a result of climate change. This includes incorporating climate change mitigation and adaptation into long-term planning both within the realm of water and other sectors. CWCB staff is also serving as the representative for the State of Colorado on climate issues in national and international forums.
- *Resiliency Office:* The CWCB is partnering with the Resiliency Office, now a part of DOLA, to incorporate climate change more comprehensively into all their actions and the resiliency efforts of local governments. CWCB staff is also working to incorporate climate change into the state's all hazard mitigation plan. Staff from the resiliency office also serve on the executive committee for the Colorado Communities Symposium; the two agencies are exploring opportunities for further collaboration on catastrophic risk modeling.
- *Colorado Department of Transportation (CDOT):* The CWCB is working with the CDOT to look at how climate change can be integrated into long-term planning. Two recent projects include a full-day workshop and a joint presentation to the Transportation Environmental Resource Council.
- *Colorado Department of Public Health and Environment (CDPHE):* The CWCB and CDPHE are continuing to work with utilities, federal agencies, and others to proactively identify and address regulatory barriers to climate preparedness and adaptation. In accordance with Executive Order D2017-015, CWCB staff, other state agencies, and the Governor's Office are working to implement statewide climate goals. The CWCB serves on and leads a number of workgroups focused on mitigation, adaptation, and resilience.



*Colorado Emergency Watershed Protection (EWP) Program:* Colorado EWP Program aims to implement watershed recovery projects that reduce risk to life and property, enhance riparian ecosystems, and generate long-term stream system resilience through a collaborative, watershed-based approach that incorporates the needs of diverse stakeholders. CWCB is the state sponsor for Phase II of the Colorado EWP program. While Phase I addressed more immediate emergency work, Phase II is intended to implement a more long-term, holistic approach to stream and watershed recovery. Rather than protecting individual sites, funds will promote overall watershed recovery and resiliency by restoring stream function and reestablishing connections between stream reaches and their associated floodplains, to protect values at risk, homes, businesses and infrastructure. Watershed coalitions assisted in selecting project areas consistent with the highest priorities established in watershed master plans. This current Phase II EWP effort is funded with \$56.9 million federal dollars with a \$7.9 million State contribution (\$63.2 million total).



The record-smashing floods of 2013 ravaged Front Range waterways, rerouting and flattening stream channels, eroding streambanks, degrading fish habitat, and stripping trees and vegetation from riparian areas. Four years later, many of those waterways have been repaired, restored, and even improved due to efforts led by the CWCB and a myriad partners at the state, federal, and community level. With most attention properly focused on the recovery of communities, reconstruction of homes and property as well as road, bridge, and infrastructure repair, the CWCB and its partners have redesigned and rebuilt stream channels in a way that has improved stream flows, boosted fish habitat, and created more resilient waterways in the event of future floods.



## CRITICAL ACTION 2

Evaluate and incorporate appropriate adaptation for the potential effects of climate change on municipal, industrial, environmental, and agricultural projects and methods that address the water supply gaps.

- Climate change is a key element of the statewide resiliency efforts that encompass watershed health initiatives. The Colorado Climate Plan was first released in the fall of 2015. In accordance with Executive Order D2017-015, “Supporting Colorado’s Clean Energy Transition,” the Colorado Climate Plan is currently being updated. The update will include the goals and objectives of the executive order as well as revised agency strategies and recommendations. A draft of the plan was posted for public comment October 2 through November 3, 2017. Public comments will be addressed and incorporated as appropriate and the plan will be finalized in early 2018.
- In accordance with Executive Order D2017-015, CWCB staff, other state agencies, and the Compact for Colorado Communities will host the Colorado Communities Symposium in early 2018. The Symposium will serve as a forum for state and local government leaders to convene their peers from higher education institutions, non-profit organizations, and the private sector for a series of discussions and events related to Governor Hickenlooper’s July 2017 executive order on climate preparedness and clean energy development in Colorado. It will also feature a series of plenary sessions, breakout tracks with interactive scenario planning sessions, training events and roundtable discussions, tabletop exhibition, post-conference workshops and meetings, and an awards dinner. By showcasing and driving leadership action on climate and energy under a unified banner, Governor Hickenlooper and local government leaders are sending a strong signal that innovative and sustained climate leadership are a priority in Colorado. The Symposium’s program agenda will be steered by a committee consisting of current and former state agency and local government leaders.



## GOAL

*Prepare for Climate Change:* Respond to, monitor, and prepare for climate change.



