

**Grand County Stream Management Plan (GCSMP) Update
 3rd Stakeholder Outreach Meeting
 September 19, 2023, from 5:30 to 8:00 PM
 Northern Water Willow Creek Campus, 725 County Road 40, Granby, Colorado 80446
 Hybrid Meeting Held via ZOOM
 Meeting Summary - FINAL**

ATTENDANCE

Meeting Participants: Rachel Badger, Ben Bates, Paula Belcher, Travis Bray, Andrew Breibart, Brooklyn Cimino, Mark Coleman, Jeff Drager, Anna Drexler-Dreis, Jon Ewert, Kayli Foulk, Eric Freels, Pierre Glynn, Tallie Gray, Evie Guay, Quinn Harper, Kirsten Heckendorf, Mike Holmes, Patty Holmes, Larry Howe, Jeromy Huntington, Ingrid Karlstrom, Kirk Klancke, Russ Knight, Doug Laraby, Don Meyer, Katherine Morris, Ed Moyer, Katie Nicholls, Jerry Nissen, Katie Randall, Becca Rugg, Jen Stephenson, John Tilstra, David Troutman, Jason Turner, Kent Wehmeyer, Mely Whiting, Daniel Wolford, Jamie Wolter, and Kristina Wynne

Facilitation: Samuel Wallace and Seth Greer

ACTION ITEMS

Peak Facilitation (Peak)	<ul style="list-style-type: none"> • Provide meeting participants with a detailed meeting summary and the slide decks presented in the meeting. • Synthesize information from the mapping exercise into a single platform. • Incorporate any feedback given at the meeting into the Community Vision for Healthy Rivers.
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MEETING INTRODUCTION AND BACKGROUND PRESENTATION

Samuel Wallace, Peak Facilitation (Peak), started the meeting with a brief presentation on the background of the GCSMP update, the stakeholder process, and agenda for the meeting. Below are key themes from the presentation.

- The GCSMP update is a project managed by Grand County Learning by Doing (LBD). The intention of this process is to update the original GCSMP, which was established in 2010, to maintain and, where possible, improve river and stream health in the LBD Cooperative Effort Area (CEA). The CEA contains the Fraser River Watershed, the Williams Fork Watershed, and the Colorado River Basin upstream of its confluence with the Blue River. All discussions related to the update will apply solely to this area.
- The scope of the GCSMP update is on stream and river health in the CEA within the confines of the legal framework 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 operating or have been approved.
- The update process is divided into two phases. Phase one, currently in motion, seeks to solicit community input on visions, goals, and priority geographies and produce a technical report on the present conditions of streams and rivers in the CEA, known as the Comprehensive Watershed Assessment (CWA). Phase one started in spring of 2023 and is expected to be completed by winter of 2024. Phase two, starting in the spring of 2024, will synthesize community input and the information from the CWA to identify objectives, priority areas, and collaborative projects.

- The stakeholder engagement section of phase one will include five open-house stakeholder meetings, of which this meeting is the third. The first two meetings, occurring in May and July of 2023, provided stakeholders with information about LBD, the scope of the update process, and the background information collected in the CWA process. Additionally, the meetings helped to gather stakeholder input on high-level priorities and visions for the streams and rivers in the CEA.
- Peak is the neutral third-party facilitator in the update process. In addition to organizing and facilitating meetings, Peak is responsible for gathering, processing, and summarizing stakeholder input from phase one of the process to create deliverables which will be used in phase two of the update.

PRESENTATION ON FLOWS IN THE COOPERATIVE EFFORT AREA

At the beginning of the process, a community survey was distributed to stakeholders and community members to better understand their perspectives and priorities related to stream and river health. Responses to the stakeholder survey highlighted stream flows and water temperatures as priority areas of focus for community members. The purpose of this presentation is provide an overview of Denver and Northern Water’s operations and infrastructure within the CEA, how LBD utilizes flexibility in operations to address flow concerns, and the potential for hands-on collaborative projects moving forward. Below are key themes from the discussion.

