



**COLORADO**  
**Colorado Water  
Conservation Board**  
Department of Natural Resources

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**TO:** Colorado Water Conservation Board Members

**FROM:** Kirk Russell, P.E., Finance Section Chief

**DATE:** January 23-24, 2023 Board Meeting

**AGENDA ITEM:** 16. 2023 Projects Bill Summary

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**Introduction (This is for information only and no action is necessary)**

Attached is the summary of the proposed 2023 CWCB Projects Bill for discussion and modification as necessary.

The Projects Bill includes \$82 million in funding for important CWCB Programs and Projects The NonReimbursable Investment (NRI) from the CWCB Construction Fund and Severance Tax Perpetual Base Fund is \$69.83M as shown in the following table.

	Program, Project, or Activity	Impact	NRI Request
A	Satellite Monitoring (Continuation)	Statewide	\$380,000
B	Floodplain Risk Management (Continuation)	Statewide	\$500,000
C	Weather Modification Permitting Program (Continuation)	Statewide	\$500,000
D	Fish & Wildlife Resources Fund (122.2) (Continuation)	Statewide	\$2,000,000
E	Litigation Fund (Restore Balance up to)	Statewide	\$2,000,000
F	Colorado Watershed Restoration Program (Continuation)	Statewide	\$500,000
G	Colorado Mesonet Enhancements (Continuation)	Statewide	\$150,000
H	Water Forecasting Partnership Project (Continuation)	Statewide	\$1,000,000
I	DWR Mobile Field Data Collection App	Statewide	\$800,000
J	Colorado Water Plan Implementation Grants (Continuation)	Statewide	\$2,000,000
K	Reservoir Enlargement Assessment Project (Continuation)	Statewide	\$1,000,000
L	Platte River Recovery Implementation Program	So. & No. Platte	\$19,000,000
M	UCR & SJR Recovery Programs	Statewide	\$15,000,000
N	Arkansas Valley Conduit	Arkansas Basin	\$20,000,000
O	Augmentation Efficiency Project	So. Platte Basin	\$3,000,000
P	Water Plan Action Advancement	Statewide	\$2,000,000
			\$69,830,000



# COLORADO WATER CONSERVATION BOARD

## Department of Natural Resources

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# SENATE BILL SB23-XXX

## THE 2023 WATER PROJECTS BILL

### Background

The General Assembly annually authorizes water projects from the Construction Fund and the Severance Tax Perpetual Base Fund. The CWCB provides low-interest loans to domestic and agricultural water providers for water supply projects. These revolving loan funds generate interest earning that are then used for CWCB operations, programs, projects and grants to help implement Colorado's Water Plan. To date, over 650 loans have helped finance engineering, construction, and the purchase of water.

The **Construction Fund** was created in 1971 to provide low-interest loans for water projects and provide monies for non-reimbursable investments. The Fund is a revolving loan fund that allows the CWCB to operate without funding from the state's General Fund. Revenues come from interest earnings and royalty distributions from federal mineral leases.

The **Severance Tax Perpetual Base Fund (STPBF)** was established by the General Assembly in 1997. The Fund is a revolving loan fund that receives revenues from interest earnings and from severance taxes paid by the producers of gas, oil, coal and other minerals. SB21-281 directed the CWCB to use the STPBF to fund the Water Supply Reserve Fund (WSRF), the Interbasin Compact Committee Operation Fund (IBCC) and the Water Efficiency Grant Program from the STPBF.

**Small Project Loan Report** - A report detailing the 12 loans made in calendar year 2022, providing about \$26 million, was submitted to the General Assembly on January 15<sup>th</sup> 2023. A copy of the report is available on the legislative website at [www.colorado.gov](http://www.colorado.gov).

Loan interest rates are adjusted bi-monthly by CWCB. The rates mid-year 2022 were:

- 1.50% for agricultural loans and
- 2.20% to 2.80% for municipal loans
- 6.0% for commercial loans
- 2.0% for hydroelectric projects



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### 2023 Bill Highlights

***Includes \$82M funding for important CWCB Programs and Projects. Including: \$12.6M in Water Plan Grant funding; \$24M to help with threatened and endangered species; \$20M for the Arkansas Valley Conduit; \$2M for Water Plan Action Advancement items; \$1M for Water forecasting efforts; \$500K for Watershed Restoration efforts***

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The CWCB accepts applications for non-reimbursable project investments and project loans over \$10 million on August 1<sup>st</sup> of each year. The applications are for programs, projects or activities of statewide impact or importance or exceed the available funds in other grant programs Applications are considered by the Board for inclusion in the annual CWCB Water Projects Bill.

<b>Non-Reimbursable Project Investments</b>			
<b>Section A.</b> Satellite Monitoring (Continuation)	Appropriates funds to install, maintain, and operate satellite monitored stream gauges and lysimeters for water rights administration and data collection, as statutorily authorized.	Statewide	\$380,000
<b>Section B.</b> Floodplain Risk Management (Continuation)	Assists communities to revise and improve floodplain studies and maps. (f/n/a Map Modernization Program) Provides the required non-federal matching dollars that are further leveraged by local cost share and in-kind services. This Program expects to leverage \$10M in federal funding alone this year.	Statewide	\$500,000
<b>Section C.</b> Weather Modification Permitting Program (Continuation)	Assists water conservation and conservancy districts with the development of cloud seeding programs to provide benefits to recreation, streams, and reservoirs through snowpack enhancement. This Program leverages about one million dollars in local and out of state funds annually.	Statewide	\$500,000
<b>Section D.</b> Fish & Wildlife Resources Fund (122.2) (Continuation)	Pursuant to C.R.S. 37-60-122.2 and CWCB Policy 15 and 20. The CWCB provides funding for the consideration and approval of Fish and Wildlife Resources Fund grant applications pursuant to statute.	Statewide	\$2,000,000
<b>Section E.</b> Litigation Fund - Restoring Cash Balance (Continuation)	Restore the CWCB Litigation Fund to \$2,000,000 to assist in addressing legal issues associated with compact compliance or any other litigation activities as defined under section 37-60-121 C.R.S.	Statewide	Up to \$2,000,000
<b>Section F.</b> Colorado Watershed Restoration Program (Continuation)	Provides planning, engineering, implementation measures, aquatic habitat protection, restoration work, quantification of environmental flow needs, and monitoring efforts to address technical needs for watershed restoration and flood mitigation projects, and to support healthy stream and watershed goals outlined in Colorado's Water Plan.	Statewide	\$500,000
<b>Section G.</b> Colorado Mesonet Enhancements (Continuation)	This project will provide funding for operation, maintenance, travel, communications, database and website management for temperature and precipitation stations referred to as the Colorado Mesonet, previously managed and operated by NOAA and currently operated by the Colorado Climate Center at CSU.	Statewide	\$150,000
<b>Section H.</b> Water Forecasting Partnership Project (Continuation)	This project will use modern technology to provide better characterization of snowpack, install new ground and aerial remote sensing data, and develop employee accepted hydrologic modeling practices, to provide more reliable volumetric water supply forecasting.	Statewide	\$1,000,000

