Grand County Stream Management Plan (GCSMP) Update
Stakeholder Advisory Committee (SHAC)
November 5, 2025, from 5:30 PM to 8:30 PM
Meeting Summary

ATTENDENCE
Stakeholder Advisory Committee: Gil Barth, Maura Bishop, Tom Caldwell, Tony Eason, Steve Fitzgerald, Randy George, Daniela Gosselova, Miguel Hamarat, Ingrid Karlstrom, Russ Knight, Newton Logan, and John Tilstra

Learning By Doing: Rachel Badger, Travis Bray, Brian Craig, Anna Drexler-Dreis, Becca Jonswold, Stephen Klobucar, Katherine Morris, and Jen Stevenson

Technical consultants: Johannes Beeby, Kayli Foulk, Brad Johnson, Carolyn Nobel, Erin Stewart, and John Yager

Observer: Karen Stephenson

Facilitation team: Samuel Wallace and Lauren Cortez French

ACTION ITEMS

Technical Consultants (LRE Water and Muller Engineering)	Compile and refine the outcomes of the goal-setting exercise to guide the development of the reach prioritization matrix ahead of the next SHAC meeting on December 4.

OPENING REMARKS
Samuel Wallace, Peak Facilitation Group, provided an overview of the purpose and goals for the Grand County Stream Management Plan (GCSMP) update. Highlights from his remarks are summarized below.

- At the highest level, the purpose of the GCSMP is to improve river and stream health in the Cooperative Effort Area (CEA). The update process aims to do this by combining technical information with stakeholder input to identify objectives, priority areas, and ultimately, cooperative restoration projects that can be implemented in the CEA.
- Meeting participants are asked to respect the following ground rules:
    - Listening to understand, not respond.
    - Allow every voice to be heard.
    - Participate in the discussion.
    - Treat everyone with respect.
    - Discuss ideas, not people.
    - Focus on the topic at hand.
    - Respect everyone’s time.
    - Talk about what you think and know; let others do the same.
- The scope of the GCSMP update is on stream and river health in the CEA. The plan also exists within the confines of existing legal frameworks and water rights allocations. The scope of this update does not include consumptive water use planning, lakes and reservoirs, areas outside of the CEA, or attempts to modify water rights or reverse water development projects that are in operation or have been approved.

OVERVIEW OF THE FINAL RIVER HEALTH AND STREAM REACH VARIABLES
Kayli Foulk and Carolyn Nobel, LRE Water, and John Yager, Muller Engineering, presented on the changes made to the river reach grading approach since the last meeting and previewed the Grand County Water Information Network (GCWIN) Data Portal. Their presentation is summarized in the sections below.

Framework Structure Review

- As a reminder, the stream health assessment framework that was designed for this process is organized into three categories: watershed, riverscape, and channel.
- The three main categories of the framework are further broken down into seven variable types: flow regime, sediment regime, water quality, temperature, riparian, geomorphology, and aquatic ecosystems. Each variable is associated with two or more metrics. There are twenty-four metrics total.

Grading and Weighting Updates Based on SHAC Feedback

- The grading criteria were adjusted to ensure that an 'A' grade accurately reflected a pristine, self-sustaining stream reach that does not require active management. This more conservative approach sets higher, more realistic standards for stream health.
- Most variable grades, and thus overall reach grades, decreased under the more conservative approach. The new approach helps to differentiate reach conditions relative to one another and will provide more useful insights for the later stages of the process (i.e., prioritizing reaches and developing projects).
- To further refine the grades, the technical consultants sourced and incorporated additional data for several variables, as listed below.
- The technical consultants and LBD finalized the relative weights for the seven variables that factor into the overarching reach grades. The weights were based directly on the results of the weighting survey completed by the SHAC during the July 23 meeting. Only one change was made: assigning a higher weight to geomorphology, since it is related to nearly all the other variables and plays a critical role in stream health.

