



## AGENDA

Left Hand Watershed Center  
BOARD MEETING  
2:00-4:00 pm, April 20th, 2021  
Via ZOOM call

Join Zoom Meeting  
<https://us02web.zoom.us/j/6688242485>  
Meeting ID: 668 824 2485

Welcome and Introductions	Christopher Smith	2:00 PM
Social Venture Partners Board Meeting Visit	All	2:05 PM
Board minute approval- February & March	Christopher Smith	2:30 PM
Financial Reserve Policy	Kathy Peterson	2:40 PM
Non-Discrimination Policy	Jessie Olson	3:00 PM
Fire Recovery Contractor Hiring	Jessie Olson	3:15 PM
Draft Desired Future Conditions-Forests	Jessie Olson	3:30 PM
Adjourn	Christopher Smith	4:00 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.



04/14/2021

To: Left Hand Watershed Center Board of Directors

From: Jessie Olson, Executive Director

RE: April board meeting agenda items

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## Meeting Minutes

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

## Board & Organizational Items

- Social Venture Partners will be at our board meeting this month. This is the final step in the SVP Catapult grant opportunity. We will spend the first 20-30 minutes of the meeting with them.
- The finance committee developed a draft policy for financial reserve planning (attachment 2). We will discuss this at our board meeting.
- In order to allow adequate time for invoicing and accurate financial reporting, the finance committee will review the quarterly financial reports prior to bringing to the board. Moving forward, board approval of quarterly financial reports will occur one month after the quarter ends (February, May, August, November).
- Two recent grant agreements requested our non-discrimination policy. Our only formal non-discrimination policy relates to disability. Thus, we recommend formalizing a broader non-discrimination policy (attachment 3).

## Project updates

### 1. Adaptive Management, Stewardship & Monitoring

- Staff are finalizing our annual State of the Watershed report, which we expect to be complete by the end of this month.

### 2. Adaptive Management at Scale

- Began working with selected contractor on map development in partnership with SVLHWCD.
- Developed draft framework with desired conditions and indicators collected by partners.
- Continued partner/stakeholder outreach and engagement.
- Began development of a survey for partners and stakeholders for feedback on desired future conditions and representative sites.
- Began hiring of potential tech assistant/advisor role to support project and field work.

### 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 are in the planning phases for future stewardship and community science events this spring and summer.
- We have scheduled our volunteer event on earth day, April 22<sup>nd</sup> from 3:30-5:30 in Left Hand. We will be building fish habitat structures for the off-channel pond at our stage zero site.

#### **5. Mines, Water Quality Monitoring & Analysis**

Staff and our EPA Technical Advisors (Ryan/McKnight) have been actively tracking Captain Jack Mine operations and coordinating with CDPHE/EPA and their contractor, Mine Water (operations team). Here are a few notable updates on Captain Jack progress:

- In-tunnel treatment. Since late 2020 through mid-February 2021, the operations team was working to treat mine pool water. During this time the bulkhead was shut and therefore no water was entering the creek. Treatment during this time included raising the mine pool elevation, adding caustic and organic material (e.g. methanol, Sodium Hydroxide), and recirculating the mine pool water.
- Regulated discharge. Since mid-February, the operations team has been discharging treated mine pool water into the creek at a regulated flow rate and has continued in tunnel treatment activities.
- Water quality monitoring. Mine Water monitors real-time pH, specific conductivity, redox potential in the mine pool and effluent at the adit tunnel. EPA and Mine Water are also monitoring water quality (including metals) in the holding ponds and locations on Left Hand Creek on a monthly timeframe.
- Watershed Center's input. Staff and the Ryan/McKnight team have been working closely with the operations team to make sure there is adequate monitoring of water quality conditions in the mine pool and effluent to ensure good water quality entering the creek.

#### **6. Fish Passage Feasibility Study and Education Initiative**

- Sent out cost estimate requests for development of conceptual designs.
- Held site visit with interested consultants. Jason from LHWD and Terry from LHDC attended. Responses expected next week.
- Incorporated all edits and developed final draft of Fish Report.

#### **7. SVCC & St. Vrain Partnerships**

- Construction at Apple Valley project is underway and is expected to be complete by the end of this week.
- We continue to assist the SVCC in flood recovery oversight and administrative tasks.

