COLORADO HEALTHY RIVERS FUND PROJECTS

2018 PROJECTS: FINAL REPORT

ABSTRACT

Beginning in January of 2019 the Colorado Watershed Assembly (CWA) contracted with seven Colorado Healthy Rivers Fund award recipients. Terms and conditions were developed to reflect CWA as the lead organization managing the program. This final report details the work and outcomes of the 2018 grant award period.

Colorado Watershed Assembly

March 30, 2020

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2 COLORADO HEALTHY RIVERS FUND BACKGROUND

Senate Bill 02-087, adopted by the 2002 Colorado General Assembly, establishes the Colorado Watershed Protection Fund. House Bill 08-1241 changes the name of the Fund to the Colorado Healthy Rivers Fund. The legislation authorizes the Fund be added to the Colorado Individual Income Tax Refund Check-off Program to give taxpayers the opportunity to voluntarily contribute to watershed protection efforts in Colorado. From 2002 through 2017, the program was funded solely through the Colorado Individual Income Tax Refund Check-off Program. The fund has been modified to receive contributions on a year-round basis as well as being available as an option on the Colorado Individual Income Tax Refund Check-off Program.

The legislation provides that moneys collected in the Fund will be made available in a grant program established jointly by the Colorado Water Conservation Board (Board) and the Water Quality Control Commission, in cooperation with the Colorado Watershed Assembly. The Colorado Water Conservation Board (the Board) is the state executive branch agency responsible for state water policy and planning. The Board's mission is to promote the protection, conservation and development of Colorado's water resources and minimize the risk of flood damage. Its major programs include Water Supply Protection; Water Supply Planning and Finance; Conservation and Drought Planning; Watershed Protection & Flood Mitigation; Instream Flow and Natural Lake Protection; and Water Information. The Water Quality Control Commission (the Commission) is the administrative agency responsible for developing specific state water quality policies, in a manner that implements the broader policies set forth by the General Assembly in the Colorado Water Quality Control Act. The Commission adopts water quality classifications and standards for surface and ground waters of the state, as well as various regulations aimed at achieving compliance with those classifications and standards.

The general assembly recognizes that the Colorado Watershed Assembly, a nonprofit corporation, serves as a state-level umbrella organization for such local groups. The general assembly further recognizes that the citizens of Colorado may be willing to provide funds to assist in the restoration and the protection of lands and natural resources within watersheds of the state. It is therefore the intent of the general assembly enacting this part 23 to provide Colorado citizens the opportunity to support local watershed efforts by allowing citizens to make a voluntary contribution on their state income tax returns for such purpose.

The Colorado Watershed Assembly (CWA) is a statewide organization made up of more than 80 individual watershed protection groups. More specifically, CWA is an association of Colorado's collaboration-based watershed groups that work cooperatively with state and federal agencies to resolve watershed related problems. These collaborative watershed groups that CWA supports are made up of local stakeholders with diverse interests that include municipalities, water conservancy and conservation districts, water providers, landowners, federal and state agencies and individual citizens who are working together to find cooperative and innovative solutions to local watershed problems.

The legislation establishing the Colorado Healthy Rivers Fund (CHRF) provides that two designees of the Board, in cooperation with two designees of the Commission, and upon consultation with the Colorado Watershed Assembly, shall administer the moneys in the Fund.

In 2015, CHRF learned that the Fund would not be on the 2015 Colorado Income Tax form. The fund lapsed into dormancy while the Colorado Watershed Assembly worked to have it reinstated. A campaign to the Legislature in 2016 was successful and the Colorado Healthy Rivers Fund was put back on the Tax Refund Check-off Program and has been restructured to allow for contributions to be made year-round. Since this time, CWA has embarked on an initiative to rebuild this fund which grants money to on-the-ground projects that contribute to cleaner water, healthier wildlife habitat, and improved recreation throughout our State.

3 2018 PROGRAM MANAGEMENT

The 2018 grant application submittal period opened on March 1, 2018 and closed on April 30, 2018. The application review process took place from May through July. On August 15th recommendations were sent for review and approval to the state agency designees. The seven projects selected were approved on August 22, 2018. It was decided that, going forward, the Colorado Watershed Assembly would be the lead program contract administration agency.

Beginning in January of 2019 the Colorado Watershed Assembly revised and finalized Colorado Healthy Rivers Fund (CHRF) recipient contracts and terms of conditions to reflect CWA as the lead organization managing CHRF contracts. Phone calls were made to collect missing applicant information and have individual project task allocation discussions. The contracts along with terms and conditions were sent to all recipients. Beginning in February, on-going follow-up took place with applicants to clarify any contract and insurance certificate questions, and revise contracts to reflect each project's scope of work to be covered by CHRF funds. Site location maps were created to use for promotion and planning.

Figure 1 - Map Identifying 2018 CHRF Project Locations

An internal CWA Committee was formed to prepare for CWA's new role as Program Manager and develop a marketing campaign to improve public awareness about the fund. Campaigns included the CoGives and the Healthy Rivers Fund Hoorah auction event as well as releasing on-going press and social media blasts.