Denver Water Infrastructure and Operations

Travis Bray, Denver Water, presented an overview of Denver Water’s infrastructure and operations within the CEA. Below are key themes from the presentation.

- Denver Water provides water to 1.5 million Coloradans, which makes up one fourth of the State’s population, using 2% of the State’s water supply. Sourcing for the water used is split equally between the East and West Slope, but East Slope supplies are maximized as much as possible to reduce diversions from the West Slope.
- Denver Water’s infrastructure in Grand County relies on diverting from flowing streams rather than storing water in reservoirs. Denver Water utilizes a series of canals that run parallel to topographical contours and divert water from streams including Ranch Creek, the Fraser River, Saint Louis Creek, and Vasquez Creek upon intersection with these streams. The canals carry the diverted water to the West Portal of the Moffat Tunnel where it is transferred under the Continental Divide to South Boulder Creek on the East Slope and stored in Gross or Ralston Reservoir.
- Generally, Gross Reservoir, located in Western Boulder County, and Ralston Reservoir, located in Golden, are filled in the spring and are usually filled to as close to capacity as possible before bypassing water diversions on the West Slope. The reservoirs are kept as full as possible through summer and winter.
- The Williams Fork Reservoir Collection Area in Grand County has no physical connection with the Front Range. The water that enters Williams Fork Reservoir is traded, or “exchanged”, for water diversions at the Moffat Tunnel, Roberts Tunnel, or Dillon Reservoir. These exchanges keep the downstream calling water right satisfied but can impact segments of stream as the replacement source is not at the same location as the water diversion location. Water diversions above Williams Fork Reservoir are collected in a canal system and the canals carry water to the Gumlick Tunnel for transport to the Vasquez Tunnel and then to the Moffat Tunnel for delivery to Gross or Ralston Reservoir. Denver Water works with LBD to coordinate bypasses in this area as Gross and Ralston Reservoirs near capacity.

Clarifying Questions

Participants asked questions regarding Denver Water's infrastructure and operations in the CEA. Questions are written below in italics, with corresponding answers below them in plain text.

How will the new Gross Reservoir expansion project effect Denver Water's infrastructure in Grand County?

Of the 18,000 additional acre feet (ac-ft) of yield permitted for the expansion, 10,000 ac-ft will be sourced from Grand County diversions. Presently, 25,000-40,000 ac-ft are bypassed in Denver Water's stream diversion points. The additional diversions for the Gross Reservoir Expansion Project will come from these bypasses. No additional water will be diverted to Gross Reservoir in dry years. While the project will reduce flow in Grand County during the spring runoff, the additional storage capacity afforded by the expansion will offer Denver Water more flexibility and lead to less diversions from Grand County in the future due to commitments made in the Colorado River Cooperative Agreement (CRCA).

Northern Water Infrastructure and Operations

Jeff Drager, Northern Water, presented an overview of Northern Water's infrastructure and operations within the CEA. Below are key themes from the presentation.