#### **8. Fire recovery**

- We received our executed Boulder Community Foundation grant agreement to pay for urgent post-fire restoration tasks on private lands.
- We've submitted a request to City of Longmont and St. Vrain Left Hand Water Conservancy District for the remaining unmet needs related to the fire recovery.
- Our fire recovery project contractor procurement is underway. We've hired Watershed Science and Design to help oversee the project and have issued an RFP to solicit bids for the construction portion of the project. We expect to bring a recommendation on hiring to the board this month.

#### **9. St. Vrain Forest Health Partnership.**

We continue to focus on our work within our two committees on the St. Vrain Forest Health Partnership-The Science & Planning committee and the communications/outreach committee. Updates include:

- We're planning several outreach campaigns & events related to wildfire awareness month in May. Stay on the lookout for email requests to get involved! Current planned activities include a social media video campaign on what is a healthy forest, an essay/art competition with youth, two stewardship events, kicking off community science offerings, and more.
- We've also been working with the science team to draft desired future conditions statements (attachment 4) and have the forest adaptive management framework underway.

### **Other Items**

- We're still in the beginning stages of planning our annual Watershed Days event and look forward to bringing the "Days" back into the Watershed Days event. We've tentatively scheduled the celebration for Sunday, August 29<sup>th</sup> at La Vern Johnson Park.

### **Attachments:**

1. BOD February & March Meeting Minutes
2. Financial Reserve Policy Memo
3. Non-Discrimination Resolution & Policy
4. Draft Desired Future Conditions for Forests

**Attachment 1**  
Board meeting minutes



## Board Minutes – February 16, 2021

### **Attendees**

1. Jessie Olson
2. Barbara Luneau
3. Sue Schaffler
4. Kathy Peterson
5. Roger Loving
6. Sean Cronin (with proxy for Chris Smith and Audrey Butler)
7. Mark Schueneman
8. Eric Smith
9. Yana Sorokin
10. Lauren Duncan
11. Chuck Oppermann (joined at 2:15)

### **Welcome and Introductions**

- Chris S called the meeting to order at 2:02.

### **Left Hand Watershed News**

- Sue mentioned that LHFD had groundbreaking ceremony for new fire station.

### **Approval of Minutes**

- Kathy moved, Barbara seconded, to approve the minutes from the Jan 19 meeting; the motion carried unanimously.

### **Other Updates from Jessie**

- Noted virtual audit will be underway next week.
- Processing applications for Outreach and Education Coordinator Position with many good applications.
- Terry Plummer is giving a presentation next month on ditch system operations so we will advertise that more widely.
- Noted that work on EPA technical assistance grant is being shifted and we are transitioning information in a web format.
- Gave update on Social Venture Partners grant and Thursday orientation to take an organizational survey. Provided background info on grant.

### **Forest Program & Fire Recovery Update**

- Jessie reviewed the org chart from Fireshed to SV Forest Health Partnership (see ppt slides).
- We apply Fireshed tools/information/models at the local level.
- Sean asked for Jessie to clarify where there may be areas of efficiencies or inefficiencies as the org chart grows. Jessie explained that it's growing quickly and feedback is welcome. She also noted that org chart structure decisions need to happen at the MOU level. Sean and Lauren noted importance of the BOD in a communications role. Jessie agreed and explained that a plan is in the works. Sean discussed legislators' role in supporting efforts at a local level. Sue mentioned the upcoming Wildfire Summit. Additional discussion ensued about feedback and questions for the legislators.
- Jessie showed spreadsheet outlining unmet needs and potential funding sources.

### **Fish Passage Update**

- Yana reviewed bullets from Board packet.

### **Other Items**

- Kathy noted that we don't yet have a representative on the BOD from Ward and JCWI. Kathy added that JCWI might need help from us because Colleen and Mark moved. Roger added that Jamestown is considering ways to help with JCWI. Discussion ensued about potential BOD members. Sue will reach out to a few individuals from Ward to see about potential representatives.
- Lauren noted that her team is meeting with Ballarat and EPA in early March. Also provided an update on sampling that took place and next steps at two locations.

### **Adjournment**

The meeting was adjourned at 3:15 pm.



