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 24-25, 2022 Board Meeting

AGENDA ITEM: 8. 2022 Projects Bill Summary

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

Attached is a summary of the proposed 2022 CWCB Projects Bill for discussion and modification as necessary.

The Projects Bill request includes $11.4 million funding of important CWCB Programs and Projects from the CWCB Construction Fund. Including:

1. $1.0 million in Water Plan Grant funding
2. $3.8 million to fund the Platte River Recovery Implementation Program.
3. $2.0 million to provide matching cash incentives to reduce irrigation in the South Fork of the Republican River to assist in compact compliance.
4. Appropriation of $8.2 million from the Water Plan Implementation Cash Fund for Water Plan Grants

COLORADO WATER CONSERVATION BOARD
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HOUSE BILL HB22-XXXX
THE 2022 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. In 2021, SB21-281 directed the CWCB to fund the Water Supply Reserve Fund (WSRF), the Interbasin Compact Committee Operation Fund (IBCC) and the Water Efficiency Grant Program from the STPBF. This will have a manageable impact on the STPBF; however it will reduce the amount of money available for new loans.

Small Project Loan Report - A report detailing the 14 loans made in calendar year 2021, providing about $19 million, was submitted to the General Assembly on January 15th 2022. A copy of the report is available on the legislative website at www.colorado.gov.

Loan interest rates are adjusted bi-monthly by CWCB. The rates mid-year 2021 were:

- 1.20 % for agricultural loans and
- 1.60% to 2.00% for municipal loans
- 6.0% for commercial loans
- 2.0% for hydroelectric projects

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2022 Bill Highlights

Includes $18.6M funding for important CWCB Programs and Projects. Including: $3.8M to fund the Platte River Recovery Implementation Program; $2M to provide matching cash incentives to reduce irrigation in the South Fork of the Republican River to assist in compact compliance. This Bill also appropriates $8.2M for Water Plan Grants.

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The CWCB accepts applications for non-reimbursable project investments and project loans over $10 million on August 1st of each year. Applications typically include programs, projects or activities of statewide impact or importance and are considered by the Board for inclusion in the annual CWCB Water Projects Bill.

Non-Reimbursable Project Investments			
Section A. 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
Section 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
Section C. 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	$350,000
Section D. Technical Assistance for Federal Cost-Sharing (Continuation)	These funds will continue to provide technical assistance to increase the success rate of applicants for competitive federal grant funds and thus will be highly leveraged. Project sponsors may also need CWCB financing for the non-federal costs. Eligible federal programs include the USDA's Regional Conservation Partnership Program [RCPP] offered statewide, the Colorado River Basin Salinity Control Program which is available throughout Western Colorado, and the Gunnison Selenium Management Program.	Colorado River Basin	$300,000
Section E. 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
Section F. Arkansas River Basin Decision Support System (ArkDSS) (Continuation)	The Arkansas River Basin Decision Support System (ArkDSS) is the last DSS to be developed in Colorado's DSS. This funding continues implementation efforts as identified in the ArkDSS feasibility study completed in 2011. This funding will be used to continue the implementation of the groundwater phase.	Arkansas	$500,000
Section G. Colorado Mesonet Project (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

Section H. 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	$450,000
Section I. UCRC Post-2026 Planning	The 2007 Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations of Lake Powell and Lake Mead will expire December 31, 2025, as will the Upper Basin and Lower Basin Drought Contingency Plans. This project will help fund the necessary modeling and data analyses to support Colorado and the Upper Colorado River Commission (UCRC) interstate planning and negotiation efforts.	Statewide	$200,000
Section J. Colorado's Water Plan Grant (WPGrant) Funding (Continuation)	This will transfer $1M from the Construction Fund (CF) to the Water Plan Implementation Cash Fund to provide grant funding for projects that assist with the implementation of the Colorado Water Plan through CWCB's Application and Guidelines process.	Statewide	$1,000,000
Section K. Reservoir Enlargement Assessment Project	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	$250,000
Section L. 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 Platte River Basin	$3,800,000
Section M. Republican River Basin Compact Compliance Programing	The DWR will utilize funds to provide matching cash incentives to producers to reduce irrigation/facilitate land retirement within the South Fork of the Republican River and to assist the state and the Republican River Water Conservation Dist. in meeting compact compliance obligations as outlined in a Resolution and subsequent Amendment approved by the Republican River Compact Administration.	Republican River Basin	$2,000,000
Section N. Goose Pasture Tarn Dam Rehabilitation	Authorizes a $13,130,000 loan to the Town of Breckenridge to rehabilitate the Goose Pasture Tarn Dam. The 57ft high dam is located on the Blue River upstream of the Town and stores 568AF of the Town's water supply. The loan is matched by a $10M grant from FEMA.	Colorado River Basin	$13,130,000

