Blue River Habitat Restoration Project

Project Name:	Blue River Habitat Improvement Project
Category A Applicant:	Town of Silverthorne, Colorado
Category B Applicant:	Blue River Watershed Group (POB 867 Silverthorne, CO 80498)
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Location	Town of Silverthorne, Summit County, Colorado

BRWG
BLUE RIVER WATERSHED GROUP

Table of Contents

TECHNICAL PROJECT DESCRIPTION 1
TASK 1: Stakeholder Engagement/ Public Outreach 1
Task 1.a: Public Meetings 1
Task 1.b: Website Development 1
Task 1.c: Public Notice Tool 1
Task 1.d: General Outreach and Engagement 1
Task 1.e: Technical Advisory Team 2
Task 1.f: Private Landowners and Businesses, Informational Meetings 2
Task 2: Contractor Procurement 2
Task 2a: Project Management Consultant 2
Task 2b: Engineering, Project Analysis and Design—Habitat Improvement 3
Task 3: Project Impact Monitoring 4
Task 3a: Macroinvertebrates 4
Task 3b: Periphyton, Temperature, Water Quality 4
Task 3c: Discharge/ Flow Evaluation 5
TASK 4: Fish Population Estimates 5
TASK 5: Permitting and Compliance 5
EVALUATION CRITERIA 6
Project Benefits—General Project Benefits 6
Critical Issues of Concern 6
Project Benefits 8
HUC10 Basin 8
Regional Benefits 9
Benefitting Species 9
Quantification of Specific Project Benefits 9
Species and Habitat Health 10
Watershed Benefits 15
Water Supply Benefits 16
Other Quantifiable Benefits 17
Prior Restoration Planning & Stakeholder Involvement & Support 17
Prior Planning and Design 17
Stakeholder Involvement and Support 20
Project Implementation and Readiness to Proceed 25
Presidential and Department of the Interior Priorities 28
Climate Change 28
Disadvantaged or Underserved Communities 30
Tribal Benefits (None) 30
PROJECT BUDGET .....
Project Budget .....
Budget Categories Narrative .....
COMPLIANCE–ENVIRONMENTAL & CULTURAL .....
National Environmental Policy Act .....

National Historic Preservation Act.....
Endangered Species Act .....
PERMITS & APPROVALS.....
APPENDIX 1: LETTERS OF PROJECT SUPPORT .....
APPENDIX 2: LETTER OF PARTNERSHIP.....
APPENDIX 3: OFFICIAL RESOLUTION FROM BLUE RIVE WATERSHED GROUP .....
APPENDIX 4: Blue River Integrated Water Management Plan—Master Plan .....
APPENDIX 5: Technical Advisory Team .....

ACRONYMS & ABBREVIATIONS

BoR	Bureau of Reclamation
BREW	Blue River Enhancement Workgroup
BRWIMP	Blue River Integrated Water Management Plan
BRWG	Blue River Watershed Group
BVR	Blue Valley Ranch
CBRT	Colorado Basin Roundtable
CET	Colorado Water Project Cost Estimate Tool
CPW	Colorado Parks and Wildlife
CTU	Colorado Trout Unlimited
CWCB	Colorado Water Conservation Board
DNR	Department of Natural Resources
FACStream	Functional Assessment of Colorado Streams
MMI	Multi-Metric Index
RICD	Recreational In Channel Diversion
SWSI	Statewide Water Supply Initiative
The Town	Town of Silverthorne
TOS	Town of Silverthorne
TAT	Technical Advisory Team
TU	Trout Unlimited
USFS	U.S. Forest Service
WQCD	Water Quality Control Division

EXECUTIVE SUMMARY

As a 501(c)3 non-profit conservation organization, BRWG seeks funding as a Category B applicant in partnership with the Town of Silverthorne (Town), Colorado, a Category A applicant. The Town is heavily invested in project implementation and design as the upper project reach is primarily located within Town property, incorporates Town goals and stormwater mitigation, and supports Town initiatives. Please see the Letter of Partnership from the Town of Silverthorne, APPENDIX 2.

This application signifies a request for funding under Task A: Study and Design.

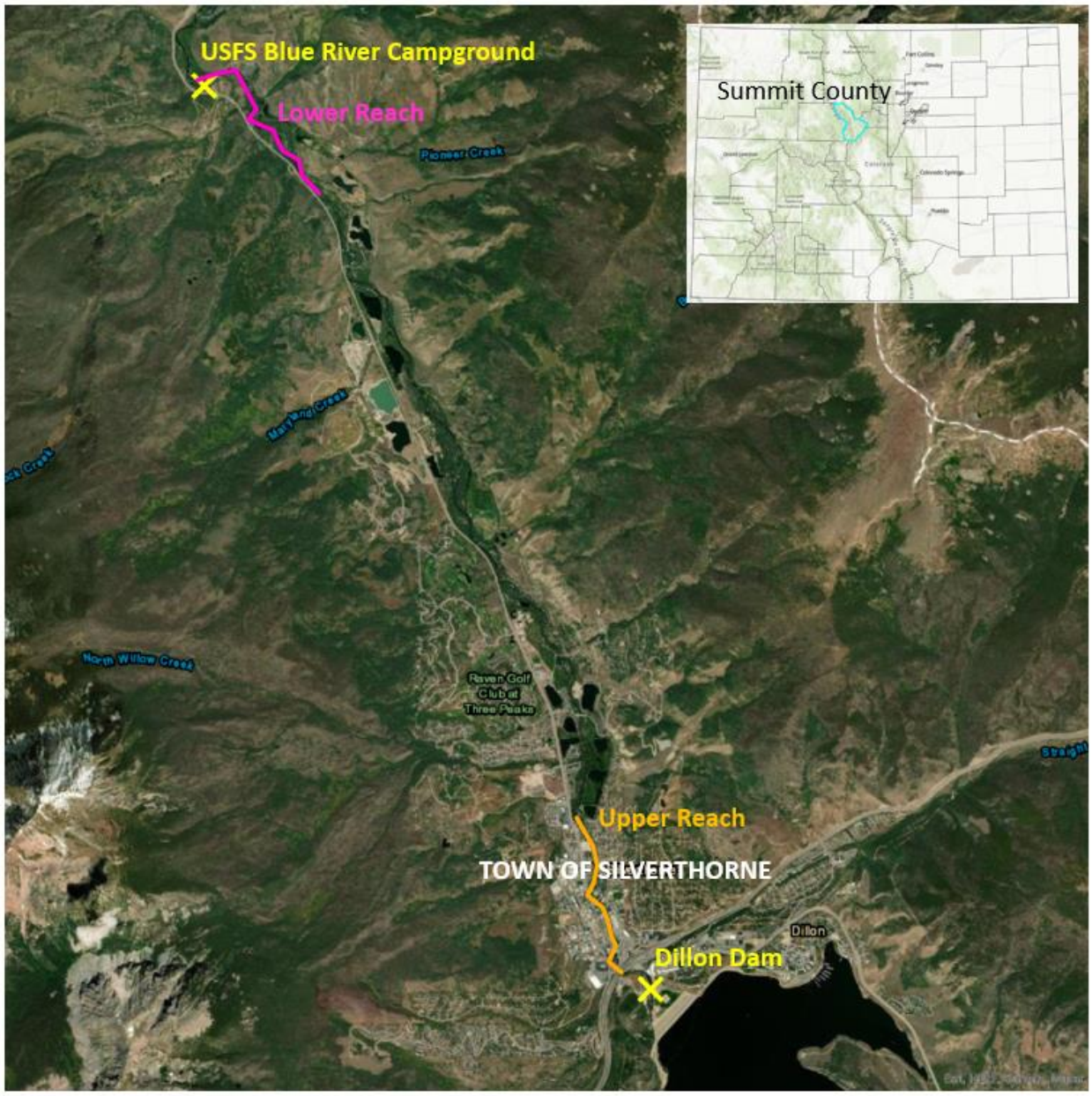
Blue River Watershed Group (BRWG) in partnership with the Town of Silverthorne (Town) have worked closely together to study aquatic ecosystem function of the Blue River since the Blue River Integrated Water Management Plan (BRIWMP) was started in 2019. Stakeholder involvement and community surveys trumpeted the community's interest in determining the cause of the declining fishery on the Blue River between Dillon and Green Mountain Reservoirs. As a response, BRWG, in partnership with Trout Unlimited, focused rigorously surveyed numerous indicators of ecosystem function on the Blue River to determine limiting factors. The BRIWMP expanded seasonal sampling and surveying efforts for three years such that science-based conclusions were drawn determining that ecosystem health is detrimentally impacted by numerous variables with underlying challenges resulting from the Dillon Dam's bottom release outlet, restricted flows, and lack of habitat. This Task A proposal will detail how the Blue River Habitat Restoration Project will benefit a prioritized three miles of the Blue River. This project will improve river and riparian health by modifying the river channel to function under current and future flow regimes. With an interdisciplinary approach, the project will not only enhance habitat but also improve water quality at stormwater outfalls, and increase recreational opportunities and public access. The goal is to approach river restoration with numerous stakeholder perspectives to ensure the ecosystem functions alongside the municipal, developmental, and recreational demands of the river.