## Board Minutes – March 16, 2021

### **Attendees**

- |                      |                                |
|----------------------|--------------------------------|
| 1. Jessie Olson      | 21. Jerome (last name unknown) |
| 2. Jan Kleinbord     | 22. Sharla Benjamin            |
| 3. Roger Loving      | 23. Nelson Holton              |
| 4. Ken Lenarcic      | 24. David Levitt               |
| 5. Terry Plummer     | 25. Eric Smith                 |
| 6. David Hirt        | 26. Barbara Luneau             |
| 7. Chris Smith       | 27. Sue Schaufler              |
| 8. Andrew Notbohm    | 28. Kathy Peterson             |
| 9. Deb Hummel        | 29. Roger Loving               |
| 10. Gabe Tuerk       | 30. Mark Schueneman            |
| 11. Greg Hanson      | 31. Yana Sorokin               |
| 12. David Levitt     | 32. Karen Conduff              |
| 13. Treste Huse      | 33. Annie Noble                |
| 14. Mary Boardman    | 34. Sean Cronin                |
| 15. Emily Rodriguez  | 35. Alex Tennant               |
| 16. Gerald Blackler  | 36. Chuck Oppermann            |
| 17. Audrey Butler    | 37. Rod Schone                 |
| 18. Erica Crosby     | 38. Art Link                   |
| 19. Dee Walsh (sp?)  | 39. Ryan Rudolph               |
| 20. Monica Bortolini | 40. Joy Jenkins                |

### **Welcome and Introductions**

- Chris S called the meeting to order at 2:02 and went through introductions.

### **Flood potential following wildfire**

#### **1. David's Presentation**

- David provided a presentation on fire recovery. Showed burn severity and watershed map. Focused on Left hand Creek portion. Talked about potential threats: hillslope erosion, debris flows, and increased runoff and stream flows. Showed and discussed maps of where threats may impact the watershed (e.g. debris flows).
  - Jessie asked if the increased risk related to stream flows is temporary – so once vegetation is established will the 100-year flood event go back to what it was



before? David responded that risk decreases after two years. Gerald explained that first year is the biggest increase in flows and we can expect 5-7 years for full recovery to pre-fire flows.

- David introduced the different potential treatments. Mulch is recommended by research as the best approach to stabilize soils in the first year. Noted that seeding is less effective. Showed maps of potential mulching areas and fire severity. Discussed application approach. Also showed sediment capture techniques and larger area proposed for sediment capture.
- David walked through next steps. These include contracting aerial mulching, design and construction of sediment catchment areas, continue to ID and fund needs, implement on-the-ground projects, and data collection and adaptive management.
- David showed photos after the Fourmile fire and recovery. Emphasized that understory vegetation is important for recovery.
  - Jessie added that we received notice from the Community Foundation Boulder County to address many of the unmet needs, which also includes Left Hand Fire.
  - In response to Gabe's question, David explained that it's cost effective to fly the mulch with helicopters rather than using tree mastication treatments on site.
  - In response to Sean's question, David said that bids from contractors were generally in the ballpark or less compared to estimates.
- David added that an early warning system is also being funded with EWP funding.
  - In response to question from Deb, David explained that monsoon season will have the biggest impact compared to recent snow due to the slow melting and the cover with the recent snow on the ground. Gerald clarified that the model just shows the first year and multipliers get reduced as vegetation recovers. Also added that problem areas will become evident more quickly from the snowmelt.
  - Jan asked if there was concern about the streambed, hillsides, or both? And if recent restoration will be helpful? Jessie said that restoration will be helpful but flows will be increased. Suggested that we circle back to the question after Andrew's presentation. David added that if the new bridge puts Streamcrest neighborhood in a better position.

## **2. Andrew and Greg's Presentation**

- Andrew with Boulder Office of Emergency Management provided presentation. Shows map of Geer Canyon and Central Gulch. Noted upcoming public meetings. Shows specific areas of concern: (1) South St. Vrain polygon, (2) Geer Canyon polygon, and (3) Streamcrest and East of 36. Introduced notification system for flashflood advisory, watch, and warning system in these areas.
- Greg with National Weather Service in Boulder provided presentation. Discussed actions after fire/before flood and during flood. Goal is lead time for people based on monitoring radar data and rain gauge data. Problem is storms are short-lived and lead time might be minimal or not at all. Flooding can occur as the rain is falling for a short storm (e.g. 15 min). Discussed what we can do – be informed by knowing the forecast, having a way to receive warnings (e.g. weather radio, FEMA app, etc.), being aware of

environmental cues (e.g. thunderstorm upstream or rising water), and a plan for evacuation. See slides for details.