Other Provisions

Section O.
Water Plan **Implementation Cash Fund Appropriation -** This will appropriate $8.2M of sports betting revenues ($7.2M) and Construction Fund ($1M) 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.

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Satellite Monitoring/Maintenance Program

Colorado Water Conservation Board

November 2021 Board Meeting

PROJECT DETAILS	
Project Cost:	$380,000
NRI Funding Request:	$380,000
Funding Source:	*Construction Fund*
Project Type:	DWR Streamgaging
Type of Grantee:	State Agency

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

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.

Saguache Creek at Cemetery Road- Cantilever and Radar Installation (Division 3). Note these installations are more cost efficient as they require significantly less infrastructure than a typical stilling well and shelter.

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Floodplain Risk Management

Colorado Water Conservation Board

November 2021 Board Meeting

PROJECT DETAILS	
Project Cost:	$9,940,517
NRI Funding Request:	$500,000
Funding Source:	*Construction Fund*
Project Type:	**Leverage Funds for Grants**
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

Colorado has received approximately $46 million in federal grant dollars for floodplain mapping activities as part of the floodplain Map Modernization/Risk Map Program (Program) initiated by FEMA in 2003. The FEMA funds are being matched by CWCB and local cost-share dollars to implement 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 required non-federal matching dollars (80/20 cost share program in previous years), 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 thus far. 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 DSS system to increase data capture and enhance Colorado's decision support tools.

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 2021, which starts October 1st and ends September 30, 2022.

Grant Description	FEMA Funding	Grant Description	FEMA Funding
FY21 CTP Project Management	***$731,955***	**Adams, Morgan Counties Phase 2**	***$688,000***
Arapahoe, Baca, Weld Phase 1 (BLE/Discovery)	***$785,480***	**Gunnison (Year 1), Pueblo (Year 1), Garfield Addtl, Chaffee (Addtl), Lake (Addtl) Phase 2**	***$1,239,600***
Pueblo Levees	***$104,320***	**Prowers County Phase 3 & 4**	***$250,000***
Town of Crestone/Saguache County Alluvial Fan Mapping	***$36,000***	**Huerfano County Phase 3 & 4**	***$273,000***
Summit County Phase 2	***$305,100***	**Crowley, Kiowa, Lincoln, Phillips, and Sedgewick Counties Phase 1 (BLE/Discovery)**	***$787,995***
T-Gap Levee (El Paso County)	***$68,700***	**LOMR Review Partner Program**	***$670,000***
SW Colorado Phase 3 & 4	***$2,070,500***	**Hinsdale and Logan Counties Phase 2**	***$489,412***
FY21 COMS	***$288,455***	**Bent, Fremont, Mesa, Otero, Lake City/Hinsdale Phases 3-4**	***$1,013,000***
Glenwood Springs/Garfield County Debris Flow Mapping	***$139,000***		
Total FEMA Funding:	***$9,940,517***		

PROJECT DETAILS	
Project Cost:	$1.6M (matching from Lower Basin States and local sponsors)
NRI Funding Request:	$350,000
Funding Source:	*Construction Fund*
Project Type:	Snowpack augmentation
Type of Grantee:	Local Water Districts

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

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.