The Blue River Habitat Restoration Project study and design phase is estimated to conclude in December 2025.

The proposed aquatic ecosystem restoration effort will involve Federal Land of the White River National Forest.

PROJECT LOCATION

Blue River Habitat Restoration Project is located in Summit County, Colorado below Dillon Dam in the Town of Silverthorne. The upper reach begins below the Dillon Dam, just under I-70 at approximately latitude 39.62714 and longitude -106.07173 and flows ~1.4 miles northward through the Town of Silverthorne. The lower reach begins where USFS property begins on the river left (west side) at approximately latitude 39.71507 and longitude -106.11726 and flows northwest ~1.6 miles to the USFS Blue River Campground.



TECHNICAL PROJECT DESCRIPTION

The proposed Blue River Habitat Restoration Project is the culmination of nearly a decade of strengthening a local watershed group (Blue River Watershed Group). BRWG and Trout Unlimited have embarked on a partnership to identify the priority concerns for the watershed. The Blue River Integrated Watershed Management Plan (BRIWMP)[1] involved community and emphasized outreach; focused technical studies of the Blue River to assess biological communities, evaluate temperature and flow regimes, water quality, and stream geomorphology; and created a report with prioritized, recommended projects to facilitate the recovery of the fishery and ecological health. This project will continue to engage our technical advisory team, stakeholder committee, and the public as we move forward with our project analysis, river restoration engineering design, and researching permitting/ compliance. Notably, as a Task A applicant, we anticipate construction will take place in the next phase of work.

TASK 1: Stakeholder Engagement/ Public Outreach

Task 1.a: Public Meetings

Public informational meetings will be held twice a year to present progress and solicit feedback on study results, engineering plans and design. The Colorado River District's State of the River annual meeting will also be an opportunity to provide a project update to regional stakeholders.

Public access to the project team and the project's status will be encouraged. Accordingly, all meetings and published information will disseminate BRWG contact information, making the ED and/ or the project manager available to field questions or concerns as they arise.

Task 1.b: Website Development

The BlueRiverWatershed.org web site will be maintained and updated with project objectives and science-based research supporting the project as well as progress on design concepts and timeline to completion. Website upkeep requires personnel time to maintain the Blue River Habitat Restoration Project page of BlueRiverWatershed.org. The website is maintained year-round with performance reports uploaded quarterly.

Task 1.c: Public Notice Tool

Public outreach and educational messaging are critical to a successful project through publicly accessible and visible river properties. In collaboration with Summit County Outdoor Coalition, the project will integrate a new online public notice tool. The goal is to develop and advertise a public notice web-based platform to inform of planned turbid days, project progress, etcetera.

Task 1.d: General Outreach and Engagement

General public outreach efforts using local newspapers, local radio, presentations to elected officials and presentations to existing groups and community meetings such as the monthly Forest Health Task Force and quarterly Summit Water Quality Committee meetings.

[1] https://www.blueriverwatershed.org/uploads/9/6/3/3/9633489/brimwp_phase_1_final_report_august_2021.pdf

Public engagement will also involve volunteers. Temperature and flow monitoring will provide the opportunity for public participation in citizen science. The project team is organizing an internship creel study as a local student skill growth opportunity.

Task 1.e: Technical Advisory Team

From its inception in 2019, the Blue River Integrated Watershed Management Plan (BRIWMP) has sought and relied upon input from the local community to define and direct project objectives. Two working groups have emerged, the BRIWMP Stakeholders and Technical Advisory Team. As the project moves forward, the Executive Director of the BRWG will continue to convene, seek input, and engage interested parties in the progress of this project.

Technical Advisory Team meetings will be held quarterly to provide guidance and coordinate with the design engineering process. The Technical Advisory Team currently consists of Trout Unlimited, BRWG, CPW, Denver Water, Blue Valley Ranch, USFS, and Town of Silverthorne. Additional entities, such as Colorado Whitewater, may be invited to participate as technical advisors to support certain aspects of the project.

Task 1.f: Private Landowners and Businesses, Informational Meetings

Private landowner outreach will be targeted to property owners with river access and/ or ownership. Outreach efforts will communicate with landowners individually and through targeted informational meetings. Businesses and residents along the project reach will be included in project development; this stakeholder group will be invited to discuss the project and planning will consider this group's concerns and interests as they align with and/ or contest the project design.