- Jan asked for clarification about climbing to safety when the road is unsafe. Greg responded that you can move to the upper level of house or opposite side of the road away from stream, but it depends on location. Andrew suggested another meeting to continue the preparation/awareness conversation and also invited people to Burnscar Spotter training is on April 20th. Jan asked if Greg can recommend one top notification option and Greg recommended that having all is best but suggested the Boulder County 911 notification and NOAA Weather Radio. Andrew elaborated on options with each notification method.
- Karen asked about the culvert under Left Hand Drive at the bottom of Geer Canyon and if the small size is a concern. David noted that there is currently no proposal to enlarge the culvert. Added that it survived the 2013 flood. Others in the Boulder County Public Works Dept noted concerns with adjacent crack willow trees but not the culvert itself. Gerald provided clarification about modeled cfs to identify risks, stating that 1,000 cfs is not imminent. Gerald offered to investigate what Geer Creek was flowing at during 2013 floods.
- Jessie concluded that there are other community meetings available for additional information and Watershed Center will email it out to our listerv and newsletter.

### **How does the Left Hand ditch system work? (Presentation by Terry Plummer of the Left Hand Ditch Company)**

- Terry noted Left Hand Ditch Company was established in 1856 and showed birds eye view of the entire system, zooming into upper system.
- Reviewed LHDC facts – see slides. Explained Stock Book, as well as location and legal database base. Anything about the ditch company over the last 100 years is stored in a comprehensive database.
- Showed how delivery and storage is tracked in database. This is done based on decrees and priorities. Explained how much water is lost during the process.
- Explained how computer monitoring helps shareholders with tracking.
- Explained they are a “water short company,” meaning without SSV and CBT shares they can’t keep the system running. Explained that 40% of the water is lost because it comes down the mountain at the wrong time. Explained that sometimes a call on the system (even from Nebraska) means they can’t store water.
- Described variables that impact yield: wind, heat, cloud and tree cover, and dryness all impact evaporation. Also ditches not used get dry and cracked.
- Described Daily Operations: How is water issued? Water can only be issued when it is physically in the lake. Water issues increase over the season as the lakes fill up (snow melts). Storage issue = what’s in the reservoir. Creek issue = what’s coming down the mountain. Farmers pay attention to issues to determine what they plant.

- Three reservoirs: Lake Isabelle, Left Hand Park, and Gold Lake. Isabelle can fill Gold Lake, Lake Ditch, Allen's Lake, and rest of the system. Terry went on to describe which ditches can be serviced by which reservoirs. Sees slides for details.
- LHDC Goals: Keep the water as high as possible for as long as possible. Use decrees as wisely as possible. Mangle the water to last as long as possible. Exchange as much LH water as possible using C-BT water out of Carter Lake. Prepare for next year by storing winter exchange water and any excess for initial issues on April 1<sup>st</sup>. Carryover any unused C-BT for the next season.
- Maintenance and Upgrades: Ongoing and necessary. E.g. Currently adding new pipe to Allen's Lake filler canal because ditch is collapsing. Typically spend \$75K/year doing maintenance and this will likely be doubled with the recent wildfires. Described procedures for crews that monitor key locations continuously when flood conditions occur or there are expected flood conditions.
- Hazards include wildlife and Terry often needs to run ditches at night due to aggressive recreationists.
- Questions:
  - Gabe asked about when computer stations were introduced and what is measured at the stations. Terry said this was a state requirement and is still in progress. They measure CFS on the ditches and uploads it every 15 minutes. Lakes are uploaded every 24 hours. Noted that expense is high and maintenance is constant (calibration, pipe clogs, etc.).
  - Karen asked is there's a way for everyone that owns shares to work together to guarantee that there is constant flow in the creek to keep the fish alive. Terry noted that currently there is not because demand is outweighing supply but that LHDC is having conversations with the Watershed Center to explore solutions.
  - Chuck asked is there's someone he should call if he finds debris gathering upstream of the Strath street bridge. Terry said construction crews are continually walking ditches and looking for problems, and also assessing aerially 1-2 times per season. Jessie added that there is a Boulder County number for bridge clogging issues and she will send it to Chuck.
  - Kathy asked if Terry can explain the source of his revenue for running the system. Terry explained that it is through assessments, which are established at the stockholders meeting. \$30 per share or \$200 minimum. They use that to generate revenue for maintenance, admin, loan debt, salary, etc. Katy asked if there are grants for computerized monitoring. Terry said SVLHWCD provided resources to cover some costs of computers. Added that they are looking into potential help with grants.
  - Deb asked if the Gold Lake is primarily a headwaters fill reservoir or does he store water from the St. Vrain. Terry said he stores water.
  - Chuck asked about Brainard Lake and Terry explained that he runs water though Brainard but he doesn't know who owns it.
  - Sean noted that LHDC is a high functioning model of ditch companies across the state, in big part thanks to Terry. All agreed that we are fortunate to have Terry and his support for these conversations.

