



AGENDA

Left Hand Watershed Center
BOARD MEETING
2:00-4:00 pm, December 15th, 2021
Via ZOOM call

Join Zoom Meeting

<https://us02web.zoom.us/j/83869108290>

Meeting ID: 838 6910 8290

Welcome and Introductions	Christopher Smith	2:00 PM
Left Hand Watershed News	All	2:10 PM
State of Colorado DRMS Update	Erica Crosby	2:20 PM
Approval of Minutes: November	Christopher Smith	2:20 PM
2021 Budget	Jessie Olson	2:50 PM
Fire Recovery & SV Forest Health Partnership Update	Jessie Olson	3:10 PM
Watershed Steward Award	Kathy & Sue	3:20 PM
Adjourn to Executive Session	Christopher Smith	3:30 PM

NOTE: The Watershed Center will make reasonable accommodation for individuals with known disabilities at meeting and events per our non-discrimination notice. Visitors needing accommodation are encouraged to contact any staff member to request such accommodation 48 hours in advance of such event.



12/10/2020

To: Left Hand Watershed Center Board of Directors

From: Jessie Olson, Executive Director

RE: December board meeting agenda items

Meeting Minutes

Draft meeting minutes for November are attached (attachment 1) for review and approval.

Board Items

- The 2021 budget has been updated with expenses through November included. The final budget will be presented and voted on at this board meeting (attachment 2).
- We raised just over \$7,500 from individual donors on Colorado Gives Day (last year we raised approximately \$3,000). Adding in pay pal and check donations, we raised just over \$15,000 in unrestricted donations from individuals and corporations this year. We also increased the number of individual donors from 25 in 2019 to 49 in 2020. Thank you to everyone that contributed and helped spread the word. We will be updating the website to recognize new donors (and sustaining donors that donate yearly) by the end of the year.
- Kathy and Sue have nominated Colleen Williams for the Watershed Steward award (attachment 3).

Project updates

1. Adaptive Management, Stewardship & Monitoring

- With data collection complete, we're moving into data analysis phase of our adaptive management process. Over the next few months we will be entering data, analyzing data, and compiling results into our annual state of the watershed report.

2. Adaptive Management at Scale

- Staff are currently planning and scheduling partner meetings that will take place early next year. The goal will be to further assess partner goals, identify monitoring locations and metrics, and begin field discussions at representative areas in the watershed.
- Staff are also focused on collaborating with forest health partners and helping develop metrics for the desired future conditions that will be integrated into the basin-wide adaptive management framework.

3. Bureau of Reclamation Water SMART Grant: Watershed Restoration Plan

- The project will contribute \$100,000 toward development of a Watershed Restoration Plan for the St. Vrain Basin. This project also helps fund organizational development, partnership building and development of conceptual restoration designs. This past month we've continued to meet with partners and continue partnership building.

4. Community Science

- We continue to distribute monthly e-newsletters.
- We participated in a community webinar about preparing for next wildfire season with the CU Boulder's Center for Sustainable Landscapes and Communities (CSLC) this past month.
- We met with staff from Earth Force, to discuss their program and potential opportunities for future collaboration.

5. Mines, Water Quality Monitoring & Analysis

- The Pinyon and Ryan McKnight team is preparing to provide an update on their work related to Captain Jack mine at a future board meeting. They are meeting with Mary Boardman and Joy Jenkins this month to learn more about CDPHE and EPAs remediation efforts.
- DRMS (Erica Crosby) will give an update on the State mine reclamation program at the December board meeting.
- We've completed a fee for service project for Left Hand Water District, final report is attached (attachment 4).
- We continue monthly water quality monitoring using River Watch. We're considering sending all the samples to a lab for processing in 2021 rather than doing a portion of the lab work in-house. We will have an update at a future meeting.

6. Fish Passage Feasibility Study and Education Initiative

Staff is wrapping up the Biological Assessment report, and is scheduling review meetings with fisheries experts in the region. Meanwhile, staff is also planning meetings with water owners in the New Year.

7. SVCC & St. Vrain Partnerships

- We're continuing to work through permit requirements with Boulder County on the Apple Valley repair project. We're required to submit an individual floodplain development permit for the work which has changed the timeline of our permit submittal. We expect to submit our Hazard Mitigation Review application to Boulder County this month, and the permit application will follow that.

8. Forest Health

- We've continued to assist with fire recovery efforts, attending stakeholder meetings, field visits and scheduling coordination meetings. I will provide an update on the recovery and we can discuss the Watershed Center's continued role in the recovery at the board meeting.
- We also continue to lead the St. Vrain Forest Health Partnership, where we've held a partner meeting this month, where we began defining the desired future conditions of the forests.
- We submitted an application to the CWCB Water Plan grant to continue St. Vrain Forest Health Partnership work and plan implementation into the second half of 2021 and 2022.

Other Items

- We are beginning the process of developing a 2021 workplan. I expect to present a draft plan at the January board meeting.
- Executive session will be held to discuss the Executive Director's annual performance review.

Attachments:

1. BOD November Meeting Minutes
2. 2021 Budget
3. Watershed Stewards Award Nomination
4. Water Quality report for LHWD

Attachment 1
Board meeting minutes



Board Minutes – November 17, 2020

Attendees

1. Chris Smith (with proxy for Kathy Peterson)
2. Barbara Luneau
3. Gabe Tuerk
4. Sean Cronin
5. Roger Loving
6. Monica Bortolini
7. Jessie Olson
8. Mark Schueneman
9. Sue Schaufler
10. Audrey Butler
11. Chuck Oppermann
12. Andrew Albright
13. Jim Krick
14. Yana Sorokin
15. Deb Hummel
16. Jason Roudebush

Welcome and Introductions

- Chris S called the meeting to order at 2:05.

Public comments on items not on the agenda

- Chris S asked for items and none were offered.

Left Hand Watershed News

- Chris S asked for summary of BAER results. Jessie said increased risk with flooding and sediment in both SV and LH areas, but that there was higher risk in LH/Geer Canyon. Generally area with severely burned landscape is significant and we need to strategize how to cover the whole landscape. Next step is to work with EWP and CWCB teams to understand what treatments are needed and how to fund it. Discussed DSR timeline. Chris S emphasized importance of coordinating work between LHWD and City of Longmont and getting help from the Watershed Center. Chuck noted importance of mitigation at the drainage end points. Audrey asked about sediment transport study that David Hirt is undertaking and Jessie confirmed they are connected. Jessie will send meeting notes from recent fire recovery team meeting. Sue asked if they looked at Spring Gulch and Jessie said that she would follow up on this. Sean and Chris

discussed potential use of CBT water if needed. Monica asked about fire after flood. Jessie and Chris provided overview of general estimates provided at the fire recovery team meeting.

Approval of Minutes

- Roger moved, Barbara seconded, to approve the minutes from the September 15 and October 20 meetings; the motion carried unanimously.

Quarterly Financial Report & 2021 budget

- Chris S relayed from Kathy that she is pleased with budget format and content.
- Jessie reviewed quarterly financial report. Noted that we received unrestricted donations. Introduced new line item, "Project or Program Indirect Revenue." Went through expenses line by line. Went through board designated reserve funds. Sue asked for clarification about budgets/actuals and Jessie explained this was meant for hiring another person but this did not take place mostly due to COVID.
 - Sue moved, Monica seconded, to approve the quarterly financial report; the motion carried unanimously.
- Jessie reviewed the 2021 budget noting that the first page is what will be voted on at the Dec BOD meeting. Went through cover page line by line. Monica asked about flexibility in using designated board reserve funds and Jessie explained they can be allocated to that category/project/program as needed over that specific timeline of the category/project/program. Next Jessie moved onto Project Revenue and Expenses, going over each project. Barbara noted a typo on year under CWCB Adaptive Management. Barbara suggested a community-based fundraising campaign for the Community Science Program and Jessie will follow up. Gabe asked about staffing capacity and Jessie described work plan. Next Jessie went over operating expenses.

Fish Passage Update

- Deb and Yana provided a fish passage update (see slides).

St. Vrain Forest Health Partnership Update

- Jessie reviewed the draft scope and budget. Board members agreed that they support this grant.