A Statement of Work was drafted between CWA and the Colorado Water Conservation Board designed to initiate the 2019 CHRF application period. A new proposed timeline for the grant application cycle is below.

APPLICATIONS AVAILABLE: FALL - SEPTEMBER
DEADLINE TO SUBMIT APPLICATIONS: FIRST FRIDAY OF NOVEMBER
APPLICATIONS REVIEWED AND APPROVED: DECEMBER 15TH
GRANTS AWARDED: JANUARY 30TH
ANNUAL PROGRESS REPORTS DUE: JANUARY 30TH OF THE FOLLOWING YEAR

A CHRF budget review meeting took place between the three primary fund organizations to plan for the 2019 grant cycle. The recommended direction was to convert to an on-line application submittal process. Research was conducted to identify software compatible with the CWA website platform that could best manage an on-line application process and meet the platform security criteria. Wufoo software was selected. A red-line review of the current application guidelines was conducted to reflect the new on-line submittal process.

Figure 2 - Marketing for CHRF Hoorah! Fundraising Event

The cost for this software program is $29.08 a month. CWA agreed to purchase the software in August of 2019 to prepare for the open application period. In August, Wufoo software was purchased and a draft CHRF on-line application was created. Developing the form on-line involved additional CWA staff time. A contract review was conducted which reduced the program financial scope. The management hours allocated to the CHRF program were reduced.

In May and August of 2019, follow-up emails and calls were made to the 2018 CHRF recipients requesting project status updates and social media materials and three site visits took place. The CWA Program Manager visited the Bear Creek site in May, Big Thompson site in June and Campbell Valley site in August. All site visits resulted in social media campaigns that increased CHRF program exposure.

Figure 3 - CHRF Poster for Booth Display at Promotional Events

4 PROJECTS 2018 GRANT CYCLE

4.1 BADGER CREEK RESTORATION PILOT PROJECT

4.1.1 Background

The lead project sponsor and coordinator for the Badger Creek Watershed Partnership was the Central Colorado Conservancy. The Badger Creek Watershed drains into the Arkansas River in Fremont County. This 100 square mile watershed is home to public lands (BLM, U.S. Forest Service, State Board Lands, Colorado Parks and Wildlife), private ranchlands and a few rural subdivisions. Most of the land is used for cattle grazing.

Over the years, the Badger Creek Watershed has experienced degradation from previous and current land uses. Periods of intense grazing pressure created rapid damage to both the uplands and riparian areas. The historic broad fluvial wetlands comprising the watershed, were cleared, grazed, and farmed. The creek became channelized, cutting down 4-12 feet. Former wetlands became dry and disappeared. EcoMetrics, the organization that developed the Park County Wetland Stream Inventory in 2016, has estimated a loss of 64% of wetland habitat in the watershed. The creek bed continued to erode, and the incision trench widened to more than 200 feet in places. Changes to Badger Creek impact the Arkansas River, including water infrastructure, water supply, fisheries, recreation, and ecological services.

4.1.2 Activities

In August 2019 phase 1 of the riparian restoration demonstration project in the Badger Creek Watershed was completed. The project area included approximately ½ mile of Badger Creek running through the BLM's Wagon Tongue parcel.

Working with EcoMetrics, 67 'speed bumps' were built using native materials harvested on site. These 'speed bumps' were constructed from sedge sod, placed in incised portions of the channel to slow the water down, and spread it out, widening the riparian area along Badger Creek. Even at low flows the water in Badger Creek continues to flow over the top of the speed bumps, so while the water is slowed down and spread out, it continues to be a flow-through system.

Following construction of the speed bumps, Mile High Youth Crews planted 2000 willows in the newly wetted areas adjacent to Badger Creek. The native willows were a mix of montane species, sourced from AlpineEco, a nursery in Buena Vista specializing in native plants for restoration.

Figure 4 - Workers on Site at Badger Creek Restoration Pilot Project

Badger Creek's BLM partners treated several patches of Canada thistle on site to prevent their spread as more moisture becomes available for plants along this reach. 11 photo points were established along the half mile reach and a photo record documents upstream and downstream conditions at each photo point before, during, and after construction and planting.

4.1.3 Accomplishments

The 1.2 acres of existing wetland were expanded to 3.8 acres of wetland in the short-term, as predicted. The treatments are performing as expected and appear to be on track to reach 5.0 acres of enhanced/restored wetlands after the next few years. Monitoring will continue on this site to document how Badger Creek and its riparian area respond over time.

4.1.4 Funding Leverage

Central Colorado Conservancy was able to leverage this pilot riparian restoration project to bring in additional funding for a second phase of restoration on a lower reach of Badger Creek in 2020. Having a demonstration project on the ground has also already allowed them to show neighboring landowners how well this technique is working and they have garnered interest from two additional landowners in the Badger Creek Watershed who want to learn more about potential riparian restoration on their private ground.

