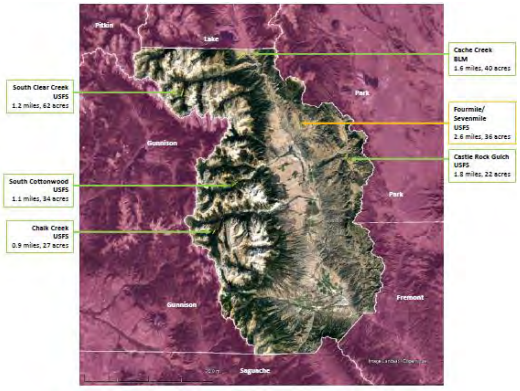
# Envision Recreation in Balance – Sediment Control Grant

Final Report




Prepared for:

Colorado Water Plan Grant Program

Attn: Chris Sturm

Date: 8/15/2023

Applicant: Envision Chaffee County . Chaffee County Community Foundation as the Fiscal Sponsor.

Grant Amount: $49,851

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## Introduction

The Envision Recreation In Balance Sediment Control project was created under a larger community visioning and planning process, and is integrated with the Chaffee County Wildfire Protection Plan and the Chaffee County Outdoor Recreation Management Plan. Data from the 2020 Chaffee County Recreation Survey indicated community concern about the impact of outdoor recreation use on the health of forests, waters and wildlife.

The intent of the project was to: 1) Identify opportunities to improve landscape-scale sediment retention, 2) develop rapid response projects to pilot test methodologies to close and reclaim such sediment sources to achieve broader retention, 3) develop a mobile app (Chaffee Rec Collector APP) to consistently collect data on outdoor recreation impacts, including erosion/sediment generation, and 4) ensure coordination with related plans and community engagement.

The program was managed by Envision Chaffee County. Envision facilitates implementation of the Chaffee County Wildfire Protection Plan, the Chaffee County Outdoor Recreation Management Plan and a suite of projects that support working agricultural lands and businesses. Envision is a non-profit organization convened by unanimous decree of the Chaffee County Board of Commissioners.

## Background

The project is located in Chaffee County, Colorado, and includes the entire county. Specific locations, details about background information and site summaries are provided in attached Reports 1, 2 and 3 referenced below.

### Task 1. Identify Opportunities to enhance landscape sediment retention

The goal of this work was to use spatial data, Google Earth data and site assessments to identify opportunities to enhance sediment retention, such as by the enhancement of beaver dam and wetland areas. A secondary focus was to identify areas of increased sediment generation related to high outdoor recreation use so that they could be addressed.

### Task 2. Rapid Response Projects

Rapid response project goals were to: 1) Pilot test strategies to close and restore recreation sites generating sediment into waterways using low tech process that would not require NEPA, monitor the efficacy of different methods over time, and share the information with land management agencies and the community so that it could be employed at landscape scale. 2) Asses the potential for additional projects to increase the sediment retention capacity of the landscape – such as low technology wetland enhancement.

### Task 3. Recreation Impact Monitoring System

The goal was to develop a tool that volunteers and agency staff could use to collect consistent data on campsites, trails and trailheads. The intent was to develop the Chaffee Rec Collector APP with land management agencies, deploy it across Chaffee County, and

provide the technology as a transferable tool to other areas. The big picture goal was to enable collection of data that would catalyze and support land management action.

**Task 4. Coordination, Outreach and Reporting**

This module was designed to ensure that the above efforts are coordinated with other community plans, land management agencies, local government and supported by the community.

## Methods

Details of project methods are provided in Reports 1, 2 and 3 attached.

Colorado Water Conservation Board (CWCB) funding of $49,851 was used to support qualified consultants, primarily EcoMetrics (on sediment retention), Quiet Use Coalition (QUC) (on campsite restoration methods) and Envision Chaffee County (on community engagement and coordination).