Task 2: Contractor Procurement

Task 2a: Project Management Consultant

This contractor will be procured through an RFP process and will serve a technical role for project oversight and coordination. The Project Manager will have experience running projects of this scope and magnitude. Tasks will include development of project timelines, scheduling, creating the project checklist and ensuring its completion. This consultant will interface with BRWG, ensure contract work is performed to project specifications, review invoices, and support project deliverables. Expense is based on preliminary price analysis $185/ hour blended rate of 20 hours per week over the course of the 2-year project.

An RFP for the Project Management Consultant will be issued immediately upon Grant Award, January 2024, with the intention of having the Project Management Consultant under contract shortly thereafter to assist with the RFP selection process and contracting award for the design engineer (F.2). This contract will be completed when construction designs and cost estimates are completed to a 100% plan set and Task A is complete.

Task 2b: Engineering, Project Analysis and Design—Habitat Improvement

The BRWG will hire a design engineer through a competitive RFP process. The project is expected to include habitat restoration and stormwater management utilizing best practices in channel morphology, bank stabilization, grade control structures, bioswales/ detention basins, and riparian vegetation/ wetland enhancement. These techniques and activities will be developed through the Task A Phase and will be discussed in more detail in a Task B grant request. The design engineer will develop and complete preliminary and final plans and application for permits. The tasks assigned to the lead engineer will include:

- Collect field information on the project reaches of the Blue River including general site evaluations, site-specific surveys at proposed improvements, topographic surveying, and compiling linework (parcels, utilities, LiDAR, etc.) for base maps.
- Develop hydraulic analysis and sediment-transport analysis.
- Consult with the Summit County floodplain administrator to determine submittal requirements for the acquisition of a floodplain permit. Prepare required hydraulic analyses.
- Prepare preliminary and final designs using appropriate geomorphic principles; update and refine the hydraulic analysis provided in the concept plan.
- Evaluate potential for utility conflicts and stormwater integration opportunities.
- Evaluate potential for recreational (boating, fishing) and access (trails, boat ramps, ADA infrastructure) improvements.
- Develop preliminary plans, with grading and details. Prepare preliminary technical specifications.
- Refine design plans and cost estimates. Iterations at 60-80-100% completion will be used by BRWG fundraising planning efforts.
- Prepare final plans, construction drawings, technical specifications and cost estimate to 100% construction ready/ ready to bid.
- Participate in stakeholder meetings and work with BRWG and the contracted project manager to incorporate input from the Technical Advisory Team and other stakeholders to ensure final plans meet best possible outcomes for the majority, if not all the stakeholders.

Note: The Town of Silverthorne holds a Recreational In-Channel Diversion (RICD) water right within the project's extents. The Town of Silverthorne listed the development of a recreational boating wave and/ or slalom course as a top community priority in the Town of Silverthorne Parks, Open Space, and Trails Master Plan.[2] If this scope is determined to be feasible, the project engineer will work closely with water park designers to ensure fish passage is maintained and river health concerns are incorporated. The Town of Silverthorne recognizes the recreational and economic development potential of such a project, referencing towns across the Mountain West that benefit from such a project. However, there are many site-specific concerns that need to be addressed such as minimal slope and reduced flow regime/ sub-optimal flows much of the

[2] Town of Silverthorne Parks, Open Space, and Trails Master Plan (pg 37 and pg 48)
https://drive.google.com/file/d/15PEQckDEPHvfZ0v9uQJ2FwOfHxwPjguN/view?usp=share_link

year due to dam releases. Accordingly, the design engineer will work with water park designers to determine the feasibility of a recreation park that maintains fishery habitat and offers boating opportunities at optimal flow regimes.

Task 3: Project Impact Monitoring

The BRWG has carefully studied the project area for the last four years and will continue a focused study to identify pre- and post-project physical and biological conditions. A primary goal of past studies was a determination of leading causes for the declines in the Blue River fishery and more broadly, declining ecological function. The collective stakeholder goal is to restore ecological function to the Upper and Middle reaches of the Blue River by improving water quality and in-stream and riparian habitat.

To offer qualitative determinations on the impact of the Blue River Habitat Restoration project, BRWG and TU will oversee, or be directly involved in, collection and analysis of biological and habitat responses at previously established Blue River IWMP monitoring sites. Consistent pre and post project monitoring will track the following metrics:

Task 3a: Macroinvertebrates

Macroinvertebrate sampling has previously included and will continue to include the "Multi Metric Index (MMI v4) that has been adopted by the Colorado Dept of Health, Water Quality Control Division (WQCD, 2017), and a selection of several individual metrics specifically chosen to assess the condition of aquatic life and address specific concerns in this study. Most of the additional metrics have been reviewed in WQCD Policy 10-1 and/or recommended by the EPA Rapid Bioassessment Protocols."[3] MMI and diversity scores on the ten monitoring sites will be plotted alongside previous data. "This will provide an understanding of the food requirements and ecological role of aquatic macroinvertebrates at each sampling location."

Task 3b: Periphyton, Temperature, Water Quality

Periphyton sampling will include reference to the web-based regional diatom MMI, which has not been adopted by the WQCD, but is a useful frame of reference given the lack of an adopted state standard. Taxonomic identification will continue to be taken to the genus level but will not include speciation at this time. In conjunction with the diatom MMI, biomass will be measured as concentration of Chlorophyll-a (chl-a) and Ash Free Dry Weight (AFDW).

Continuous temperature monitoring has been conducted since 2019 and will continue to be conducted through volunteer citizen science efforts. Dataloggers collect a datapoint in 1-hour intervals and require intermittent maintenance. Data will be downloaded from the BRWG temperature loggers by volunteers and plotted as temperature profiles from Dillon Reservoir to Green Mountain Reservoir. This data will also be used to perform a 'degree day' assessment. Temperatures below Dillon Reservoir will be compared to the main stem, upstream of the

[3] Plafkin et al. 1989; Barbour et al. 1999

reservoir impoundment, and in target tributaries to evaluate the dam's impact on river temperature throughout the spring, summer and fall.

Water quality study will occur year-round through continuous data loggers, with target grab sampling during spring runoff and large rain events at four collection points and at stormwater outfalls in the Town of Silverthorne. Four Onset HOBO U24 Conductivity Dataloggers are installed in the project reach to continue stormwater water quality assessments. Dataloggers collect a datapoint in 15-minute intervals and require intermittent maintenance. The water quality samples assess the following field parameters: pH, specific conductance, conductance, temperature, and flow. Lab analytics determine the following: pH, specific conductance, conductance, hardness, and alkalinity, as well as total and dissolved sodium, chloride, magnesium, calcium, and percent sulfates. Water quality monitoring will provide metrics on water chemistry and inform management to support long-term ecological health of the Blue River Watershed.

Task 3c: Discharge/ Flow Evaluation

Flow is monitored using the USGS gage 09050700 just downstream of the Dillon Dam. Additional flow monitoring will be conducted at two of the survey sites. Two new temporary flow gage locations will be permitted and installed for volunteer readings downstream from the USGS gage to monitor tributary inputs to the lower project reach. The resulting plot is a hydrograph to track flows, a heavily controlled key component of river function and habitat health.