In 2019, the State of Wyoming collaborated with the CWCB and the Jackson County Water Conservancy District to launch Colorado's first permitted aerial cloud seeding program. 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. Potential programs for this upcoming water year seek to gather and process the data we have collected from two years of aerial seeding to accurately gauge increases in snowpack and streamflow.

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 $3.7M to match the CWCB's $2.9M to bolster locally sponsored cloud seeding in Colorado. Each year, about $1.4M 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.

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Technical Assistance for Federal Cost-Sharing (TAFC) Program

Colorado Water Conservation Board

November 2021 Board Meeting

PROJECT DETAILS	
Project Cost:	$300,000
NRI Funding Request:	$300,000
Funding Source:	*Construction Fund*
Project Type:	Grant Program
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

Colorado's Water Plan values efficient and effective water infrastructure. Innovative solutions and additional conservation and efficiency measures are needed to stretch Colorado's water supplies and maintain aging reservoirs, canals, and distribution systems.

Muliple water users can benefit from improving and upgrading irrigation infrastructure. Water quality can be improved downstream in areas that are high in salinity or selenium, to the benefit of other water users and wildlife. Efficiencies in water delivery may lead to increased flows for environmental and recreational uses, while optimizing regional delivery systems for the benefit of other agricultural water users.

Though the cost of these improvements are often beyond the capacity of water users, several federal cost-share programs provide financial incentives to help defray those costs. These programs are competitive; to be awarded funds, proposals require sound planning and well-engineered feasibility studies with reasonable and accurate cost estimates. Additionally, collaborative programs and processes such as stream management plans or regional conservation plans may lead to more competitive applications, resulting in a more comprehensive and optimized water management scheme.

The funding requested herein will be used to provide technical assistance grants to entities applying for federal cost-share programs, and to successful applicants to use in design and project management of specific project elements when federal funding for those activities is limited. In these cases, federal program guidelines restrict what federal funds may be used for, and TAFC funds may be used as applicant cost-share for those specific tasks. For example, certain NRCS programs disallow use of funds for project management and stakeholder coordination costs. TAFC funds can be used for these important tasks so that project proponents can devote federal funds to allowable expenses such as project construction costs. CWCB has employed this approach with previous funding sources devoted specifically to the RCPP program.

By providing grants for technical assistance to prepare applications in past programs, the CWCB and partner institutions have improved the success rate of Colorado water users applying for these federal funds. In addition, by providing funds for engineering design and environmental compliance activities by the successful applicants, CWCB has helped accelerate the actual implementation of projects, and preserved federal grant funds for project construction. Similar grant opportunities have been funded by the Board, and used successfully for these purposes, in 2014, 2015, and 2017.

Federal programs which provide incentives for greater efficiency include the USDA Regional Conservation Partnership Program [RCPP] which is offered statewide, the Colorado River Basin Salinity Control Program which is available throughout Western Colorado, and the Gunnison Selenium Management Program which is only available in the Gunnison Basin below the Aspinall Unit. These funds may also be used to leverage funds from the Bureau of Reclamation's WaterSMART program, and EPA cost-share programming, such as application preparation and technical assessment for potential Section 319 Nonpoint Source Management Program grants.

These technical assistance funds will increase the success rate of applicants for competitive federal grant funds and thus will be highly leveraged. In addition, successful participants in these federal programs have, and will continue to have, a strong incentive to use the CWCB loan program to finance a portion of the non-federal implementation costs.

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Litigation Fund

Colorado Water Conservation Board

November 2021 Board Meeting

PROJECT DETAILS	
Project Cost:	$1,520,000
NRI Funding Request:	$1,520,000
Funding Source:	*Construction Fund*
Project Type:	Legal Support
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	N/A
Drainage Basin:	All Basins

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 (I) 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)."

The CWCB has received a letter from Attorney General Phil Weiser stating that a total of $1,520,000 will be needed in FY 21/22 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: $940,000 for FY 21/22
2) Republican River Basin: $105,000 for FY 21/22
3) Rio Grande Basin: $475,000 for FY 21/22

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.