## CRITICAL ACTION 3

Work on creating resilient watersheds to protect, restore, and enhance water quality in the face of climate change.

- The State of Colorado is actively encouraging local communities to develop drought preparedness plans by providing tools and resources for development and implementation. This is a collaborative effort between the CWCB and other state agencies to engage stakeholders on sections of the Climate Plan. The CWCB held a stakeholder session for water on January 27, 2016 and other agencies have held respective topic sessions on transportation, tourism, public health, and agriculture.
- On February 22, 2017 the CWCB hosted “Climate Change and Agriculture: A Public Engagement Session of the Colorado Climate Plan” as part of the 26th annual Governor’s Forum on Colorado Agriculture. The session was an opportunity for producers, consumers, experts and other agricultural stakeholders to provide input on how we can work together to move forward with implementation of the Colorado Climate Plan for the agricultural sector.



## PROGRAM HIGHLIGHT

### Colorado's Clean Energy Transition

On July 11, 2017, Governor John Hickenlooper signed an executive order committing the state to climate action. He also announced that Colorado will join the U.S. Climate Alliance, a bipartisan group of states in the United States that are committed to achieving the U.S. goal of reducing carbon dioxide emissions 26–28% from 2005 levels by 2025. The executive order sets forth the following goals for the State of Colorado to achieve:

- Reduce statewide greenhouse gas emissions by more than 26% from 2005 levels by 2025;
- Reduce carbon dioxide emissions from the electricity sector by 25% by 2025 and 35% by 2030 from 2012 levels; and
- Achieve electricity savings of 2% of total electricity sales per year by 2020.

In his statement, Governor John Hickenlooper said “Coloradans value clean air and clean water. Our strong economy is a reflection

of how our exhilarating outdoors attracts young entrepreneurs and the talent they need for their businesses, the vast majority of our residents, and indeed the country, expect us to help lead the way toward a clean and affordable energy future. In this process, we no doubt can address climate change while keeping a priority on household budgets.” In addition to the above goals, Colorado is also committing to:

- Work strategically with any interested utility or electric cooperative on a voluntary basis to maximize use of renewable energy without increasing costs to taxpayers;
- Create a statewide electric vehicle plan by January 1, 2018;
- Develop a greenhouse gas emissions tracking rule through the CDPHE;
- Identify opportunities to partner with local governments on locally-led climate resilience actions;
- Institutionalize the state’s greening government initiative;
- Formalize and expand upon cross-agency actions to provide economic development strategies and other supportive services to communities impacted by the changing energy landscape, and submit a written annual report detailing those efforts and accomplishments;
- Incorporate the emissions reductions goals into the Colorado Climate Plan and solicit stakeholder input regarding additional measures or strategies to advance these goals.

# PROGRAM HIGHLIGHT





“Coloradans value clean air and clean water. The vast majority of our residents, and indeed the country, expect us to help lead the way toward a clean and affordable energy future.”

*-John Hickenlooper  
Governor of Colorado*



# INTERBASIN PROJECTS AND AGREEMENTS

Colorado has many intrastate agreements among diverse and disparate stakeholders. These agreements benefit the individual stakeholders, but also equip the state to effectively protect its interests in interstate matters. CWP Chapter 8 explores these projects and agreements and sets broad goals to promote statewide cooperation for water supply planning. The actions outlined in this chapter do not fall under a specific measurable objective, but rather call for continued support and discussions at the basin roundtable and Interbasin Compact Committee (IBCC) levels. Updates on both entities follow.

- *The basin roundtables:* The basin roundtable process, year after year, proves to be a robust, highly-collaborative system driving local solutions to daunting resource management challenges. Over the past year in particular, the nine basin roundtables have demonstrated an unparalleled effort in activating projects and programs in their BIPs. Basins have taken initiative to bring forward multi-use, multi-benefit projects and have shared their successes and challenges through increased interbasin communication.

On June 20, 2017, the Arkansas, Metro, and South Platte Basin Roundtables held a joint meeting in Denver to discuss the evolving role of the IBCC, CWP implementation, ATMs, stream management planning, education and outreach efforts, and the WSRF needs assessment. The Arkansas Basin Roundtable and joint Metro and South Platte Basin Roundtables enlisted the help of BIP Coordinators. The coordinator position quickly proved to proactively bring parties together in support of feasible solutions to address diverse BIP needs. The four west slope roundtables are planning a similar joint meeting in spring 2018.