<b>Section I.</b> DWR Mobile Field Data Collection App	This funding will enable the Division of Water Resources (DWR) to create a mobile application (App) for iOS and Android that will allow DWR staff to perform the many tasks they perform in the field more efficiently and provide real time information available.	Statewide	\$800,000
<b>Section J.</b> Colorado Water Plan Implementation Grants (Continuation)	This will transfer \$2M from the Construction Fund (CF) to the Water Plan Implementation Cash Fund to provide additional grant funding for projects that assist with the implementation of the Colorado Water Plan through CWCB's Application and Guidelines process.	Statewide	\$2,000,000
<b>Section K.</b> Reservoir Enlargement Assessment Project (Continuation)	DWR's Comprehensive Dam Safety Evaluations (CDSE) tools provide for risk-informed decision making in reservoir enlargement planning, spillway adequacy, and protection of life and property. This will be used on a prioritized list of high hazard dams that show a likely potential for enlargement. These studies will serve a dual function of defining potential enlargement quantities and identifying components of the structure that may need to be modified as part of a safe enlargement scenario.	Statewide	\$1,000,000
<b>Section L.</b> Platte River Recovery Implementation Program	This will fund the Platte River Recovery Implementation Program to implement certain aspects of the U.S. Fish and Wildlife Service's recovery plans for three threatened or endangered species (Whooping Crane, Pallid Sturgeon, Piping Plover), while providing Endangered Species Act compliance for Colorado water projects.	South & North Platte Basin	\$19,000,000 (Sev Tax Fund)
<b>Section M.</b> UCR & SJR Recovery Programs	The Upper Colorado River Endangered Fish Recover Program and San Juan River Basin Recovery Implementation Program (Recovery Programs). They provide Endangered Species Act compliance for Colorado water users. It is critical that Colorado maintains regulatory certainty, while contributing to the protection of four endangered/threatened fish species.	Statewide	\$15,000,000 (Sev Tax Fund)
<b>Section N.</b> Arkansas Valley Conduit	Authorizes an additional \$20M grant to the Southeastern Colorado Water Conservancy District or to Otero County to provide non-federal cost share funding for this important component of the Frying Pan - Arkansas Project. This project will help bring quality drinking water to six counties in the lower Arkansas Valley. This is in addition to the \$10M grant and \$90M loan approved in HB20-1403	Arkansas Basin	\$20,000,000 (Sev Tax Fund)
<b>Section O.</b> Augmentation Efficiency Project	Authorizes a \$3M grant to the Groundwater Management Subdistrict (GMS) of the Central Colorado Water Conservancy District (CCWCD) to improve the efficiency and effectiveness of its augmentation plans. The grant will help offset an estimated project cost of \$13M. The project includes pipelines, augmentation wells, and groundwater recharge sites to improve the timing and location of replacement water.	So. Platte Basin	\$3,000,000

<b>Section P.</b> Water Plan Action Advancement	<p>The 2023 Colorado Water Plan includes the need to implement identified actions. This funding will help advance actions and related work (i.e. developing tools, convening stakeholder groups, research, data analysis) that are described in Water Plan. This includes:</p> <ul style="list-style-type: none"> <li>• <b>Vibrant Communities:</b> Municipal Water Conservation Standards Evaluation</li> <li>• <b>Robust Agriculture:</b> Economic Analysis of Agricultural Opportunities</li> <li>• <b>Thriving Watersheds:</b> Watershed Planning Platform</li> <li>• <b>Resilient Planning:</b> Drought Ready Communities Framework</li> </ul>	Statewide	\$2,000,000
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## Other Provisions

### Section Q.

**Water Plan Implementation Cash Fund Appropriation** - This will appropriate \$12.6M of sports betting revenues (\$10.6M) and Construction Fund (\$2M) funding within the Cash Fund to make grant funding available for projects that assist with the implementation of the Colorado Water Plan through CWCB's Application and Guidelines process. *{This will be increased by General Fund money if the Governor's proposed budget is approved by the General Assembly}*

### Section R.

**Change to Session Law HB20-1403 Section 17** - This will include the option to grant the funds previously appropriated to the Southeastern Colorado Water Conservancy District to Otero County as the recipient of the \$10M grant for the non-federal cost share funding for the Frying Pan-Arkansas Project to build the Arkansas Valley Conduit.

### Section S.

**Chatfield Reservoir Reallocation Project - Orphan Shares Purchase** - This will appropriate funding for Colorado Parks and Wildlife (CPW) to purchase of up to 924AF Orphan Shares owned by CWCB.



This project entails the continued, long-term operational viability of the State Satellite Linked Monitoring System and Stream Gage Refurbishment Program, which is administered by the Division of Water Resources (DWR). This program currently encompasses about 650 satellite stream gaging stations that require continued replacement of outdated data collection platforms, upgrades to transmission components, and refurbishment of the associated infrastructure. In addition, many existing gaging stations need to be modified to provide critical stream flow data for both flood and low flow monitoring. Changes in technology, which will ultimately increase reliability and real time data transmission rates, will require the DWR to continue to upgrade the system in the future. In addition, this project provides annual maintenance for the Arkansas River Basin Compact Lysimeter Research Project. The costs associated with the continued refurbishment and operational viability of the Satellite Monitoring System is currently approximately \$330,000 per year. The cost associated with the Lysimeter Project is approximately \$50,000 per year. The total project cost is \$380,000.