- Big thanks to Terry for the great presentation!

### **Adjournment**

The meeting was adjourned at 4:05 pm.

**Attachment 2**  
Financial Reserve Policy



04/13/2021

To: Left Hand Watershed Center Board of Directors

From: Kathy Peterson and Left hand Watershed Center Finance Committee

RE: Reserve Fund Policy

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## **Introduction & Discussion**

The Left Hand Watershed Center is now in a position to set aside a cash reserve to provide a cushion for planned or unplanned future needs, as we discussed a few months ago. An operating reserve is an unrestricted fund balance set aside to stabilize a nonprofit's finances by providing a cushion against unexpected events, losses of income and large unbudgeted expenses. Below is a proposed reserve policy, adapted from [PropelNonprofits.org](http://PropelNonprofits.org), which supplies templates and samples of policies for nonprofits.

## **Proposed Operating Reserve Policy**

### **Purpose**

The purpose of the Operating Reserve Policy for the Left Hand Watershed Center is to ensure the stability of the mission, programs, employment and ongoing operations of the organization. The Operating Reserve is intended to provide an internal source of funds for situations such as a sudden increase in expenses, unanticipated loss in funding or uninsured losses. Operating Reserves are not intended to replace a permanent loss of funds or eliminate an ongoing budget gap. It is the intent of The Left Hand Watershed Center for Operating Reserves, when used, to be replenished within a reasonably short period of time. The Operating Reserve Policy will be implemented in concert with other financial policies and practices, in order to support strategic and operational plans.

### **Definitions and Goals**

The Operating Reserve Fund is defined as a designated fund set aside by action of the Board of Directors. The minimum amount to be designated as Operating Reserve will be established in an amount sufficient to maintain ongoing operations and programs for a set period of time, measured in months. The Operating Reserve serves as a dynamic role and will be reviewed and adjusted in response to internal and external changes.

The target minimum Operating Reserve Fund is equal to three months of average operating costs. The calculation of average monthly operating costs includes all recurring, predictable expenses such as salaries and benefits, occupancy, office, phone, travel, program, and ongoing professional services (such as bookkeeping, audits, tax returns). Direct project expenses, depreciation, in-kind, and other non-cash expenses are not included in the calculation. The amount of the target minimum reserve fund will be calculated each year after approval of the annual budget, reported to the Finance Committee/Board of Directors and included in the regular financial reports.

### **Accounting for Reserves**

The Operating Reserve Fund will be recorded in the financial records as Board-Designated Operating Reserve. The Fund will be funded and available in cash or cash equivalent funds.

## **Funding of Reserves**

The Operating Reserve Fund will be funded with surplus unrestricted operating funds. The Board of Directors may from time to time direct that a specific source of revenue be set aside for Operating Reserves. Examples may include one-time gifts or bequests, special grants, or special appeals.

## **Use of Reserves**

Use of the Operating Reserves requires three steps:

### **1. Identification of appropriate use of reserve funds.**

The Executive Director and staff will identify the need for access to reserve funds and confirm that the use is consistent with the purpose of the reserves as described in this Policy. This step requires analysis of the reason for the shortfall, the availability of any other sources of funds before using reserves, and evaluation of the time period that the funds will be required and replenished.

