



May 21, 2025

To: Andrea Harbin Monahan, Colorado Water Conservation Board (CWCB)

From: The Watershed Center (formerly Lefthand Watershed Oversight Group)

RE: CWCB Watershed Restoration Grant – Science, Stewardship, and Education in Saint Vrain Creek Watershed – Final Report (POGG1, PDAA, 2020*2934)

The purpose of this memo is to provide a final report on activities related to The Watershed Center's Science, Stewardship, and Education in Saint Vrain Creek project. The project timeline is 06/06/2020 – 06/06/2025 and the total project budget is currently \$772,241.00 with \$377,211 from the CWCB Watershed Restoration Grant.

1. Project Summary and How the Project Was Completed

Over the last five years, Science, Stewardship, and Education on Saint Vrain Creek has been foundational to establishing The Watershed Center's watershed stewardship approaches rooted in adaptive management and monitoring in the St. Vrain Watershed. This project supported a holistic approach to watershed health by improving connectivity of diverse restoration efforts, incorporating of science-based watershed management, and K-12 education focused on engaging youth in this work.

Through this project, The Watershed Center achieved three main project goals: 1. Expand monitoring and assessment efforts throughout St. Vrain Watershed, 2. Expand stewardship and adaptive management actions at restoration projects, and 3. Expand place-based watershed science programming in Lyons K-12 schools. In the sections to follow, we summarize obstacles encountered and solutions throughout the project as well as deliverables and associated accomplishments.



2. Obstacles Encountered and Solutions

Throughout this project, we faced obstacles that changed our project approach. These obstacles and resulting solutions are described in the table below.

Obstacle Encountered	Solution
Expansion of adaptive management process into a different watershed	As part of Task 1, we planned to expand monitoring to new sites in the St. Vrain Watershed using the Adaptive Management Process we developed for Left Hand Creek. However, expanding into a larger watershed required adjustments to our monitoring framework. Through this process, we encountered key lessons learned, such as the need to adapt sampling timing (e.g., benthic macroinvertebrate and habitat sampling) to account for differences in flow dynamics between the two systems. These adjustments helped refine our approach to multi-watershed monitoring and laid a foundation for expanding monitoring to the St. Vrain Basin (through separately funded Adaptive Management at Scale project).
Expansion of The Watershed Center's leadership role in new watershed	This project began under St. Vrain Creek Coalition (SVCC) leadership, with The Watershed Center (TWC) providing support. When SVCC dissolved, TWC had to shift from supporting their goals to defining adaptive management needs and watershed priorities. This transition required time and extended the project timeline but ultimately strengthened TWC's leadership across a larger geography, improving efficiency and capacity to work collaboratively and identify and implement projects across larger geography.
Tradeoffs of small footprint projects	Small-footprint projects were difficult because landowners saw them as flexible, but high permitting costs left little budget for changes. Though small in footprint, projects like Burdock Hollow were costly due to permitting requirements, limiting flexibility. Landowners requested changes mid-project, but budget constraints made adjustments impossible. We overcame this by improving communication, reinforcing project scope early to manage expectations when permitting costs take up a large portion of the budget.
Erosion matting and follow up maintenance	The Lyons Valley Park Streambank Restoration project opted to use erosion matting to stabilize the banks after revegetation. Erosion matting made follow-up maintenance like seeding and weed control difficult in subsequent growing years. As such, we now prioritize methods like hydromulching for revegetation and stabilization and reserve erosion matting for steep slopes where more stability is needed.
Feasibility of work that can be completed under an adaptive management task	We planned to include structure repairs at restored sites in our adaptive management task but faced obstacles with funding, permitting, and timelines. Structural adjustments, like lowering a side channel or modifying a drop structure, usually required separate funding due to permitting and timeline constraints unless the structure existed in a diversion maintenance easement. To overcome this, we used project funds to identify adaptive management needs that could be addressed within five years (e.g., weed control, easement repairs) and needs for larger repairs that could align with future projects.
Integrating responsiveness planning strategy into our prioritization strategy	We envisioned using our watershed-scale prioritization approach to identifying and implementing projects with partners in the St. Vrain Watershed. As we collaborated more with new partners, we realized some identified management priorities through holistic prioritization while others emphasized responsive actions