Watershed Stewardship Award

- Chris S asked how to set a bar for the stewardship award. All agreed to do it as a vote. Discussion ensued about the award.

Adjournment

The meeting was adjourned at 4:35 pm.

Attachment 2
2021 Budget



12/10/2020

To: Watershed Center Board of Directors

From: Jessie Olson, Watershed Center Executive Director

RE: 2021 Budget

The purpose of this memo is to provide a brief narrative on the proposed 2021 budget for Left Hand Watershed Center (Watershed Center).

2021 Budget

The rolled up summary page of the budget, attached, summarizes expected carryover, revenue and expenses per funding source. Draft versions of this budget were reviewed by the Watershed Center finance committee and the Watershed Center bookkeeper. Revenue is broken up by (1) unrestricted revenue (2) project (restricted) revenue. Expenses are broken up by (1) personnel (broken up by fundraising, program, and project expenses) (2) operations (broken up by fundraising and other) (3) project expenses that are non-personnel. At the December Board meeting, the board would vote to adopt the first page of the approved budget. The expected revenues and expenses are summarized by category below:

- **Carryover from Prior Year** includes the net difference between revenue and expenses from the previous year.
- **Revenue sources** are broken up by unrestricted revenue (including unrestricted board partner contributions, other donations, and in-kind office space, indirect project/program revenue), and project specific restricted revenue (which includes project specific donations and grants). Donations could be from corporations, businesses, individuals, foundations, or board partner contributions and are generally noted in the notes section of the budget.
- **Personnel service costs** include staff salaries, taxes, unemployment insurance, and benefits. Benefits for full-time staff include an IRA, which is matched by 3% from the Watershed Center and health insurance. Personnel service costs are primarily funded by project/program specific revenue including grants and restricted donations, and about \$18,000 in unrestricted revenue. Total expected revenue available for personnel is approximately 4.0 FTE, but may be more or less depending on project needs and additional grants/funding received.
- **Operations/Program costs** include expenses and contract services related to organizational function. These are funded by the Watershed Center unrestricted revenue and/or the indirect income from grant revenue. Rent was assumed to continue as an in-kind contribution from Left

Hand Water District, at a value of \$32,108 annually based on review of comparable rent and utility costs.

- **Project Revenue & Expenses** utilize project-specific grants or project-specific donations. Costs include any necessary materials, supplies, permit fees, hiring of contractors, consultants and others. Project costs are broken up between staff (personnel) costs related to project delivery and project expenses such as permit fees, hiring of consultants or contractors, and project materials and supplies. Active projects in 2021 include:

5. CWCB Adaptive Management (\$54,092)

This is an awarded CWCB grant for stewardship, monitoring, and adaptive management at our EWP and DOLA Legacy project sites. The total grant is for \$176,000 and expires in January 2022. We expect to spend \$54,092 in 2021 on personnel, consultants, weed contractors, and plant materials.

6. LWOG Adaptive Management (\$0)

This is the Watershed Center generated revenue from our “stewardship/M&M fund campaign” and match for our CWCB adaptive management grant. Over \$58,000 has already been raised to date (and is shown in board reserve funds). We expect to first spend down the CWCB adaptive management grant and then spend this down last. In 2021, we expect to continue to use this funding to pay for items that are ineligible for funding at via CWCB such as food for volunteer stewardship events or irrigation supplies and maintenance.

7. CWCB Community Science (\$10,061)

This is an awarded CWCB Water Plan grant to develop the Watershed Center’s community science strategic plan, and implement the plan. The plan was completed in 2020 and now we are implementing our Community Science Program via Catch the Hatch, Watershed Days, work with CU Boulder students, and community monitoring events. The grant expires in 2021 and is \$35,000 total. We expect to spend \$10,055 in 2021 and close out the grant. This is also match for Gates Family Foundation & CDBG-DR Planning grant.

8. Community Science Program (\$25,000)

Gates Family Foundation provided \$42,500 for this program in 2018 and we’ve spent down all of this funding in 2020. In 2021 we expect to raise \$25,000 from grants, partners and/or community members.

10. LHWD Fee for Service (N/A)

On an as-needed basis, LHWD contracts with the Watershed Center to collect water quality samples in the watershed.

11. CWCB WSRF Fish Passage (\$30,337)

This is an awarded CWCB grant for our fish passage feasibility assessment and education initiative. The funds will be used for Watershed Center staff and contracting team to complete the assessment. The grant is for \$50,000 total and expires in 2023. We expect to use \$30,337 in 2021. Match funding comes from “LWOG fish passage donations” below as well as \$14,000 from CDBG-DR Legacy project which expired in 2020.

12. LWOG Fish Passage Donations (\$0)

This is Watershed Center generated revenue, raised from individual donors and the SVLHWCD for the fish passage assessment and education initiative. We raised \$10,079 in 2019, which we expect to spend in 2021.

14. DRMS Water Quality Monitoring (\$4,999)

DRMS anticipates paying under \$5,000 for Watershed Center staff to complete water quality monitoring in Left Hand Creek. Purchase order is anticipated in spring 2021.

15A. CWCB ARUS (\$33,561)

This is an awarded CWCB grant that allows us to continue our adaptive restoration experiments in the canyon, and forest health projects in the St. Vrain Basin. The total grant amount is \$146,934 total and expires in May of 2024.

15B. CWCB WPM (\$14,570)

This is an awarded CWCB grant that will be used to start a pilot stewardship project with Boulder County. The grant also includes funding for project oversight, strategic planning, and fundraising. The total grant amount is for \$69,478 total and expires in May of 2024.

16. SVCC Fee for Service (\$5,000)

This is a fee for service project with the St. Vrain Creek Coalition to complete project oversight of warranty work and monitoring at EWP project sites. Currently our contract is for \$12,346 total and expires in 2021. We expect to spend this on direct project expenses related to stewardship activities, and staff time related to assisting with board meetings.

18A. Watershed Days Sponsorship (\$8,000)

This is Watershed Center generated revenue, raised from corporate and municipal sponsors of the Watershed Days event. In 2019, we raised \$8,000 in sponsorships for our Watershed Days event; in 2020 we raised \$3000. We anticipate raising \$8,000 in 2021.

18B. CWCB Watershed Days (\$21,609)

This is an awarded CWCB Water Plan grant for \$42,500 to host the Watershed Days event. We anticipate spending \$21,609 in 2021, assuming we are able to host a larger in-person event.

20A. CWCB St. Vrain Science, Stewardship, and Education (\$122,453)

This is an awarded CWCB grant for science, stewardship and education in St. Vrain Creek watershed. Includes \$125,000 for a design-build structure repair project in Apple Valley North. Total grant amount is \$377,241 for work through 2023.

20B. Partner Contributions- St. Vrain Science, Stewardship, and Education (\$10,000)

These are pending landowner donations, which will be used as match for the CWCB application for science, stewardship and education in St. Vrain Creek watershed. We also anticipate that this will be an on-going annual program and funding campaign. We've already raised \$15,000 in 2020 via a donation from CEMEX.

21A. CWCB Adaptive Management at Scale (\$115,985)

This is an awarded CWCB grant to develop a regional tool to collaborate on adaptive management in the St. Vrain Creek basin. Total includes consultant fees and Watershed Center staff time. Total grant amount is \$382,320 for work through 2023.

21B. Partner Contributions- Adaptive Management at Scale (\$55,000)

This is Watershed Center generated revenue, raised from partner contributions, which would be used as match for the CWCB application for adaptive management at scale. Annual partner contributions are expected from Boulder County (20K), Mile High Flood Control District (20K), City of Boulder (10K), Keep it Clean Partnership (5K), St. Vrain Left Hand Water Conservancy District (5K). Currently this project is set for the next three years, but we anticipate that this will be an on-going annual program and funding campaign.

21C. USBOR Adaptive Management at Scale (\$46,330)

This is an awarded USBOR grant to develop a regional tool (Watershed Restoration Plan) to collaborate on adaptive management in the St. Vrain Creek basin. Includes consultant fees and Watershed Center staff time. Total grant request amount is \$100,000 and expires in 2022.