Updates Made to Each River Health Variable

- **Updates to the grading approach for the 'flow regime' variable:**
  - Reaches with natural hydrology (i.e., no dams or diversions) were assigned an "A" grade for flow regime. Many of those reaches were unable to be graded before, since they lack established flow targets. With this change, three additional reaches with natural hydrology were added to the assessment.
  - To ensure low summer flows were effectively translated into the flow regime grades, summer base flows were weighted higher relative to the other flow regime metrics.
  - Three additional reaches with established flow targets and flow gauge data were added to the assessment, for a total of six additional reaches.
- **Updates to the grading approach for the 'sediment regime' variable:**
  - The sediment regime grading scale was adjusted so that the grades are more relative to other reaches within the CEA.
  - The grading approach for 'continuity and transport,' a subvariable within the sediment regime variable, was adjusted so that only the minimum grade between the 'dams' and 'diversion structures' metrics is kept. The former approach of using both grades diluted the impacts of dams and diversion structures on the overarching sediment regime grade.
- **Updates to the grading approach for the 'water quality' variable:** The water quality grading scale, specifically for the 'A' through 'C' grades, was refined to be more conservative.

- **Updates to the grading approach for the 'stream temperature' variable:** The stream reach grading scale was not adjusted, but additional stream temperature data were sourced and added for several reaches.
- **Updates to the grading approach for the 'riparian' variable:** The grading approach for the 'riparian condition' metric was revised so that the contributions of subreaches to a reach's overall 'riparian condition' grade are weighted by subreach length.
- **Updates to the grading approach for the 'geomorphology' variable:** The grading approach for the 'planform dynamics' metric was revised to consider the severity of impairment for impaired areas within a reach, rather than assigning an 'F' to any reach with impairments. The level of impairment for each area was then weighted by the length of the impaired area and combined into a weighted average 'planform dynamics' grade for the overall reach.
- **Updates to the grading approach for the 'aquatic ecosystems' variable:**
    - The grading approach for the 'fish' metric was updated based on input and guidance from Colorado Parks and Wildlife (CPW).
    - The 'macroinvertebrates' metric grade ranges were modified to classify 'grey zone' values as a 'D' grade, or 'Partly Functional,' rather than a 'C' grade. Grey zone scores are metric scores that fall between the thresholds for 'attainment' and 'impairment.'

Grand County Water Information Network (GCWIN) Data Portal Preview

The technical consultants expect to publish the GCWIN Data Portal within the next month or two. The Data Portal:

- Compiles, standardizes, and automatically imports data from over ten data providers.
- Includes search and filtering features that let users easily find data for specific monitoring locations.
- Provides detailed information for each monitoring site, including visualization of available data, the most recently reported data, and information on the data providers.
- Allows for the straightforward creation of graphs that can be customized to include different variables, monitoring locations, and date ranges.
- Includes the option to save searches, easily share visualizations using the link address, and download data.

GCSMP Purpose and Theme Development

- Without a clear and intentional purpose statement, stream management plans (SMPs) can become too broad or lose focus. Over the last several months, Learning By Doing (LBD) has refined the GCSMP purpose statement to better reflect its intent.
- The refined purpose statement is as follows: *The purpose of this Stream Management Plan is to provide a roadmap for maintaining a healthy and resilient stream system within the Cooperative Effort Area in Grand County, Colorado, by protecting, monitoring, and restoring aquatic habitat while supporting local water uses and retaining flexibility for future water operations.*
- Using the revised purpose statement as a guide, LBD developed five overarching management themes, listed below:
    - **Community engagement:** Collaborate and communicate among landowners, agencies, and residents to build awareness, increase participation, and create shared stewardship of Grand County's rivers and streams.
    - **Water management and stream flow:** Maintain and enhance streamflows that support ecosystems, recreation, and local economies while increasing flexibility and resilience in water management.