TASK 4: Fish Population Estimates

Colorado Parks and Wildlife has conducted past electroshocking studies whenever sufficient flows are present below Dillon Reservoir. This has provided information on standing stock and year class recruitment, however, flows sufficient to conduct sampling have recently been inconsistent. High runoff has enabled a population assessment for 2022, however no data has been collected in the previous 7 years. CPW biologists do have access to a "barge" type electroshocking system which would enable completion of population studies in low water years. CPW has agreed to begin utilizing this system in low water years which will ensure that population estimates are completed for all pre- and post-project years.

BRWG will explore the possibility of engaging an annual intern and/ or volunteers to collaborate with CPW complete creel surveys throughout the Blue River, with a focused effort on the project reach. Creel surveys will help to inform on pre- and post-project conditions and create an important opportunity to communicate project goals and timelines with the public.

TASK 5: Permitting and Compliance

The Project Manager will work with the Bureau of Reclamation to meet all regulatory clearance requirements. If necessary, Task A will be hiring a third-party contractor through RFP process to begin investigation.

In Task B, all necessary permits (USACE, CDPHE, Summit County, Town of Silverthorne) after the project has received NEPA/ ESA and Cultural Clearances will be obtained.

Due to federal funding requirements clearances will be necessary throughout the project regardless of land ownership. The BRWG will collaborate with the USFS and Reclamation to determine the level of clearances required and hire a consultant through an RFP process. The recipient of the award will research permitting requirements and navigate potential environmental and cultural compliance clearances. Initial conversations with USFS have indicated the likelihood of a CE and possibly outsourcing cultural clearances to avoid internal capacity constraints.

The RFP for the Consultant to research Permitting and Clearance requirements will be issued immediately upon Grant Award, January 2024, with the intention of being under contract before the end of February and collaborating with Reclamation and otherwise researching permitting and clearance needs before June 2024, thus enabling an informed Task B proposal in 2024.

EVALUATION CRITERIA

Project Benefits—General Project Benefits

The Blue River's channel has been deprived of geomorphic changes more than 50 years due to the construction of Dillon Dam (1963) and the resulting trans-basin diversions. The pre-reservoir channel was formed to accommodate high spring flow at approximately 2,500-3,000 cfs and fall/ winter flows at approximately 250-300 cfs. See Figure 1, "Dillon Reservoir" is noted on the image as an orientational reference. River flow is from right to left.

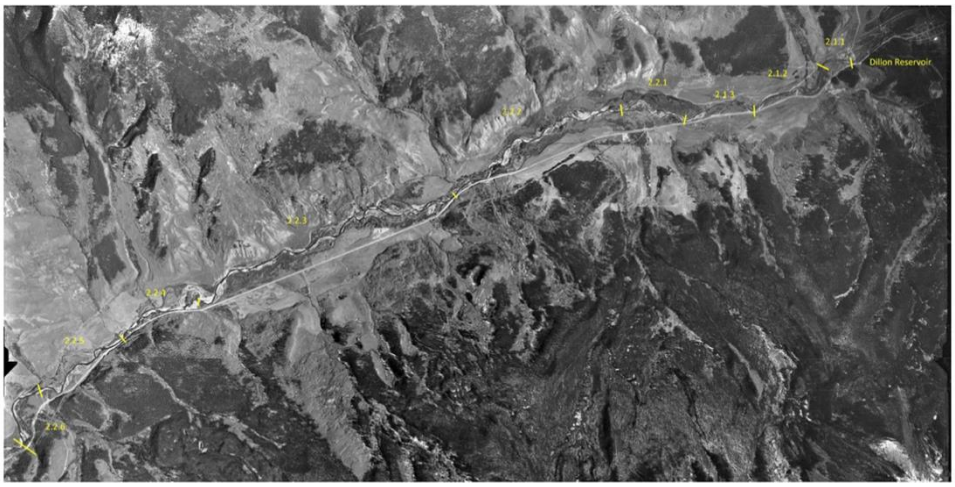


Figure 1 - Aerial image in 1954, prior to the construction of Dillon Dam

Critical Issues of Concern

Post-reservoir flow regimes exhibit 1,100-1,300 cfs high spring flows and low flows in the 50-100 cfs range. Habitat assessments conducted by the BRWG along 10 miles of the Blue River

showed that physical conditions, particularly pool habitat and cover are suboptimal for support of the fishery. While riffle and glide habitat meet minimum standards, these features are consistently meeting the low end of the acceptable range. Further, the low flow conditions, which are used as a standard for assessing habitat conditions, are present approximately 80% of the year which indicate that suboptimal habitat conditions are likely impacting aquatic life. Annual temperature regimes are also among the primary concerns for the Blue River below Dillon Reservoir. Average annual stream temperature through this reach of the Blue River is 4.7 °C due to the Dillon Dam's bottom release outlet structure. Tributary influence on temperature is more recognizable 15 miles downstream, where average water temperature is 6.7 °C. Along with increased annual average water temperature, daily water temperature fluctuations observed at downstream locations promotes life stage requirements for benthic macroinvertebrates. Diel changes in stream temperature have direct impacts on aquatic organismal life cycle.

Current flows are heavily reduced from historic rates due to trans-basin diversions within this headwaters basin. Flushing flows have been restricted and essentially eliminated to minimize flooding downstream. Recently, typical stream flows are approximately 70 cfs or less eight months a year[4].

While temperature and flow are likely the leading limiting factors to ecological productivity, existing flow regimes will never change due to Denver Water's water rights for trans-basin diversion. The CWCB holds an in-stream water right in the reach below the dam which ensures that a minimum flow of 50 cfs is guaranteed. Solutions to the temperature issues would require modifications to the dam structure. These modifications are being conditionally explored by Denver Water and will require extensive analysis and design in the coming years. Accordingly, BRWG, BRIWMP Stakeholders, the Technical Advisory Team, and project partners have agreed the first course of action is to enhance habitat, recognizing that it is one of the two most important limiting factors required to fully optimize habitat for aquatic life in the Blue River. The restoration effort will develop a functional channel within the channel that is appropriately sized and enriched for the hydrograph typical to the reduced flows. Developing and enhancing habitat is the most feasible solution to improve fisheries.

The habitat assessments conducted along the Study Reach indicate factors affecting aquatic habitat improve approximately 10 miles downstream of the Dillon Reservoir where tributary flows and natural temperatures improve habitat conditions. This is evident by longitudinal improvements in periphyton and macroinvertebrate sampling moving downstream from Dillon Dam. Accordingly, the project restoration reaches are located in the first 10 miles downstream from the dam.