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Department of Natural Resources

Arkansas River Decision Support System

Colorado Water Conservation Board
November 2021 Board Meeting

PROJECT DETAILS	
Project Cost:	$7,590,000
NRI Funding Request:	$500,000
Funding Source:	*Construction Fund*
Project Type:	Decision Support System
Type of Grantee:	State (CWCB)

LOCATION	
Benefits:	Arkansas River Basin
Water Source:	N/A
Drainage Basin:	Arkansas River Basin

The Arkansas River Decision Support System (ArkDSS) project began in the FY2011 under HB 11-1274. This original authorization appropriated $500,000, and a total of $3,200,000 has been authorized to date (including $200,000 for the Feasibility Study). Of those original appropriations, $429,382 remains unencumbered. Staff requests $500,000 be appropriated for continuation of this work in FY 2022. The new funds will be used to complete the tasks described ($925,000 total) in the table below. The goal of this phase of ArkDSS is to acquire groundwater data, process and synthesize existing groundwater data, and to develop a groundwater model of the Arkansas River Basin. Goals specifically listed in the Arkansas River Decision Support System Feasibility Study include:

- Evaluate and quantify the hydraulic connection between the aquifers (shallow and deep) and the Arkansas River and associated tributaries.
- Characterize the shallow and deep aquifer systems in the upper basin (shallow alluvial and deep basin-fill aquifers) and in the lower basin (shallow alluvial and deep Dakota/Cheyenne/Raton Basin/Denver Basin aquifers) and the hydraulic interaction between the two types of aquifers.
- Provide information on the location and timing of groundwater return flows to the Arkansas River and tributaries.
- Characterize groundwater flow and yields of various aquifer systems and provide information on the water budget elements (e.g., evapotranspiration, recharge, and pumping) for each aquifer system.
- Provide maps and tools to show historical and predicted groundwater levels and properties.

FY 2022 Proposed Funding			
Location	**Item**	**Cost**	**Notes**
Arkansas River Basin	Compile existing aquifer parameter data and create spatial tools to display	$325,000	Aquifers to develop spatial tools may include the Lower Arkansas River Alluvial (Pueblo-Stateline), Upper Arkansas River (Salida-Buena Vista), Fountain Creek, the Dakota, and the Southern High Plains Aquifers.
Arkansas River Basin	Begin development of MODFLOW groundwater model based on existing modeling work performed by either Colorado State University (CSU) or Principia Mathematica Inc. (PMI)	$300,000	Colorado (PMI as Contractor) developed a groundwater model for the Lower Arkansas River (Pueblo – Stateline) as part of Kansas vs. Colorado litigation that could be updated with current data. Colorado State University has developed two proprietary groundwater models for sections of the Lower Arkansas River. Depending on state of existing modeling, additional funding may be required.
Arkansas River Basin	Gather aquifer data through drilling of monitoring wells and performance of pumping tests, monitoring of water levels using dataloggers, and performance of streambed conductance tests	$300,000	The above two tasks may identify locations where additional aquifer data is needed. Depending on needs, additional funding may be required.

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Colorado Mesonet Enhancements

Colorado Water Conservation Board

November 2021 Board Meeting

PROJECT DETAILS	
Project Cost:	$300,000
NRI Funding Request:	$150,000
Funding Source:	*Construction Fund*
Project Type:	Data Collection/Maint.
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

The Colorado Climate Center (CCC) operates the Colorado Agricultural Meteorological (CoAgMET) network, also known as Colorado's Mesonet, which has grown to 88 stations statewide that track agricultural weather, climate and drought. The CCC also manages the Colorado Regional Climate Reference Network (CO-RCRN) which consists of 17 high-quality precipitation and temperature monitoring stations located in pristine environments. These sites were intended to monitor the climate over long periods of time in areas free of urbanization and with datasets free of station moves, changes in observation time and other factors that create inhomogeneity in climate datasets. Base funding sources do not support more than minimal operation and maintenance costs for the network, but over the last several years, through support from the state and other funding sources, many significant enhancements have been made to the network. This has included an expansion from 75 to 88 stations, the majority of which transmit data every 5 minutes. These enhancements have helped move CoAgMET toward being a multipurpose State Mesonet, still focusing on a primary mission of monitoring weather and climate for agricultural and water resources purposes, but also providing real-time data for weather forecasting and other applications.