22. CPRW Fireshed (\$22,128)

This is a contract that we received as a pass through from the USFS to complete forest health planning and outreach in the St. Vrain Basin.

23. EPA TAG Grant (\$24,546)

This is an awarded grant that we received from the EPA to hire technical experts to help us understand remediation efforts at the Captain Jack Mine, and recommended next steps. The grant total is \$50,000 and expires in 2022.

24A. WC-SV Forest Health Partnership (\$80,000)

These are pending partner contributions to the St. Vrain Forest Health Partnership, which would be used to implement the partnership plan (develop desired future conditions statements, prioritize and plan projects, plan and implement community outreach in preparation for implementation of pre-wildfire mitigation projects). This funding would be used as match for a CWCB application that was submitted in 2020 (24B below).

24B. CWCB-SV Forest Health Partnership (\$45,000)

This is a pending CWCB Water Plan grant that was submitted in December 2020 to fund the St. Vrain Forest Health Partnership. If awarded, the grant totals \$131,542 and would expire in 2024.

- **Balance Carryforward** is the net difference between the Carryover and revenue minus expenses.
- **Board Designated Reserve Funds** include Watershed Center generated revenue that is used as match for grants. Revenue sources are from corporate donors, individuals, and municipal partners. Current reserve funds include (1) Stewardship campaign (2) the fish passage feasibility study & education initiative, (3) the community science plan & implementation, (4) Adaptive Management at Scale, (5) St. Vrain Science Stewardship and Education, (6) Watershed Days, and (7) St. Vrain Forest Health Partnership.
- **Available Unrestricted Carryover Funds** is the net difference between the Carryforward funds and Board Designated Reserve Funds.

Attachments

1. 2021 Budget

Budget 2021
Summary

	2018 Budget	2018 Actual	2019 Budget	2019 Actual	2020 Budget	2020 Actual Thru 11/30/20	2020 Proj.	2021 Budget
<u>Carryover from Prior Year</u>								
Total Carryover	\$70,089	\$70,089	\$161,480	\$161,480	\$164,006	\$164,006	\$164,006	\$310,976
<u>Revenue Sources</u>								
CDBG-DR Cap Grant (06/2018)	\$129,758	\$111,263	\$0	\$0	\$0	\$0	\$0	\$0
CDBG-DR Cap Grant (06/2019)	\$15,000	\$27,495	\$45,000	\$42,493	\$0	\$0	\$0	\$0
CWCB Fundraising Grant	\$18,867	\$17,023	\$0	\$0	\$0	\$0	\$0	\$0
Board Partners (Unrestricted)	\$38,500	\$30,500	\$42,500	\$37,500	\$47,500	\$47,500	\$47,500	\$47,500
Donations (Unrestricted)	\$30,000	\$3,990	\$50,000	\$11,983	\$25,000	\$4,852	\$15,000	\$10,000
Rent (LHWD- In Kind)	\$32,108	\$32,108	\$32,108	\$32,108	\$32,108	\$29,432	\$32,108	\$32,108
Program Revenue (Indirect)				\$5,879		\$47,316	\$53,316	\$30,000
Program Revenue (Restricted)	\$1,493,300	\$951,919	\$1,808,202	\$1,383,026	\$998,195	\$831,344	\$927,167	\$728,571
Total Revenue	\$1,757,533	\$1,174,298	\$1,977,810	\$1,512,988	\$1,102,803	\$960,444	\$1,075,091	\$848,179
<u>Expenses</u>								
Personnel- Fundraising	\$24,127	\$16,281	\$20,902	\$9,070	\$8,803	\$1,447	\$2,000	\$4,832
Personnel- (Unrestricted)	\$151,969	\$99,843	\$52,312	\$47,889	\$11,284	\$11,489	\$18,000	\$26,483
Personnel- (Restricted)	\$68,000	\$101,915	\$188,297	\$170,196	\$356,030	\$226,734	\$289,206	\$364,863
Personnel Subtotal	\$244,096	\$218,039	\$261,511	\$227,155	\$376,117	\$239,670	\$309,206	\$396,178
Operations-Fundraising	\$2,500	\$1,534	\$1,000	\$894	\$1,000	\$25	\$25	\$1,000
Operations-Other	\$85,597	\$85,549	\$87,741	\$58,992	\$94,641	\$55,565	\$60,708	\$78,558
Operations Subtotal	\$88,097	\$87,082	\$88,741	\$59,886	\$95,641	\$55,590	\$60,733	\$79,558
Contractors/Consultants/Supplie	\$1,395,300	\$777,786	\$1,611,650	\$1,223,421	\$625,447	\$524,258	\$558,183	\$288,707
Total Expenses	\$1,727,493	\$1,082,907	\$1,961,902	\$1,510,462	\$1,097,205	\$819,519	\$928,121	\$764,443
Balance Carryforward	\$100,129	\$161,480	\$177,388	\$164,006	\$169,605	\$304,932	\$310,976	\$394,711
Board Designated Reserve Funds								
Stewardship Campaign (M&M/Adaptive Management)	\$35,000	\$58,659	\$58,475	\$58,833	\$58,833	\$56,190	\$55,789	\$45,789
Fish Passage Feasibility Study & Education Initiative	\$0	\$6,579	\$0	\$11,579	\$1,500	\$11,430	\$11,430	\$6,430
Community Science	\$0	\$42,500	\$22,753	\$16,795	\$13,386	\$0	\$0	\$0
Adaptive Management at Scale	\$0	\$0	\$0	\$0	\$0	\$70,000	\$70,000	\$125,000
St Vrain Science, Stewardship and Education	\$0	\$0	\$0	\$0	\$0	\$15,000	\$15,000	\$25,000
Watershed Days	\$0	\$0	\$0	\$2,120	\$2,120	\$2,934	\$3,747	\$3,747
SV Forest Health Partnership	\$0	\$0	\$0	\$0	\$0	\$0	\$12,500	\$37,500
Reserve Funds Subtotal	\$35,000	\$107,738	\$81,228	\$89,326	\$75,838	\$155,554	\$168,466	\$243,466
AVAILABLE UNRESTRICTED CARRYOVER FUNDS	\$65,129	\$53,743	\$96,160	\$74,681	\$93,767	\$149,378	\$142,510	\$151,245