[4] See Blue River IWMP exceedance plots for Reach 2, section 4.2: https://www.blueriverwatershed.org/iwmp-910563-666782.html

The 10-mile project reach is further subdivided into two project reaches, the Lower Reach and the Upper Reach based on prioritization of greatest ecological need in conjunction with public property, public use, and recreational accessibility. The project's Lower Reach is the study area most impacted by the Dillon Dam.

Project Benefits

Restoration goals in the Lower Reach include:

- Increase pool habitat
- Remove 17 rock weirs
- Increase cover habitat for fish and wildlife
- Minimize bank erosion through bank revegetation and social trail closures
- Improve public access by eliminating braided trails and developing sustainable trails and ADA/ stair access to the river
- Create point bars and import gravel substrate to improve wetland and spawning habitat
- Integrate recreational features into the design plan such that they do not create fish passage barriers
- Integrate stormwater outfalls such that water is offered filtration

The Upper Reach was chosen to act as a comparison to the Lower reach with respect to improving aquatic conditions (temperature, periphyton and macroinvertebrate community composition and abundance) with the influence of tributaries and its location within public Forest Service lands, easily accessible to a FS campground. Restoration goals in the Upper Reach include:

- Increase pool habitat
- Increase cover habitat for fish and wildlife
- Minimize bank erosion through bank revegetation and social trail closures
- Create point bars and import gravel substrate to improve wetland and spawning habitat.

HUC10 Basin

This project area lies entirely within the Middle Blue River HUC-10 (1401000205).

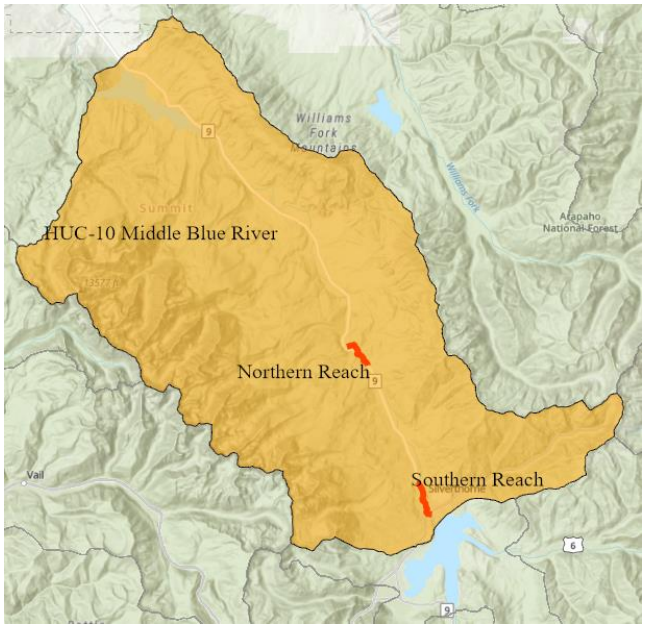


Figure 2 - Middle Blue River HUC-10 (1401000205)

Regional Benefits

This project provides multiple environmental and recreational benefits and has the potential to reduce water conflicts through outreach and education. By soliciting feedback from all known stakeholders, the Technical Advisory Team, and the public all user groups should benefit from project outcomes.

This project will create jobs—paying for BRWG staff and seven contractors, many of which will employ multiple staff persons. Other regional benefits will include public access/ safety and recreational improvements as well as Town of Silverthorne stormwater outfall infrastructure protection, as the Town of Silverthorne prepares for pending MS4 permits.

While no known endangered species will benefit from this project, the project has not gone through the clearance process to definitively rule out their presence.

Benefitting Species

The Blue River contains recreationally valuable fish species which supports a 36-million-dollar local angling economy. Anglers enjoy sport fishing for rainbow trout, brown trout, and kokanee salmon. Boating recreation use is limited to days when the Blue River is reaching 500 cfs and higher flows.

In 2016, Colorado Parks and Wildlife (CPW) delisted a majority of the Blue River from Gold Medal Status. The 16-mile delisted segment flows from the Hamilton Creek Road bridge north to Green Mountain Reservoir. “Gold Medal” designated waters must demonstrate that the fishery consistently produces a trout standing stock of at least 60 pounds per acre. The river must produce an average of at least 12 trout of 14 inches or greater per acre. The designation of Gold Medal water can only be applied to waters that are publicly available to the anglers. Gold Medal river segments must reach at least 2 miles in length. The remaining Gold Medal river segment is roughly 2 miles which flows from the Dillon Reservoir through the Town of Silverthorne and is supported by CPW’s brood stock hatchery stocking of the reach.

Quantification of Specific Project Benefits

In 1983 Colorado Parks and Wildlife (CPW) designated a portion of the Blue River below Dillon Reservoir as a Gold Medal Fishery.[5] However, in 2016 the designation was removed between the Town of Silverthorne and the Blue River Campground, located north of Silverthorne, because the river was unable to meet CPW’s biological criteria (CPW, 2019). This policy decision was driven primarily by a fishery management report prepared in 2018 (Ewert, 2018) where CPW biologists indicated low productivity may be caused by a combination of suboptimal physical habitat under low flow releases from Dillon Reservoir (noted as being less than 100

[5] Colorado Parks and Wildlife may designate a water as “Gold Medal” once it has demonstrated that the fishery consistently produces a trout standing stock of at least 60 pounds per acre and produces an average of at least 12 “quality trout” (14+ inches) per acre. Gold Medal water designation can only be applied to waters that are accessible for fishing by the general angling public. River segments must be at least 2 miles in length and lakes must be a minimum of 50 acres. https://coloradogoldmedalwater.tu.org/gold-medal-waters/

cubic feet per second (cfs) (Nehring 1988) and a lack of food and/ or limited biological productivity. The upstream portion of the reach retained its Gold Medal designation largely because of (1) the Town of Silverthorne's early-2000s in-channel river restoration efforts (Reuter, 2002), and (2) stocking this reach by CPW with catchable and brood stock rainbow trout.

Stakeholder outreach efforts conducted through the Blue River Integrated Water Management Plan (BRIWMP) highlighted the community's interest in determining the cause of the declining fishery, restoring the fishery, and reclaiming the Blue River as a Gold Medal fishery. For three years (2020-2022), the BRIWMP worked to scientifically determine the limiting factors within the ecosystem through studies including benthic macroinvertebrate sampling, periphyton sampling, temperature monitoring, flow analysis, and habitat assessments. Water quality sampling was added in 2022.

All study results support CPW's conclusions that the combination of suboptimal physical habitat under low flow releases from Dillon Reservoir and a lack of food and/ or limited biological productivity are likely impacting the aquatic life in the Project Reach. Specifics to follow:

Species and Habitat Health

The project area has been extensively studied over the last seven years. The current status of species and physical habitat health in the planning area is summarized in the following sections. These summaries also provide some general background on sampling methods and timing, as well as links to the full study reports.

Cold-water Fishery Habitat

Functional Assessment of Colorado Streams (FACStream)[6] assessments were conducted to measure and define whether habitat conditions are supportive of a cold-water fishery. Results are compared to 'known standards' or available scientific references that define productive and healthy habitats.