Matching funds totaled $206,000. This work included:

- Assessment of sediment generation impacting agricultural infrastructure by the Central Colorado Conservancy ($5,006 in-kind).
- Materials to implement treatments to restore/remove sediment generating campsites provided by the Bureau of Land Management (BLM), Arkansas Headwaters Recreation Area and U.S. Forest Service (USFS - $23,000). This included boulders and posts for site containment and signage.
- Funding to develop, pilot test and implement the Chaffee Rec Collector APP ($129,350). This included funding from GOCO, Chaffee Common Ground Fund, County of Chaffee and other sources. Funds were used to support Pointer Consulting in developing the APP and partners in pilot testing and deploying the APP.
- Funding to coordinate all program elements and ensure coordination with other county plans ($32,500) provided by Envision Chaffee County.

## Results

**Task 1. Identify Opportunities to enhance landscape sediment retention**

EcoMetrics completed an assessment of sediment retention project options at county scale, which is attached as “Report 1 Sediment Retention Project Assessment”. This report documents countywide prioritized opportunities for low-tech, process-based restoration of riverscapes in Chaffee County. The project areas provide opportunity to manage riverscape health to mitigate sediment, support declining wildlife, attenuate flash floods, and protect ecosystems from the potential impacts of post wildfire flooding. The work was coordinated with other regional studies, including the Community Wildfire Protection Plan, the Chaffee County Outdoor Recreation Management Plan, and a Planning for Wildlife geospatial model that identifies the most important habitat for the most and the most sensitive species across Chaffee and Lake counties.

**Task 2. Rapid Response Projects**

As a result of Task 1, an early win project was identified – the Fourmile Creek Multi-Benefit Wetland Restoration Project. This project was developed, supported by the USFS, assessed by NEPA, and is now fully funded by a subsequent CWCB Grant and the Chaffee County Common Ground Fund. The project will include extensive monitoring, and therefore serve as a pilot for this type of work in the upper Arkansas River Basin. Work is expected to begin in late 2023. Development of the project, in addition to priorities, exceeded the goals of this funding.

Task 2 also resulted in identification of opportunities and methods to address sediment being generated from outdoor recreation use, with a focus on high impact dispersed campsites adjacent to streams and quality wetland habitat. Campsites in the Clear Creek drainage, above the Clear Creek Storage Vessel, were prioritized following an assessment of countywide impacts.

Quiet Use Coalition completed detailed prioritization of specific sites for remediation. Sixteen large dispersed campsites were closed and remediated. The work included a variety of restoration methods and barriers, as well as signage, to prevent future damage. This work is detailed in attached "Report 2 QUC Recreation Site Assessment and Treatment". Results were monitored after 1 year. Monitoring indicated that almost all of the fencing, signage, rock work, etc. completed in 2021 is intact and functioning as desired. Vehicles are generally remaining on designated routes, there is no evidence of dispersed camping or fire building, and natural restoration/revegetation is proceeding with regrowth. Monitoring also discovered a need to continue to repair and enhance the previous work. At a few sites, monitoring indicated vandalized signs, vandalized fences, damaging recreational use in restored areas, unauthorized vehicle use behind closure signs, and areas that require additional restoration work. These needs were addressed with added signage, added barriers and restoration. Results were shared with land management agencies and with the Chaffee Recreation Taskforce to help inform future efforts at landscape scale. Monitoring and follow-up action are documented in the attached "Report 3 QUC Monitoring and Follow up Treatment".

**Task 3. Recreation Impact Monitoring System**

This portion of the scope was completed with funding from other matching sources. The Chaffee Rec Collector APP was created to collect consistent information on campsites, trailheads and trails, including data on erosion, trash and human waste that could impact waterways. The APP has been deployed in Chaffee and Lake counties, where more than 3,000 campsites have been documented containing nearly 1,000 incidents of human waste and 16,000 gallons of trash. Data generated with the APP has been instrumental in catalyzing management action, including a decision by the BLM to transition to camping in designated sites only countywide, and camping management NEPA in progress by the USFS in Chaffee and Lake counties. This camping management project has been described by

USFS staff as likely the most impactful project to watershed health in the Upper Arkansas Basin this decade.

**Task 4. Coordination, Outreach and Reporting**

Envision Chaffee County provided coordination, ensuring that project work and results are coordinated with the Community Wildfire Protection Plan and the Chaffee County Outdoor Recreation Management Plan for maximum benefit. Project results have also been shared with the Envision Forest Health Council, Chaffee Recreation Council and the Chaffee Rec Taskforce. These bodies include over 50 leaders from land management agencies, local government and nonprofit organizations. Due to the outreach and reporting, the project results are being used by the community and agencies and the resulting projects enjoy strong community support.