- Northern Water supplies water to Colorado's Northern Front Range, from Boulder to Fort Collins and eastwards to the Colorado-Nebraska border, including the cities of Greeley, Fort Morgan, Sterling, and Julesburg.
- Most of the water diverted by Northern Water from the West Slope is captured in Granby Reservoir. This water is then moved through the Adams Tunnel under the Continental Divide and released into Horsetooth Reservoir and Carter Lake on the Front Range for storage.
- Northern Water utilizes return flows to maximize water usage before water leaves the state. Return flows make use of water used by cities or farms to be used again in locations downstream.
- Northern Water operates the federally owned Colorado-Big Thompson Project (C-BT) jointly with the Colorado Bureau of Reclamation to supply supplemental water to the northern East Slope towns and agricultural operators. Half of the water utilized by for municipal use in the Northern Water service area is diverted from Grand County. Yearly quotas are set to deliver set amounts of water to customers based on percentages of shares owned. Customers may carry over up to 20% of their share to the next year, a measure that encourages conservation and discourages over-appropriation. The C-BT project originally supplied water mostly to agricultural operations, but over the last 50 years, towns in the system have grown significantly and require more water. Now, water use between municipal and agricultural customers are closer to equal and vary year-to-year.
- The Green Mountain Reservoir, located upstream from Kremmling on the Blue River, was constructed at the inception of the C-BT project to offset the water taken from the West Slope with a means to store and use water on the West Slope. In years where Northern Water takes water from Granby Reservoir without having priority water rights, water is resupplied into Green Mountain Reservoir to offset the diversions. The reservoir is on the downstream end of Grand County, so increased flows due to releases into the reservoir are not often seen in the CEA but provide benefit further down the Colorado River.
- Windy Gap Reservoir was constructed in 1985 to pump water from the Colorado River into the C-BT project by way of Granby Reservoir. Typically, pumping occurs in May and June, but may start earlier or end later during wet years. Northern Water has junior water rights in the Windy Gap area and cannot pump water in dry years.

- On many wet years, Granby Reservoir fills to capacity before any water from Windy Gap can be pumped. Northern Water proposed the Windy Gap Firming Project to address this issue. The firming project involves the construction of a new reservoir, Chimney Hollow Reservoir, set to be located just West of Carter Lake, to store an additional 90,000 ac-ft of water. Allowing Northern Water to divert more water from Grand County during wet years will allow flexibility to divert less water from streams in some dry years.
- As part of the original Windy Gap Project, Northern Water was required to provide a means of returning flows to Grand County, which they did by funding a portion of the Colorado River Water Conservation District (CRD)'s construction of Wolford Mountain Reservoir, which helps meet West Slope water demands and results in a release of water back into Grand County's waterways at times.
- LBD was originally created to address the likelihood of reduced flows in Grand County due to Northern Water's Windy Gap firming project and Denver Water's Gross Reservoir expansion project, which were proposed simultaneously. Through the LBD collaborative, both water companies have made commitments to minimize harm to Grand County's waterways due to diversions.

Clarifying Questions

Participants asked questions regarding Northern Water's infrastructure and operations in the CEA. Questions are written below in italics, with corresponding answers below them in plain text.

Will the Windy Gap firming project and the construction of Chimney Hollow Reservoir divert more water from the West Slope than is currently being taken?

The project will lead to more diversions from Windy Gap on wet years but will add more flexibility into the system to divert less water from Grand County waterways in some dry years.

Operational Flexibility of the Grand County Water Infrastructure System

Mely Whiting, Trout Unlimited, presented on the operational flexibility of the water infrastructure in the CEA that can be applied to address areas of concern. Below are key themes from the presentation.

- The water system within Grand County is highly managed and water has been being diverted for almost a century. Waterways no longer reflect natural processes.
- Operational flexibility is the process by which water operations can be managed to reduce their negative impact as much as possible within the confines of existing water rights. In the last 10 years, LBD has facilitated discussions between water companies and Grand County to utilize operational flexibility in manners that benefit the County's water resources.
- The Intergovernmental Agreements (IGAs) that govern water rights and operations in the County provide several tools that can be used to reduce negative impacts of diversions in the CEA.
 - Denver Water will provide 1,000 ac-ft of water by foregoing Moffat Tunnel diversions once the Gross Reservoir expansion project is completed. This water will be managed by LBD's Operations Subcommittee to lessen negative impacts. Denver Water has also voluntarily released water from Moffat diversion areas to address high water temperatures in the past.
 - Williams Fork Reservoir contains 2,500 ac-ft of usable water that can be released when needed.
 - Grand County may pump up to 1500 ac-ft of water from Windy Gap Reservoir for mitigation purposes.