The results of the habitat assessments identified all eight sites provide sufficient wetted perimeter even at 50 cfs (typical low water), and average riffle depths are at or greater than the standards applied in minimum instream flow studies. These results indicate riffle habitat should be suitable to support benthic invertebrate production as a food source for higher trophic levels. Glide habitats across all eight sites also provide hydraulic conditions at low flows that are likely sufficient to provide foraging locations for fish.

Pool habitat, however, is sparse, and where present, exhibit shallower average depths than the recommended 1.5 feet at low flows to provide adequate cover, resting, and refuge habitat. Pools are found downstream of constructed boulder weir drop structures and are extremely limited. Many are associated with outside bends in the low flow channel or associated with mid-

[6] https://www.coloradosmp.org/wp-content/uploads/2021/03/2015-FACStream-1.0-Manual.pdf

channel structures such as boulders. The limited number of pools, and the shallow depths present in all the pools may be contributing to the impairment of the trout fishery.

Some of the existing boulder drop structures have created a very wide channel section with shallow depths and a lack of diversity in structure. They may also be limiting upstream fish passage. Restoration efforts will address these issues and post-project habitat assessments will measure the level of improvement.

Morphology

The Blue River is located in a wide and unconfined valley. Average channel gradients through the project area are 0.7% - 0.6%. Entrenchment ratio and width to depth ratios are moderate and the dominant bed form is riffle-pool-run, although habitat assessments conducted in 2021 and 2022 indicate very little pool habitat is present, likely due to the low and shallow flow conditions. Channel substrate is primarily cobbles and boulders.

Overall, the Blue River today is a single channel with a low slope and low sinuosity. The general channel planform and alignment has changed little since the construction of the Dillon Reservoir dam, although vegetation encroachment is clearly visible when comparing pre-dam conditions to today's imagery.

Bankfull discharge is defined as the dominant channel forming flow with a recurrence interval of 1 to 2 years. Bankfull discharge is also correlated to the maximum discharge the channel can convey without overtopping onto the floodplain. It is considered to be the most effective flow for moving sediment, forming or removing bars, forming or changing bends and meanders, and generally "doing work that results in the average morphological characteristics of channels".[7] Based on the hydrologic analysis for the Blue River the 2-year flow (50% exceedance) is between 700 and 800 cfs for water years 1988 to 2021 (34 years). The HECRAS 1D analysis indicates most of the surveyed cross sections have a bankfull capacity well in excess of the bankfull discharge. This indicates that the channel has not experienced overtopping to the same extent prior to the construction of Dillon Reservoir, which is evident when comparing vegetation encroachment.

Floodplain development has impacted channel plan form including gravel pit mining and urban encroachment. Urban encroachment has occurred primarily in the Town of Silverthorne. Most development lines the channel banks that were present in 1954 with impacts to the overbank vegetation but little alteration to the channel alignment. Gravel pit mining also occurred sometime between 1954 and present day. Several of the gravel pit ponds are in the Town of Silverthorne, and appear to be hydraulically connected to the river, either by overland flooding or via groundwater and as a result support riparian and wetland vegetation between the two features. The development of these gravel pits also appear to have included the diversion of the main stem into a side meander channel. These side channels are typically narrower than the historic mainstem.

[7] Dunne and Leopold, 1978

In the absence of sediment from the upper basin due to the reservoir, and in the absence of high flows due to the reservoir operations, it is possible the hydraulic conditions required for sediment transport, scour or degradation are relatively infrequent or absent.

By modifying the channel shape, stabilizing banks, increasing pool depth and improving overhead cover the project will create morphology that matches existing flow regimes. The goal is to create a channel morphology that:

- Achieves bankfull discharge and transports bedload materials with some regularity.
- Exceeds bankfull discharge and inundates the floodplain during high runoff years without impacting infrastructure.

Macroinvertebrates

Seasonal and spatial variability in the pattern of recovery (with respect to distance downstream from the reservoir) suggested that factors such as surface-water releases, input from tributaries, and possibly other sources of anthropogenic stress (urban runoff) may have had various influences on the health and recovery of benthic macroinvertebrate communities at different times during the year.

Results from the 2020 field monitoring indicate that benthic macroinvertebrate communities were "impaired" immediately downstream from Dillon Reservoir in the spring and fall, while further downstream benthic macroinvertebrate communities were "impaired" during the summer. Improvements in benthic macroinvertebrate were consistently observed moving from upstream (near Dillon Reservoir) to downstream (near Green Mountain Reservoir) of the study area. Alterations from the natural flow and temperature regime imposed by reservoir operations were likely responsible for a decline in the richness and abundance of sensitive and specialized taxa. See Full Macroinvertebrate Reports from Timberline Aquatics: 2020, [8] 2021.[9]

This project cannot address existing temperature regimes and restricted flows due to operational and statutory limitation. However, by returning the river channel to a proper geometry to accommodate the reduced flow regime and addressing stormwater outfalls, the sampling sites in the project area are anticipated to realize increased richness and abundance in macroinvertebrates. Restoration aims to improve stream habitat and connectivity to floodplain habitat such that impaired biological communities display a distinct response. Sensitive macroinvertebrates require access to various habitat types to complete life cycles. A target of habitat restoration is an uplift to the macroinvertebrate community composition and attainment of the Colorado WQCD MMI.

Periphyton

Algal biomonitoring is a vital field of study as primary productivity forms the baseline of most aquatic ecosystems, comprised of photosynthetic organisms that drive energy exchange in most

[8] https://drive.google.com/file/d/1ibbodDgxe7S8ixM0Bvp3zdMMLvIfae0i/view?usp=share_link
[9] https://drive.google.com/file/d/1OYyei9tBU-V2prlOw0-XCzzW2aSdjQSO/view?usp=share_link

streams. Because of this, benthic algae are commonly used to indicate the health of streams, as they are susceptible to changes in environmental conditions. Moreover, it was initially proposed to the Blue River Enhancement Workgroup (a group of experts formed to address the declining fishery from 2016-19), that one of the root causes for declines in the Blue River fishery and ecological function was the lack of primary productivity. The result would be a decreased forage capacity for target macroinvertebrates and juvenile trout and a cause for reduced annual growth rates in various age classes of trout. Lack of periphyton, or benthic algae, may be limiting invertebrate populations and, subsequently, the fishery. Longitudinal declines in periphyton abundance were seen for the first 1 ½ miles below Dillon Reservoir. Periphyton abundance sampling indicates some recovery moving further downstream, but remains variable.