- *The IBCC:* Since its creation, the IBCC has continually served the state as a valuable platform for discussing challenging water issues and uniting statewide interests. We can look back to brief snapshots of the IBCC's history to recognize how it has achieved considerable statewide consensus on water planning that works for all Coloradans. In highlight, after years of discussion, the IBCC delivered the "No and Low Regrets Action Plan" in 2013, which was foundational to the BIPs. In addition, the IBCC provided the Conceptual Agreement in 2014. In 2015 and 2016, the IBCC helped finish CWP and usher in the implementation phase.

In November 2017, the IBCC explored the evolving nature of the committee in light of CWP. The IBCC is a powerful clearinghouse of ideas and has served many specific roles over the years; but most broadly, the committee has stood as a united think-tank to bring the interests of basins and stakeholders back to the statewide lens. November's IBCC meeting renewed the committee's strategic plan to best support the implementation of CWP and the CWCB-basin roundtable-IBCC system moving forward.

**"I have been greatly encouraged by the spirit and energy of the basin roundtable members as they get water project implementation under- way within their respective basins."**

-John Stulp  
Special Policy Advisor to the Governor for Water  
Director of Compact Negotiations, Interbasin Compact Committee



# ALIGNMENT OF STATE RESOURCES AND POLICIES

**C**WP Chapter 9 explores the mechanisms by which the State of Colorado can help implement the BIPs and address critical water strategies through Colorado water law and water rights, economics and funding, permitting process improvement, and statewide engagement and innovation. Two primary measurable objectives stem from the goals and actions identified in this chapter, including *G: Funding and H: Education, Outreach, and Innovation*.

## PROTECTING COLORADO'S COMPACTS AND UPHOLDING COLORADO WATER LAW

The following goals are not directly attributed to a measurable objective, but rather promote continued collaboration among the State of Colorado and federal, state, tribal, and local entities regarding interstate and intrastate water management issues. The actions seek to protect Colorado's compact entitlements while encouraging collaborative solutions to protect existing and future uses within the state.



### GOALS

In May 2017, the Arkansas River Compact Administration passed a resolution allowing Colorado Parks and Wildlife (CPW) to utilize a water right in the Highland Ditch on the Purgatoire River into John Martin Reservoir for the benefit of the fish and wildlife conservation pool. The fish and wildlife permanent pool is intended to benefit the fishery in the reservoir, with additional benefits for boating and other recreational opportunities. This resolution of the Administration is a one-year agreement, with potential for renewal. This agreement is the product of cooperation and hard work by CPW, the CWCB, the state of Kansas, the Lower Arkansas Water Management Association, the Attorney General's office, and especially the Division 2 staff of the DWR. If the agreement is implemented long-term, better protection of the fishery and recreational opportunities will be possible, with reduced costs and a more dependable source of water for the permanent pool.

- The CWCB and DWR are working with the Lower Arkansas Water Conservancy District on a study to assess the potential of establishing a new storage account at John Martin Reservoir for the benefit of Colorado water users. Any such new account would have to be approved by the Arkansas River Compact Administration, through close work with water users and the state of Kansas. Phase I of the study describes the new account, its potential storage participants and benefits, the waters and uses for the waters to be stored, basic operational aspects of the account, and identifies additional efforts needed.
- The CWCB continues to participate in the Water Bank Workgroup in an advisory capacity, which is comprised of stakeholders including water rights holders, conservation districts, and NGOs. The Water Bank Workgroup continues to explore the feasibility of water banking in Colorado through pilot projects, research, and working closely with interested stakeholders to understand associated opportunities and challenges.

## ECONOMICS AND FUNDING

In May 2016, the CWCB board charged the CWCB staff with developing a creative water funding plan to provide financial incentives to support multipurpose, regional projects. This three-year funding plan was presented to the Board in July 2016 and to the IBCC in August 2016. It was incorporated into the CWCB Projects Bill for the Colorado Legislature's 2017 session and passed – becoming effective in July 2017. The 2017 Projects Bill (HB17-1248) include the following new funding actions:

- \$10 million to aid in implementing CWP. The bill included \$1 million for the SWSI update, leaving \$9 million for specifically identified projects or activities that have potential to help achieve the measurable objectives identified in CWP.
- \$10 million transfer from the CWCB Loan Program Fund to the Water Supply Reserve Fund with a focus on grant funding for projects that include multi-beneficial uses.
- \$5 million in grant funding to support the Watershed Restoration Grant Program. The CWCB proposed setting aside \$15 million dollars for the Watershed Restoration Program. The first \$5 million was authorized in the 2017 Projects Bill. Additional funding is expected in 2018 legislation.
- \$1.1 million for implementation of the Colorado Water Loss Control Initiative, for water loss training.
- Creation of a repayment guarantee fund. The fund is intended to incentivize regional projects that use pooled financing and have multiple partners and beneficiaries, alleviating some of the burden on permanent transfers from irrigated agriculture.