The COVID-19 travel restrictions have delayed some planned enhancements, including installing measurement towers at 10 meters above ground (in addition to the existing 2-3 meter towers) at one or two stations, and experimenting with all-weather precipitation gauges. Despite the restrictions, CCC focused on numerous new tools for analyzing, interpreting, and disseminating the CoAgMET data. CCC regularly updates monthly climate summaries for their seven longest-running stations available on the web. New sets of real-time maps have been developed and allows for quick looks at weather conditions, precipitation, and winds across the network. CCC also posts new sets of graphs and tables on the web that allows for easier access and visualization of the data, while also maintaining the data access methods that long-time users are accustomed to.

CCC intends to install stations in a few targeted areas that are vulnerable to drought but are currently devoid of high-quality data. CCC will also continue efforts to upgrade Regional Climate Reference Network stations to full CoAgMET stations, effectively expanding the size of the network. We will also add to the number of 10-meter towers and all-weather precipitation gauges at selected stations. Station updates and quality assurance will require significant attention, as some of the usual maintenance activities have been postponed because of travel restrictions. We will continue to add to the number of stations with soil moisture monitoring. With the additional data we will develop new tools for monitoring evaporative demand, drought conditions, and precipitation, and engage a broad range of audiences to help them make the best use of the available data. With the additional tools and data, we will work on data dissemination through the website, meetings and various other means (social media, handouts, etc).

Grant funds will allow continued enhancements to the CoAgMET network, improved data and products for water use planning, climate change monitoring and engagement with broader audiences, such as the clean energy innovators. Real-time monitoring capabilities will continue to be enhanced to improve severe weather warnings and emergency management applications. ***Non-Reimbursable grant funding is used to qualify for federal funds through the National Mesonet to support critical operations and maintenance needs.***

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Water Forecasting Partnership Project

Colorado Water Conservation Board

November 2021 Board Meeting

PROJECT DETAILS	
Project Cost:	$450,000 (matching will be sought)
NRI Funding Request:	$450,000
Funding Source:	*Construction Fund*
Project Type:	Data and Modeling Upgrades
Type of Grantee:	Funding for Partnerships

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

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 $350,000 in HB20-1403. Staff requests $450,000 be appropriated for continuation of this work in FY 2021/2022. 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.

A highlight from the last round of funding was establishing infrastructure for NCAR's modeling system in the Dolores, Animas, and Lemon basins. This system will be able to take full advantage of the radar that will be installed in Durango by pulling that data into streamflow forecasting.

FY 2022-23 Proposed Funding			
Location	**Item**	**Cost**	**Notes**
Statewide	ASO Pilot Project Support	$350,000	Partner with the stakeholders in the Colorado ASO group to conduct multiple ASO flights in pilot basins to determine ideal flight numbers per season. Either Northern Water Conservancy District or Denver Water will be the primary fiscal agent, but flights will be determined by a larger group representing areas across the state.
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 for WY20/21.
Total Request:		**$450,000**	

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UCRC Post-2026 Planning

Colorado Water Conservation Board

November 2021 Board Meeting

PROJECT DETAILS	
Project Cost:	$500,000
NRI Funding Request:	$200,000
Funding Source:	*Construction Fund*
Project Type:	Technical Support
Type of Grantee:	State Agency

LOCATION	
Benefits:	Statewide
Water Source:	CO River tributaries
Drainage Basin:	Colorado River Basin

The General Assembly has authorized the Colorado Water Conservation Board to fund projects and programs to "assure that the state of Colorado protects its allocation of interstate waters" and "to achieve efficient and effective management of river systems for recognized beneficial purposes" with projects "Including but not limited to development of river basin models within and without the state, policy formulation, interstate negotiations, and water management within the state" (C.R.S. 37-60-115 (1)(b)).