Budget 2021
Details

	2018 Budget	2018 Actual	2019 Budget	2019 Actual	2020 Budget	2020 Actual Thru 11/30/20	2020 Proj.	2021 Budget	Notes
Carryover from Prior Year									
Total Carryover	\$70,089	\$70,089	\$161,480	\$161,480	\$164,006	\$164,006	\$164,006	\$310,976	
Revenue Sources									
CDBG-DR Cap Grant (Through June 2018)	\$129,758	\$111,263	\$0	\$0	\$0	\$0	\$0	\$0	Closed 6/30/2018
CDBG-DR Cap Grant (Through July 2019)	\$15,000	\$27,495	\$45,000	\$42,493	\$0	\$0	\$0	\$0	Expired 6/30/19
CWCB Fundraising Grant	\$18,867	\$17,023	\$0	\$0	\$0	\$0	\$0	\$0	Expires December 2018
Board Partners (Unrestricted)	\$38,500	\$30,500	\$42,500	\$37,500	\$47,500	\$47,500	\$47,500	\$47,500	
Donations (Unrestricted)	\$30,000	\$3,990	\$50,000	\$11,983	\$25,000	\$4,852	\$15,000	\$10,000	
Rent (LHWD- In Kind)	\$32,108	\$32,108	\$32,108	\$32,108	\$32,108	\$29,432	\$32,108	\$32,108	
Project or Program Revenue (Indirect)				\$5,879		\$47,316	\$53,316	\$30,000	Includes indirect revenue for projects that closed out in 2020 (Gates, DRMS, City of Longmont WQ analysis) and indirect project revenue for on-going project work 01/01/20-9/30/2020. Prior to 2019, indirect project revenue was included in carryover.
Project or Program Revenue (Direct)									
(1) DOLA CDBG-DR Legacy Project	\$924,800	\$312,907	\$1,597,192	\$1,170,895	\$330,000	\$524,198	\$524,198	\$0	Closed 5/30/2020
(2) DOLA CDBG-DR 63rd Street Ex.	\$375,000	\$359,475	\$0	\$0	\$0	\$0	\$0	\$0	Closed 7/31/18
(3A) DOLA CDBG-DR Three Reaches	\$80,000	\$119,679	\$0	\$0	\$0	\$0	\$0	\$0	Closed 7/31/18
(3B) DOLA CDBG-DR Hinman	\$0	\$4,690	\$0	\$0	\$0	\$0	\$0	\$0	Closed 7/31/18
(4) CDBG-DR Stewardship HB & Citizen Science	\$46,500	\$52,360	\$45,000	\$59,286	\$0	\$0	\$0	\$0	Expired 6/30/19
(5) CWCB ADM	\$20,000	\$1,852	\$41,771	\$26,160	\$85,000	\$57,438	\$64,701	\$54,092	Expires in 2022, \$176,000 budget total
(6) LWOG Adaptive Management	\$35,000	\$28,124	\$10,000	\$2,600	\$10,000	\$0	\$0	\$0	Individuals, corporations, partner donations. On-going funding campaign for stewardship program (and match for CWCB grant).
(7) CWCB CSP	\$0	\$4,493	\$10,672	\$6,812	\$18,188	\$11,866	\$12,500	\$10,061	Water plan grant 35K total. Expires in 2021
(8) Community Science Program	\$0	\$42,500	\$10,000	\$0	\$10,000	-\$4,154	-\$4,154	\$25,000	Gates FF (received entire grant in 2019). 25K TBD
(9) OSMP Monitoring	\$0	\$3,555	\$5,600	\$6,739	\$5,600	\$5,792	\$5,792	\$0	Annual grant
(10) LHWD Fee for Service	\$7,000	\$6,518	\$0	\$0	\$0	\$3,470	\$3,470	\$0	As needed water quality monitoring
(11) CWCB WSRF Fish Passage	\$0	\$776	\$31,336	\$5,789	\$44,211	\$10,259	\$15,000	\$30,337	50K grant, expires 11/09/23
(12) LWOG Fish Passage Donations	\$0	\$6,579	\$5,000	\$5,000	\$0	\$0	\$0	\$0	5K individual donations; 5K from SVLHWCD.
(13) SVLH Stream Management Plan	\$0	\$3,012	\$5,352	\$509	\$0	\$0	\$0	\$0	Expired 12/31/2019
(14) DRMS Water Quality Monitoring	\$5,000	\$4,999	\$4,999	\$4,095	\$4,999	\$4,010	\$4,999	\$4,900	Assume annually renewed
(15A) CWCB ARUS	\$0	\$0	\$21,380	\$22,196	\$58,000	\$33,276	\$36,000	\$33,561	Expires 2024 Total grant \$146,934
(15B) CWCB WMP	\$0	\$0	\$10,000	\$7,688	\$30,000	\$11,123	\$15,000	\$14,570	Expires 2024 Total grant \$69,478
(16A) SVCC Fee for Service	\$0	\$400	\$4,950	\$5,399	\$3,947	\$2,053	\$2,053	\$5,000	Expires Dec 2021
(16B) CWCB- SVCC	\$0	\$0	\$4,950	\$4,023	\$0	\$0	\$0	\$0	Expired 6/30/2019
(17) City of Longmont Fee for Service	\$0	\$0	\$0	\$12,591	\$5,000	-\$1,887	\$613	\$0	Assuming they would like to contract with us again.
(18A) Watershed Days Sponsorships	\$0	\$0	\$0	\$8,000	\$8,000	\$3,000	\$3,000	\$8,000	Assume same sponsorship levels in 2019
(18B) CWCB WD (Watershed Days)	\$0	\$0	\$0	\$0	\$21,250	\$11,496	\$11,496	\$21,609	Grant total is \$42,500

Budget 2021
Details

	2018 Budget	2018 Actual	2019 Budget	2019 Actual	2020 Budget	2020 Actual Thru 11/30/20	2020 Proj.	2021 Budget	Notes
(19) CWCB SVAM (St Vrain Adaptive Management)	\$0	\$0	\$0	\$32,746	\$0	\$0	\$0	\$0	Grant Expired in 2020
(20A) CWCB SVSSE (St. Vrain Science, Stewardship & Education)	\$0	\$0	\$0	\$0	\$142,000	\$29,999	\$60,000	\$122,453	Contracted June 2020. Expires 2023. \$377,241 Total
(20B) WC-Partner Contributions St. Vrain AM	\$0	\$0	\$0	\$2,500	\$25,000	\$15,000	\$15,000	\$10,000	Committed via support letters.
(21A) CWCB AM at Scale	\$0	\$0	\$0	\$0	\$100,000	\$20,076	\$30,000	\$115,985	Contracted June 2020. Expires 2023. \$382,320 Total
(21B) WC-AM at Scale (Partner Contribution)	\$0	\$0	\$0	\$0	\$60,000	\$70,000	\$70,000	\$55,000	Partners collectively committed \$60,000 Annually for 3 years
(21C) USBOR	\$0	\$0	\$0	\$0	\$28,000	\$6,859	\$10,000	\$46,330	Contract expected July 2020. Expires 2022. \$100,000 Total
(22) CPRW Fireshed	\$0	\$0	\$0	\$0	\$9,000	\$12,648	\$15,000	\$22,128	Expires December 2021.
(23) EPA Tag Grant	\$0	\$0	\$0	\$0	\$0	\$4,823	\$20,000	\$24,546	New Contract expected June 2020. 50K distributed over 2 years.
(24A) WC-SV Forest Health Partnership	\$0	\$0	\$0	\$0	\$0	\$0	\$12,500	\$80,000	Partner/Corporate/Foundation Contributions
(24B) CWCB-SV Forest Health Partnership	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$45,000	Pending CWCB Water Plan grant
Total Revenue	\$1,757,533	\$1,174,298	\$1,977,810	\$1,512,988	\$1,102,803	\$960,444	\$1,075,091	\$848,179	
Expenses									
CDBG-DR Cap Grant (Through July 2018)									
Personnel	\$96,969	\$67,593	\$0	\$0	\$0	\$0	\$0	\$0	Closed 6/30/18
Operations	\$32,789	\$43,670	\$0	\$0	\$0	\$0	\$0	\$0	Closed 6/30/18
CDBG-DR Cap Grant (Through July 2019)									
Personnel	\$15,000	\$27,495	\$45,000	\$42,493	\$0	\$0	\$0	\$0	Closed July 2019
CWCB Fundraising Grant									
Personnel	\$16,367	\$15,714	\$0	\$0	\$0	\$0	\$0	\$0	Closed 2018
Operations	\$2,500	\$1,310	\$0	\$0	\$0	\$0	\$0	\$0	
General Fund- Personnel									
Personnel- Fundraising	\$7,760	\$567	\$20,902	\$9,070	\$8,803	\$1,447	\$2,000	\$4,832	
Personnel- Other	\$40,000	\$4,754	\$7,312	\$5,396	\$11,284	\$11,489	\$18,000	\$26,483	
Subtotal Programs	\$211,385	\$161,103	\$73,214	\$56,959	\$20,087	\$12,936	\$20,000	\$31,315	
Operating Expenses									
Bookkeeping	\$7,000	\$2,783	\$20,000	\$6,587	\$12,000	\$8,976	\$10,000	\$12,000	
Tax Prep	\$2,500	\$0	\$2,500	\$0	\$2,500	\$2,717	\$2,717	\$3,000	
Bank fees	\$0	\$209	\$250	\$178	\$250	\$127	\$178	\$250	
Audit	\$0	\$0	\$14,000	\$8,552	\$9,000	\$3,406	\$3,406	\$8,700	Quote from CLA for 2021 (no single audit needed)
Phone	\$600	\$951	\$2,580	\$2,314	\$2,580	\$2,222	\$2,580	\$3,000	
Mileage	\$1,400	\$471	\$1,500	\$660	\$1,000	\$68	\$68	\$500	
Trainings and Conferences	\$1,000	\$543	\$2,000	\$1,228	\$2,000	\$600	\$600	\$2,000	
Field Supplies	\$500	\$0	\$1,000	\$0	\$0	\$0	\$0	\$0	
Misc. Supplies & Service	\$1,000	\$2,584	\$2,303	\$1,153	\$2,303	\$3,371	\$3,500	\$3,500	
Insurance	\$1,000	\$538	\$4,000	\$1,604	\$4,000	\$2,456	\$2,456	\$2,500	
Website	\$300	\$180	\$500	\$1,847	\$2,000	\$1,119	\$1,500	\$2,000	
Software & Computer supplies & IT	\$500	\$569	\$1,000	\$270	\$5,000	\$532	\$1,000	\$5,000	
Postage and Shipping	\$450	\$291	\$700	\$189	\$700	\$245	\$300	\$700	
Printing & Marketing Materials	\$500	\$69	\$1,000	\$1,554	\$2,500	\$0	\$0	\$1,500	
Meeting Materials and Supplies	\$750	\$517	\$1,000	\$639	\$1,000	\$200	\$200	\$500	
Event Expenses	\$200	\$66	\$300	\$0	\$300	\$0	\$0	\$300	
Legal Review and Assistance	\$3,000	\$0	\$1,000	\$110	\$1,000	\$96	\$96	\$1,000	
Fundraising Expenses	\$0	\$224	\$1,000	\$894	\$1,000	\$25	\$25	\$1,000	
Rent (LHWD- In Kind)	\$32,108	\$32,108	\$32,108	\$32,108	\$32,108	\$29,432	\$32,108	\$32,108	
Rent (not in Kind)	\$0	\$0	\$0	\$0	\$14,400	\$0	\$0	\$0	
Subtotal Operations	\$52,808	\$42,103	\$88,741	\$59,886	\$95,641	\$55,590	\$60,733	\$79,558	