	to immediate needs. To overcome this challenge, we improved communication around our prioritization approach and worked to integrate projects from both prioritization-based and responsive strategies into a cohesive framework.
Integrating wildfire mitigation into process based restoration planning	During this project the largest wildfire in County history occurred and partners and communities started to emphasize wildfire hazards in river corridors. This perspective shift highlighted brought about a new challenge to integrate wildfire mitigation considerations into process based river restoration planning, especially near communities. This required bringing in diverse expertise (e.g., fire districts and restoration planners) to evaluate sites with both river function and wildfire risk in mind and to assess tradeoffs between ecological processes and community safety. For example, in the Martin Parcel planning process, river restoration would be millions of dollars of investment with limited wildfire risk reduction benefits. Town of Lyons eventually prioritized wildfire mitigation strategies over river restoration due to cost-effectiveness. Moving forward, we recognize that wildfire will continue to shape our watersheds, so planning must integrate both restoration and mitigation strategies.
Managing contaminated compost at restored sites	One of the project areas used local compost during revegetation that was contaminated with that agricultural annual species kochia. Kochia grows in monocultures and outcompetes all other species. We overcame this challenge by first utilizing the warranty period to re-till and seed the areas and then invested in two years of repeated mowing in the summer and overseeding in the fall to allow for native species to slowly outcompete the kochia.
Stewardship approaches and community willingness	We planned to use spot-treatment herbicides for weed control across large areas, but many community members and landowners in the St. Vrain watershed opposed herbicide use. Hand-pulling alone was too costly for lasting impact. To adapt, we used overseeding and mowing to help native species compete with noxious weeds. We also strengthened our stewardship outreach approaches and met with several landowners to discuss weed identification and non-chemical treatment options, empowering them to manage weeds on their own properties.
Teacher training approaches	We initially envisioned offering in-person training opportunities for teachers in the watershed, but, after conversations with teachers and school administrators about actual classroom needs, we determined that teachers' schedules and availability wouldn't allow for this support format. To overcome this challenge, we pivoted to supporting teachers with equipment instead of offering time-consuming trainings. We worked to put together loanable equipment bins that teachers can borrow in order to implement Watershed Center-developed lesson plans based around field data collection. This enabled teachers to engage their students in the full scientific process, including their own data collection, without having to purchase expensive equipment.



3. Deliverables and Accomplishments

Accomplishments and deliverables are described in the table below that came out of our project goals to 1. Expand monitoring and assessment efforts throughout St. Vrain Watershed, 2. Expand stewardship and adaptive management actions at restoration projects, and 3. Expand place-based watershed science programming in Lyons K-12 schools.