### **2. Authority to use operating reserves**

The Executive Director will submit a request to use Operating Reserves to the Finance Committee of the Board of Directors. The request will include the analysis and determination of the use of funds and plans for replenishment. The organization's goal is to replenish the funds used within twelve months to restore the Operating Reserve Funds to the target minimum amount. If the use of Operating Reserves will take longer than 12 months to replenish, the request will be scrutinized more carefully. The Finance Committee will recommend the request to the Board of Directors.

### **3. Reporting and monitoring**

The Executive Director is responsible for ensuring that the Operating Reserve Fund is maintained and used only as described in this Policy. Upon approval for the use of Operating Reserve funds, the Executive Director will maintain records of the use of funds and plan for replenishment. He/she/they will provide regular reports to the Finance Committee/Board of Directors of progress to restore the Fund to the target minimum amount.

## **Review of Policy**

This Policy will be reviewed every other year, at minimum by the Finance Committee, or sooner if warranted by internal or external events of changes. Changes to the Policy will be recommended by the Finance Committee to the Board of Directors.

**Attachment 3**  
Non-Discrimination Resolution & Policy





## Resolution: 2021-02 04-20-2021

*A resolution of the Left Hand Watershed Center, adopting a policy of non-discrimination.*

Whereas, the Left Hand Watershed Center (the Watershed Center), a stakeholder-driven organization, strives to establish an inclusive, non-discriminatory environment by design.

Whereas, one of the Watershed Center's core values identified within the 2017 Strategic Plan is our community.

Whereas, the Watershed Center's 2017 Strategic Plan states, "we value all members of our community and beneficiaries of the watershed. We are a place where everyone is welcome and all voices will be heard."

Whereas, staff and board recommend formalizing our non-discrimination policy to specify that the Watershed Center does not and shall not discriminate on the basis of race, color, creed, gender, expression, age, sexual orientation, ancestry, marital status, disability, religion, or military status in any of its activities or operations

Whereas, the XX members of the Watershed Center Board of Directors present at the April 20<sup>th</sup> 2021 board meeting voted to approve this non-discrimination policy, with XX members abstaining and XX members objecting;

Therefore, be it resolved that Left Hand Watershed Center does not and shall not discriminate on the basis of race, color, creed, gender, expression, age, sexual orientation, ancestry, marital status, disability, religion, or military status in any of its activities or operations.

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Christopher Smith, Board President  
Left Hand Watershed Center

## **Attachment 4**

Draft Desired Future Conditions for Forested Landscape



# St. Vrain Forest Health Partnership

## DRAFT Desired Future Conditions

### Our Forested Landscape: What's the Problem?

Our community experienced the largest fire in the County's history in 2020, highlighting the increased risk of catastrophic wildfire in the region. Fire is a natural component of forest ecosystems across the northern Front Range of Colorado, and for millennia periodic fire sustained fire dependent plant species, a diversity of wildlife habitat, and functioning watersheds. However, factors such as active fire suppression, rapidly expanding wildland urban interface, and climate change have increased the threat of high severity and uncharacteristic wildfire.

Current forest conditions in the watershed are often dense and overcrowded and put communities, forest ecosystems, and water supply and infrastructure at risk for high loss in the event of a wildfire. The recent Cameron Peak, East Troublesome, Calwood and Lefthand fires are evidence of this growing threat which impacts communities and contributes to permanent loss of tree cover and forest type conversion, soil erosion, degraded water quality, and increased sedimentation into waterways. Many of the Front Range fires have been severe and have compromised important ecological functions and ecosystem services, including water delivery. For example, repairs to water systems after large-scale fires is costly and often also causes additional biological impacts to the areas, including a decrease in water quality and an increase in water temperature. Further, the recent fires emphasized the eminent need to assess current forest and fuel conditions in the watershed and the potential for negative outcomes from extreme fires, especially in the Wildland-Urban-Interface where homes and infrastructure are at risk. Studies also show that after such high-severity, high-intensity fires, forest regeneration is limited due to the lack of seed trees and dry conditions. Thus, Front Range wildfires have had high ecological and economic costs and have also raised concern over the long-term sustainability of Front Range forests.