The Upper Colorado River Commission (UCRC) was established with the enactment of the 1948 Upper Colorado River Basin Compact. As part of that compact, the states of Colorado, New Mexico, Utah and Wyoming work together through the UCRC on multiple technical issues related to streamgaging and streamflow, runoff forecasting, consumptive use, reservoir operations, evaporation and drought contingency planning throughout the Upper Colorado River Basin. The CWCB provides technical support to the UCRC and Colorado's Commissioner.

The Colorado River Basin faces several significant challenges for which the states and the UCRC will conduct technical work, including extensive modeling and data analysis. Historic drought continues to impact water users throughout the Colorado River Basin, and drought contingency planning activities are being implemented basinwide. The 2007 Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations of Lake Powell and Lake Mead will expire December 31, 2025, as will the Upper Basin and Lower Basin Drought Contingency Plans. Formal discussions regarding post-2026 water resources management for the Colorado River will commence in 2022.

This project will help fund the necessary modeling and data analyses to support Colorado and UCRC interstate planning and negotiation efforts.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado's Water Plan Implementation

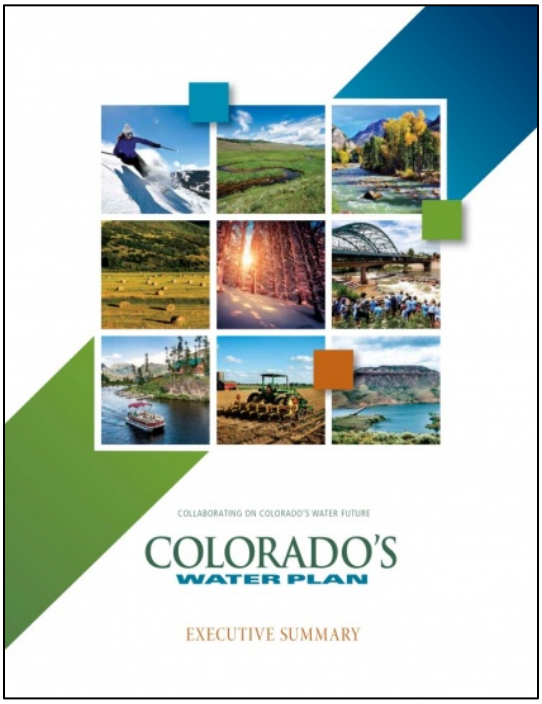
Colorado Water Conservation Board

November 2021 Board Meeting

Colorado's Water Plan Grant (WPGrant) Funding - $1.0 million – This funding will provide grant funding for projects that assist with the implementation of the Colorado Water Plan through CWCB's Application and Guidelines process.

PROJECT DETAILS	
Project Cost:	$1.0M
NRI Funding Request:	$1.0M
Funding Source:	*Construction Fund*
Project Type:	Water Plan Implementation
Type of Grantee:	N/A

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins



COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Reservoir Enlargement Assessment Project

Colorado Water Conservation Board

November 2021 Board Meeting

PROJECT DETAILS	
Project Cost:	$10M
NRI Funding Request:	$250,000
Funding Source:	*Construction Fund*
Project Type:	Technical Investigation
Type of Grantee:	Government

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

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.

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.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Platte River Recovery Implementation Program

Colorado Water Conservation Board

November 2021 Board Meeting

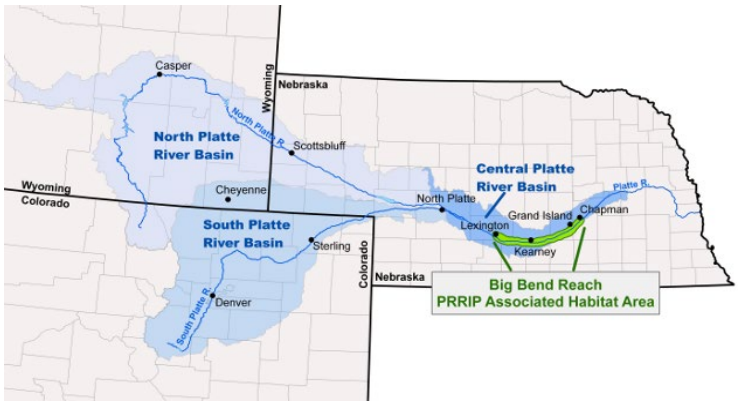
PROJECT DETAILS	
Project Cost:	$24,900,000
NRI Funding Request:	$3,800,000
Funding Source:	*Construction Fund*
Project Type:	Recovery Program
Type of Grantee:	State Agency

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	South and North Platte

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.