Based on the data collected to date, seasonal periphyton community composition would appear to support higher trophic levels. Using periphyton alone, we cannot state that the algal communities should support a thriving fishery. Data suggests the Blue River monitoring sites are not impaired, but benthic algae is not abundant. Anthropogenic factors such as altered thermal and flow regimes, impaired habitat, water quality and stormwater, water temperature and lack of riparian habitat and floodplain connectivity are also impacting ecological health of the Blue River. See full periphyton reports 2021,[10] and 2022.[11]

Based on current and projected flow regimes, the habitat project anticipates achieving biological uplift through an appropriately sized channel and restoration of critical in-stream habitat. By reconnecting in-stream habitat and restoring stream margins and floodplain habitat, natural energy inputs that are infrequently present under current conditions will be reintroduced. Targeted restoration of physical and biological processes through the proposed reach is expected to uplift algal communities through improved autochthonous energy production and seasonal trophic-level interactions.

Temperature

Water temperature is perhaps the single most important environmental parameter for fish. Ambient water temperature drives fish survival, behavior, and growth and also is known to define the range a fish can occupy.[12]

The project area is heavily impacted by the Dillon dam. Water is released from the bottom of the reservoir which results in cold water releases, frequently below optimal ranges for brown trout,[13] and likely having a negative impact on all life stages of the fishery. Release temperatures are generally less than 10 °C. The low temperature affects the aquatic biota in several ways.

[10] https://drive.google.com/file/d/1Q1JFnJLdT5_r_ACNkLpeM2AaGh1uuROt/view?usp=share_link
[11] https://drive.google.com/file/d/1-1IWyISxnQB6UUPSKR3s18KacLFTcpGV/view?usp=share_link
[12] Magnusen et al. 1979 as cited by KA 2021; Brinkman et al. 2013 as cited by KA 2021; Cook and Bergersen 1988, Rogers 1998 as cited by KA 2021; Selong et al. 2001, Bear et al. 2007, Brinkman et al. 2013 as cited by KA 2021; and Dunham et al. 2003, de la Hoz Franco and Budy 2005 as cited by KA 2021
[13] Raleigh, et al. 1986

Benthic macroinvertebrates that require natural seasonal temperature fluctuations to complete their life cycles are absent or in low numbers. Growth rates for fish are slowed because of lower metabolic rates. Trout spawning success can be decreased by the low water temperatures, especially for spring spawning species such as rainbow trout and cutthroat trout.[14] These species normally experience rising water temperatures during egg incubation. Low water temperatures (less than 10°C) can delay embryo development and hatching in rainbow trout.[15]

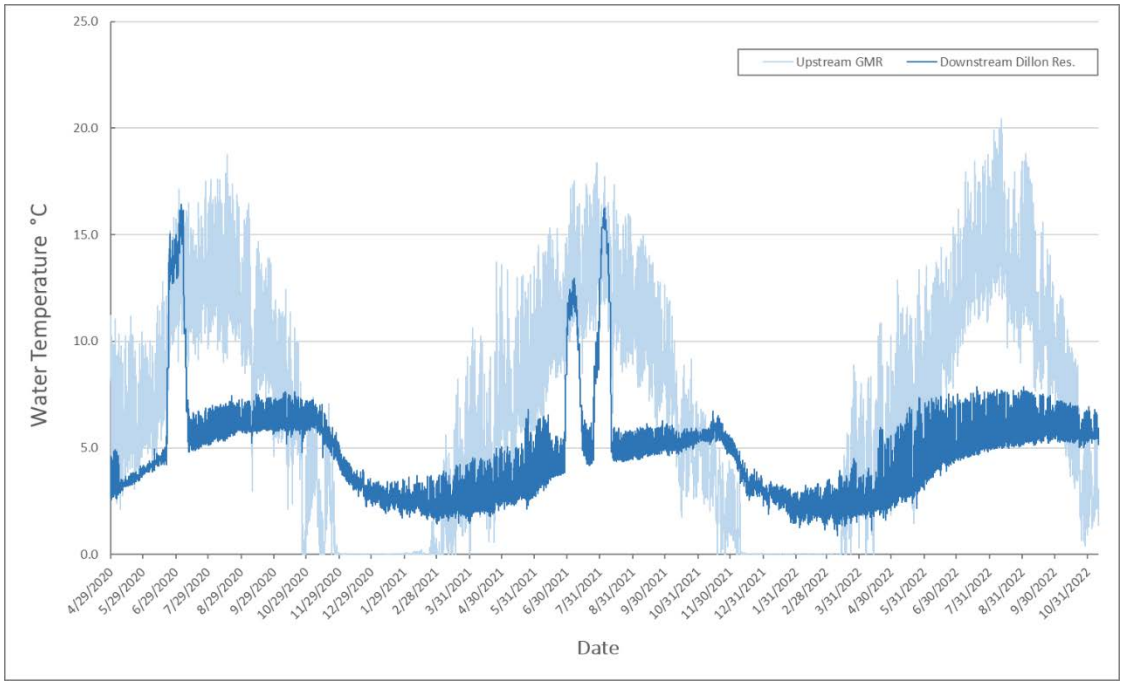


Figure 3 - Water temperature monitored downstream of Dillon Reservoir compared to upstream of Green Mountain Reservoir.

The dam overtopping or spilling during high water causes water temperatures to increase dramatically over a short period of time, likely causing thermal shock to all downstream aquatic organisms. When the spill ends, it causes an additional thermal shock as water temperatures quickly return to their previous levels. Water temperature monitoring in 2020 shows a reservoir spill that created an increase in temperature of 6.6 °C (4.8 to 11.4 °C) in 48 hours, which is considerable when compared to the conditions on the Blue River upstream of Dillon where water temperatures changed 1.2 °C (7.7 to 8.9 °C) over the same 48-hour period. In 2020, only the portion of Blue River below Boulder Creek, 11 miles downstream of Dillon Reservoir, recorded water temperatures similar to the temperature readings above Dillon Reservoir, indicating warming recovery occurred over the first 11 miles downstream of Dillon Reservoir. The temperature range at and below Boulder Creek where in the optimal temperature ranges for adult brown trout growth.

[14] Miller, 1988
[15] Timoshina, 1972

Project outcomes do not anticipate measurable changes to water temperature at this time, but ongoing monitoring will determine the net effects. Additional temperature sampling stations may be included in improved pools if spot monitoring indicates increased temperatures.

Flow Analysis/ Hydrology

The Blue River is generally a snowmelt driven system, with peak flows typically occurring in late spring and early summer and often lasting for multiple days or weeks. Alterations to natural patterns of flow variability, including the frequency and timing of peaks, fluctuations, and rates of change, are particularly important to fish, insects and other biota that have life history strategies tied to predictable flow rates at specific times of the season.[16]

The flow regime in the Blue River downstream of Dillon Reservoir is impacted by reservoir operations, effecting both peak flows and base flows. Current estimates indicate annual flow depletions from trans-basin diversions can be significant and the reservoir alters the natural sediment regime, blocking the transport of fine material, small gravels and cobbles into the Project Reach. While flow remediation is not a component in this restoration plan, it informs on prioritizing those reaches with the most overall habitat impairment.