P R O J E C T D E T A I L S	
Project Cost:	\$380,000
NRI Funding Request:	\$380,000
Funding Source:	Construction Fund
Project Type:	DWR Streamgaging
Type of Grantee:	State Agency

L O C A T I O N	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins



Purgatoire River at Fisher's Crossing Stream Stage Radar Installation





Colorado has received approximately \$56 million in federal grant dollars for floodplain mapping activities as part of the floodplain Map Modernization/Risk Map Program (Program) initiated by FEMA since 2003. The FEMA funds are supplemented by CWCB and local cost-share dollars to perform the map update work to create updated digital floodplain maps and flood risk tools. The initial Program funds authorized in the 2003 and all subsequent Construction Fund Bills have provided past required non-federal matching dollars, as well as associated projects for leverage. The State funds are further leveraged by local cost share dollars and in-kind services from many communities to obtain additional related information and project assistance. The total funding amounts have been instrumental in keeping Colorado as a lead state within FEMA Region 8 and will continue to benefit Colorado communities in the future. It is expected that significant FEMA funding will continue as long as the Program exists. Program deliverables will become part of the Flood Decision Support System (DSS) to increase data capture and enhance Colorado's decision support tools.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$9,876,577
<i>NRI Funding Request:</i>	\$500,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Leverage Funds for Grants
<i>Type of Grantee:</i>	State Agency

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins

The Program impacts the entire state, and the objective is to develop updated watershed-based and/or countywide floodplain maps using information based on high quality data and current engineering technology within a digital environment. The use of GIS technology will be employed for all new countywide studies for ease of distribution, updating and viewing. The table below summarizes funding expected to be approved by FEMA for Federal Fiscal Year 2022, which starts October 1, 2022 and ends September 30, 2023.

Grant Description	FEMA Funding	Grant Description	FEMA Funding
<b>FY21 CTP Project Management</b>	<i>\$1,695,613</i>	<b>Chaffee, Costilla, Garfield Phase 3</b>	<i>\$792,689</i>
<b>Montrose, Grand Phase 1 (BLE/Discovery)</b>	<i>\$651,742</i>	<b>Gunnison Addtl, Pueblo Addtl, Phase 2</b>	<i>\$1,501,223</i>
<b>Arapahoe, Baca Phase 2</b>	<i>\$399,680</i>	<b>Custer Phase 2</b>	<i>\$259,687</i>
<b>Adams, Las Animas, Morgan Phase 3</b>	<i>\$792,154</i>	<b>Lake Phase 3 Addtl</b>	<i>\$40,096</i>
<b>Summit County Phase 3-4</b>	<i>\$333,943</i>	<b>Crowley, Kiowa, Lincoln, Phillips, and Sedgewick Counties Phase 2</b>	<i>\$1,292,641</i>
<b>Hinsdale and Logan Phase 3</b>	<i>\$495,678</i>	<b>LOMR Review Partner Program</b>	<i>\$200,000</i>
<b>FY22 COMS</b>	<i>\$212,240</i>	<b>El Paso Phase2 Addtl &amp; Phase 3</b>	<i>\$1,209,191</i>
<b>Total FEMA Funding:</b>	<i>\$9,876,577</i>		

The CWCB has had grants since 2004 for water district sponsored cloud seeding programs developed after the early 2000s drought. In 2007, State-to-state agreements were signed to provide grants in Colorado. CWCB distributes grants from the CWCB, New Mexico Interstate Stream Commission, Southern Nevada Water Authority, Central Arizona Water Conservation District, and California Six Agency Committee. CWCB funding leverages pledged match funding from Lower Basin States water users. This funding helps meet CWCB goals to have industry standard equipment in operation for efficient and effective programs.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$1.5M (matching from Lower Basin States and local sponsors)
<i>NRI Funding Request:</i>	\$500,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Snowpack augmentation
<i>Type of Grantee:</i>	State Agency

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins

In 2019, the State of Wyoming collaborated with the CWCB and the Jackson County Water Conservancy District (JCWCD) to launch Colorado's first permitted aerial cloud seeding program. In 2021, JCWCD in partnership with CWCB permitted a new ground-based weather modification program in the North Platte Basin. Some of the requested funding increase will help to continue this new state-to-state collaboration in the North Platte Basin. A 2015 National Center for Atmospheric Research Climatology of Seeding Potential study showed high seeding potential in the North Platte Basin. The program goal is to augment snowpack in the southeastern part of the basin. CWCB is currently working hopes to permit new programs in the St. Vrain and Left Hand drainage and in the Yampa/White/Green Basin in the coming years.

Since 2007 the Lower Basin Water Users in the Colorado River (Southern Nevada Water Authority, California Six Agency Committee, and Central Arizona Water Conservation District) have donated \$3.75M to match the CWCB's \$2.9M to bolster locally sponsored cloud seeding in Colorado. Each year, about \$1.5M is spent on supporting current operations, upgrading equipment, and financing various weather modification studies around the state.

Effective cloud seeding requires siting cloud seeders high onto ridges in areas of good airflow to ensure the silver iodide particles are regularly transported into clouds. We have had success at helping upgrade programs with new high elevation seeders at: Winter Park, Grand Mesa, Crested Butte, above McPhee Reservoir, near Mancos, and Telluride. These seeders are now owned by water districts. It has been clearly demonstrated that low elevation manually operated seeders are not particularly effective at getting seeding material into the clouds. High elevation seeding equipment is needed. Colorado has high elevation terrain and siting remote generators at high altitudes is vital for effective seeding.

The CWCB has ten years of facilitating successful multi-state collaborations to benefit local water supplies and downstream compact obligations. In 2015, a ten year \$15M winter research experiment in Wyoming concluded that a 5-15% increases in snowpack can be expected but only from about 30% of the storms appropriate for seeding. Therefore, a 1-5% increase in snowpack was demonstrated and can be expected in well designed and executed programs. As we move forward, Colorado must continue to investigate and pursue opportunities for collaboration between basins to benefit multiple watersheds and thus the entire state as a whole.





The Fish and Wildlife Resources Fund (Fish and Wildlife Mitigation Fund) was established by the legislature in 1987 to help mitigate the impacts to fish and wildlife resources that are affected by the construction, operation, or maintenance of water diversion, delivery, or storage facilities, pursuant to C.R.S. Section 37-60-122.2 and Financial Policy 15 and 20. The statute was amended in 2002 to recognize the role instream flows in mitigating impacts, and authorized the Colorado Water Conservation Board as well as sponsors of existing facilities to use these funds. The purpose of the Financial Policies (15 and 20) is for the consideration and approval of Fish and Wildlife Resources Fund grant applications pursuant to sub-sections 2-5 of 37-60-122.2, C.R.S.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$2,000,000
<i>NRI Funding Request:</i>	\$2,000,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Mitigation Grants
<i>Type of Grantee:</i>	State Agency

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins

The following projects have received approval for use of these funds over the years:

- 2008: \$30,000: Rio Blanco River Restoration Phase III, Lower Blanco Property Owners Association
- 2009: \$132,000: Rio Blanco River Restoration Phase IV, Lower Blanco Property Owners Association
- 2009: \$70,000: Clear Springs Ranch Fish Passage, Colorado Springs Utilities
- 2010: \$560,000: Reconstruction of the Hartland Diversion Dam, Painted Sky R C and D Council
- 2011: \$75,000: Upper South Platte Diversion Reconstruction Project, Coalition for the Upper South Platte
- 2012: \$50,000: Stream Mitigation Banking Protocols, Colorado State University
- 2014: \$100,000: Platte River Enhancement Phase II, South Suburban Park and Recreation District
- 2015: \$50,000: Stream Mitigation Protocol and Aquatic Habitat Mapping, Colorado State University
- 2017: \$450,000: South Platte Flood Hazard Mitigation, Urban Drainage and Flood Control District
- 2017: \$814,270: Chatfield Reservoir Mitigation Company, Plum Creek Restoration
- 2017: \$550,000: Buckhorn Valley Metropolitan District, Abrams Creek Ditch Lining Project



## COLORADO

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## Litigation Fund

Colorado Water Conservation Board

November 2022 Board Meeting

Section 37-60-121(2.5) provides that the Colorado Water Conservation Board is authorized “to expend, pursuant to continuous appropriation and subject to the requirements of paragraph (b) of this subsection (2.5), a total sum not to exceed the balance of the litigation fund, which is created, for the purpose of engaging in litigation...to defend and protect Colorado’s allocations of water in interstate streams and rivers...” Paragraph (b) of section 121(2.5) provides: “pursuant to the spending authority set forth in paragraph (a) of this subsection (2.5), moneys may be expended from the litigation fund at the discretion of the board if (l) with respect to litigation, the Colorado Attorney General requests that the Board authorize the expenditure of moneys in a specified amount not to exceed the balance of the fund for the costs of litigation associated with one or more specifically identified lawsuits meeting the criteria set forth in paragraph (a) of this subsection (2.5).”

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$1,955,000
<i>NRI Funding Request:</i>	up to \$2,000,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Legal Support
<i>Type of Grantee:</i>	State Agency

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	N/A
<i>Drainage Basin:</i>	All Basins

The CWCB has received a letter from Attorney General Phil Weiser stating that a total of \$1,955,000 will be needed in FY 22/23 to adequately: defend in negotiations; litigation; and other processes the State's apportionments under the Compacts. The funds will be allocated as follows:

- 1) Colorado River Basin: \$1,020,000 for FY 22/23
- 2) Republican River Basin: \$105,000 for FY 22/23
- 3) South Platte River Basin: \$205,000 for FY 22/23
- 4) Rio Grande Basin: \$590,000 for FY 22/23
- 5) Arkansas River Basin: \$35,000 for FY 22/23

The CWCB will request a refresh of the Litigation Fund up to \$2,000,000 each year through annual appropriations in order for the Board to respond to unforeseen legal challenges.



House Bill 22-1379 was signed into law in May 2022. Utilizing funds from the American Rescue Plan Act (ARPA) State and Local Fiscal Recovery Fund (SLFRF), it established an appropriation of \$10,000,000 for the CWCB Colorado Watershed Restoration Program. The bill states that the funds shall be used “for watershed restoration and flood mitigation grants to restore, mitigate, and protect stream channels and riparian areas susceptible to flood hazards and sediment erosion and deposition after wildfire, including expenditures for the design and implementation of projects intended to mitigate increased flows, sediment, and debris, with federal and local matching requirements.”

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$500,000
<i>NRI Funding Request:</i>	\$500,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Watershed Restoration
<i>Type of Grantee:</i>	State Agency

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins

The CWCB Watershed and Flood Protection Section is also working on a program that provides a proactive approach to address post wildfire flooding, debris flows, and other impacts. Wildfire Ready Watersheds will be completed by the end of 2022 and has a two part focus: a statewide post-fire susceptibility analysis and (2) a framework that communities can use to perform watershed scale planning to address post wildfire hazards. Early results indicate that a significant portion of the state will be susceptible to post wild-fire impacts. This indicates a need for framework implementation for many communities. The CWCB will be piloting 2-4 framework implementations to refine the framework and demonstrate it's efficacy in identifying pre fire mitigation projects designed to protect lives, property, and water supplies.

Staff is anticipating another Special Release of CWRP to disperse the funds appropriated in HB 22-1379. There is an ongoing need to fund technical assistance associated with the House Bill 22-1379, Wildfire Ready Watershed implementation, grants approved through the Watershed Health and Recreation category of the Colorado Water Plan grant program, and unforeseen disasters such as floods and post wild-fire hazards.



The Colorado Climate Center was established by the state in 1974 through the Colorado State University Agricultural Experiment Station to provide information and expertise on Colorado's complex climate. Through its program of Climate Monitoring, Climate Research and Climate Services, the Center is responding to many climate related questions and problems affecting the state today. One way the Center monitors the climate is through CoAgMET, a network of 88 stations statewide tracking agricultural weather and Colorado's climate. The Climate Center is located at Colorado State University within the Department of Atmospheric Science.

This project builds on recent work that has improved the quality, accessibility, and usability of meteorological data collected by the Colorado Agricultural Meteorological Network, CoAgMET (also known as Colorado's Mesonet). CoAgMET is rapidly maturing as Colorado's Mesonet, providing high quality weather data targeted for use in water planning, management, conservation and education. In recent years we have expanded the network (now with over 90 stations) and increased the number of stations reporting data every 5 minutes. We have also revamped the website and developed a new API that makes it even easier for data users to find what they need. The CoAgMET data are used for a broad range of applications, including irrigation planning, drought monitoring, water availability calculations, real-time weather monitoring, and much more. This proposed project will further enhance CoAgMET data and will increase its uses for understanding the climate of Colorado, especially in relation to stakeholder needs in the water and agriculture sectors.