4.2 Bear Creek Watershed Restoration Project

4.2.1 Background

Rocky Mountain Field Institute RMFI was the Bear Creek Watershed Restoration Project sponsor working with the United States Forest Service (USFS), El Paso County (EPC), and the City of Colorado Springs (COS), along with collaboration from additional partner groups and agencies, to protect the sole remaining, genetically pure population of greenback cutthroat trout (Oncorhynchus clarkia stomias). This population of trout, which is the last of its kind surviving in the wild, inhabits a 4-mile stretch of Bear Creek just west of the City of Colorado Springs on property managed by USFS and EPC. Under the Endangered Species Act (ESA) greenback cutthroat trout are currently listed as threatened.

The overarching goal of the Bear Creek Watershed Restoration Project is to improve the habitat of the greenback cutthroat trout while enhancing the health and function of the Bear Creek Watershed. A secondary goal is to foster sustainable recreation. The primary objective that was established in order to accomplish these goals is the decommissioning of former Trail #667. The objective will be achieved through the multi-year implementation of a variety of proven, science-based techniques including active ecological restoration, streambank restoration, decommissioning of system and non-system trails, and improvement of designated system trails to reduce risks associated with erosion and enhance overall trail sustainability.

The Bear Creek Project is unique in that it is a restoration project located 5-miles into the backcountry from the closest parking area. The location poses logistical challenges that have considerable impact on the project. Work of this nature can only be completed by hand crews that are equipped to camp and work in the backcountry. Rocky Mountain Field Institute and Mile High Youth Corps (MHYC) started decommissioning work of former Trail #667 in the fall of 2017, continued in the summer of 2018.

4.2.2 Activities

In May of 2019 RMFI continued to restore 2.7-miles of the former #667 Trail. Due to the backcountry location, field crews camped in Jones Park and hiked to work sites in the Watershed. An average of 8 MHYC members were on site for the duration of the project, along with a minimum of 2 RMFI staff who provided project supervision and coordination with land management agencies.

Because of the presence of the fish and the risk of sediment from the severely eroded trail system entering the stream, the project could not stop at decommissioning – active restoration was also necessary. In areas where an open trail abutted Trail #667, the approach was to make the trail uninviting for users by installing fence, felling trees, and spreading slash. As the trail veered away from those areas, and closer to Bear Creek, the approach changed from decommissioning to restoration. The restoration process consisted of felling trees to create in-trail obstacles for persistent users (off-trail travel is prohibited in the Watershed) as well as creating microclimates by opening the forest canopy for in-trail plant germination, constructing in-trail erosion control structures using felled trees or rock found on-location and spreading a native seed mix.

In many areas on the trail, the profile becomes steep and incised, in turn creating a channel for water flow and sediment transport. Almost the entirety of the trail is incised, ranging from a few inches to more than 5-feet in some areas. The approach to address this was to slow the flow of water by adding surface roughness through slash and the installation of check dams (CDs).

Figure 5 - Social Media Announcement for Bear Creek Watershed Restoration Project

4.2.3 Accomplishments

Over the 8 workdays with MHYC, RMFI field instructors provided opportunities for natural resource skills development, outdoor leadership, and environmental education lessons. RMFI staff offered place-based lectures that included content about the biological significance of the trout and the NEPA process as well as historical events that occurred in the Bear Creek Watershed.

Twenty-six check dams (CD) were installed. The purpose of the CDs is to reduce water's erosive force, stabilize loose soil, and ensure planted seed would not wash away. These erosion control structures will reduce the amount of sediment entering Bear Creek by keeping water and particulate materials held in suspension on the trail by creating a solid barrier on the critical edge.

Slash materials were placed perpendicular or at 45-degree angles to the trail to reduce concentration of on-trail water flow. Near trail junctions, the deadfall was placed densely to make travel difficult for determined users.

RMFI continues to complete effectiveness monitoring in the Watershed to determine if project performance goals and desired conditions are achieved. The effectiveness monitoring protocol includes the following routine evaluations: geo-referenced photo points (before and after), periodic site visits with land management agency project staff to make observations of vegetative re-growth and sediment capture, and detailed quantitative data collection to document the statistics.

4.2.4 Funding Leverage

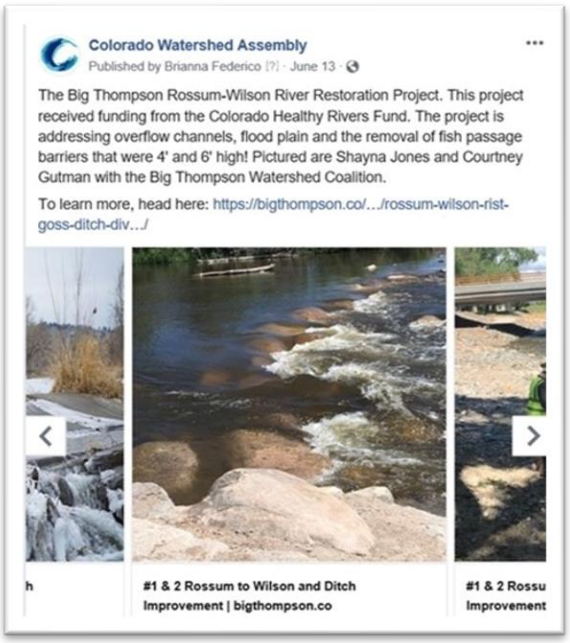
To leverage the labor force, RMFI sub-contracted with the MHYC to help complete project objectives. RMFI has a long history of partnering with MHYC to implement trail improvement and landscape restoration projects, including one eight-day hitch of work in the Watershed during the 2019 field season. The MHYC employs young adults 17 to 24, providing them a chance to earn an income and participate in a variety of crew-based environmental rehabilitation and habitat restoration projects.