- Middle Park Water Conservatory District (MPWCD) is provided with a firm supply of Windy Gap water and can release unused water for utilization by Grand County.
- Grand County can utilize any unused storage capacity from Lake Granby, up to 7,500 ac-ft, to store pumped Windy Gap water.
- The release of 5,412.2 ac-ft of water from Lake Granby yearly benefits endangered fish species. This water can be stored in Green Mountain or Wolford Reservoir and utilized later if it is not immediately needed. This is commonly known as 5412 Water.
- LBD-led operations coordination is an important part of this process to ensure that water is released by parties at necessary times and utilized in effective manners.

Roles of LBD in Influencing Flow Releases

Kayli Foulk, Grand County, presented on the roles and responsibilities of LBD's Operations Subcommittee in utilizing operational flexibility to influence where and when water is released. Below are key themes from the presentation.

- The LBD Operations Subcommittee produces an annual Operations Plan and Operations Report. The annual Operations Plan outlines strategies to maximize the environmental benefits of flow releases and details procedures and timelines for LBD projects in the coming year. The plan is developed within the scope of several guidelines, including the CRCA, the original iteration of the GCSMP, hydrologic and water supply forecasts, and current water supply system conditions. Links to the latest versions of the Operations Plan and Operations Report, as well as past editions, can be found [here](#).
- The Operations Subcommittee meets weekly between June and September to review stream flow and temperature data from ten monitoring sites managed by the Grand County Water Information Network (GCWIN) within the Fraser River and Upper Colorado River watershed. During in-season operations, flow and release decisions are guided by Colorado's stream temperature standards, including the chronic standard measuring maximum weekly average temperature and the daily standard measuring daily maximum temperature.
- In 1961, the US Department of the Interior developed principals governing the release of water from Lake Granby to maintain healthy flows. These guidelines, commonly called the 1961 principals, dictate minimum flow levels below Lake Granby. When combined with 5412 Water, which is calculated separately, minimum standards for flow below Lake Granby are set to 75 cubic feet per second (cfs) from May through August. Minimum flows drop to 40 cfs in September, and again to 20 cfs in October corresponding with the brown trout spawning season. Minimum flows are maintained at 20 cfs until April.
- The Shoshone hydroelectric powerplant, located in Glenwood Canyon, has one of the oldest water rights on the Colorado River, and maintains a flow of 1250 cfs through Glenwood Canyon. The powerplant is often offline due to repairs or maintenance. The Shoshone Outage Protocol Agreement (ShOP) was forged in 2016 to ensure that flows remain consistent through the canyon when the powerplant is down. This agreement effectively forces upstream water operators with junior water rights to keep water instream until it reaches Glenwood Canyon.
- The Cameo Call provides water for irrigators in the Grand Valley area. Like the ShOP, this agreement ensures that water will remain instream until it reaches Grand Junction.
- The ShOP and Cameo calls benefit rivers within the CEA by ensuring continued water releases from Grand County reservoirs to ensure that water will be available to downstream users, effectively protecting segments of river that may reach dangerously low flows otherwise.

Summary of Recent LBD Water Operations

Don Meyer, CRD, presented recent examples of LBD's use of operational flexibility to address streamflow and water temperature concerns in recent years. Below are key points from the discussion.