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.

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. From 2020-2032, Colorado has committed to providing a total of $24.9 million in cash and $6.25 million in in-kind contributions, adjusted annually for inflation. Since 2019, the Colorado General Assembly has appropriated $2.61 million through the Species Conservation Trust Fund (HB 19-1259 and SB 20-201).



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).

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Republican River Basin Compact Compliance Programming

Colorado Water Conservation Board

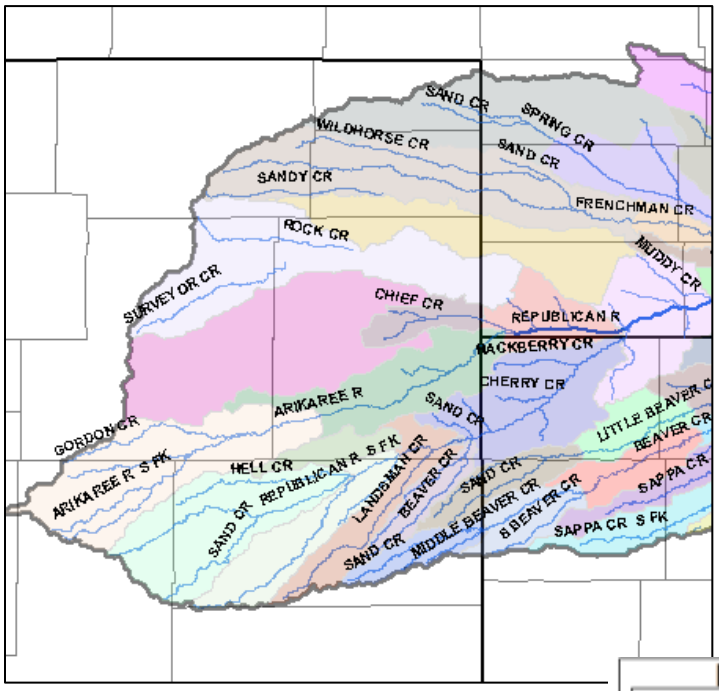
November 2021 Board Meeting

PROJECT DETAILS	
Project Cost:	$10,000,000
NRI Funding Request:	$2,000,000
Funding Source:	*Construction Fund*
Project Type:	Compact Compliance
Type of Grantee:	DWR/State Agency

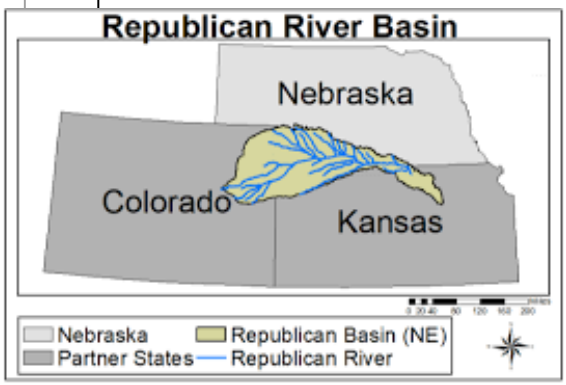
LOCATION	
Benefits:	Statewide
Water Source:	Republican River
Drainage Basin:	South Platte/Republican

The Colorado Division of Water Resources will utilize funds to provide matching cash incentives to producers to reduce irrigation/facilitate land retirement within the South Fork of the Republican River and to assist the state in meeting ongoing compact obligations. The project is located in the South Fork Focus Zone of the Republican River Basin. Counties include Kit Carson, Yuma, Lincoln, and Washington.