Budget 2021
Details

	2018 Budget	2018 Actual	2019 Budget	2019 Actual	2020 Budget	2020 Actual Thru 11/30/20	2020 Proj.	2021 Budget	Notes
Project Expenses									
(1) DOLA CDBG-DR Legacy Project									
Personnel	\$35,000	\$54,772	\$84,192	\$84,524	\$40,000	\$35,596	\$35,596	\$0	
Other (Contractors/Consultants/Materials)	\$889,800	\$258,135	\$1,500,000	\$1,086,371	\$290,000	\$488,602	\$488,602	\$0	includes mileage
(2) DOLA CDBG-DR 63rd Street Ex.	\$375,000	\$359,475	\$0	\$0	\$0	\$0	\$0	\$0	
(3a) DOLA CDBG-DR Three Reaches									
Personnel	\$20,000	\$25,485	\$0	\$0	\$0	\$0	\$0	\$0	
Other (Contractors/Consultants/Materials)	\$60,000	\$94,194	\$0	\$0	\$0	\$0	\$0	\$0	
(3b) DOLA CDBG-DR Hinman (Contractor)	\$0	\$4,690	\$0	\$0	\$0	\$0	\$0	\$0	
(4) CDBG-DR Stewardship HB & Citizen Science	\$46,500	\$52,360	\$45,000	\$59,286	\$0	\$0	\$0	\$0	
(5) CWCB ADM									
Personnel	\$0	\$83	\$28,883	\$8,332	\$65,000	\$44,269	\$53,000	\$29,092	
Other (Contractors/Consultants/Materials)	\$20,000	\$1,790	\$10,000	\$17,411	\$15,000	\$11,701	\$11,701	\$25,000	
(6) LWOG Adaptive Management									
Personnel	\$10,000	\$3,182	\$0	\$803	\$8,000	\$44	\$44	\$0	
Other (Contractors/Consultants/Materials)	\$0	\$430	\$3,000	\$2,426	\$2,000	\$2,599	\$3,000	\$10,000	
(7) CWCB CSP									
Personnel	\$0	\$4,329	\$9,247	\$6,185	\$16,413	\$11,465	\$12,500	\$10,061	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$500	\$170	\$0	\$0	\$0	\$0	
(8) Community Science									
Personnel	\$0	\$606	\$9,247	\$20,446	\$9,409	\$7,524	\$7,524	\$25,000	
Other (Contractors/Consultants/Materials)	\$0	\$2,780	\$15,000	\$5,259	\$4,000	\$1,730	\$1,730	\$0	
(9) OSMP Monitoring									
Personnel	\$0	\$3,437	\$5,090	\$4,627	\$5,040	\$1,332	\$5,678	\$0	
Other (Contractors/Consultants/Materials)	\$0	\$279	\$0	\$490	\$0	\$114	\$114	\$0	
(10) LHWD Metals Monitoring									
Personnel	\$3,000	\$2,554	\$0	\$0	\$0	\$2,440	\$1,470	\$0	
Other (Contractors/Consultants/Materials)	\$4,000	\$3,227	\$0	\$0	\$0	\$409	\$2,000	\$0	
(11) CWCB WSRF Fish Passage									
Personnel	\$0	\$851	\$10,361	\$3,055	\$39,790	\$9,347	\$15,000	\$15,337	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$20,000	\$2,257	\$0	\$0	\$0	\$15,000	
(12) LWOG Fish Passage									
Personnel	\$0	\$0	\$10,079	\$0	\$10,079	\$149	\$149	\$5,000	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$107	\$0	\$0	\$0	\$0	
(13) SVLH Stream Management Plan									
Personnel	\$0	\$2,107	\$4,816	\$1,060	\$0	\$0	\$0	\$0	
Other (Contractors/Consultants/Materials)	\$0	\$307	\$150	\$47	\$0	\$0	\$0	\$0	
(14) DRMS Water Quality Monitoring									
Personnel	\$0	\$4,108	\$4,999	\$292	\$4,499	\$5,268	\$5,268	\$2,693	
Other (Contractors/Consultants/Materials)	\$0	\$118	\$0	\$3,188	\$0	\$1,408	\$1,408	\$2,207	
(15A) CWCB ARUS									
Personnel	\$0	\$0	\$9,000	\$9,325	\$32,200	\$27,584	\$35,000	\$23,561	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$13,000	\$12,571	\$20,000	\$2,680	\$1,000	\$10,000	
(15B) CWCB WMP									
Personnel	\$0	\$0	\$2,483	\$4,412	\$17,000	\$7,509	\$15,000	\$9,570	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$5,000	\$3,200	\$10,000	\$3,200	\$0	\$5,000	
(16A) SVCC Fee for Service									
Personnel	\$0	\$401	\$4,950	\$2,395	\$0	\$1,733	\$1,453	\$2,500	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$2,875	\$3,947	\$247	\$600	\$2,500	
(16B) CWCB SVCC									
Personnel	\$0	\$0	\$4,950	\$3,770	\$0	\$0	\$0	\$0	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$253	\$0	\$0	\$0	\$0	
(17) COL Fee for Service									
Personnel	\$0	\$0	\$0	\$2,485	\$4,500	\$808	\$613	\$0	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$7,368	\$0	\$0	\$0	\$0	
(18A) Watershed Days Sponsors									
Personnel	\$0	\$0	\$0	\$0	\$0	\$76	\$76	\$0	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$5,880	\$8,000	\$2,110	\$2,110	\$8,000	
(18B) CWCB WD (Watershed Days)									
Personnel	\$0	\$0	\$0	\$0	\$10,000	\$10,835	\$10,835	\$13,609	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$0	\$10,000	\$409	\$409	\$8,000	
(19) CWCB St Vrain Adaptive Management									
Personnel	\$0	\$0	\$0	\$18,485	\$0	\$0	\$0	\$0	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$14,260	\$0	\$0	\$0	\$0	