- The summers of 2021 and 2022 were unusually hot and dry. In the spring and summer of 2021, following a winter of unbalanced snowpack, the West Slope was in a severe drought, while the East Slope was not experiencing drought. Additionally, soil moisture on the West Slope was well below average. As spring progressed into summer, runoff continually decreased, and drought conditions worsened. During June of 2021, water temperatures at the Kremmling monitoring gauge spiked to 74° F.
 - Ranch Creek experienced both chronic and acute exceedances in 2021, and chronic exceedances were also recorded upstream from Kremmling on the mainstem of the Colorado River.
 - The ShOP call began on June 23 and the Cameo Call began early, on July 11, in 2021. A large rain event on the Eagle River in late July reduced the calls and led to more water storage and diversions above Kremmling.
 - 5412 waters were released early from Granby Reservoir in July.
 - Eventually, monsoons in July and August and maintenance work on the Moffat tunnel in August prevented diversions, which returned flow to manageable levels.
 - Concerning water temperatures and low flow levels on the Colorado River below Kremmling in the summer of 2021 prompted action from the Operations Subcommittee. LBD called on its partners to help mitigate the high water temperatures and helped organize key actions by several partners during critical periods of temperature exceedance.
 - Denver Water bypassed 100 cfs from Moffat Tunnel diversions to empty into the Saint Louis Creek. Additional water was bypassed during the August maintenance on the tunnel. Denver Water also released 23 cfs of water from Williams Fork reservoir to mitigate high water temperatures.
 - MPWCD released 50 cfs of water from Windy Gap reservoir.
 - CRD utilized the storage capacity of Wolford Mountain Reservoir to release 50 cfs of water.
 - Both CRD and the MPWCD sacrificed total yields to prioritize mitigatory action in the summer of 2021.
- The summer of 2022 did not reach the hot and dry conditions of the previous year, but still displayed some concerning water temperature and stream flow statistics.
 - Runoff levels during summer of 2022 were at 89% of the yearly average, and monsoons happened early and often. Despite a wet early summer, chronic exceedances were measured at the Kremmling monitoring gauge in mid-July, with water temperatures reaching as high as 73° F during this period.
 - Additional conditions addressed by the Operations Subcommittee included early bypasses at Willow Creek Reservoir, limited diversion rates in the Moffat collection system due to Gross Reservoir expansion construction, and low fill totals in Green Mountain Reservoir.
 - Mitigation efforts in the summer of 2022 were undertaken by several LBD partner entities to combat high water temperatures.
 - Grand County had access to 1300 ac-ft of water from Windy Gap Reservoir from Northern Water and MPWCD that was released to combat high temperatures.
 - 5412 releases occurred in mid-July of 2022.
 - CRD released 500 ac-ft from Wolford Mountain Reservoir.

- MPWCD releasing 400 ac-ft from Windy Gap Reservoir.
 - Denver Water released 200 ac-ft into Ranch Creek.
- Despite entities' best mitigation efforts in both 2021 and 2022, it is difficult to fully address flow and temperature issues with the limited water available for flex in the system. While it is not certain to what capacity mitigation efforts helped to address temperature exceedances, water releases were found to correlate with periods of lowering water temperature.
- Fortunately, no temperature exceedances have been recorded in the summer of 2023.

Clarifying Questions

Participants had the opportunity to ask questions regarding recent LBD streamflow and temperature operations the CEA. Questions are written below in italics, with corresponding answers below them in plain text.

Many of the mitigatory releases discussed focused on Ranch Creek. Were there no flow or temperature impacts on the Fraser River during this time period?

The Fraser River and Saint Louis Creek experienced some minor temperature concerns, but the Ranch Creek's exceedances were the most urgent. Operations are decided on a case-to-case basis, and during some seasons, the Fraser River takes higher priority.

Is there a way to view all the monitoring sites' locations throughout the CEA?

Yes, the GCWIN website contains maps showing the locations of all 60+ monitoring sites. The data can be found [here](#).

Have exceedance data been compared over time to identify potential trends in water temperature?

The information presented today is just a snapshot of the monitoring that has been taking place in the CEA. Lotic Hydrological will analyze data going back to 1985 and highlight changes in data since 2010 as part of the CWA.

Have watershed models including groundwater and wet meadows been utilized?

The main purpose of the CWA is to identify areas of concern where collaborative restoration projects may be necessary. While no ground water data is being assessed directly in the assessment, analysis of changing riparian areas will be utilized to identify priority geographies.

Does the current operations process consider the impact of Grand Ditch diversions to the CEA, and could mitigation efforts include operations involving the Grand Ditch?

The Grand Ditch company has senior water rights, and any negotiation to include Grand Ditch water in operations would necessitate one or more involved entities giving up some level of water rights and receiving lower yields.