High quality weather data for water resources application is greatly taken for granted and receives little financial support. It is a statewide effort benefiting many users from agricultural producers to municipal water providers and many others. Federal data collection efforts have provided useful long-term temperature and precipitation data but not the extensive measurements of humidity, wind and solar radiation needed for computing reference evaporation and crop consumptive use. The Colorado Regional Climate Reference Network, gifted to CSU from the National Weather Service, represents a federal investment in hardware of nearly \$1,000,000 and is an excellent high-quality network for tracking indicators of climate change. Funding from CWCB in previous years has enabled the enhancement of some of these stations to fill critical monitoring gaps and improve evapotranspiration monitoring. Grant funds will allow effective enhancements to the CoAgMET network, improved delivery of data and new products for water use planning and climate change monitoring. They will improve real-time monitoring capabilities to improve severe weather warnings and emergency management applications. ***Importantly, this grant funding will allow CoAgMET to continue to qualify for federal matching funds through the National Mesonet Program to support critical operations and maintenance needs.***

P R O J E C T D E T A I L S	
Project Cost:	\$300,000
NRI Funding Request:	\$150,000
Funding Source:	Construction Fund
Project Type:	Data Collection/Maint.
Type of Grantee:	State Agency
L O C A T I O N	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins



## Water Forecasting Partnership Project

### Colorado Water Conservation Board

November 2022 Board Meeting

The water forecasting partnership project began in the FY2016/2017 under SB 16-174. This original authorization appropriated \$300,000, and was reauthorized for in both HB17-1248 and SB18-218 for \$800,000 each fiscal year. This project was most recently funded at \$450,000 in HB22-1316. Staff requests \$1,000,000 be appropriated for continuation of this work in FY 2023/2024. The new funds will be used to complete the projects described under the blue heading. The goal of this program is to acquire

new data and refine water supply forecasting statewide.

As of November 2022, the project has leveraged over \$1,000,000 in match from local stakeholders for the 2023 season. These stakeholders created a central group called the Colorado Airborne Snow Measurement Group (CASM). \$350,000 from last year's funding provided match for 14 snow-on LiDAR/Spectrometer flights in 7 different basins, and \$100,000 to continue WRF-Hydro modeling in the Dolores and Conejos Basins. Staff anticipates at least this match level for FY23/24, and will be working to seek additional match in both local and federal funds.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$2,000,000 (matching will be sought)
<i>NRI Funding Request:</i>	\$1,000,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Data and Modeling Upgrades
<i>Type of Grantee:</i>	Funding for Partnerships

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins

FY 2023-24 Proposed Funding			
Location	Item	Cost	Notes
Statewide	Colorado Airborne Snow Measurement Group Pilot Project Support	\$900,000	Partner with the stakeholders in the Colorado Airborne Snow Measurement group to conduct multiple LiDAR/Spectrometer flights in pilot basins to determine ideal flight numbers per season. Flights will be determined by a larger group representing areas across the State. This group includes Denver Water, Northern Water, Dolores Water, USGS, and the Colorado River District.
Rio Grande	NCAR (continuation)	\$50,000	Maintain 5 stations in Conejos basin in partnership with Conejos Water Conservancy District. Provide experimental forecasting using multi-radar multi-sensor methods to compare to official federal forecasting.
Southwest	NCAR (continuation)	\$50,000	Partner with Dolores Water Conservancy District to continue to provide experimental forecasting using multi-radar multi-sensor methods to calibrate the radar, originally established in WY20/21.
<b>Total Request:</b>		<b>\$1,000,000</b>	





DWR is responsible for administering water in compliance with Colorado state statutes, decrees of the water court, and interstate compacts. This involves distributing water based on the priority system, while maximizing the beneficial use of water and avoiding injury to senior appropriators or violation of Compacts with surrounding States. Accomplishing this requires collection of significant amount of data by water commissioners and other field staff. This data is input into HydroBase, the database shared by DWR and the CWCB under Colorado's Decision Support Systems (CDSS).

The purpose of this grant application is to obtain funding to enable the Division of Water Resources to contract with an application development vendor to create a mobile application (iOS and Android) that will allow DWR staff to perform the many tasks they perform in the field more efficiently. The project would create an effective mobile field data collection application for DWR staff to use when collecting diversion records, dry-up verification, measuring device evaluations, meter tests, well inspections, dam inspections, etc. This is needed because currently DWR staff use a variety of paper and electronic processes to input this data into DWR's system and enable office staff to make decisions. Having a mobile device solution that can populate data in HydroBase and load documents into Laserfiche will allow DWR to provide more real-time data.

This project would provide benefits across the State of Colorado in the form of more real-time data acquisition and administration, which will result in maximizing the beneficial use of water under the priority system and interstate compacts. DWR staff in the seven division and Denver offices are responsible for collecting many types of data in the field in order to fulfill the Division and State Engineer's statutory responsibility to manage Colorado's water resources.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$800,000
<i>NRI Funding Request:</i>	\$800,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	DWR Data Collection
<i>Type of Grantee:</i>	State Agency

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins







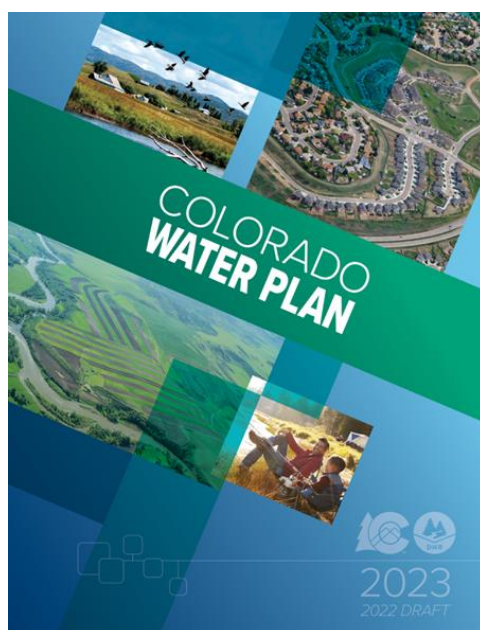
This funding will support the Water Plan Grant Program. Funding for the Water Plan Grant Program comes from the Construction Fund, sports betting revenue, and from General Fund appropriations as approved by the General Assembly. The Water Plan Grant Program is available to promote progress on the critical actions identified in the Water Plan and its measurable objectives. The Board will fund the projects, programs and activities that have the best opportunity to make progress on the Water Plan's objectives and that are in alignment with the program guidelines.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$2,000,000
<i>NRI Funding Request:</i>	\$2,000,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Water Plan Grants
<i>Type of Grantee:</i>	State Agency

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins

## Water Plan Grant Program Appropriation History

	FY17/18	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23
Total appropriated	\$ 15.55M	\$ 9.55M	\$ 20.85M	\$ 12.8M	\$ 15.0M	\$ 8.2M
Construction Fund	\$ 15.55M	\$ 9.55M	\$ 12.55M	\$ 12.8M		\$ 1.0M
Sports Betting						\$ 7.2M
General Fund			\$ 8.3M		\$ 15.0M	





## Reservoir Enlargement Assessment Project

Colorado Water Conservation Board

November 2022 Board Meeting

Dam Safety Branch sees an opportunity for multi-stakeholder benefit through this project. Previous CWCB NonReimbursable Investment funding has been utilized to pilot the proposed project and has already shown significant statewide benefits. Additional grant funds are being requested to utilize these tools on a prioritized list of high hazard dams that show a likely potential for enlargement of existing facilities. These studies will serve a dual function of defining potential enlargement quantities and identifying components of the structure that may need to be modified as part of a safe enlargement scenario. An equitable prioritization process will be utilized to select the projects in a maximum number of water divisions across the State, consistent with the goals of the Colorado Water Plan for increasing storage.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$17M
<i>NRI Funding Request:</i>	\$1,000,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Technical Investigation
<i>Type of Grantee:</i>	State Agency

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins

Colorado Dam Safety is statutorily responsible for determining the safe storage level for all reservoirs in the State of Colorado. Many of the 398 classified high hazard dams in Colorado are approaching 100 years of age as the population continues to increase below them. This project will further the goal identified in the Colorado Water Plan of examining the enlargement potential at existing reservoirs by identifying the most likely locations for successful enlargement projects while at the same time determining improvements required to ensure safe storage in these high hazard facilities.