Budget 2021
Details

	2018 Budget	2018 Actual	2019 Budget	2019 Actual	2020 Budget	2020 Actual Thru 11/30/20	2020 Proj.	2021 Budget	Notes
(20A) CWCB St. Vrain Science, Stewardship, and Education									
Personnel	\$0	\$0	\$0	\$0	\$16,000	\$20,814	\$30,000	\$34,453	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$0	\$125,000	\$8,540	\$30,000	\$88,000	
(20B) SV Partner Contributions									
Personnel	\$0	\$0	\$0	\$0	\$15,000	\$0	\$0	\$0	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$0	\$10,000	\$0	\$0	\$0	
(21A) CWCB Adaptive Management at Scale									
Personnel	\$0	\$0	\$0	\$0	\$27,000	\$18,324	\$25,000	\$85,985	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$0	\$70,000	\$0	\$5,000	\$30,000	
(21B) Partner Contributions AM at Scale									
Personnel	\$0	\$0	\$0	\$0	\$5,000	\$0	\$0	\$0	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$0	\$55,000	\$0	\$0	\$0	
(21C) USBOR									
Personnel	\$0	\$0	\$0	\$0	\$25,200	\$6,265	\$10,000	\$21,330	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,000	
(22) CPRW Fireshed									
Personnel	\$0	\$0	\$0	\$0	\$5,900	\$10,528	\$15,000	\$17,128	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$0	\$2,500	\$509	\$509	\$5,000	
(23) EPA TAG Grant									
Personnel	\$0	\$0	\$0	\$0	\$0	\$4,823	\$10,000	\$4,546	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$0	\$0	\$0	\$10,000	\$20,000	
(24A) WC-SV Forest Health Partnership									
Personnel	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,000	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,000	
(24B) CWCB-SV Forest Health Partnership									
Personnel	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,000	
Other (Contractors/Consultants/Materials)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,000	
Projects Subtotal	\$1,463,300	\$879,701	\$1,799,947	\$1,393,616	\$981,477	\$750,992	\$847,389	\$653,571	
TOTAL EXPENSES	\$1,727,493	\$1,082,907	\$1,961,902	\$1,510,462	\$1,097,205	\$819,519	\$928,121	\$764,443	
BALANCE CARRYFORWARD	\$100,129	\$161,480	\$177,388	\$164,006	\$169,605	\$304,932	\$310,976	\$394,711	
Board Designated Reserve Funds									
Stewardship Campaign (M&M/Adaptive Management)	\$35,000	\$58,659	\$58,475	\$58,833	\$58,833	\$56,190	\$55,789	\$45,789	Corporations, Partners, & Individual donations
Fish Passage Feasibility Study & Education Initiative	\$0	\$6,579	\$0	\$11,579	\$1,500	\$11,430	\$11,430	\$6,430	SVLHWCD donation, Individual donations
Community Science	\$0	\$42,500	\$22,753	\$16,795	\$13,386	\$0	\$0	\$0	Gates Family Foundation
AM at Scale	\$0	\$0	\$0	\$0	\$0	\$70,000	\$70,000	\$125,000	60K partner contributions estimated annually for 3 years
St Vrain Science, Stewardship and Education	\$0	\$0	\$0	\$0	\$0	\$15,000	\$15,000	\$25,000	
Watershed Days	\$0	\$0	\$0	\$2,120	\$2,120	\$2,934	\$3,747	\$3,747	
SV Forest Health Partnership	\$0	\$0	\$0	\$0	\$0	\$0	\$12,500	\$37,500	
Reserve Funds Subtotal	\$35,000	\$107,738	\$81,228	\$89,326	\$75,838	\$155,554	\$168,466	\$243,466	
AVAILABLE UNRESTRICTED CARRYOVER FUNDS	\$65,129	\$53,743	\$96,160	\$74,681	\$93,767	\$149,378	\$142,510	\$151,245	

Attachment 3
Watershed Steward Award Nomination

To:
Board of Directors
Left Hand Watershed Center

December 10, 2020

From:
Kathy Peterson
Sue Schaffler

Re: Nomination for 2020 Watershed Center Steward Award

Colleen Williams has been a part of the Left Hand Watershed Center since its formation in 2002, and the driving force for the James Creek Watershed Initiative (JCWI) before that.

Due to her pioneering activism in the watershed, JCWI became a voting member of the Left Hand Watershed Center from the outset, and Colleen lent her expertise in grant application and management and restoration in the early days of the organization, and served as the financial agent for the first grant the Watershed Center received.

Colleen has served as a tireless advocate for the health of the greater Left Hand watershed. Always tuned to any threats to the watershed, she helped advocate for watershed restoration and health through historic mining restoration projects, fires, and floods.

In recognition of Colleen Williams' leadership role in watershed protection and restoration, and her commitment to watershed stewardship throughout the Left Hand and James Creek watersheds, we nominate Director Colleen Williams for the first ever Watershed Center's Watershed Steward Award.

Sincerely,

Kathy Peterson
Sue Schaffler.

Attachment 4

Water Quality Report to Left Hand Water District

**RESULTS OF WATER QUALITY MONITORING IN
LEFT HAND CREEK WATERSHED**

Prepared for Left Hand Water District



**LEFT HAND
watershed center**

Developed by:

LEFT HAND WATERSHED CENTER
6800 Nimbus Road, Longmont CO 80503 (office)
P.O. Box 1074, Niwot, CO 80544-0210 (mailing)
303.530.4200 | www.watershed.center

Summary

This report describes results of work conducted by Left Hand Watershed Center (Watershed Center) for Left Hand Water District (LHWD) to document water quality before, during, and after routine maintenance at the Left Hand Park Reservoir. The concern was that maintenance activities would prolong base flow conditions, specifically in areas near and downstream of the Captain Jack Mine, and the low flows would exacerbate the negative impacts from mine water effluent. Our results showed that maintenance activities and resulting base flow conditions had no discernable adverse effect on water quality. However, the results indicated water quality improvements in response to management activities at the Captain Jack Mine as well as identified a pulse of elevated concentrations of analytes at the Haldi Intake in early October.

Purpose

The purpose of this project was to monitor water quality in the upper Left Hand Creek Watershed before, during, and after routine maintenance at Left Hand Park Reservoir from August 22, 2020 through October 8, 2020. This reservoir is a main source water for upper Left Hand Creek (i.e. all reaches upstream of the confluence with James Creek) and often maintains greater than base flow conditions through late October, the end of irrigation season. After drainage and repairs, the reservoir was expected to no longer contribute flows to the creek. Resulting flows, specifically in proximity to the Captain Jack Mill site, were expected to be similar to base flow conditions by early September. The Watershed Center and Left Hand Water District agreed to monitor water quality once before the drainage and for five consecutive weeks thereafter to ensure that negative water quality impacts (particularly from pH and dissolved metals) from Captain Jack mine drainage would not be exacerbated due to prolonged low flow conditions. We compared results over time at all monitoring locations and against national and Colorado State drinking water quality standards at the Haldi Intake, the LHWD's municipal drinking water source on Left Hand Creek.

Methods

The Left Hand Watershed Center monitored water quality at six locations on Left Hand Creek from the Captain Jack Mill site to Haldi Intake on a weekly basis from August 22, 2020 through October 8, 2020 (Figure 1). To carry out this work, the Watershed Center used River Watch monitoring protocols during each sampling event at some of the existing locations (California Gulch, Rowena, Upstream James Creek, and Haldi) and additional locations at the Captain Jack Mine (Big Five Tunnel, Lower Pond Outlet) (Figure 1). River Watch refers to the Watershed Center's participation in the statewide citizen stream monitoring program coordinated by Colorado Parks and Wildlife (<https://coloradoriverwatch.org/>). Below, we describe the water quality measurements collected at each location:

1. Field Analytes. These included pH, alkalinity, hardness, and dissolved oxygen. Samples were processed within 8 hours of collection by Watershed Center Staff.
2. Dissolved Metals and other Analytes. All metals samples were filtered and analyzed for dissolved concentrations. We chose to collect filtered samples because dissolved metals are the most bio-available for uptake by aquatic organisms and human consumers. Preserved dissolved metals samples were sent to ALS Labs for processing within 24 hours of collection. The dissolved analytes are as follows:

Antimony	Cobalt	Potassium
Arsenic	Copper	Selenium
Barium	Iron	Silver
Beryllium	Lead	Sodium
Cadmium	Magnesium	Thallium
Calcium	Manganese	Vanadium
Chromium	Nickel	Zinc