    - **Aquatic habitat:** Protect and restore fish and macroinvertebrate habitats by improving in-stream and riparian conditions, supporting biodiversity and watershed resilience.
    - **River function:** Maintain river stability, connectivity, and sediment balance through post-fire recovery, channel and floodplain restoration, and healthy riparian systems.
    - **Water quality:** Improve and maintain clean, cool, and healthy water by addressing high temperatures, sediment, and nutrients through shading, monitoring, and adaptive management.
- These five themes are intended to translate the purpose statement into organized focus areas, ensuring that the plan addresses both stream health and community values.
- The themes closely connect with and support the top five community values identified by stakeholders in Phase 1 of the GCSMP Update.

Comments for the Technical Consulting Team

SHAC members provided comments on the presentation, which are summarized below.

- On page 2 of the grading summary handout, reach lengths are expressed in feet, but reach drainage areas are expressed in square miles. It would be helpful to have both measurements expressed in miles for ease of comparison.
- While the three metrics for the 'flow regime' variable are critical, they are a fairly reduced set of targets for a hydrograph. It could be useful to have a concept of what a hydrograph is expected to look like for a stream reach—not just two thresholds and one target that needs to be hit during a year, but other metrics such as the total flow expected in wet and dry years and when runoff is expected to begin and end.

Questions for the Technical Consulting Team

SHAC members asked the technical consultants questions about the reach grading updates. Questions are indicated below in italics, followed by the corresponding responses in plain text.

Most of the metric weights in the 'weighting' column on page 1 of the grading summary handout add up to 100 for the variable they are associated with. Is there a reason why the weights for the three metrics associated with the 'flow regime' variable only add up to 90?

No. The metrics are weighted relative to each other. In other words, the 'peak flows' metric contributes 15 points, 'summer base flows' contributes 60 points, and 'winter base flows' contributes 15 points to a total of 90 points for the 'flow regime' variable. The technical consultants will adjust the points so that they add up to 100 while maintaining the same weights.

What is the difference between planform dynamics and profile dynamics?

- Planform dynamics is the ability of a river to naturally shift its shape from above (i.e., curves and bends, or meanders). Planform dynamics can be constrained by structures such as roads, railroads, and other structures that prevent the river from naturally adjusting.
- Profile dynamics are the ability of a river to naturally shift its vertical profile, or its slope and elevation changes along its length. Structures such as diversion dams and bridges can sometimes affect a river's profile dynamics, leading to issues like incision.

Are there places in the CEA where the size of the historic channel no longer fits with the current flow regime?

That question would require significant additional field data collection to answer directly. However, other indicators, such as the embeddedness of riffle structures or the presence of excess or insufficient sediment, could provide tentative answers.

GOAL-SETTING EXERCISE AND DISCUSSION

All meeting participants, including both SHAC and LBD members, worked in three small groups to develop goals for each of the five themes to guide planning and decision making. Each group's goals are transcribed into the table below, organized by theme and group.

Theme	Group A	Group B	Group C

Water Management and Stream Flows
• Peak flows
• Base flows
	• Mimic natural increase and decrease flows (ramping rates)
	• Utilize flushing flows
	• Address base flows for water temperature and aquatic habitat (late July – October)
	• Explore options to prepare for drought and high thermal conditions
	• Create decision support systems to think about environmental flow releases
		• Maintain peak flows/base flows (targets)
		  ○ For protection of stream temps
		• Collaborate to put all environmental flows to their maximum benefit
		  ○ Also coordinate with water managers around spills and operations (ramping rates)
			• Moderating flows for resiliency
			• Continued coordination between water users of all sizes
			  ○ Optimize flows to support fisheries and aquatic habitats
			• Proactive versus reactive frameworks
			  ○ Decision support tools, informed by data, to optimize environmental flows
			• Collect additional flow data to better understand existing flow conditions