RMFI received additional funding from Patagonia and El Paso County to support 2019 work objectives. RMFI has submitted another grant to Patagonia and the organization is in discussions with land managers about dedicating funds to the project next year.

4.3 Big Thompson Rossum-Wilson River Restoration

4.3.1 Background

Figure 6 - Social Media Announcement for Big Thompson Rossum-Wilson River Restoration



The Big Thompson Watershed Coalition (BTWC) has two projects between Rossum and Wilson Avenues: a river restoration project (Rossum-Wilson) and a ditch improvement project (Rist-Goss). The Rossum-Wilson and Rist-Goss projects will restore channel, banks, and ditch infrastructure damaged by the Front Range floods of 2013. However, much of this area has also been intensively damaged by extensive cattle grazing.

The budgets for these projects include revegetation following construction, but visits to the sites over the course of planning had identified a greater need for vegetation. This project provided a great opportunity to build on the BTWC's monitoring, adaptive management and stewardship initiative and involve the community in the revegetation work.

The City of Loveland has agreed to discontinue leasing this land for cattle grazing following the BTWC restoration projects. BTWC plans to establish vegetation in this damaged area, with one year of monitoring and one to two follow up planting and weeding days. Removal of cattle and revegetation of this area is expected to have positive impacts on water quality, which is monitored by the Big Thompson Watershed Forum, as well as stabilizing banks and reducing erosion.

The planting plan calls for soil amendments, native seed, container plants, and riparian tree cuttings. This project will allow the heavily grazed section to be planted, monitored, and weeded by volunteer community members, with plants, monitoring, and administrative costs covered by this grant.

4.3.2 Progress Report

During the reporting period of fall-winter 2019, the BTWC organized and coordinated a volunteer day with Hach and Trout Unlimited – Rocky Mountain Flycasters. They prepared and discussed tools, supplies, and educational materials; and conducted follow-up appreciation materials, record keeping, and public relations. Also, planning activities with the City of Loveland, Hach, and Rocky Mountain Flycasters were started to conduct a large volunteer planning day for Earth Day 2020 (on or near the date).

The BTWC engaged volunteers in project history and construction, native plant identification and care techniques including watering, weeding, and staking for future community identification ease. Fifteen volunteers were led through 3 hours of native plant care and weeding at the Rossum-Wilson project site.

4.3.3 Contract Extension

In the BTWC application the below schedule was proposed.

The timeframe for this project is 12 to 18 months, depending on monitoring results:

- June 2019: Volunteer planting day
- Late summer/ fall 2019: Volunteer weed pull (if needed)
- Early spring 2020: Volunteer planting day/weed pull
- Late summer/fall 2020: Volunteer weed pull (if needed)

To accommodate this timeline, the BTWC contract service dates were extended from January 1, 2019 through June 28, 2020.

4.4 CAMPBELL VALLEY WATERSHED AND CREEK RESTORATION

4.4.1 Background

The Wildlands Restoration Volunteers (WRV) was the lead sponsor for this project. Campbell Valley is located within a region Colorado Natural Heritage Program identified as "one of Colorado's highest-priority landscape-level conservation sites, based on threats and multiple species and communities of concern in need of protection attention. In the early 1900's, due to delayed completion of the North Poudre Irrigation Canal, Campbell Creek was used as a temporary conveyance through this valley. The elevation of the creek was down cut by over 40 ft. This massive change caused head-cutting and down-cutting of every tributary in the valley, resulting in the estimated loss of 150,000 MM cubic ft. of sediment, and over 3 miles of riparian habitat.

Due to continued canal leakage and historic overgrazing, the instability continues today, dumping over 7,000m2 of sediment into Campbell Creek yearly, which is a tributary to the Poudre River. The sediment is a pollutant which poses problems for utilities, fish and invertebrates, and the erosion dissects the Robert's ranch pastures, encourages invasive plant establishment, and disrupts wildlife habitat and migration corridors.

Wildlands Restoration Volunteers has been working in Campbell Valley for over 10 years. Much of this effort has been focused on stabilizing the ongoing damage cause by the leaks in the upper watershed and the upland erosion caused by the lowered base level of the valley, but in recent years the focus has moved to Campbell Creek itself. Much of Campbell Creek has become incised due to the additional flows from the leak upstream. The riparian forest in these areas is nonexistent and being replaced by more xeric species. In an effort to raise the water table and reintroduce a native riparian forest WRV is installing a system of grade control and induced meandering structures.

4.4.2 Activities

WRV had planned to build out and complete repairs to the exclosure fencing around the floodplain. This part of the scope, and the riparian revegetation it would have protected, was delayed. The leak in the North Poudre Ditch took a dramatically turn for the worse in 2018 and 2019. It was decided to prioritize enhanced monitoring to watch for indicators of an impending catastrophic breach. Funding that would have otherwise gone towards fence repair was spent on additional stream stage monitoring and drone photogrammetric surveys of the destabilized area.