Managers have worked to restore forest conditions, but there is a growing need to increase the pace and scale of treatments, and strategically place treatments in the face of high treatments costs and limiting budgets.

### What's the Solution?

The [St. Vrain Forest Health Partnership](#) (Partnership) is working with community members to implement cross-jurisdictional, landscape-scale forest restoration projects to achieve a healthy and resilient watershed that can sustain wildfire and other natural disturbances while protecting communities, keeping water supplies clean and reliable, and supporting diverse native flora and fauna for current and future generations.

The Partnership is working to proactively restore ponderosa pine and dry mixed-conifer forests in the Watershed, taking a collaborative, cross-boundary approach. To begin this process, over 30 stakeholders convened for two workshops between February 2020 and March 2021. From these meetings, the Partnership developed a list of important themes focused around landscape-scale social and ecological

values, goals, and desired conditions. These discussions generally focused on restoring ecological processes and protecting the communities and sub watersheds within the St. Vrain (Table 1).

**Table 1. Stakeholder-generated thematic values**

<b>Theme</b>	<b>Description</b>
Forest Health and Resilience	Forest ecosystems provide ecosystem services and are resilient to wildfire, climate change and other disturbances
Water Resources	Forests support healthy watersheds that provide water for municipal and agriculture water users
Wildfire Risk	Forest conditions protect values and prevent loss from high severity wildfire
Wildlife	Forest ecosystems provide varying habitat to support diverse wildlife species
Aesthetics	The beauty of the forest is maintained
Recreation	Forests support recreation activity that does not negatively impact ecological values
Cultural Resources	Forest conditions protect the rich cultural resources such as indigenous, European settlement and agricultural history
Education	Forests provide educational opportunities for the public to learn about ecology and gain support for restoration efforts
Economics	Overcome barriers surrounding the cost of forest and fire management
Community	Forest restoration should be collaborative and inclusive

Once the values were identified and grouped by themes, a science sub-committee within the Partnership synthesized and distilled stakeholder input at these meetings into overarching landscape-scale goal and desired future condition statements (Table 2).

**Table 2. DRAFT Landscape-Scale Desired Conditions**

<b>GOAL</b>	<b>DESIRED FUTURE CONDITION DESCRIPTION</b>
Forested landscapes are adapted to climate change and resilient to high severity wildfire and other disturbances.	Diverse forest structure including range of species, age classes, sizes, classes and gaps and openings of various sizes. This forest structure helps reduce frequency and size of high severity fire on the landscape. Low severity fire is utilized to maintain desired structural condition and forest ecosystem processes.
Forest ecosystems provide ecosystem services and quality wildlife habitat.	Landscape supports nesting/mating, forage, and cover for multiple species, including (but not limited to): pollinators and other invertebrates, aquatic species (cutthroat and rainbow trout), large mammals (bighorn sheep, deer, and elk), small mammals (Abert's squirrel), and avian species (northern goshawk, migratory neotropical songbirds).
Forests support recreation activities.	Regional recreation access across the landscape is minimally disrupted during implementation of restoration projects & wildfire occurrence.

<p>Communities are protected from the negative consequences of wildfire.</p>	<p>Landscape scale forest restoration reduces the risk of high severity wildfire occurring in the landscape. Well-designed and well-managed firebreaks reduce the risk to critical infrastructure and communities. Communities can utilize safe evacuation or shelter in place options during wildfires.</p>
<p>Water utility infrastructure is protected so that the watershed can continue to provide high quality water for municipal and agriculture water users.</p>	<p>Hillslope erosion is limited to natural processes and is not excessive (high severity fires &amp; presence of hydrophobic soils is limited). River systems have ability to adapt to an increase of sediment inputs through development of sediment catchment zones within depositional reaches of the river, upstream of critical infrastructure.</p>
<p>The beauty of the forest is maintained.</p>	<p>Landscape supports a mosaic of diverse aesthetic conditions including forested patches, openings, diverse age classes, diverse overstory and understory species. Trees remain as a component of the forested landscape but openings are recognized as beautiful and important.</p>
<p>Forest restoration adheres to an inclusive collaborative process</p>	<p>Landowners, agencies and communities alike support cross-boundary projects, increasing the pace and scale of forest restoration in the watershed. Communities support the desired conditions described above.</p>