Colorado Dam Safety has developed a consistent approach for completing comprehensive evaluations of dams, known as Comprehensive Dam Safety Evaluations (CDSE). This Project utilizes a CDSE risk-informed decision making process to identify dam failure modes for a given storage capacity. This information can then be used to determine improvements necessary to meet dam safety standards for the increased



storage, and ultimately for the development of cost estimates of the enlargement. The CDSE approach provides for the use of risk-informed decision making in reservoir enlargement planning, spillway adequacy studies, and assessment of need for reservoir storage restrictions to ensure the protection of life and property.



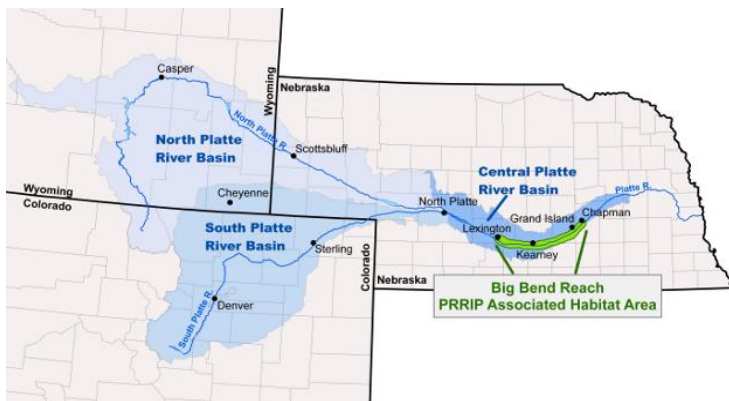
The purpose of the Platte River Recovery Implementation Program (“Recovery Program” or “Program”) is to implement certain aspects of the U.S. Fish and Wildlife Service’s recovery plans for three threatened and endangered species (the endangered whooping crane and pallid sturgeon and the threatened piping plover), while providing Endangered Species Act compliance for Colorado water projects.

P R O J E C T D E T A I L S	
Contract Obligation:	\$29,000,000
NRI Funding Request:	\$19,000,000
Funding Source:	Sev Tax PBF
Project Type:	Recovery Program
Type of Grantee:	State Agency

The Recovery Program became effective January 1, 2007 following the implementation of a cooperative agreement by the Governors of Colorado, Wyoming, and Nebraska and the U.S. Secretary of the Interior. The Program provides Endangered Species Act compliance for water-related activities in the North and South Platte Basins, while providing recovery benefits for three threatened and endangered species. Since 2007, the Program has provided Endangered Species Act compliance for over 213 water projects, the majority of which occur in Colorado. The Program has also contributed to the success of species recovery. In early 2021, the U.S. Fish and Wildlife Service determined that one of the Program’s target species, the endangered interior least tern, was recovered and therefore was removed from the list of threatened and endangered species under the Endangered Species Act. Without this Program, existing and new water projects would likely not be able to operate without an individual Section 7 Consultation, causing major delays, increased costs, loss in efficiencies, potential shortages to water supplies, and potential negative impacts to species.

L O C A T I O N	
Benefits:	South and North Platte
Water Source:	Various
Drainage Basin:	South and North Platte

The Recovery Program operates in 13-year increments, with the First Increment occurring from 2007-2019. The First Increment was extended by another 13 years from 2020 through 2032, in order to achieve the Program’s milestones. The State of Colorado has committed to cost-sharing the funding of the Program’s First Increment Extension through cash and in-kind contributions. The cost of the Program is shared between the federal government and the States of Wyoming and Colorado at a 50/50 cost-split, with credits for in-kind contributions from the states and water users. The total cost of the First Increment Extension is \$156 million, adjusted annually for inflation. Colorado’s remaining proportion of the First Increment Extension is approximately \$24.9 million, adjusted for inflation annually. In FY22, the Colorado General Assembly appropriated \$1.9 million through the Species Conservation Trust Fund (SB 22-158) and \$3.8 million through CWCB Projects Bill (HB 22-1316). The remaining obligation is approximately \$19 million.



The Platte River Recovery Implementation Program covers the North and South Platte River basins (left). The target species are the endangered whooping crane (top right), threatened piping plover (middle right), and the endangered pallid sturgeon (bottom right).







The Upper Colorado River Endangered Fish Recovery Program and San Juan River Basin Recovery Implementation Program (Recovery Programs) were created to reestablish populations of four endangered fish in the upper Colorado River basin: bonytail, Colorado pikeminnow, humpback chub, and razorback sucker. The cooperative agreement for the Upper Colorado River Endangered Fish Recovery Program was signed by the governors of Colorado, Wyoming, Utah, and the Secretary of the Interior and Western Area Power Administration Administrator. The cooperative agreement for the San Juan River Recovery Implementation Program was signed by the governors of Colorado, New Mexico, and the Secretary of the Interior and the tribal governors of the Navajo Nation, Jicarilla Apache Nation, Southern Ute Indian Tribe, and Ute Mountain Ute Indian Tribe.