### OBJECTIVE G

### FUNDING



Colorado's Water Plan sets an objective to sustainably fund its implementation. In order to support this objective, the state will investigate options to raise additional revenue in the amount of \$100 million annually (\$3 billion by 2050) starting in 2020. Such funds could establish a repayment guarantee fund and green bond program focused on funding environmental and recreational projects. In addition, such funds could further support conservation, agricultural viability, alternative transfer methods, education and outreach, and other plan implementation priorities.



### GOAL

*Explore New Funding Opportunities:* Develop near-term funding opportunities whereby the smallest amount of funding possible has the greatest benefit to implementing Colorado's Water Plan.



### CRITICAL ACTION 1

Seek an amendment to expand the CWCB loan program's authority to fund treated water supply, reuse, conservation, environmental, and recreation projects and methods.

- The 2016 Projects Bill revised CRS 37-60-119 to expand the CWCB's loan authority to finance projects that include the distribution of treated water in order to support regional projects.



### CRITICAL ACTION 2

Explore a public-private partnership (P3) center of excellence that models how to develop P3 agreements and explores financial incentives for regionalization.

- The CWCB and the Statewide Funding Committee continue to evaluate P3 opportunities and concepts that may be available to Colorado water providers.





### CRITICAL ACTION 3

Continue to encourage regional and multipurpose projects and methods that address water supply gaps by providing financial incentives, such as an interest rate reduction or extended loan repayment periods.

- In 2016, the CWCB changed its lending policy to allow for 40-year repayment terms. The policy also addressed the life of the infrastructure as a limiting factor in determining the loan terms. The CWCB also added language to the policy to allow for additional interest rate reductions for loans 10 years and less.
- The 2017 Projects Bill created a repayment guarantee fund to financially support regional projects with multiple borrowers using pooled financing. The fund will provide financial backing that will streamline project financing and move a project forward in a more efficient and cost effective manner.
- The CWCB and the Statewide Funding Committee will continue to look for opportunities to incentivize projects that serve the water users and improve the environment.



### CRITICAL ACTION 4

Continue to provide \$1 million or more, if needed, on an annual basis to support stream management and watershed plans.

- The CWCB has committed \$15 million to fund watershed and stream restoration projects over the next three to five years.



### CRITICAL ACTION 5

Develop a sustainable funding plan that integrates a guarantee repayment fund, green bonds, and additional support grants and loans for the WSRF, education, conservation, reuse, ATMs, and agricultural viability. This will include the dedication of \$50 million dollars of severance tax funds to kick-start the initiatives in the plan, and the identification of an approach to develop a new viable public source of funding.

- The CWCB, along with the IBCC, will continue to look at ways to increase available funding for water projects. The CWCB has taken an initial step towards addressing the \$100 million per year funding gap identified in CWP by using \$25 million of loan program funds to jumpstart the implementation of CWP by issuing grants that focus on achieving the measurable objectives. This included \$10 million of supplemental funding for the WSRF for the nine basin roundtables. The CWCB Board and staff will continue to work with stakeholders and legislators and evaluate the need for legislation.

## NEW PROGRAM HIGHLIGHT

### Colorado's Water Plan Grant Fund



The purpose of the Water Plan Grant funding is to make progress on the critical actions identified in Colorado's Water Plan and its measurable objectives. The CWCB Board selects projects, programs, and activities to fund that align with CWP's measurable objectives and critical actions, based on fund availability for each grant category:

- \$1,000,000 to provide technical assistance or improve agricultural efficiency;
- \$3,000,000 to facilitate the development of additional storage, artificial recharge into aquifers, and dredging existing reservoirs to restore the reservoirs' full decreed storage capacity;
- \$2,000,000 for multi-beneficial projects and those projects identified in BIPs to address the water supply and demand gap;
- \$1,000,000 for watershed health, environment, and recreation;
- \$1,000,000 to implement long-term strategies for conservation, land use, and drought planning;
- \$1,000,000 for water education, outreach, and innovation efforts.