Figure 7 - Photos of Campbell Valley Watershed & Creek Restoration Project Site Visit August 2019

A late-summer flood completely wiped out all the existing watergap fencing that crossed the floodplain. Effort was redirected to cleaning up the damaged fence debris. The flood which covered the 100-foot-wide floodplain in 20" of water also damaged 5 new Wicker Weir structures in the uppermost reach. This reach, which is especially narrow and incised, may be more appropriate for the sturdier TWIG structures if access can be found for the heavy equipment.

With so much of the fencing damaged and winter grazing season approaching, WRV redirected their fall resources to installing more structures instead of planting unprotected vegetation. Revegetation will take place after the fence is repaired in 2020.

4.4.3 Accomplishments

WRV held five volunteer projects totaling 8 project days and 1200+ volunteer hours this season. They constructed a total of 53 in-stream structures:

- 30 Wicker Weirs (though 5 were lost to a flood event)
- 8 Induced Meanders
- 10 Temporary Wooden In-stream Grade control Structures
- 5 Rock Riffles

Each of these structures has the effect of raising the local water level in the creek by 12-24 inches, in many cases overtopping the streams banks in higher flows and irrigating the 100+ft wide floodplain. They treated 8500 feet of stream for a total of 20 acres of floodplain and potential wetland and riparian habitat.

While not all the intended objectives were met for the 2019 season, by taking an adaptive approach they are on track to meet their longer-term project goals. Funding is in place to complete the remaining TWIG installations, repair the fencing and complete revegetation in 2020 and 2021.

The additional monitoring has already had interesting results. Despite increased leakage flows, they're seeing an encouraging trend in sediment load reduction in the creek and while the digital elevation

models haven't yet produced any alarming results indicating catastrophic breach, they now have baseline topography for much of Campbell Creek and its tributaries.

4.4.4 Funding Leverage

WRV leveraged $19,604 in CWA funds to secure additional resources and put their volunteer community to work. Other funders contributed over $32K towards the 2019 season enabling them to mobilize almost $30K in volunteer labor.

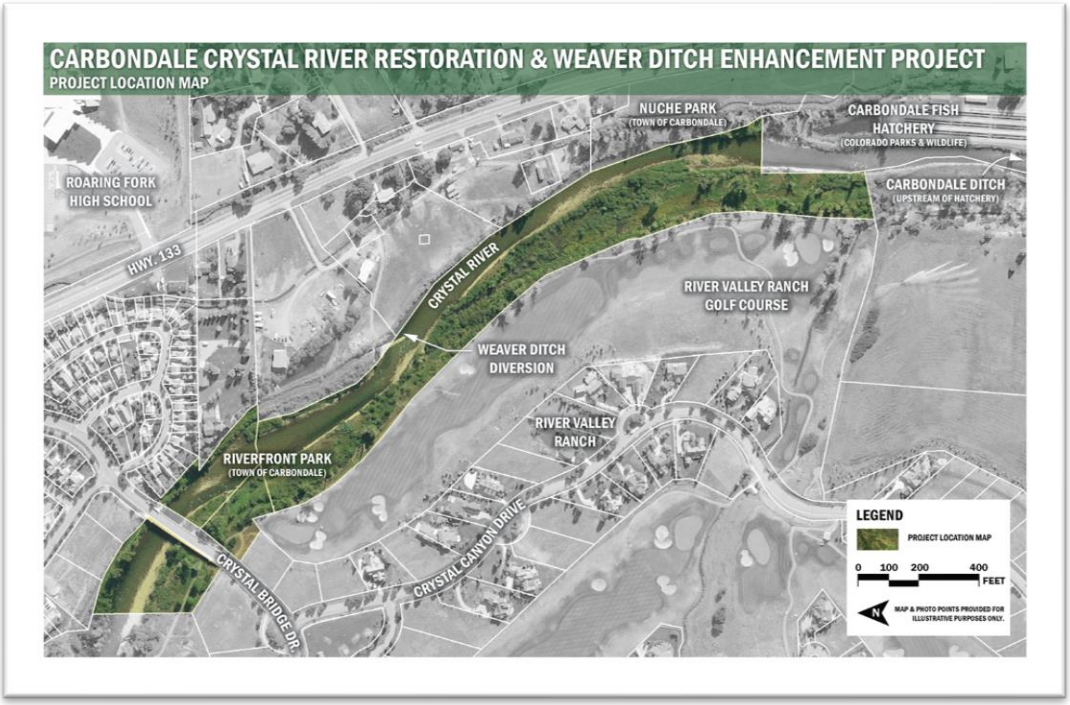
The scope accomplished with these funds in 2019 enabled them to secure additional resources for upcoming seasons including over $70K in grant funding which will support two more seasons of volunteer efforts.

