



Final Grant Report: Crystal River Management Plan Pilot Projects and Implementation

Contract Number: POGG1 2019-2688

This grant funded significant work by RFC and associates to plan, fund, and implement demonstration and pilot projects that build on the results and stakeholder collaboration from the 18-month Crystal River Stream Management Planning effort (CWCB Contract C150520), and subsequent implementation and outreach (CWCB PO 201700000911). This document serves as a final grant report outlining progress, projects, and anticipated next steps.

TASK 1 – FACILITATING IMPLEMENTATION OF PILOT AND DEMONSTRATION PROJECTS

The CRMP recommends several high-priority actions for ensuring that the local community is adequately equipped to deal with shifting community values, economic foundations, and climate realities in a way that minimizes conflict between user groups and achieves high levels of environmental resiliency. During the past two years, RFC has made significant progress in on-the-ground projects, grown fundamental partnerships, and continued to learn and adapt to the ever-changing water realm. We have several projects in progress both on the ground and in initial study phases. We anticipate continuing both leading and supporting CRMP implementation going forward.

- **Integrated Ecological Restoration and Diversion Structure Pilot Project**

- RFC worked extensively with the Town of Carbondale and consultants River Restoration and DHM Design to fully fund this project. This project, a direct outcome of the recommendations of the 2016 Crystal River Management Plan, will: create a stable, low maintenance diversion structure for the Town's Weaver ditch; re-establish a self-sustaining low flow channel through the project reach; preserve, enhance, and create riparian and wetland areas; create designated angler access and riparian trails; upgrade interpretive signage; and establish an accessible access point and rustic classroom area near the River Valley Ranch's South Bridge, within walking distance of 5 Carbondale schools. This multi-benefit project will not only improve the project reach, but also serve as a demonstration for other town and privately owned areas with similar concerns.
- During the timeframe of this grant:
 - An overview of the Preferred Design Alternative was chosen after public meetings and stakeholder input was incorporated. The project team held several outreach meetings with the Carbondale community and park users to ensure the final design meets the needs and desires of the community as well as the ecology. We feel confident that the final design is beneficial to both.
 - 60% design plans were completed in October of 2019 (sent previously).
 - 90% design plans were completed in May 2021 (sent previously).
 - Final design plans and bid tabs were completed in April of 2022 (available upon request).
 - The Town funded contractor DHM to create a funding prospect report, highlighting best potential funding sources for the project. That report (sent previously) was published in January 2020. Since that time, RFC worked on and obtained several priority grants including funding from CPW's Fishing is Fun, BOR's WaterSMART, and CWCB's Water Plan Grants.
 - RFC, Town staff, and consultants have been able to bring several interested parties to tour the site, including CWCB staff, River District staff, and former CWCB board member Gail Schwartz. In addition, potential contractors have been brought in to review the project and access points.
- At this point, the project as budgeted is fully funded. Riparian work is anticipated to begin in June, with instream work beginning as soon as high water recedes in July.
- Challenges have included change over and decline in staff at Aspen Valley Land Trust and American Rivers, who helped write grants and inform the planning phase. While they remain supportive of the project, they have less staff time to dedicate.
- Perhaps the greatest challenge in the project was determining a work window that allowed all necessary project components to be completed and did not interfere with the local mountain whitefish

population. RFC staff and consultants worked extensively with Colorado Parks and Wildlife and have found an amenable solution.

- **Ditch Efficiency Engineering Pilot Project**

- Consultant SGM completed the ditch survey in the summer of 2019 (sent previously) This is being used to inform the headgate work on the restoration project.
- Pitkin County Healthy Rivers has contributed \$65,000 towards the rebuild of the Weaver Ditch Headgate. New and modern headgates were delivered to the Town and will be installed after irrigation season in the fall. Once the antiquated gate is updated, the Town intends to move forward on installing 3 telemetry sites and an automated headgate. Pitkin County has expressed an interest in continuing to fund the additional phases of this project.

- **Riverine Restoration:**

- The Town of Carbondale Riverine Restoration has been combined with the ecological work in Section 1 to create a more holistic project- including riparian restoration, instream restoration, and diversion structure improvements. We will continue to work with the town to identify other properties that may benefit from restoration work.
- RFC has engaged Pitkin County Open Space and Trails (PCOST) and continue to explore potential restoration projects on their property, with focus on Thompson Open Space, Red Wind Point, Janeway, and Filoha Meadows.
 - PCOST has commissioned a vegetative baseline study with restoration recommendations at Thompson Open Space in anticipation of future restoration work.
 - RFC has obtained additional funding for work at Filoha Meadows and Crystal Valley through private donors as well, with planning phases anticipated to begin this summer.
- The Crystal Restoration Working group (detailed below) has collaboratively created a restoration matrix (sent previously) based on work done in the Crystal Management Plan, The Stream Health Initiative, and Pitkin County. This is meant to help guide and prioritize projects and restoration discussions.
- RFC worked with the Catena Foundation to fund operation of up to 3 gauges on the Crystal River to document flows in dewatered areas and provide accountability and document trigger points for diversion rescheduling agreements.