In the fall of 2017, the CWCB began to receive and process the first round of grant application requests. The first round of applications were due on August 1, the second on October 1, and the third in February 2018, pending availability of funds. There is an "Intent to Apply" status available to applicants to provide the Board with an indication of future funding needs. The applications are subject to a two-meeting review and approval process by staff and the CWCB Board. At the September 2017 CWCB Board meeting, CWCB staff presented the first round of applications to the Board. At the November 2017 meeting, the Board will vote on the first round of applications and have the initial consideration for the second round of applications.

- In the first round of CWP funding, the CWCB received 33 grant applications requesting over \$7.4 million from the Water Plan Grant fund, leveraging over \$42 million in matching funds to meet total project costs. The CWCB also received 29 "intent to apply" applications requesting over \$9.2 million for a future grant cycle (many did not identify costs).
- In the second round of CWP funding, the CWCB received 26 grant applications requesting a total of \$4 million from the Water Plan Grant fund, leveraging over \$34 million in matching funds to meet total project costs. The CWCB also received three "intent to apply" applications for a future grant cycle requesting a total of \$425,000.
- The first two rounds of CWP grant applications cover 92% of the state (59 of 64 counties).

PROGRAM HIGHLIGHT





## OBJECTIVE H

# EDUCATION, OUTREACH, AND INNOVATION



Colorado's Water Plan sets a measurable objective to significantly improve the level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys. Colorado's Water Plan also sets a measurable objective to engage Coloradans statewide on at least five key water challenges (identified by CWCB) that should be addressed by 2030.



## GOAL

Advance Education, Outreach, and Innovation: Inform Coloradans about water issues to encourage engagement and innovation in determining Colorado's water future.

- *CWCB Confluence Newsletter*: In August 2016, the CWCB created an e-newsletter, the Confluence, to highlight the work of the CWCB and update Coloradans on CWP implementation through the sharing of local and statewide water-related programs, events, and initiatives. It is released after each CWCB Board meeting every other month.
- *Implementation Update Fact Sheet*: In November 2016, the CWCB created the CWP Implementation Update fact sheet that keeps Coloradans up-to-date on implementation progress. It is produced every other month and housed on CWP website.
- *Public Education, Participation, and Outreach (PEPO) Workgroup Workshop*: The PEPO Workgroup was established in 2005. The PEPO Workgroup is comprised of IBCC representatives, education liaisons from each basin roundtable, and other key stakeholders in the water education community. Each of the nine basin roundtables have a PEPO liaison that leads the education and outreach efforts for the basin. In October 2016 and 2017, the CWCB convened all the PEPO liaisons and other education committee members from that basin for a statewide workshop. The workshop gives an opportunity for a statewide sharing of resources, best practices, and idea-sharing. It also gives a forum for the PEPO Workgroup to guide and advise on statewide education and outreach projects stemming from the CWCB and other organizations.
- *Water Education Colorado (formerly known as Colorado Foundation for Water Education)*: The CWCB continues to partner with Water Education Colorado, whose mission is to promote a better understanding of Colorado's water resources and issues by providing balanced and accurate information and education. The CWCB and Water Education Colorado collaborate on mutual priorities identified in the annual scope of work approved by the CWCB Board each year in May. These priorities all align with meeting the goals in CWP, and are related back to CWP in the scope. Example projects during fiscal year 2017-2018 include: Water Fluency, Water Leaders, Water Education Network, basin tours, and Headwaters magazine.



## CRITICAL ACTION 1

Create a new outreach, education, and public engagement grant program to fund basin roundtable education action plans and initiatives.

- *Colorado's Water Plan Grants*: 2017 was the first year of water plan grant funding. Of the \$10 million, \$1 million was set aside for projects and activities that support education, outreach, public engagement, and innovation. Currently, 15 CWP grants are under the CWCB review process with fund requests totaling \$870,535 and leveraging another \$534,221 in matching funds to meet total project costs. The impacts of these projects span a wide range of CWP objectives.



## CRITICAL ACTION 2

Conduct a water education assessment to help develop a plan that addresses critical gaps in water education, advances CWP efforts, and supports basin roundtable work.

