



January 31, 2022

To: Chris Sturm, Colorado Water Conservation Board (CWCB)

From: Left Hand Watershed Center

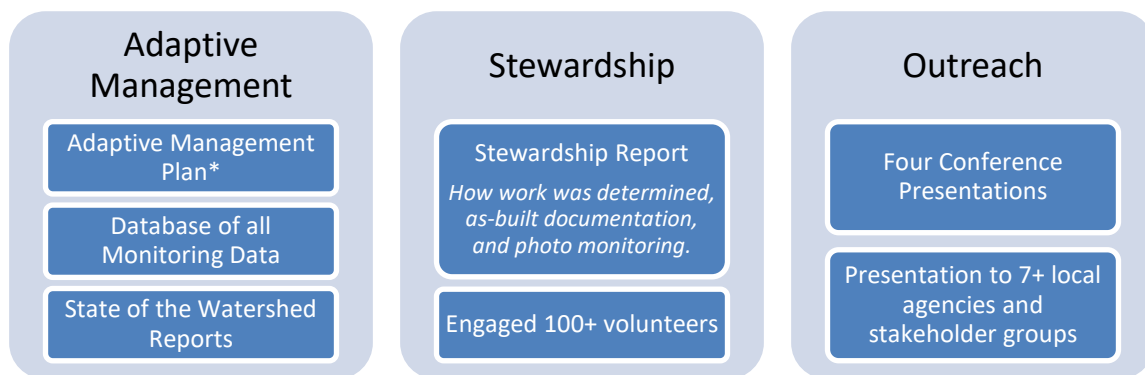
RE: CWCB Watershed Restoration Grant – Left Hand Creek Stewardship & Adaptive Management Progress Report #5 (CTGG1 PDAA 2019\*00202)

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The purpose of this memo is to provide a final report about activities related to Left Hand Watershed Center's Stewardship & Adaptive Management project (CTGG1 PDAA 2019\*00202). The project timeline is 08/02/2018 – 01/31/2022. The total budget is \$384,270.50 with \$176,085.25 from the CWCB Watershed Restoration Grant.

## 1. Project Summary and How the Project Was Completed

Over the last four years, Stewardship & Adaptive Management has been foundational in helping the Watershed Center assess the success of our completed restoration projects in meeting their goals using an adaptive management approach. Through this project, the Watershed Center (1) engaged in stewardship of the watershed and helping build a community-wide stewardship ethic; (2) developed and utilized an adaptive management framework for monitoring and assessment; and (3) worked with hired consultants and volunteers to implement corrective actions as determined by the adaptive management framework. Figure 1 below summarizes project components.



**Figure 1** shows the two key steps and associated deliverables involved in completing Stewardship & Adaptive Management. Each deliverable is discussed in more detail within this report. Asterisk (\*) indicates the deliverable was separately funded.

On the following page, Table 1 describes each deliverable and its associated accomplishments, challenges, and lessons learned across the project.

**Table 1** describes accomplishments, obstacles, and lessons learned for each deliverable.

<b>Deliverable</b>	<b>Accomplishments</b>	<b>Obstacles</b>	<b>Lessons Learned (Solutions to obstacles)</b>
<b>State of the Watershed Reports</b> <ul style="list-style-type: none"> <li>• <a href="#">2019</a></li> <li>• <a href="#">2020</a></li> <li>• <a href="#">2021</a></li> </ul>	<ul style="list-style-type: none"> <li>- Developed annual recommendations for future management and monitoring actions and project prioritization through stakeholder collaboration and scientific data collection.</li> </ul>	<ul style="list-style-type: none"> <li>- Matching monitoring and management needs with appropriate data collection.</li> <li>- Field capacity.</li> <li>- Calwood and Left Hand Fires</li> </ul>	<ul style="list-style-type: none"> <li>- Worked with local and relevant experts to revise our monitoring framework.</li> <li>- Engaged over 15 volunteers during field data collection.</li> <li>- As part of the Adaptive Management process, Watershed Center staff responded to the fires and implemented post-fire monitoring quickly. (Separately funded)</li> </ul>
<b>Database of Monitoring Data</b>	<ul style="list-style-type: none"> <li>- Completed three years of monitoring data at over 25 sites across the St. Vrain and Left Hand Watersheds.</li> <li>- Produced annual data summary reports as part of the State of the Watershed Report.</li> </ul>	<ul style="list-style-type: none"> <li>- Data quality control</li> </ul>	<ul style="list-style-type: none"> <li>- Created data quality assurance/quality control measures.</li> </ul>
<b><u>Stewardship Report</u></b>	<ul style="list-style-type: none"> <li>- Completed over 45 stewardship projects at 11 sites.</li> <li>- Engaged over 100 volunteers on projects.</li> </ul>	<ul style="list-style-type: none"> <li>- COVID restricted in-person and group events</li> <li>- Maximizing funds and efficiency</li> </ul>	<ul style="list-style-type: none"> <li>- Hired small group or individual consultants where large group activities were either cost or COVID restricted.</li> <li>- Matched volunteer events with appropriate projects, such as large area seeding of hand pulling.</li> </ul>
<b>Presentations</b> <ul style="list-style-type: none"> <li>• <a href="#">2018 Poster</a></li> <li>• <a href="#">2019 Poster</a></li> <li>• <a href="#">2019 Presentation</a></li> <li>• <a href="#">2020 Presentation</a></li> <li>• <a href="#">2021 Presentation</a></li> </ul>	<ul style="list-style-type: none"> <li>- Presented the Watershed Center's Adaptive Management approach at multiple conferences: 2018 and 2019 Sustaining Colorado Watersheds, 2019 Society of Ecological Restoration Rocky Mountain Chapter, and 2020 River's Edge West.</li> <li>- Engaged with local and regional experts on the approach and integrated feedback.</li> </ul>	<ul style="list-style-type: none"> <li>- COVID limited conference attendance in 2021.</li> </ul>	<ul style="list-style-type: none"> <li>- Presented our annual findings in 2021 virtually to local stakeholders to continue collaboration and feedback process (Boulder County, City of Longmont, St. Vrain and Left Hand Water Conservancy District, Left Hand Water District, Town of Lyons Ecology Board, Inter- Mountain Alliance, Trout Unlimited chapters and more).</li> </ul>