Opportunities for Collaborative Solutions

Jon Ewert, Colorado Parks and Wildlife (CPW), presented on collaborative projects that can be utilized to address stream flow and water temperature concerns. Below are key themes from the discussion.

- Recently, river management organizations have embraced what is known as process-based design for river restoration. This concept uses physical treatments to alter river channels in ways that encourage stream health.
- Many river channels in Grand County reflect historic flows that are higher than average flows today. Due to the nature of Grand County's highly managed water system, river channels cannot readjust to present levels of flow. The result is channels that are wide and

shallow, an unhealthy environment for aquatic wildlife that is also susceptible to high temperatures.

- Process-based design can be utilized in Grand County to manually resize river channels to reflect current flow regimes.
- Rivers with altered flow regimes often lack effective point bars, low-angle sand banks on the inside edge of river bends. Construction of point bars in these stretches can focus flows and create scours at lower flows that maintain deeper pool depths on the outside of the bend. Additionally, point bars provide access to floodplains.
- The presence of reservoirs in a river system can interrupt the natural flow of suspended materials in river channels, including rock, wood, and fine sediment. Restoration projects can artificially introduce supplies of these materials to areas downstream from reservoirs that lack them. When resizing channels, wood can be added under bank materials. In addition to reintroducing wood material to the stream, this process mimics undercut banks, which provide ideal habitat for fishes.
- Altered flow regimes such as the ones in Grand County can hinder fish passage in river channels, fragmenting habitat. Oftentimes, structures that are designed to allow passage at high flows can prevent passage at lower flows. Creation of passage channels for aquatic organisms can help to mitigate habitat fragmentation. When carrying out projects focused on fish passage, it is important to create structures that allow passage for all fish. This includes fish that are smaller or are not strong swimmers, like the Mottled Sculpin, which is important to the aquatic ecosystems in the CEA. Grand County has already seen projects such as this have success, such as one that provided a passage channel through the Granby Reservoir diversion structure.
- GCWIN monitors areas that have been subject to process-based design projects to measure success, monitoring both physical and biological statistics. Reaches containing wood treatments have been found to contain as much as 2.4 times the brown trout abundance, 10 times the brown trout biomass, and 28 times the abundance of brown trout over 14 inches when compared to untreated reaches.

Clarifying Questions

Participants had the opportunity to ask questions regarding collaborative stream restoration projects. Questions are written below in italics, with corresponding answers below them in plain text.

Have any projects focused on beaver health and abundance been considered?

CPW has engaged in some projects utilizing Beaver Dam Analogues, man-made structures fabricated to mimic the form and function of natural beaver dams. One concern about introducing beavers to waterways in Grand County is the potential introduction of diseases like Whirling Disease. An alternative to introducing beavers is the creation of attractive beaver habitats to encourage natural migration of beavers.

MAPPING EXERCISE AND COMMUNITY VISIONING FEEDBACK

For the remainder of the meeting, stakeholders highlighted areas within the CEA that were of particular importance or concern to them on printed maps displaying the Fraser River, Williams Fork River, and the Upper Reaches and Main Stem of the Colorado River watersheds. Stakeholders had the opportunity to provide additional explanations for their selections on comment cards. Peak will review and process this feedback and present it in a single platform. Participants were also encouraged to provide feedback on the Community Vision for Healthy Rivers, synthesized from individual vision statements by Peak. The Community Vision statement read as follows: *“To work collaboratively across boundaries to create healthy and resilient rivers, streams, and riparian*

corridors that sustain thriving aquatic habitat and support a vibrant community and local economy.”
Peak will review any feedback and incorporate it into the final Community Vision for Healthy Rivers.

NEXT STEPS

- Peak will provide a summary and link to the slide decks presented in the meeting to all meeting participants.
- Peak will process the geographic priorities of stakeholders and feedback on the community vision statement into deliverables that will be presented at the conclusion of phase one of the GCSMP update process.
- The next Stakeholder Outreach Meeting will take place in December, featuring a presentation of the finalized CWA.