4.5 Carbondale Crystal River Restoration and Weaver Ditch Efficiency Project

4.5.1 Background

The Town of Carbondale was the lead sponsor for this project. The Town owns Riverfront Park (the project site) and all the land on both sides of the Crystal River and within 5-feet of the ordinary high water mark as the river passes 1.5 miles through Carbondale. The state of the Crystal River has been the focus of the community for many years with the conflicts of use and desires for a river system which is less distressed and functions in a more natural way. In 2016 after extensive survey work, public input and inventory of the Crystal River, the Roaring Fork Conservancy published the "Crystal River Management Plan". The management plan brought forth a foundation of selected segments of the Crystal River which were considered to be of high priority to re- establish riparian habitat and increase river channel stability.

Figure 8 – Carbondale Crystal River Restoration & Weaver Ditch Enhancement Project Location Map



This project focus was on the publicly accessible Riverfront Park and the adjacent reach of river which encompasses a one-half mile reach. The reach is located along the Town of Carbondale-owned Riverfront Park in River Valley Ranch (RVR) subdivision. Riverfront Park lies between the Carbondale Fish Hatchery and Crystal Bridge Drive.

The Crystal River Management plan describes this reach as being severely to unsustainably impaired. The Crystal River restoration and Weaver ditch efficiency plan brings forth opportunities for the Town of Carbondale to act on a major goal of the 2015 Carbondale Parks & Recreation Master Plan for improved connectivity between the community and its rivers.

This project offers a unique opportunity for the community to come together with a common goal of restoring the Crystal River. The objective is to maintain the park's character and passive use as a wildland park, improve the health of the ecosystem, and enhance the educational experience.

4.5.2 Activities

The requested grant monies were targeted to be used to fund the planning, design, and permitting for the project. In 2018 River Restoration, DHM Design, and Lotic Hydrologic conducted a thorough site survey and analysis of the Crystal River and adjacent riparian habitat. The site survey identified which parts of the river and riparian system were functioning in a healthy way, and which parts were not.

Figure 9 - Crystal River Aerial View Photograph

In April and May 2019, the consultant team presented the results of their site assessment, along with conceptual restoration and enhancement alternatives to the public. Public comments were accepted between 4/22/2019 and 5/24/2019. Meetings and site visits were held with stake holders and organization representatives from many organizations including: Audubon Society American Rivers, Colorado Parks and Wildlife, RVR home owners Association, Roaring Fork Conservancy, US Forest Service White River National Forest, Aspen-Sopris Ranger District, Aspen Valley Land and Trust, Pitkin County Healthy Rivers Colorado Water Conservation Board, Stream Restoration Coordinator Colorado Basin Roundtable, Colorado Division Water resources (Division 5) Carbondale Parks Commission and the Carbondale Board of Trustees Public Council of the Rockies.

In the summer 2019, the project stakeholders considered the public input and selected the preferred alternative which is reflected in the 60% plan submittal.

4.5.3 Accomplishments

The results of the public outreach tasks have resulted in a plan which addresses the scope of the project with input from the stakeholders and the community at large. The plan has prompted a goal for fundraising and conceptual phasing of plan implementation.

One of the main objectives within the planning process has been to develop a self- sustaining project requiring minimal long-term maintenance. This area is within the Carbondale Parks Department park system. Routine site visits are expected to occur for site condition, and work plans.

Communication amongst the stakeholders has been critical to the success of the project thus far. The Weaver Ditch efficiency portion of the project was assessed as a different project. The river diversion was included with the Carbondale Crystal River Restoration and Weaver Ditch Efficiency Project and the inventory of the Weaver Ditch was performed separately. These were different skill sets for the groundwork which could then be combined for implementation in the field.

This project will remain a foundational project for future work along the Crystal River. The lessons learned with the design and implementation will serve future restoration and habitat improvement along this river corridor. The Crystal River Management plan and Crystal River Restoration Report and Crystal River Restoration Project Plan will more than likely remain foundational documents for future projects and plans. The next steps will be to continue fund raising and proceed with a request for proposal to construct the project.

4.5.4 Funding Leverage

Funding sources included grant monies from Colorado Healthy Rivers Fund $15,000, Colorado Water Conservation Board WSRF $20,700, Environment Foundation Funding (Aspen Ski Company) $9,300, Colorado Water Conservation Board Watershed restoration grant $90,000, Pitkin County Healthy Rivers, $5,000, Town of Carbondale $20,000 and in-kind contribution of $20,000.

The planning, design, and permitting for the project is anticipated to cost $200,000 and take over a year to complete. The project was preliminarily awarded $130,000 in grant funding earlier this year from two separate Colorado Water Conservation Board funds ($100,000 from the Watershed Restoration Grant Fund and $20,700 from the Water Supply Reserve Fund), as well as $9,300 grant from the Environment Foundation. The remaining $70,000 needed for the planning phase will be funded in part by the Town of Carbondale and in-kind contributions from the partnering organizations and other funds, as needed.

4.6 POUDRE FLOWS PROJECT

4.6.1 Background

Colorado Water Trust was the lead sponsor and is the primary proponent for the Poudre Flows Project. The Cache La Poudre River (Poudre River) originates high in the Rocky Mountains and flows through canyons to the Cities of Fort Collins and Greeley, continuing east to the plains. During seasons with low flows, which occurs even in years of average snowfall, human uses withdraw all the water from the river in at least seven places, leaving the Poudre's fish populations devastated and impacting other wildlife that depends on the river for survival.