- **Floodplain Re-Connection and Alluvial Storage Potential Demonstration Project**

- RFC is heading the Crystal River Restoration Working Group. This group includes representatives from Pitkin County Open Space and Trails, Pitkin County Healthy Rivers, American Rivers, Crystal Valley Caucus, and property owners/residents of the Crystal Valley. This group put together a matrix to explore and prioritize restoration potential on the Crystal. The area of Janeway and the potential alluvial storage has garnered significant attention, with some concern to feasibility.
- US Forest Service hydrologist Justin Anderson previously completed preliminary modeling on the Janeway parcel. LiDAR-derived digital elevation model provided by Pitkin County was used to build a detailed topographical surface in AutoCAD portraying the Crystal River and its floodplain through the Janeway parcel. A hydrologist used the topographical information to build a hydraulic model of the river and floodplain in HEC-RAS, a widely-used hydraulic modeling program. The hydraulic model was used to predict and evaluate the elevation of the water surface for different flood flows that can be expected on the Crystal River. The results indicate the degree to which the Crystal River is able to flood its floodplain during flood events of varying magnitude. (sent previously)
- RFC is engaged with American Rivers, the Colorado River Water Conservation District (CRWCD), and other stakeholders to look further at the potential for alluvial storage at Janeway and other areas of the Crystal. This work is an outcome of CRWCD's Crystal River Augmentation Water Project. Conversations regarding next steps are ongoing.

TASK 2 – CRMP OUTREACH, COORDINATION, & OVERSIGHT

RFC worked to facilitate outreach and coordination with stakeholders and project partners to implement recommendations of the CRMP, focusing on the pilot and demonstration projects described in Task 1. We regularly worked to ensure the progress and lessons are reported and shared broadly with local agencies, agricultural groups, ditch companies, conservation groups, water users and decision makers, and other watershed groups to support the goals of the CRMP, State Water Plan, and Colorado Basin Implementation Plan.

- **RFC staff will continue conversations and meetings with Crystal Valley stakeholders to solicit input and increase awareness and knowledge around the plan. We will engage stakeholder groups to provide information about the CRMP and ongoing implementation efforts and serve as a resource for other organizations.**
 - RFC continues to work with a variety of stakeholders in the Crystal Valley, including private property owners and organized groups such as Town of Carbondale, Crystal Valley Environmental Protection Association, Pitkin County Open Space, Pitkin County Healthy Rivers, Colorado River Water Protection District. RFC is also a member of the Wild and Scenic
 - RFC and project partners presented to the Town of Carbondale Trustees, and have plans to partner on outreach activities to further public knowledge of the “Crystal River Restoration at Riverfront Park” project, with work scheduled to begin this summer.
 - COVID provided a significant challenge to in person meeting and outreach, however
- **We will continue to leverage results of the CRMP implementation as an example to others pursuing stream management plans, and work to secure broader engagement and potential funding to support ongoing and future projects.**
 - RFC consulted with two private landowners on the Crystal who are looking to implement bank restoration and/or stabilization projects with habitat improvement. One was a larger scale, and one a small-scale property. Both projects are currently seeking funding.
 - RFC continues to work with the CRWCD “natural solutions” working group for the Crystal River Augmentation Plan.
 - RFC regularly participates in River Network SMP peer learning events and presented to the Colorado Basin Roundtable as an example of SMP implementation.
- **RFC will serve as the hub for communication and coordination for partners working in support of the CRMP implementation to maximize efficiency, foster teamwork, and ensure the logical sequencing of projects.**
 - RFC serves on and/or leads several groups working on the Crystal River projects including Crystal Restoration Working Group, Roaring Fork Biodiversity Initiative, Crystal Augmentation Plan Environmental Group, and Crystal River Wild and Scenic Group. We maintain communication with the towns, counties, and groups working or planning work in the Crystal Valley. Many of these groups reach out to RFC early in the process for input and support as projects develop.
 - RFC also led the coordination of the planning and fundraising for the “Crystal River Restoration at Riverfront Park” obtaining local, state, and federal funding for this \$1.7 million multi-benefit restoration project.
- **RFC will actively disseminate information on the experience and results of on the ground projects including the Town of Carbondale ditch efficiency project, diversions structure/headgate improvements, riverine restoration projects and floodplain/riverine habitat evaluations to continue to encourage replication of similar efforts by other Crystal River water users to support the goals of the Plan.**
 - Crystal River work and projects were featured or mentioned in RFC’s [2018](#) and [2019](#) Annual Report, and [RFC Fall 2019 Newsletter](#). The project will also be featured in the spring 2022 newsletter, yet to be published. RFC has presented its work to Pitkin County Healthy Rivers and Eagle County BOCC. In addition, Conservation Colorado highlighted the Town of Carbondale twice in its “Water Plan Grant Project Map” with videos about both the [Weaver Ditch Project](#) and the [Riverfront Park Restoration](#). These videos were shared by multiple groups on social media including Conservation Colorado, RFC, and Colorado Trout Unlimited.

- A recent article by Aspen Journalism also featured the Crystal River project and RFC staff: [Crystal River restoration finding its footing in Carbondale park.](#)

The significant accomplishments and learning thus far continue to facilitate future work on the Crystal and other rivers in Colorado, demonstrating the value of Stream Management Planning where sound science and community values lead to cooperative and creative problem solving with multiple benefits to both the community and water resources. CRMP continues to be a leader in the SMP programs and implementation of on the ground projects. Thank you for your continued support as we continue work to benefit the Crystal River.