- *Data-based Water Education Plan:* CWP identifies a sub-action to create a data-based water education plan. The first step of this process is in progress. In March 2017, the CWCB Board approved a grant with the OMNI Institute to complete the CWP Outreach, Education, and Public Engagement Baseline Survey. This is the baseline survey to gather and analyze the necessary information to determine progress, successes, and areas of priority and improvement to meet the plan's objectives. This survey will utilize and build upon past awareness surveys in Colorado. It will also improve the use of existing state resources (sub-action of critical action 3) by gathering various state agencies and statewide education groups to coordinate data collection. The project will help the state collect and analyze consistent data so Coloradans can target efforts to meet the measurable objectives in the plan. This project will be completed by June 30, 2018.
- *Water Education Asset Mapping:* CWP lays out a sub-action to determine critical gaps in water education, both geographically and topically. In March 2017, the CWCB Board approved a grant for the One World One Water Center at MSU Denver to complete a statewide Water Education Asset Mapping project. The project will provide information about education programs across the state including the strengths, resources, needs, and gaps (geographically and topically) in each basin. It will include an analysis of the types of target audiences for education and outreach that need to be reached to achieve each measurable objective in CWP. It will be completed by June 30, 2018. This project achieves both critical action 2 sub-tasks and will provide important data to create a water education plan.

**“I want a Colorado Water Plan that allows for today’s quality of life for my children’s children.”**

-Sean Cronin  
Executive Director

St. Vrain & Left Hand Water Conservancy District



## CRITICAL ACTION 3

Identify five water challenges that Colorado’s innovation community could help solve, develop an award program, and engage Coloradans in the challenge.

- CWP calls upon Colorado’s innovation community, education and outreach experts, research institutions, and the governor’s Colorado Innovation Network (COIN) to collaborate with the water sector to address Colorado’s water challenges with innovation and “outside the box” creativity. The plan sets an objective to identify five water challenges that Colorado’s innovation community could help solve by 2030, and engage Coloradans and develop an award program along the way.

In the summer of 2016, the CWCB partnered with COIN to discuss ways to achieve this goal. In the fall of 2016, the CWCB and COIN joined forces with Denver Water, Colorado State University, Colorado Office of Economic Development and International trade (OEDIT), and Open Water Foundation to develop TAP-IN. Along with many other statewide partners, TAP-IN launched in April of 2016.



## PROGRAM HIGHLIGHT

### TAP-IN EVENTS



TAP-IN is a platform to support innovation in water in Colorado. TAP-IN stemmed from the innovation goal in Colorado's Water Plan and was designed to be the forum to present these challenges and engage Coloradans in the solutions. In 2017, TAP-IN shared 18 challenges with the innovation, entrepreneurial, and business community and gathered over 350 attendees at TAP-IN events. The mission of TAP-IN is to provide the space for Coloradans to "tap in" to the creative current that flows through our state to solve our greatest water challenges.

In May 2017, TAP-IN hosted one community dialogue event, Water Entrepreneurs: How They Did It & What They Learned, at Galvanize with 70 attendees. It featured three entrepreneurs who shared their successes, challenges, and ideas for how Colorado could better support water innovation.

Over the summer, TAP-IN hosted three reverse pitch events in different locations around the state. In contrast to traditional pitch

competitions where entrepreneurs pitch their ideas and products to potential investors and customers, a "reverse pitch" puts end users in front of the community to pitch their specific challenges – a problem pitch. In doing so, TAP-IN looks to connect on-the-ground water challenges with people, insight, and resources that could lead to community-drive solutions.

- The first reverse pitch event, TAP-IN: Source & Cycle, was held in June at the Denver Metro Chamber of Commerce with 130 attendees. It focused on urban water challenges. The six problem pitchers were WaterReuse Colorado, National Renewable Energy Lab, The Water Connection/Greenway Foundation, City of Boulder, Denver Botanic Gardens, and Denver Water.
- TAP-IN: Cultivate & Produce focused on the agriculture, food, beverage, and brewing industries. It was held in August at the Innosphere with 100 attendees. The six pitchers were Wood's High Mountain Distillery, Colorado Ag Leadership Program, Forest Coffee Trading Co., Horse & Dragon Brewing, Western Water Partnerships, and The Nature Conservancy.
- The third and final reverse pitch event, TAP-IN: Play & Protect, was held at FACTORY in Grand Junction in October. Play & Protect focused on the outdoor recreation industries and watershed health fields. The 65 attendees heard pitches from JW Associates, Ouray Ice Park, Many Rivers Brewing, Grand Valley Paddling Club, Colorado Water Trust, and Colorado Parks and Wildlife.

TAP-IN collaborated with over 50 engagement partners, sponsors, and problem pitchers – all with the shared goal to build connections across communities to unleash the power of Coloradans collaborating.