Local cities are concerned with the health of their river, but the concern is not just for fish and wildlife. Traditional water users like farmers and ranchers have concerns that growth and changing values towards rivers will result in dry fields and a dried-up agricultural economy.

To restore flows to the Poudre while addressing the needs of water users, the Colorado Water Trust has partnered with the Cities of Fort Collins, Greeley, and Thornton, the Cache La Poudre Water Users Association, the Colorado Water Conservation Board, and the Northern Colorado Water Conservancy

District to create a water market for the environment. Under the project as conceived, water users will be able to donate, sell, or lease their water to the river, restoring flows while also receiving compensation for any production loss. It is a unique collaboration that demonstrates that if we work together, we can restore our natural environment while also supporting our way of life. It also demonstrates evolving attitudes towards rivers. Back in the 1980s, environmental protection on the Poudre was staunchly opposed by water users. Now they are at the table helping design this project for long-term sustainability.

4.6.2 Progress Report

Colorado Water Trust has spent approximately $5,000 on outreach through the hosting of and participation in several events in Fort Collins, putting on presentations, as well as organizing meetings with project partners, donors, and prospective project partners and donors. All these activities included the promotion of the Poudre Flows Project.

They had a major setback at the beginning of the year when legislation to clarify and streamline the legal framework associated with the project did not pass and required CWT to wait for one more year to try and pass it again. This put the project largely on hold for the rest of 2019.

They will continue to meet with project partners and are in the final stages of executing a Memorandum of Agreement (MOA) to guide the rest of the project, but much of the fundraising, outreach, and communications regarding the project have been halted until they can aim to pass the legislation again in January of 2020.

4.6.3 Contract Extension

CWT requested a six-month extension for their grant on November 22, 2019. The extension was granted extending their grant deadline to June 1, 2020.

They intend to work on the legislation passing in early 2020, then move forward with the communications and branding. Once the MOA is signed and the legislation passes, they will submit for water court approval and enter into 2-3 seed contracts to begin implementation.

4.7 Rio Grande Riparian Stabilization Planning Project

4.7.1 Background

Figure 10 - Rio Grande Riparian Stabilization Planning Project Photo of Chefas Downstream Field Review

The Rio Grande in Alamosa County is experiencing a deterioration in river function due to the continual increase in sediment loading caused by unstable and eroding streambanks. Streambank instability is further exacerbated by the lack of anchoring riparian vegetation. In September 2013, the **Colorado Rio Grande Restoration Foundation** (Foundation), the fiscal agent for the **Rio Grande Headwaters Restoration Project** (RGHRP), was awarded $15,000 from the

Colorado Healthy Rivers Fund (CHRF). The award was used to engage private landowners, local stakeholders, and engineers in surveying and developing plans to improve the function of the Rio Grande through streambank stabilization and riparian restoration.

Funded activities with the 2018 CHRF grant included the development of restoration recommendations and preliminary designs for restoration completed by Riverbend Engineering in partnership with the RGHRP, private landowners, and the project's Technical Advisory Team (TAT). Additional activities included landowner and stakeholder outreach and project administration completed by the RGHRP.

4.7.2 Activities

Throughout 2018 and 2019, the RGHRP completed landowner outreach, which included over 10 site visits and in-person conversations with landowners or ranch managers about restoration needs at each site. In addition, a Technical Advisory Team was formed to oversee the planning process and ensure project methodologies and designs will best address the ecological and hydrological needs facing the Rio Grande. The TAT included representatives from the San Luis Valley Water Conservancy District (SLVWCD), Rio Grande Headwaters Land Trust (RiGHT), the Colorado Division of Water Resources (DWR), the Natural Resources Conservation Service (NRCS), and project landowners.

The RGHRP hired Riverbend Engineering, a third-party engineering firm, to complete site surveys at the four sites identified as project targets. These sites include:

- Site 1: South Hale Ranch
- Site 2: Mike McCarty Property
- Site 3: Regas Chefas Property
- Site 4: Alamosa Riparian Park (City of Alamosa Property)

Using data from the site surveys, Riverbend Engineering worked with the landowners, RGHRP, and TAT to develop restoration recommendations for each location. Recommended restoration methods include channel reshaping, streambank stabilization, and riparian wetland revegetation. Additionally, at sites where active grazing is occurring, recommendations include riparian fencing.

4.7.3 Accomplishments

A list of four prioritized sites for restoration were identified. These project sites were strategically chosen, both for the critical and urgent nature of their instability and their location relative to previously restored sites. Surveys for Sites 1, 2, and 4 were completed in Fall 2019. Surveys for site 3 will be completed in Spring 2020 with funding support through the San Luis Valley Conservation Connection Initiative. Riverbend Engineering used the site surveys and restoration recommendations to develop preliminary designs and cost estimates for Sites 1, 2, and 4. Preliminary plans include material quantities required for the channel shaping and construction of the new bank stabilization structures, riparian revegetation as well as profile view, typical sections, structure details, and an updated estimate of construction quantities and costs.