Grant funds, if awarded, will be utilized to assist the Republican River Water Conservation District in meeting compact compliance obligations as outlined in a Resolution and subsequent Amendment approved by the Republican River Compact Administration (RRCA). The RRCA approved a resolution that includes provisions for Colorado to retire 25,000 acres from irrigated in the South Fork of the Republican. 10,000 acres must be retired by 2024. Current retirement is at 3,000 acres. CWCB funds, administered through CDWR, will supplement non-federal dollars to provide additional incentives to encourage producers to enroll in the Conservation Reserve Enhancement Program and Environmental Quality Incentives Program to retire irrigation on cropland within the South Fork.



This project is of statewide interest. Failure to meet the 2024 retirement benchmark could have serious implications for Colorado remaining in compliance with the Republican River Compact and could result in mandatory curtailment of wells on a significant scale, which would be devastating to Eastern Colorado's agricultural sector and economy. If the 2024 deadline for retiring irrigation water from 10,000 acres is not met, investments in groundwater wells and irrigation infrastructure throughout the basin are at risk. Additionally, the current 100% credit for water delivered to the Republican River from the Colorado Pipeline Project (CPP) could revert to 22.4% credit should the 10,000 acre goal not be met. This would create an unsustainable water delivery scenario for the Republican River and put in jeopardy the $70 million invested in the CPP. Well pumping impacts to streams (depletions) persist for decades. Due to delayed depletions failure of the CCP to receive 100% credit would put Colorado on the path to imminent failure to meet compact obligations. Failure to meet those obligations will subject the state to litigation and probable fines.



COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Goose Pasture Tarn Dam Rehabilitation

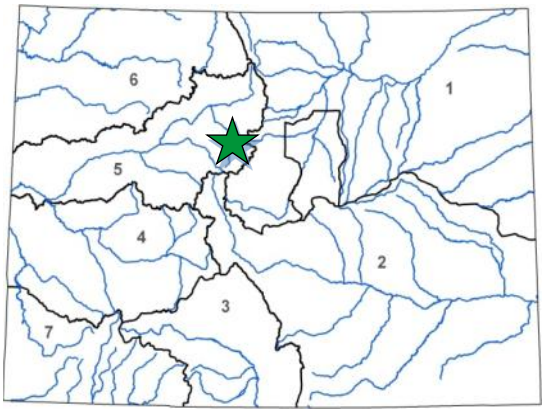
Town of Breckenridge

November 2021 Board Meeting

LOAN DETAILS	
Project Cost:	$23,000,000
CWCB Loan (with 1% Service Fee):	$13,130,000
Loan Term and Interest Rate:	30 Yrs @ 2.00%
Funding Source:	Construction Fund

BORROWER TYPE		
Agriculture	*Municipal*	*Commercial*
0%	0% Low - 0% Mid - 100% High	0%

PROJECT DETAILS	
Project Type:	Reservoir Rehabilitation
Recovered Storage:	244 AF
Preserved Storage:	568 AF
Annual Deliveries:	2,800 AF



LOCATION			
County:			Summit
Water Source:			Blue River
Drainage Basin:			Colorado
Division:	5	*District:*	36

The Town of Breckenridge is a municipality incorporated in 1880. It currently serves 5,014 water taps comprised of residential, commercial, governmental and irrigation customers. The Town has a diverse water rights portfolio made up of direct flow rights, storage rights, and augmentation water. Storage rights are primarily within Goose Pasture Tarn Reservoir (Reservoir), Green Mountain Reservoir, Clinton Reservoir, and Windy Gap Reservoir.

The Reservoir has an earthen dam classified as high hazard. In 2015, safety issues were identified with the concrete service spillway during high flows. Subsequently, the Colorado Dam Safety Branch (DSB) issued a storage restriction in 2016 lowering the safe water level by four feet and reducing storage capacity by approximately 244 AF. This Project will rehabilitate the dam and remove the storage restriction thereby reducing the risks of damage to property and public infrastructure, and potential loss of life up to 10 miles below the Reservoir. The Project will be funded, in part, by a grant from the Federal Emergency Management Agency (FEMA) for $10,000,000. Construction began in April of 2021 and is expected to be completed in the fall of 2023.