#### WHAT'S NEXT?

TAP-IN is partnering with the Denver Metro Small Business Development Center to design a water-focused Trout Tank Pitch Accelerator that will launch in February 2018. Two additional reverse pitch events and a showcase are planned for 2018 as well. To learn more or get involved visit TAP-IN's website: <http://tapinco.org/>

# PROGRAM HIGHLIGHT

# FRAMEWORK FOR A MORE EFFICIENT PERMITTING PROCESS

**C**olorado's Water Plan advocates for effective and efficient permitting in which State of Colorado agencies work together to complete their work early in the permitting process. This will provide the opportunity for State support without being pre-decisional.

The actions in CWP, Chapter 9.4 help determine efficiencies, where possible, and increase coordination. The actions also provide incentives that encourage multipurpose projects with many partners, especially for projects that meet Colorado's water values, such as enhanced conservation and efficiencies. Actions 1-5 in Chapter 9.4 were all completed through a series of lean events, leading to the recent release of the Colorado Water Supply Planning and Permitting Handbook and state agency Memorandum of Understanding in June 2017 (Action 6). The goals and actions that follow can be found in Measure Objective E: Storage.



## GOAL

*Improve Permitting Processes:* Advocate for more effective and efficient permitting in which state agencies work together to complete their work early in the permitting process. This will provide the opportunity for State support without being pre-decisional.



## CRITICAL ACTIONS 3 AND 5

Conduct a series of Lean events with permitting agencies and stakeholders to determine ways to make permitting more efficient. Where more than one state agency has jurisdiction over a particular issue (e.g., fish health), a lead state agency will be identified, and a memorandum of understanding will be agreed to by all agencies to assist in the coordination.

Critical actions 3 and 5 summarize larger actions in Chapter 9.4 (#1-4), all of which were completed through the Lean process.



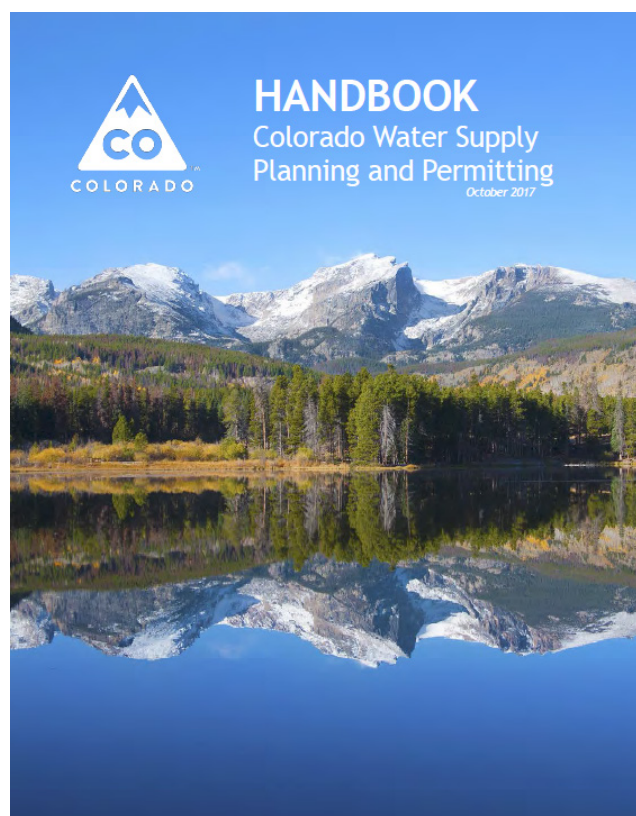


In response to CWP recommendation to improve the efficiency and coordination of the water supply permitting process, the State of Colorado and the U.S. EPA, Region 8, jointly convened a Lean event to examine water supply permitting. Representatives from state, local and federal agencies, water utilities, environmental groups, and other stakeholder groups shared their individual experiences with large water supply project planning and permitting in Colorado. The project included a one-day scoping event in February 2016 and a three-day Lean event following in March. The process was presented and discussed at the summer conference of the Colorado Water Congress in August 2016.

The Lean event and outcomes primarily focused on the initial stages of the water supply planning and permitting process – more specifically on initiating the National Environmental Policy Act (NEPA) and scoping for a water supply project. Given the length and complexity of the entire planning and permitting process, the group agreed that improvements early in the process had the greatest opportunity to create efficiencies that would span the entire process. As a result, outcomes from the Lean event focused on creating efficiencies in the water supply planning and permitting process by increasing communication and cooperation across federal, state and local regulators. One action was a state agency Memorandum of Understanding in June 2017 between DNR and CDPHE to more closely collaborate on fish and wildlife mitigation planning and water quality permitting efforts.