Deliverables	Accomplishments
Task 1 – Adaptive Management: Monitoring and Assessment <ul style="list-style-type: none"> 2021 State of the Watershed Report 2022 State of the Watershed Report 2023 State of the Watershed Report* 2024 State of the Watershed Report Part 1* 2024 State of the Watershed Report part 2* <p>* This project specifically supported data collection and data reporting for all sites in the St. Vrain Watershed. The State of the Watershed Reports with asterisks above incorporate results from this project with CWCB Adaptive Management at Scale efforts. A combined report enabled The Watershed Center to integrate results from these two separate efforts and to reach a wider audiences towards a shared understanding of watershed health in the St. Vrain Basin (including Boulder Creek).</p>	<ul style="list-style-type: none"> Continued and expanded long-term watershed health baseline data in the St. Vrain Watershed that provided critical insights into the impacts of disturbances such as the Calwood Fire in 2020, a tanker spill in 2021, and State Highway 7 construction project. Notably, our data and community connections supported Colorado Parks and Wildlife’s formal assessment of the tanker spill impacts. Directly enhanced watershed resilience by improving ecological health and protecting water resources through stewardship activities including 21.6 acres of spot-spraying, 14 acres of mowing, and 7 acres of seeding across restored areas, and two restoration projects (Lyons Valley Park Streambank and Burdock Hollow) around the Town of Lyons and strengthened long-term stewardship across the St. Vrain Watershed, ensuring sustained benefits for ecosystems, communities, and multiple water users. Deepened partnerships between The Watershed Center and key stakeholders, including Boulder County, City of Longmont, Colorado Parks and Wildlife, St. Vrain and Left Hand Water Conservancy District, Town of Lyons, and Town of Lyons Ecology Board, to advance watershed resilience in the St. Vrain Watershed. These collaborations have directly led to two new, separately funded restoration projects and the development of wildfire mitigation strategies around the Town of Lyons (see Martin Parcel Memo), expanding the region's capacity for long-term ecological and community resilience. Established the foundation of The Watershed Center’s education program that has since expanded to other grade level curriculum development and into five other schools or education centers. Fostered a stewardship ethic among Town of Lyons youth, leading them to apply their watershed knowledge beyond the classroom through presentations to the Town Ecology Board.
Task 2 – Adaptive Management: Management Actions <ul style="list-style-type: none"> Lyons Valley Park Streambank Restoration (match funding) Burdock Hollow Restoration Martin Parcel Memo* Stewardship Memo <p>*planning and coordination was funded through this project. Implementation was completed by other entities through separate funding.</p>	
Task 3 – Adaptive Management: K-12 Education <ul style="list-style-type: none"> K-12 Education Report 	



4. Confirmation of Matching Commitments

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

Source	Income	Expense	Status/Notes
Community Foundation Boulder County	\$10,000	\$10,000	Complete as of August 2021
Town of Lyons	\$350,000	\$350,000	Complete as of November 2020
CEMEX	\$9,705	\$9,705	Complete as of March 2025
Boulder County	\$22,807	\$22,807	Complete as of March 2025
TOTAL	\$392,512	\$392,512	

5. Summary of Key Deliverables

Task 1 – Adaptive Management: Monitoring and Assessment

- **2021 State of the Watershed Report:** https://watershed.center/wp-content/uploads/2021/10/2021_Watershed_Report_v2.pdf
- **2022 State of the Watershed Report:** https://watershed.center/wp-content/uploads/2022/08/SOW-Data-Report-2022_FINAL.pdf
- **2023 State of the Watershed Report:** <https://watershed.center/wp-content/uploads/2023/09/2023-SOW-Report-final.pdf>
- **2024 State of the Watershed Report Part 1:** watershed.center/wp-content/uploads/2024/08/2024_SOW_Report_final.pdf
- **2024 State of the Watershed Report part 2:** https://watershed.center/wp-content/uploads/2024/12/2024_SOW_Report_Part-II_final.pdf

Task 2 – Adaptive Management: Management Actions

- **Lyons Valley Park Streambank Restoration (match funding):** https://watershed.center/wp-content/uploads/2025/03/Lyons-Valley-Park-Streambank-Restoration_combined.pdf
- **Burdock Hollow Restoration:** <https://watershed.center/wp-content/uploads/2025/03/Burdock-As-Built-NWO-2014-00541-070621.pdf>
- **Martin Parcel Memo:** https://watershed.center/wp-content/uploads/2025/03/Martin-Parcel-Memo_2022-12-14.pdf
- **Stewardship Memo:** <https://watershed.center/wp-content/uploads/2025/03/SVSSE-Final-Stewardship-Report.pdf>

Task 3 – Adaptive Management: K-12 Education

- **K-12 Education Report:** https://watershed.center/wp-content/uploads/2025/03/SVSSE-Task-3-Final-Report_v2.pdf