## Conclusions and Discussion

All project objectives were met, and the creation and funding of the Fourmile Multi-Benefit Project exceeds expectations.

Monitoring efforts will continue on the Clear Creek restoration sites by QUC using the APP. USFS staff and QUC volunteers will continue to collaborate to adjust barriers or signage if/as needed. The example of successful restoration and closure will continue to be used by the USFS and BLM and community members as larger-scale camping management is enacted in Chaffee and Lake counties. The work is highly leveraged to be deployed at scale.

The Fourmile Creek project will include extensive monitoring and serve as an example for low-tech restoration in the region. A key component of this project is monitoring of groundwater impacts to assess and potentially address concerns by water stakeholders about impact to downstream water rights.

A key takeaway was the importance and benefit of connecting the project with other Envision-driven community plan implementation work, including connection to the Community Wildfire Protection and Chaffee County Outdoor Recreation Management plans.

## Actual Expense Budget

The Actual Budget is below (Table 1). Note the budget was modified in Oct 2022 to reallocate funds between tasks as documented in Table 2 below and also annotated in Table 1 with yellow highlight on the right.

Table 1. Actual budget.

**Colorado Water Conservation Board**

**Water Plan Grant - Detailed Budget Estimate**

**Fair and Reasonable Estimate**

| | |
|---|---|
| **Date:*** | 8 15 2023 |
| **Name of Applicant:*** | Envision Chaffee County with Chaffee County Community Foundation as the Fiscal Agent |
| **Name of Water Project:** | Envision Recreation in Balance - Sediment Control |