## 2. Obstacles Encountered and Solutions

Throughout the duration of the project we experienced various obstacles as we worked towards implementing project tasks. Overall, the various obstacles have benefitted our Adaptive Management and Stewardship approaches. The adaptive component of our approach allow us to improve on our methods and accommodate unexpected obstacles and shifting priorities. We have iteratively worked to improve our monitoring design, methods and data quality assurance to best suit staff capacity and management needs. In the latter half of the project, COVID-related health concerns limited how we implemented monitoring and stewardship tasks. As a result, we adjusted our approach by using small group sizes and contractors where possible. The 2020 Calwood and Left Hand Fires also adjusted our priorities, which worked well in the Adaptive Management process. We have since then implemented various monitoring efforts, restoration projects, and stewardship projects.

## 3. Confirmation of Matching Commitments

Below we provide a confirmation that all matching commitments have been fulfilled.

Match Funding Source	Income (2018- Present)	Expense (2018- Present)	Status
CDBG-DR Watershed Implementation Grant- Legacy Project (Stewardship & Adaptive management portion of project)	\$111,855	\$111,855	Complete as of May 2020
CDBG-DR Planning Grant (Development of adaptive management framework and Citizen Science pilot program)	\$46,000	\$46,000	Complete as of June 2019
Stewardship Campaign Donations (partners, corporations, individuals)	\$13,814	\$13,814	Complete as of 2021
Community Foundation Boulder County (monitoring)	\$58,897	\$58,897	Complete as of 2021
TOTAL Match (at close of project)	\$230,566	\$230,566	

## 4. Summary of Key Deliverables

- 2019 State of the Watershed Report: <https://watershed.center/wp-content/uploads/2019/06/LH-Watershed-Report-2019-FINAL.pdf>
- 2020 State of the Watershed Report: [https://watershed.center/wp-content/uploads/2020/05/Watershed-Center-State-of-the-Watershed-Report-2020-Final\\_with-ES-v4.pdf](https://watershed.center/wp-content/uploads/2020/05/Watershed-Center-State-of-the-Watershed-Report-2020-Final_with-ES-v4.pdf)
- 2021 State of the Watershed Report: [https://watershed.center/wp-content/uploads/2021/10/2021\\_Watershed\\_Report\\_v2.pdf](https://watershed.center/wp-content/uploads/2021/10/2021_Watershed_Report_v2.pdf)
- Database of Monitoring Data: available upon request.
- Stewardship Report: [https://watershed.center/wp-content/uploads/2022/01/CWCB\\_Stewardship-on-Left-Hand-Creek-Final-Report\\_v3.pdf](https://watershed.center/wp-content/uploads/2022/01/CWCB_Stewardship-on-Left-Hand-Creek-Final-Report_v3.pdf)

6. Presentations:

- a. 2018 Sustaining Colorado Watersheds & 2019 HAR-SER Poster:  
<https://watershed.center/wp-content/uploads/2022/01/2018-and-2019-Concept-Model-Poster.pdf>
- b. 2019 Sustaining Colorado Watersheds Presentation: [https://watershed.center/wp-content/uploads/2022/01/2019\\_Sustaining-CO-Watershed-Conference-Presentation.pdf](https://watershed.center/wp-content/uploads/2022/01/2019_Sustaining-CO-Watershed-Conference-Presentation.pdf)
- c. 2020 River's Edge West Presentation: [https://watershed.center/wp-content/uploads/2022/01/2020\\_Rivers-Edge-West-Presentation.pdf](https://watershed.center/wp-content/uploads/2022/01/2020_Rivers-Edge-West-Presentation.pdf)
- d. 2021 Local Agency and Stakeholder Presentation: [https://watershed.center/wp-content/uploads/2022/01/2021\\_State-of-the-Watershed\\_Stakeholder-Outreach.pdf](https://watershed.center/wp-content/uploads/2022/01/2021_State-of-the-Watershed_Stakeholder-Outreach.pdf)