The “Colorado Water Supply Planning and Permitting Handbook” is a result of this Lean event and is intended to provide guidance to entities planning to develop a water supply project in Colorado. These large infrastructure projects have environmental and legal complexities resulting in detailed planning and technical analyses to adequately address federal, state, and local requirements. The handbook is intended to help project proponents and contractors incorporate regulatory requirements into initial water supply planning phases long before permitting requests are submitted, ensuring projects are developed to meet requirements and take into consideration statewide objectives as described in Colorado’s Water Plan.

The handbook describes key steps in the water supply planning and permitting process and also includes a number of helpful tips and guidance including: principles to guide initial planning efforts; various federal, state, and local regulations and their triggers; efficiencies gained when applicants integrate planning; typical water quality impacts considered in the NEPA, and Clean Water Act Sections 404 and 401 reviews; and guidance for consistent assessment methodologies that may reduce duplicative efforts among agencies.



**“Lean,” or process improvement, is a set of principles and methods to improve customer experience by identifying and eliminating wasteful steps from a process.**

# LOOKING FORWARD

**C**olorado's Water Plan presents our state with unique opportunities to guide future decision making, form new partnerships, and to change old narratives and forge new paths. The question of our water future is, of course, a question of resource management; but that is only one component.

Every goal, objective, and action in Colorado's Water Plan and in this report was born out of a value that we all, as Coloradans, chose to prioritize and uphold. These broad values represent the overarching tenets that guide how we work together and shape our collective vision for the state, but our value-based, daily decisions are the actions that carry us forward and help us incrementally achieve our goals.

"Water time" is a concept in western water management which alludes to how our state's water infrastructure was built on a century's worth of laws and norms. Our history is woven into every decision we make today. In water time, evolution and change can feel slow. Some days it feels like the road ahead to implement Colorado's Water Plan is long and riddled with obstacles, but we must remember that we have come a long way already – and that the plan was not built on a blank slate. The plan represents a juncture when our state came together in a new way, and we must continue to tackle our challenges together, especially the unexpected ones.

Our state's future requires flexibility in the face of uncertainty. Adaptive management requires us to continue to process and learn from the past, but always remain "forward looking." We must anticipate plausible but unprecedented conditions, and expect surprises. It is in this light that anniversaries, benchmarks, and updates are all mechanisms of opportunity to revisit our goals and shift our energy toward the most appropriate actions.

If this report holds one message, let be it that Colorado is a collaborative state, and Colorado's Water Plan is an example of what can be accomplished when we come together. Together, we look forward to many more years of hard work, achievement, and celebration.

**"It's undeniable: our water challenges necessitate that we pull together as one, innovate, and become more agile."**

*-The Colorado Way Forward, Colorado's Water Plan*





# CREDITS & REFERENCES

## ACKNOWLEDGMENTS

This document was the result of tireless efforts of water leaders across from across Colorado and CWCB staff. CWCB staff would like to thank those who actively participate in CWP implementation every day, for of the many hours spent developing specific CWP actions and for those who helped develop this document. It is through these ongoing efforts that Colorado will realize it's current and future water goals.

## ■ PHOTO CREDITS

All photos in this document appear courtesy of the CWCB, public submissions and Shutterstock.com.

## ■ ENDNOTES

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<sup>1</sup> The U.S. News and World Report 2017 Economy Rankings measures states' economic stability and potential. Retrieved from <https://www.usnews.com/news/best-states/rankings/economy>

<sup>2</sup> The Bloomberg Brain Concentration Index uses U.S. census data to track business formation as well as employment and education in STEM. Retrieved from <https://www.bloomberg.com/news/articles/2017-10-10/the-smartest-americans-are-heading-west-as-computer-chips-replace-cow-chips>

<sup>3</sup> A summary of the complete list of legislative, programmatic, board policy, and process actions is available in CWP, Appendix H.

RIPPLE EFFECTS  
COLORADO'S WATER PLAN IN ACTION



# RIPPLE EFFECTS

## COLORADO'S WATER PLAN IN ACTION



**COLORADO**

Colorado Water  
Conservation Board

Department of Natural Resources

*2017 Implementation Update*