**Scope of Work**

| | Estimated Hours | | | | Subcontractors | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub-task | Central Colorado Conservancy Restoration Specialists | Central Colorado Conservancy Volunteer Coordinator | Central Colorado Conservancy Miles | | EcoMetrics or CUC (research scientist) | EcoMetrics (miles) | Volunteer labor (organized by Central Colorado Conservancy) | Materials CPW (Boulders, fencing, signs, etc.)(AHRA) | Heavy equipment (AHRA) | Equipment Operators (AHRA) | UAWCD Professional Staff (Hydrologist) | Recreation in Balance Grant (Materials) | Recreation in Balance Grant (Time) | | Project Total | CWCB Funds | Other Matching Funds | |
| | $ 45 | $ 35 | $ 0.535 | Subtotal | $ 120 | $ 0.535 | $ 32 | $ 10,000 | $ 76 | $ 60 | $ 120 | $ 13,000 | $ 65 | Subtotal | | | | |
| **Task 1 - Evaluate sediment potential of recreation sites** | | | | | | | | | | | | | | | | | | |
| Review existing data and reports | | | 0 | $ - | 16 | 100 | | | | | | | | $ 1,974 | $1,974 | $ 1,974 | $ - | |
| Consult with agency personnel and local experts | | | 0 | $ - | 24 | 0 | | | | | | | | $ 2,880 | $2,880 | $ 2,880 | $ - | |
| Remote evaluation using aeral imagery | 0 | 0 | 0 | $ - | 24 | 0 | | | | | | | | $ 2,880 | $2,880 | $ 2,880 | $ - | |
| Create spatial database of sites by risk rating | 0 | 0 | 0 | $ - | 32 | 0 | | | | | | | | $ 3,840 | $3,840 | $ 3,840 | $ - | |
| Field assessment of priority sites | 0 | 0 | 0 | $ - | 60 | 600 | | | | | | | | $ 7,521 | $7,521 | $ 7,521 | $ - | |
| Assess sites impacting agricultural infrastructure | | | | $ - | | | | | | | 42 | | | $ 5,004 | $5,004 | | $ 5,004 | |
| Assess in detail Fourmile Site and Project | | | | | 67 | | | | | | | | | $ 8,004 | $8,004 | $ 8,004 | $ - | Adjusted |
| **Task 2 - Rapid Response Projects** | | | | | | | | | | | | | | | | | | |
| Identify pilot projects and implement treatments | 207 | 80 | 1100 | $ 12,704 | 30 | 100 | | | | | | | | $ 3,654 | $16,357 | $ 16,142 | $ 215 | |
| Implement monitoring and year 1 adjustements | | | | | 10 | | | | | | | | | $ 1,220 | $1,220 | $ 1,220 | | Adjusted |
| Implement treatments (USFS/BLM Materials) | | | | $ - | | | 160 | 1 | 80 | 80 | | 1 | | $ 13,000 | $13,000 | | $ 13,000 | |
| **Task 3 - Recreation Impact Monitoring System** | | | | | | | | | | | | | | | | | | |
| Develop sediment monitoring protocols | | | | $ - | 0 | 0 | | | | | | | | $ - | 50 | $ - | $ - | Adjusted |
| Integrate sediment protocol in RIMS | | | | $ - | 0 | 0 | | | | | | | | $ - | 50 | $ - | $ - | Adjusted |
| Pilot testing | | | | $ - | 0 | 0 | | | | | | | | $ - | 50 | $ - | $ - | Adjusted |
| Develop full system and cell phone application | | | | $ - | | | | | | | | | 1990 | $ 129,350 | $129,350 | | $ 129,350 | |
| **Task 4 - Coordination, outreach and reporting** | | | | | | | | | | | | | | | | | | |
| Project coordination and meetings | | | | $ - | 16 | 200 | | | | | | | | $ 2,027 | $2,027 | $ 2,027 | $ - | |
| Community meetings and presentations | | | | $ - | 16 | 100 | | | | | | | | $ 1,974 | $1,974 | $ 1,974 | $ - | |
| Summary report | | | | $ - | 12 | | | | | | | | | $ 1,390 | $1,390 | $ 1,390 | $ - | Adjusted |
| Community engagement and full program coordination | | | | $ - | | | | | | | | | 500 | $ 32,500 | $32,500 | | $ 32,500 | |
| Subtotal Hours | 207 | 80 | 1100 | | 306 | 1100 | 160 | 1 | 80 | 80 | 42 | 1 | 2490 | | | | | |
| Subtotal Labor/ Subcontractor cost | $9,315 | $2,800 | $589 | 12,704 | $36,774 | $589 | $5,120 | $10,000 | $6,040 | $4,800 | $5,004 | $13,000 | $161,850 | 243,176 | $255,880 | $ 49,851 | $ 206,029 | |
| **TOTAL** | | | | | | | | | | | | | | | **$255,880** | $ 49,851 | $ 206,029 | |

Table 2. Budget Adjustments approved October 2022.

| Task | Description | Grant Budget | Grant Remaining | Proposed Adjusted Remaining | Comments | Delta |
|---|---|---|---|---|---|---|
| 1 | Evaluate Sediment Potential fo Recreation Sites | $19,095.00 | $11,796.50 | $19,800 | Funding increased $8003.50 to cover 165 hours at $120 hour for Ecometrics. Funds transferred from Task 3 remaining and a portion of remaining Task 4 funds. | $8,003.50 |
| 2 | Rapid Response Projects | $16,142.00 | $9,979.77 | $11,200 | Funding increased to cover estimated time and materials for Quiet Use Coalation to restore 3 to 5 pilot campsites in coordination with USFS. | $1,220.23 |
| 3 | Recreation Impact Monitoring System | $5,813.50 | $5,813.50 | 0 | Remaining funds of $5813.50 transferred to Task 1. Scope completed leverating more than anticipated match funding. | -$5,813.50 |
| 4 | Coodrination, Outreach and Reporting | $8,800.50 | $8,800.50 | $5,390.27 | A portion of remaining funds ($3410.23) tranferred to Task 1 and Task 2. Scope will be completed using additional in-kind services. | -$3,410.23 |
| | Total | $49,851.00 | $36,390.27 | $36,390.27 | | $0.00 |

## Appendix

Please see attached Reports 1 to 3:

Report 1 Sediment Retention Project Assessment by EcoMetrics.

Report 2 QUC Recreation Site Assessment and Treatment by the Quiet Use Coalition.

Report 3 QUC Monitoring and Follow up Treatment by Quiet Use Coalition.

## References

Please see attached Reports 1 to 3.