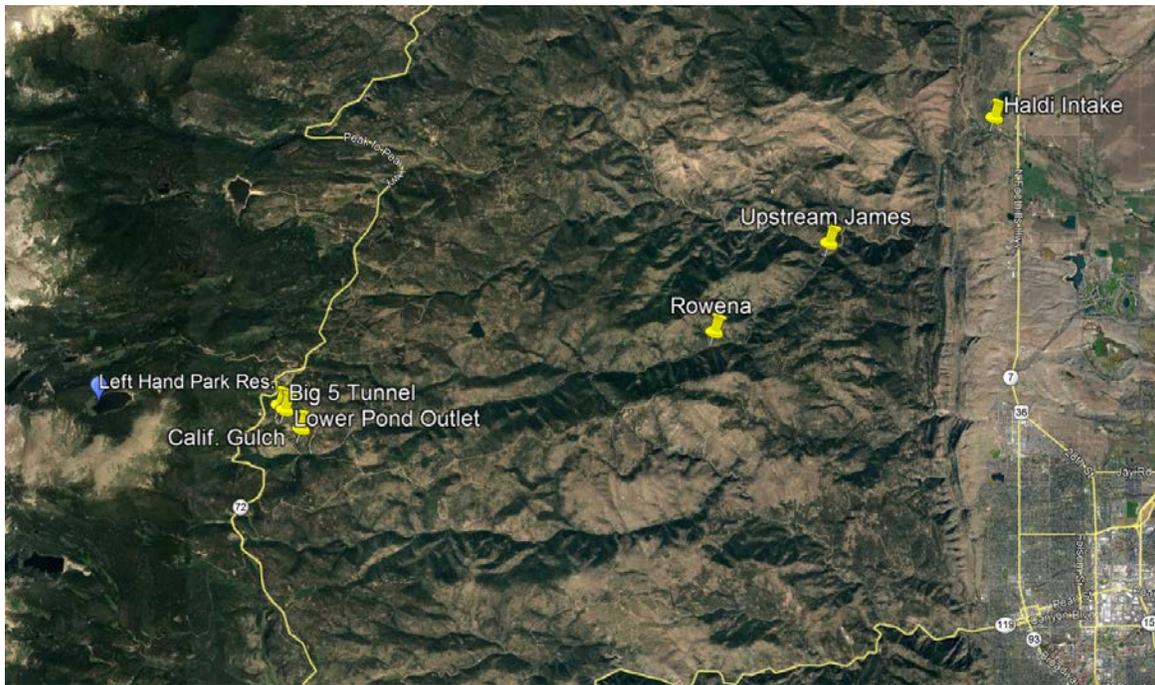


Figure 1. Site map of the Left Hand Park Reservoir and all six monitoring locations at the Captain Jack Mill and on Left Hand Creek. Captain Jack Mine sites: Big 5 Tunnel, Lower Pond Outlet. Left Hand Creek sites upstream to downstream: California Gulch, Rowena, Upstream James, Haldi Intake.

Results and Discussion

We analyzed samples for trends in field data (hardness, alkalinity, dissolved oxygen, and pH) and dissolved metals and other analytes (see list provided in Methods section) at each site over time and compared to drinking water quality standards at the Haldi Intake. Our results did not show that reservoir maintenance had any adverse impacts to water quality. However, they did show improvements related to management activities at the Captain Jack Mine and identified a pulse of field and dissolved metals and other analytes at the Haldi Intake in early October.

During our sampling period, Colorado Department of Public Health and Environment (CDPHE) and the US Environmental Protection Agency's (EPA) contractor, Mine Water, began management activities at the Big Five Tunnel. Activities included preparing for new in-tunnel treatment by 1. Adding a sodium hydroxide (NaOH) addition to the mine pool in early September and 2. Closing the bulkhead between Sept 14 and Sept 24, which stopped effluent flow into Left Hand Creek, and allowed for mine pool water level to rise for future NaOH and methanol additions.

Below we discuss key results:

1. Mine activities improved pH and dissolved concentrations of toxic metals downstream.

Activities at the Big Five Tunnel were reflected in pH at all sites over time (Figure 2) and concentrations of dissolved Copper and Zinc at the California Gulch site over time (Figure 3). Water pH is correlated with the dissolution of metals in water and a good indicator of water quality. For example, if we see a decrease in pH, we infer that more metals are in solution and may therefore be harmful to aquatic life or impair drinking water quality. Overall, conditions improved at all sites, especially those closest to the mine (Calif. Gulch, Rowena).

More specifically, pH at Mine sites (Big 5 Tunnel and Lower Pond Outlet) immediately improved after NaOH additions in early September and continued to improve thereafter when sampling was possible (effluent flows at

Big 5 Tunnel were a trickle on Sept 24 and Oct 8 and absent on Sept 30; Lower Holding Pond went dry after Sept 14). The pH at all downstream sites and concentrations of Copper and Zinc at Calif. Gulch improved after the bulkhead was shut between Sept. 14 and Sept 24 and mine water was no longer flowing into the creek. Copper concentrations were undetectable after Sept 7. Since pH of water facilitates the dissolution of metals in water, these results suggest that the pH and presence or absence of mine water effluent entering the creek are the main drivers to water quality at creek sites downstream. Higher pH results in lower dissolved metals, and reduced mine water effluent flow results in effective dilution of dissolved metals.

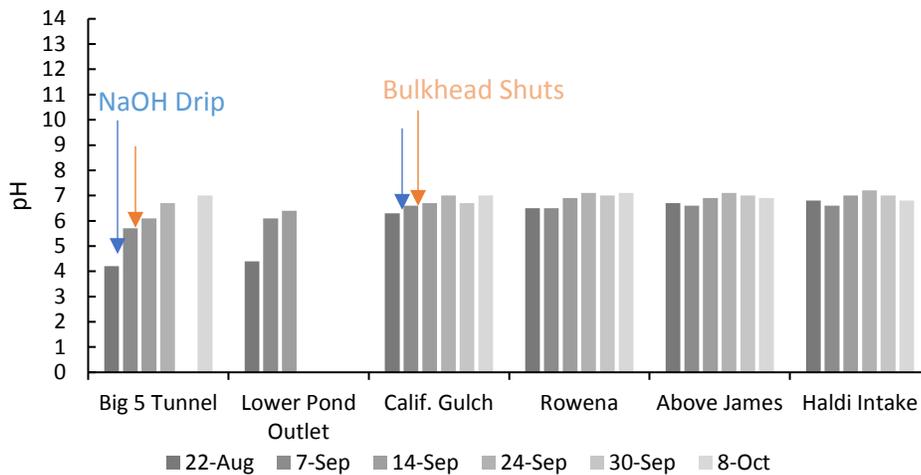


Figure 2. August 22 through October 8, 2020 pH data from all six monitoring locations at the Captain Jack Mill and on Left Hand Creek. Timeline of management actions at the Big Five Tunnel (NaOH Drip, blue, and Bulkhead Shuts, orange) in relationship to pH data shown by color. No samples were collected at Big 5 Tunnel on Sep 30 and at Lower Pond Outlet after Sep 14).

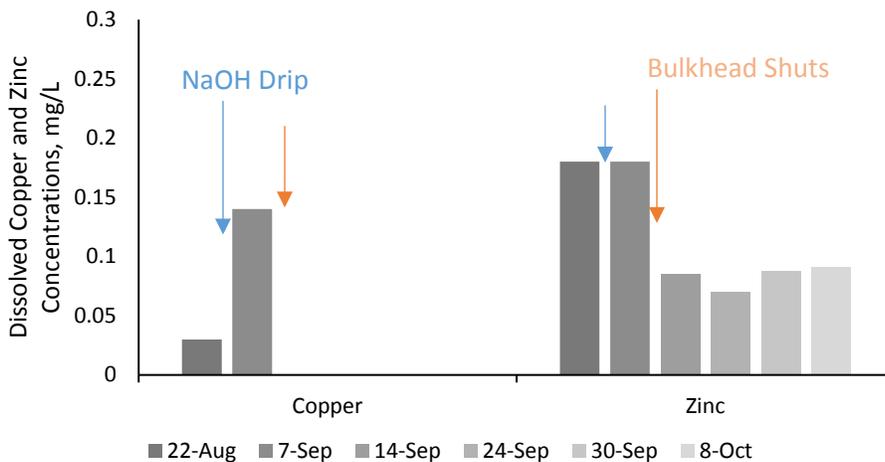


Figure 3. August 22 through October 8, 2020 dissolved concentrations (mg/L) of Copper and Zinc at California Gulch. Timeline of management actions at the Big Five Tunnel (NaOH Drip, blue, and Bulkhead Shuts, orange) in relationship to metals data shown by color. Copper was non-detectable after September 7, 2020.