Community Engagement
• Collaboration
• Landowner engagement
• Education
• Recreation
	• Coordinate use of environmental pools and spills
	• Coordinate and collaborate on river diversions
	• Create opportunities for private landowners to implement restoration projects
	• Pair great habitat with public access and thoughtful use
	• Improve community awareness of river health
	  ○ Data distribution (different audiences)
	  ○ Outreach to HOAs and towns
	  ○ Increase project visibility
		• Promote stewardship in recreation through education, tours, community events, volunteering
		  ○ Partnering with established events
		  ○ Focused outreach, social media, signage
		  ○ Collaborate with landowners on role of beaver in ecosystems
		• Prioritizing reaches/projects where maximum benefit can be achieved
		  ○ Public/private lands
		  ○ Future development in an area
		  ○ Collaborate for erosion and stormwater code enforcement
		  ○ Work with landowners on criteria for working with landowners
			• Promote "messy" rivers as healthy rivers in educational efforts
			• Achieve consensus and support from community to maintain, improve, and monitor
			  ○ Education on positive beaver management
			• Broaden collaboration to achieve greater buy-in and ensure sustained momentum into the future
			  ○ Celebrate successes
			  ○ Community engagement in projects (e.g., volunteering, youth programs)
			• Education beyond the CEA (to Front Range water users)

Water Quality
• Stream temperature
• Nutrients
• Aquatic life standards
	• Mitigate hazard impacts (pre-disaster planning)
	• Sustain water quality, focused on peak usage
	  ○ Minimize point source uses, focused on peak usage
	• Minimize algal blooms in rivers and streams
	• Maximize the natural environment to reduce nutrients and sedimentation
	• Promote best management practices to minimize nutrients to streams
		• Managing base flows for stream temperature protection
		  ○ Decision support tools
		• Prioritize projects that include right-sizing channels, deepening, and shading for temperature impacts
		  ○ Riparian improvements for groundwater impacts
		• Identify fire impacted areas for floodplain and channel restoration
		  ○ Reconnect floodplain for nutrient uptake
			• Decrease temperatures through:
			  ○ Shading
			  ○ Ponding, floodplain restoration
			  ○ Decision support tools
			• Nutrient management through:
			  ○ Point source management
			  ○ Nonpoint source management (stormwater management, green infrastructure, mitigating post-wildfire impacts, collaboration with agriculture)

Theme	Group A	Group B	Group C

River Function
• Sediment
• Geomorphology
• Riparian
	• Increase floodplain connection and connection to the water table for late season flows and base flows
	• Introduce sediment before flushing flows to establish interstitial habitat
	• Increase riparian shading to address water temperature
	  ○ Native and appropriate species (ex. community willow staking)
	• Increase the number of deep holes for fish (ex. River Bend)
	  ○ Increase habitat diversity and channel sizing
		• Prioritize projects that focus on right-sizing channels to improve river function
		• Protect riparian and geomorphic functions in developed areas
		• Improve riparian conditions (multi-benefit)
			• Give the river room
			• Floodplain reconnection
			  ○ Promote natural planform, bedform, and floodplain diversity
			• Support low-tech, process-based restoration
			• Think larger scale (gravel augmentation, etc.)
			  ○ Bundle large- and small-scale projects
			• Improve diversion structures

Aquatic Habitat
• Fisheries
• Macroinverts
	• Increase macroinvertebrate diversity (assessed by indicator species)
	• Increase the number of deep holes for fish (ex. River Bend)
	  ○ Increase habitat diversity and channel sizing
	• Preserve and enhance recreational and agricultural interests by improving river health
	• Minimize habitat fragmentation/increase habitat connectivity
		• Continued and improved monitoring to understand conditions and indicator criteria
		  ○ Key indicators
		• Focus on reaches with native species (vegetation and aquatic life)
			• Aim for trophic balance
			  ○ Sculpin
			  ○ Salmonfly
			• Enhance and restore natural, self-sustaining geomorphic and ecological function

	**Group A additional goal:* Maintain or protect high-level grade stretches	**Group B additional goal:* Use spatial analysis to inform additional monitoring (Upper Colorado to 50% data record, etc.)	**Group C overarching goal:* Riparian improvements

NEXT STEPS

The next SHAC meeting will be held <u>virtually</u> on Thursday, December 4, from 5:30 PM to 7 PM. Ahead of that meeting, the technical consulting team will compile and refine the outcomes of the goal-setting exercise to guide the development of the reach prioritization matrix.