P R O J E C T D E T A I L S	
Anticipated Contribution:	\$15,000,000
NRI Funding Request:	\$15,000,000
Funding Source:	Sev Tax PBF
Project Type:	Recovery Program
Type of Grantee:	State Agency

L O C A T I O N	
Benefits:	Statewide
Water Source:	Colorado River
Drainage Basin:	Colorado River

The Recovery Programs use science-based, cooperative actions to assist in endangered fish recovery. These include: habitat maintenance and streamflow augmentation, operating fish hatcheries and stocking, constructing fish passages and fish screens, and removing invasive predatory fish. The Recovery Programs have accomplished major strides in reaching their goal of implementing management strategies to promote a healthy population of endangered fish species. The Recovery Programs have accomplished major strides in reaching their goal of implementing management strategies to promote a healthy population of endangered fish species. Some highlights include:

- 8 fish passages have been constructed.
- 4 large irrigation channels have been screened or modified.
- 3 reservoir outlets have been screened to prevent nonnative fish escapement.
- 3 more reservoir screens are currently being designed.
- Down-listing of the humpback chub from endangered to threatened
- Proposed down-listing of the razorback sucker from endangered to threatened

Congressional authorization and the cooperative agreements for both programs will expire in September of 2023. As part of the reauthorization process, the State of Colorado is actively involved in planning for Recovery Program activities, budgets, funding sources and program reauthorization through 2038. Funding for annual operations of the Recovery Programs was historically provided by hydropower revenue from Colorado River Storage Project (CRSP) reservoirs. Drought, projections of future hydrology and project repayment obligations have significantly reduced the reliability and availability of hydropower revenue as a funding source for the Recovery Programs. Program partners are collaborating to identify future sources of funding. The annual operating budget for the Recovery Programs for 2024 - 2038 is currently estimated to be approximately \$13.9 million per year, adjusted annually for inflation. Staff is requesting \$15 million to help meet our anticipated cash contributions over the next 15 years. The Recovery Programs provides Endangered Species Act compliance for over 2,500 water projects in the Upper Colorado and San Juan River basins. 1,250 of those projects are located in Colorado.



*UCRIP recovers healthy populations of the bonytail (left), Colorado pikeminnow, humpback chub (right), and razorback sucker.*



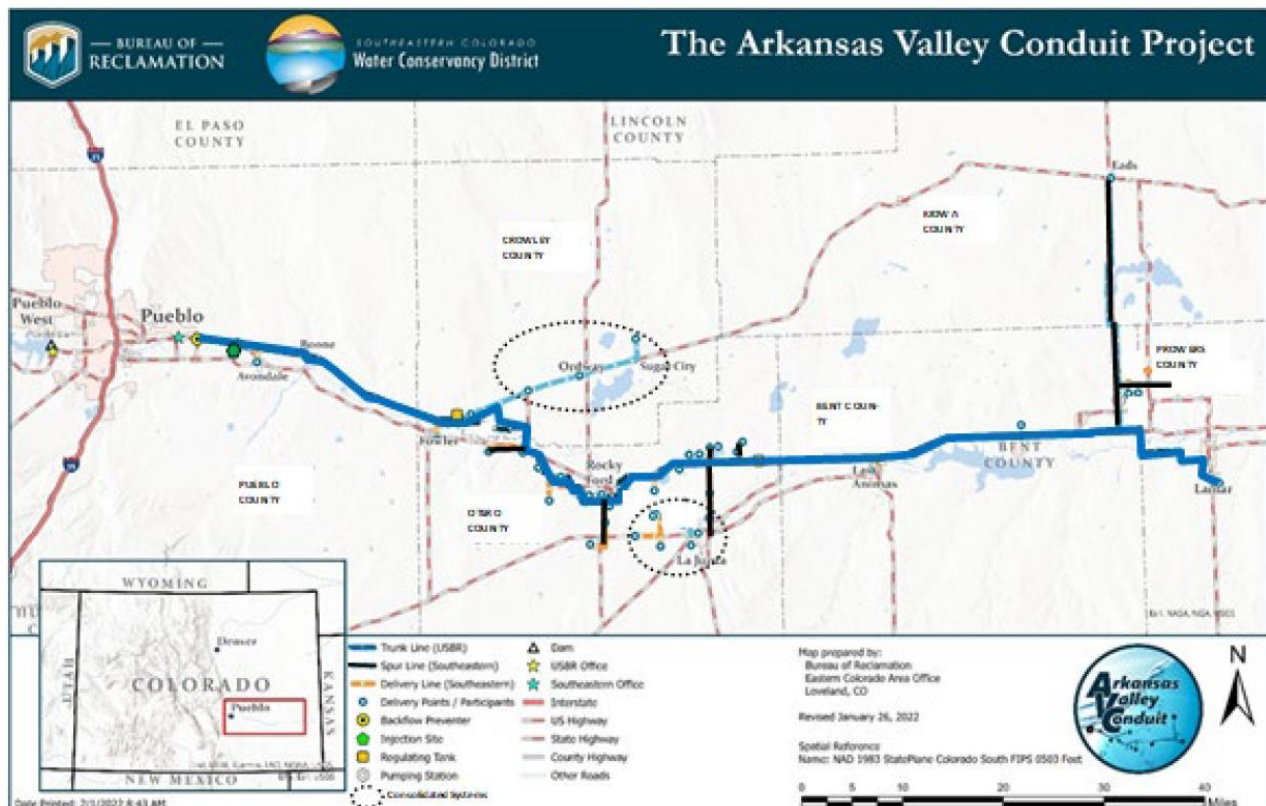
The Arkansas Valley Conduit was authorized by Congress in 1962 as part of the Fryingpan-Arkansas Project (Project), but was never built because local communities could not afford the cost. In 2000, the Southeastern Colorado Water Conservancy District, working with people in six Lower Arkansas Valley counties, renewed planning efforts for the AVC. In 2009, new federal legislation (PL 111-11) reauthorized construction of the AVC, with a 65 percent federal share, and 35 percent local share. The legislation also allows miscellaneous revenues from the Project to fund and repay construction costs. The Bureau of Reclamation issued an Environmental Impact Statement in 2013, and a Record of Decision in 2014.

P R O J E C T D E T A I L S	
Project Cost:	\$600,000,000
NRI Funding Request:	\$20,000,000
Funding Source:	SevTax PBF transfer to CF
Project Type:	Infrastructure
Type of Grantee:	Conservancy District

L O C A T I O N	
Benefits:	Pueblo, Crowley, Otero, Bent, Kiowa, Prowers Counties
Water Source:	Arkansas River
Drainage Basin:	Arkansas

The project will deliver clean drinking water to 50,000 people in 40 communities in southeastern Colorado. Domestic wells in the Arkansas River watershed east of Pueblo are contaminated by naturally occurring radioactive materials and high levels of salinity, nitrates and selenium.

These funds, along with the \$10M provided in HB20-1403, will be used to cover design and construction of the spur and delivery lines. \$8M is needed to perform the design. \$2M has been secured through the American Rescue Plan Act of 2021 to design some of the AVC delivery lines from counties and incorporated cities or towns. The current goal is to complete the design these lines by the end of 2024. \$35M is needed for construction of the spur lines that are necessary to serve multiple participants and cannot be attributed to a single water system. Goal to complete this construction by end of 2028.