When complete, the Project will improve the health and resilience of the Rio Grande in Alamosa County by stabilizing streambanks and restoring riparian areas, thereby reducing sediment load to the river,

improving riparian and aquatic habitat, reconnecting the river to its floodplain, and revitalizing riparian wetlands.

4.7.4 Funding Leverage

The total cost of the project was $32,500, with $15,000 from the Colorado Healthy Rivers Fund and $17,500 in cash and in-kind contributions. The CHRF grant award provided funds to complete site surveys and preliminary designs at three of the four identified restoration sites.

In 2019, the RGHRP applied and was awarded a $40,000 grant through the San Luis Valley Conservation Connection Initiative (SLVCCI), which will fund the preliminary designs for Site 3 and final designs and permitting for all four sites. Final designs and permitting for all sites will be completed in Spring and Summer 2020. This will allow for project construction starting in Fall 2020 as funding becomes available.

In Summer 2019, the RGHRP applied to and received a grant of $200,000 from the National Fish and Wildlife Foundation to support project construction at each site. An additional grant through the Colorado Water Conservation Board was submitted in November 2019 and is pending. These grant dollars paired with the landowner contributions will allow for the implementation of the recommendations and preliminary designs developed through this Project.

5 PROGRAM FINANCIALS

Grant funds disbursed $101,128.

Administrative and management complete pending two grant extensions granted through June 2020.

Table 1 - 2018 CHRF Funds Leveraged Per Project and Funding Sources Total

Applicant	Project Title	Project Type	Funds Considered	Cash	In-Kind	Match/In-Kind Funding	Basin
Central Colorado Conservancy	Badger Creek Restoration Pilot Project	Riparian Restoration/Enhancement	14,750	50,434	7,536	57,971	Arkansas
Big Thompson Watershed Coalition (BTWC)	Big Thompson Watershed Coalition Rossum-Wilson River Restoration Community Revegetation Project	Restoration	10,700	1,000	10,000	11,000	SP
Town of Carbondale	Carbondale Crystal River Restoration and Weaver Ditch Efficiency Project	Planning	15,000	150,000	25,000	175,000	Colorado
Colorado Water Trust	Colorado Water Trust's Poudre Flows Project	Planning	15,000	275,000	0	275,000	SP
Wildlands Restoration Volunteers	Campbell Valley Watershed and Creek Restoration	Restoration	19,604	20,178	39,998	60,176	SP
Rio Grande Headwaters Restoration Project (RGHRP)	Rio Grande Riparian Stabilization Planning Project	Planning	15,000	12,000	3,000	15,000	RIO
Rocky Mountain Field Institute	Bear Creek Watershed Restoration Project	Habitat/Enhancement/Recreation	28,000	6,941	5,585	12,526	Arkansas
			118,054	476,434	42,536	518,971	

6 CONCLUSION

The value of the Colorado Healthy Rivers Fund to our Colorado communities may be best stated by the recipients of those funds.

> *"Having a demonstration project on the ground has also already allowed us to show neighboring landowners how well this technique is working and we have garnered interest from two additional landowners in the Badger Creek Watershed who want to learn more about potential riparian restoration on their private ground."*
>
> *Buffy Length, Central Colorado Conservancy, Badger Creek Restoration Pilot Project*

"Another exciting update, we received a grant for $200,000 through the National Fish and Wildlife Foundation for project construction! This is a significant portion of the project cost and will move us that much closer towards implementation. We wouldn't have received this grant without the initial CHRF support, which really speaks to the value of these smaller leveraging grants."

Emma Reesor, Executive Director, Rio Grande Headwaters Restoration Project

The Badger Creek Project in the Arkansas basin will continue to monitor their pilot project for a few years to make sure it is responding as expected. They were able to leverage the project to bring in additional funding for a second phase of restoration on a lower reach of Badger Creek in 2020.

In the Bear Creek Watershed, Rocky Mountain Field Institute sub-contracted with the Mile Hi Youth Corp, a non-profit organization whose mission is to provide young adults with professional development opportunities through meaningful service projects and educational experiences. Over the 8 workdays with MHYC, RMFI field instructors provided opportunities for natural resource skills development, outdoor leadership, and environmental education lessons. RMFI staff offered place-based lectures that included content about the biological significance of the trout and the NEPA process as well as historical events that occurred in the Bear Creek Watershed. Additionally, RMFI field instructors taught MHYC members backcountry camping skills such as rigging bear high-lines, knot-tying, and Leave No Trace principles.

Big Thompson Watershed Coalition organized and coordinated a volunteer day with Hach and Trout Unlimited / Rocky Mountain Flycasters volunteers where they prepared and discussed tools, supplies, and engaged volunteers in project history and construction, native plant identification and care techniques including watering, weeding, and staking for future community identification ease.

The Wildland Restoration Volunteers are seeing an encouraging trend in sediment load reduction in the Campbell Valley Project site and, while the digital elevation models haven't yet produced any results indicating catastrophic breach, they now have baseline topography for much of Campbell Creek and its tributaries.

In the Town of Carbondale, they are using the products from the Carbondale Crystal River Restoration and Weaver Ditch Efficiency Project as foundational information for future work along the Crystal River. The lessons learned with the design and implementation will serve future restoration and habitat improvement along the river corridor.