2. Mine activities also reflected in hardness data trends.

In 2016, the remediation efforts at the Captain Jack Mine began by adding crushed limestone to Big 5 Tunnel and holding ponds to passively treat mine water effluent. Since then, we have seen elevated hardness at the mine sites and California Gulch. These additions increase the concentrations of Calcium in water, a main

component of water hardness or the water's ability to buffer harmful metals from aquatic life. For example, increased hardness improves the water's buffering capacity.

As expected, hardness during this sampling period was high at the mine sites due to the limestone. Notably, after the bulkhead shut, we identified a slight decrease in hardness at the downstream locations, except for Haldi Intake (Figure 4). This suggests that hardness at the California Gulch, Rowena, and Above James sites is influenced by mine water effluent. The increase in hardness at the Haldi Intake is likely related to a pulse of elevated concentrations of analytes in early October, which we will discuss in a following result below.

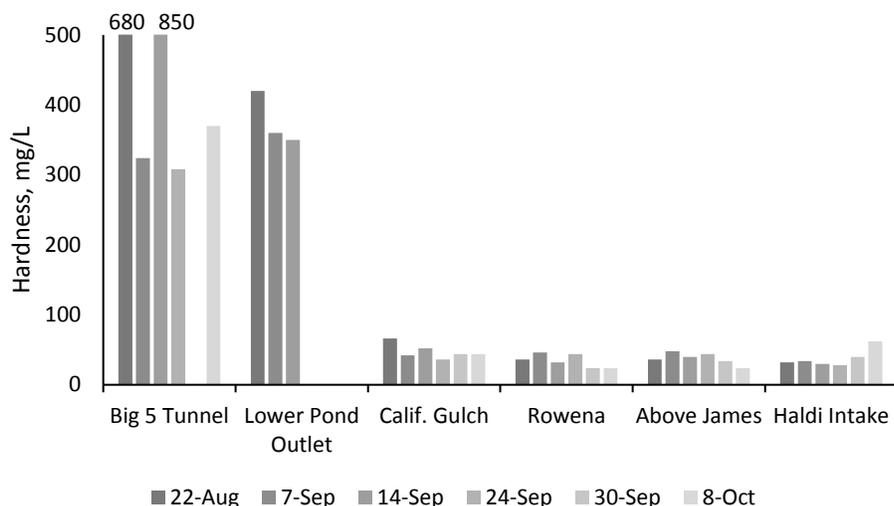


Figure 4. August 22 through October, 8 2020 Hardness (mg/L) at all six monitoring locations at the Captain Jack Mill and on Left Hand Creek. No samples were collected at Big 5 Tunnel on Sep 30 and at Lower Pond Outlet after Sep 14). Hardness values that exceed the fixed 500 mg/L axis are labeled.

3. Water quality at Haldi Intake did not exceed primary or health advisory drinking water standards throughout the sampling period. Regulated analytes only exceed secondary standards during two sampling events, and water quality trends highlight a pulse of elevated analytes on Oct. 8.

We compared results at Haldi Intake over time and to applicable EPA and Colorado State primary and secondary standards for drinking water and health advisory levels (Table 1). Primary standards represent maximum contaminant levels based on risk of adverse human health effects. Secondary standards are based on adverse aesthetic effects, such as staining on plumbing fixtures and laundry, or the taste, odor, or color of the water, but do not represent a human health risk. Health advisory levels represent possible thresholds for adverse human health effects, but are not regulated as official maximum contaminant levels, and are instead treated as voluntary levels for good-practice water treatment.

Throughout the survey period, we detected concentrations of four regulated analytes: Iron, Manganese, Zinc, and pH. No concentrations exceeded primary or health advisory standards. Of these analytes, concentrations for Manganese exceeded secondary concentrations on two occasions (Sept 7 at 0.091 mg/L and Oct 8 at 0.17 mg/L) and Iron exceeded secondary standards on Oct 8 at 0.38 mg/L (Table 2). While, the EPA encourages drinking-water providers to avoid serving treated water exceeding secondary standards because the objectionable color or staining may cause customers to avoid using the water, even though it is safe to drink, it is possible that exceedances were irregular. Specifically, on Oct 8, when Iron and Manganese both exceeded secondary standards, concentrations for multiple analytes were also elevated (Table 2).

On the Oct 8 sampling event, we found that hardness and concentrations of all detectable dissolved analytes, except for Zinc, at the Haldi Intake were highest in concentration compared to the preceding five sampling

events (Table 2; Figure 4). These results suggest a possible pulse of elevated concentrations of analytes on this day. We did not observe elevated concentrations at other sites, suggesting this pulse had already passed these upstream sites or it was specific to this area of the watershed.

Table 1. EPA and Colorado State secondary standards (concentrations in mg/L or standard units) for treated drinking water for all applicable and detectable analytes at the Haldi Intake site. We did not detect any analytes with Primary or health advisory level exceedances.

Metal	Iron (Fe)	Manganese (Mn)	Zinc (Zn)	pH
Concentration	0.3 mg/L	0.05 mg/L	5 mg/L	6.5-8.5 s.u.
Type	Sec.	Sec.	Sec.	Sec.

Table 2. August 22 through October 8, 2020 dissolved concentrations (mg/L) of all detectable dissolved metals and other analytes at Haldi Intake. Values in **bold** indicate an exceedance of EPA and CO State secondary standards and 'nd' indicates the analyte was not detected at that sampling event.

Sampling Event Date	Dissolved Analytes and Concentrations (mg/L)						
	Calcium	Iron	Magnesium	Manganese	Potassium	Sodium	Zinc
8/22/2020	7.4	nd	1.3	0.024	nd	2.2	0.03
9/7/2020	7.5	0.36	1.8	0.091	nd	3	0.032
9/14/2020	6.7	nd	1.5	0.021	nd	2.6	nd
9/24/2020	6.5	nd	1.4	0.021	nd	2.3	nd
9/30/2020	6.4	nd	1.4	0.025	nd	2.3	nd
10/8/2020	15	0.38	3.8	0.17	1.1	3.5	nd

Conclusions and Recommendations

While we did not find any concerning negative impacts to water quality during this sampling period, it is important to recognize the importance of management activities at the Captain Jack Mine and the resulting impacts to resulting downstream water quality. We found that management activities impacted pH, hardness, and resulting concentrations of metals and other analytes at downstream sites. Another notable finding was the pulse of elevated concentrations for multiple analytes at the Haldi Intake. While the pulse did not result in concerning negative impacts to water quality, it highlights the importance of tracking dynamic water quality conditions throughout management activities.

Based on our results and recent watershed events, we recommend the following:

1. Consider discrete water quality monitoring efforts as management activities continue at the Captain Jack Mine. We anticipate operations at the mine to resume draining mine water effluent into Left Hand Creek as remediation activities progress. We recommend discrete weekly water quality monitoring at these study sites during this upcoming operational change (i.e. monitor before and for three consecutive weeks thereafter) and during other future management actions that may impact water quality.
2. Consider tracking water quality at the Haldi Intake for persistent exceedances of secondary standards for drinking water. Based on these data, there is no cause for concern or action regarding secondary exceedances for Iron and Manganese. However, the EPA and State of Colorado encourage drinking-water providers to avoid serving treated water that persistently exceeds secondary standards because the objectionable color or staining may cause customers to avoid using the water.
3. Consider monitoring post-fire impacts to water quality at the Haldi Intake. The recent Burn Area Emergency Response (BAER) assessment for the Calwood Fire identifies Heil Ranch and Geer Canyon as a severely impacted burn area. Geer Canyon is an ephemeral drainage situated just upstream of the Haldi Intake and could transport sediment and debris loads from the burn area during rain events and snow melt. We recommend monitoring turbidity and potential sediment and debris sources prior to rain or runoff events in the surrounding Geer Canyon watershed.