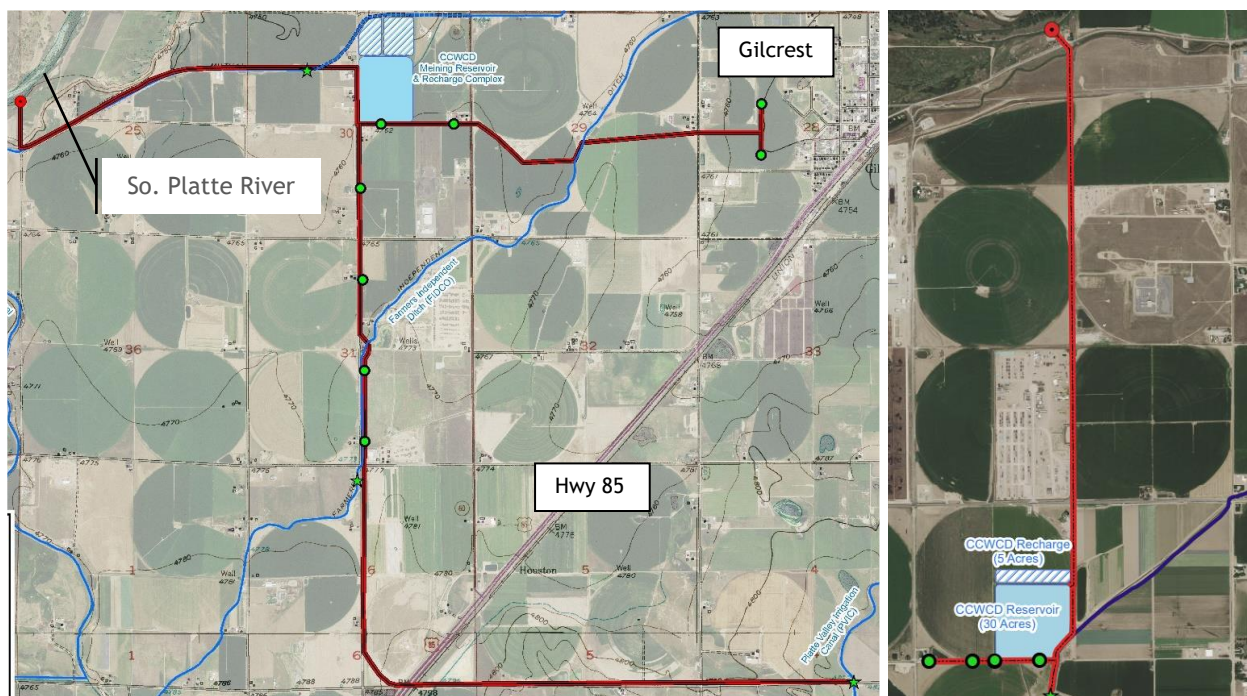


The Central Colorado Water Conservancy District (CCWCD) and its two subdistricts, the Groundwater Management Subdistrict (GMS) and the Well Augmentation Subdistrict (WAS), operate augmentation plans and develop water supplies as directed by the Colorado Water Conservancy Act. Since 2006, these plans have been utilized to increase water supplies for irrigators. To improve the efficiency and effectiveness of these augmentation plans GMS proposes to build a two pipelines. The Project will consist of two pipelines—and Northern Phase and Southern Phase—to connect reservoirs, irrigation canals, augmentation wells, and recharge sites. Water moved between them will then be flexibly applied to augment stream depletions at different locations and different times as conditions require.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$12,850,000
<i>NRI Funding Request:</i>	\$3,000,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Augmentation Infrastructure
<i>Type of Grantee:</i>	Conservancy District

L O C A T I O N	
<i>Benefits:</i>	South Platte
<i>Water Source:</i>	South Platte
<i>Drainage Basin:</i>	South Platte

The Southern Phase incorporates a 142 acre reservoir site, which GMS already owns. The 3,400 AF volume will be excavated over the next ten years. The proposed pipeline which will connect the reservoir to three irrigation canals (Platte Valley Irrigation Company, Farmers Independent Ditch Company, and the Western Mutual Ditch Company) and the recharge sites is currently under design. A preliminary construction estimate for the pipeline and associated infrastructure has been completed by J&T Consulting. GMS also proposes to permit two existing wells near the Town of Gilcrest as part of the Project. The Northern Phase will be constructed on the north side of the river North-West of the Southern Phase infrastructure. It will connect several additional augmentation wells, a reservoir, the Farmer's Independent Ditch, and the river.







CWCB staff requests \$2 million dollars of non-reimbursable project funds to advance actions and related work (i.e. developing tools, convening stakeholder groups, research, data analysis) that are described in the 2023 Colorado Water Plan (Water Plan). This funding will advance actions within each action area of the Water Plan with flexibility to allow for the budget to shift across action areas should staff needs or board operations refine funding priorities. Funds may not lead to completion of the noted actions, however, this funding offers as an initial investment towards their advancement - recognizing that some actions require funding for underlying work. These actions are described in detail in the 2023 Colorado Water Plan's Chapter 6 and summarized below.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$2,000,000
<i>NRI Funding Request:</i>	\$2,000,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Water Plan Actions
<i>Type of Grantee:</i>	State Agency

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins

Action Area	Water Plan Action Advancement Opportunities	Costs
Vibrant Cities	To support Colorado Water Plan implementation in the area of Vibrant Communities (Actions 1.1, 1.3 and 1.7), monies will be used to provide the initial funding this project will to advance water loss tracking, turf replacement discussions, and support the development of benchmarks (supporting Actions 1.1, 1.3 and 1.7).	\$500,000
Robust Agriculture	To support Colorado Water Plan implementation in the area of Robust Agriculture, monies will be used to advance economic evaluations of agriculture that can inform local government decision-making and expand Collaborative Water Sharing Agreements (supporting actions 2.3, 2.5 and 2.6).	\$500,000
Thriving Watersheds	To support Colorado Water Plan implementation in the area of Thriving Watersheds the CWCB will work with partner agencies to develop a common watershed planning platform and evaluate how research around forest health can inform scenario planning modeling (supporting actions 3.4 and 3.8).	\$500,000
Resilient Planning	To support Colorado Water Plan implementation in the area of Resilient Planning (supporting action 4.10), the CWCB will create tools that enhance Colorado's drought resilience by developing a Drought Ready Communities framework that helps communities better plan for localized drought impacts.	\$500,000