Hydrologic analyses were completed to identify a range of flows representative of current conditions with which to assess aquatic habitat and develop restoration recommendations.

Continued hydrologic analysis will inform the measured success of other project benefits.

Watershed Benefits

Water Quality (pH, Dissolved Oxygen, and Conductivity)

In 2020, IWMP project partners received a small grant to collect surface water grab samples from various stormwater outlets along this reach of the Blue River. Sampling events targeted spring snowmelt events, investigating constituents of concern that stem from urban runoff. Field data and lab analysis identified sodium and chloride were measured at the highest concentrations across all sample events at each location. While the grab samples were collected at or near stormwater outfalls, concentrations of sodium exceeded state drinking water standards, and chloride exceeded EPA chronic and acute surface water standards and the EPA aquatic life standard.

The overarching goal of this study and subsequent analysis was a comprehensive understanding of the impacts Straight Creek, and various stormwater outfalls have on the Blue River. Elevated concentrations of sodium, chloride, and various contaminants of concern stem from current land-use practices and are considered a stressor to aquatic organisms. Continuous water quality monitoring through the installation of data loggers and monthly surface water grab samples collected from each stormwater monitoring site illustrated seasonally elevated concentrations of sodium and chloride. While both minerals are naturally occurring, elevated concentrations of each can result in acute and/ or chronic salinization of freshwater environments, directly

[16] Beardsley et al. 2015

impacting biological communities. Through collaboration with various State agencies and local municipalities, TU and BRWG are working to continue water quality monitoring to inform management and reduce the impacts of urban runoff on aquatic organisms.

As part of the proposed project, stormwater outlets identified as a concern by the Town of Silverthorne's 2021 Master Stormwater Drainage Plan[17] will be incorporated and designed to be part of the overall restoration plan. Anticipated outcomes of this effort will be a measurable decrease in total suspended sediments, increased riparian and wetland habitat, and potentially, a reduction in total or dissolved constituents of concern in the Blue River. Ongoing monitoring will identify the outcomes of stormwater infrastructure improvements. A long-term goal of the BRIWMP, separate from the proposed project, is to participate in the adaptation of resource management to reduce the impacts of road deicers and urban runoff on receiving waters across Colorado.

Ecological Function & Resiliency

The Blue River channel was formed by high flows of 3000 cfs and low flows of 300 cfs. The current flow regime of 1800 cfs to 50 cfs is insufficient to maintain the health of the aquatic and riparian systems. This project will help reestablish a balance between flow and morphology.

The proposed habitat improvements seek to address morphology to reduce these impacts and to provide seasonal refugia for aquatic organisms. The result of the proposed stream restoration will be an appropriately sized channel based on current and projected flow conditions. While there are other leading factors limiting the ecological health of this reach, restored channel morphology is expected to reduce a primary stressor. Future steps taken by local stakeholders, watershed groups, and management agencies will continue to reduce the impacts of other identified stressors, such as altered temperature regime and water quality impairment.

Success in improving ecological function will have measurable results:

- Floodplain connectivity will be visible to increased habitat at various flows.
- The stream corridor will be reconnected with riparian vegetation through measurable revegetation efforts.
- The wood regime in the reach will be improved by incorporating large woody debris (LWD) into the channel and streambank, where appropriate.
- This project will increase the number and depth of pools and augment gravel to glide habitat for spawning habitat. This reach of the Blue River does not have an active bedload and the streambed is comprised of large cobble to small boulders.

Water Supply Benefits

The water supply through the project reach will not be impacted. The Dillon Dam/ Reservoir will continue to be a limiting factor for flow. The Town of Silverthorne's recreational in channel

[17] https://drive.google.com/file/d/1f0Y3tAGG-iYRVGh5P5UCLnAwP2kFccJp/view?usp=share_link

diversion water right (RICD) will be retained and utilized with the development of the recreational park.

Other Quantifiable Benefits

The quantifiable benefits are primarily listed in the Species and Habitat Health section above. Recreational access to the river across public areas is addressed as a part of the scope of work. Unsafe and unauthorized access trails have been identified in the initial planning phase and will be addressed in the final engineer design. Recreational users and vegetation will benefit from marked and hardened river access points. Public safety will increase if steep, braided, and eroding trail access is replaced with trail markers and constructed trails, staircases, and access improvements.

Prior Restoration Planning & Stakeholder Involvement & Support

Prior Planning and Design

The Blue River Habitat Restoration Project is the product of many years of hard work by the Blue River Watershed Group (BRWG) in partnership with Trout Unlimited (TU) made possible by the continued support of the Technical Advisory Team, Colorado Parks and Wildlife (CPW) and other federal, state and local entities—see the Stakeholder Engagement section below. The project's foundation was built by the Blue River Integrated Water Management Plan (BRIWMP) where community outreach directed the project to conduct technical studies of the Blue River biotic system in order to determine the limiting factors of the declining fishery. Prior research and planning resulted in a list of prioritized recommended projects to enable the recovery of the Blue River fishery. A full list of the resulting projects is described in the final draft of the BRIWMP report.[18] Habitat improvement has been identified as the first project the community and technical team aim to implement.

A detailed description of the seven-year project evolution follows:

2016, the Colorado Parks and Wildlife removed the Gold Medal Waters designation from the Blue River between the north end of the Town of Silverthorne to and Green Mountain Reservoir due to decreasing trout populations. This action was met with great concern from the CPW Commission, the Department of Natural Resources, local business groups, anglers, and others that rely on the recreation-based income the fishery provides. Shortly thereafter the Blue River Enhancement Workgroup (BREW) was formed to address the Gold Medal designation loss. BREW studied the declining fishery and formulated a list of possible limiting factors that were likely contributing to the decline. BREW's efforts halted in 2018 when funding the necessary studies to test these factors emerged as an insurmountable hurdle for the group.

2018, BRWG applied for and received a BoR WaterSMART Cooperative Watershed Management (CWMP) grant to hire an executive director and begin the process of building community support for recovering the Blue River fishery. The most comprehensive approach to addressing

[18] https://www.blueriverwatershed.org/iwmp-910563-666782.html

ecosystem distress while also meeting the needs of the Colorado State Water Plan was to develop an Integrated Water Management Plan.

2019, Trout Unlimited and Blue River Watershed Group, utilizing original grant funding from the CWMP, made an application to the CWCB, the CRD, CBRT and other local funding sources to begin writing the Blue River Integrated Water Management Plan (BRIWMP). The scope of this planning document is intentionally multidisciplinary and inclusive. The plan offers an approach to managing water holistically considering water supply, wastewater, and stormwater systems while balancing consumptive and non-consumptive use. The BRIWMP addresses water as a single connected system and promotes coordinated development and management of water, land, and related resources to maximize the economic and social benefits while promoting ecological function. Two specific objectives were defined:

- **Objective 1.** To understand the potential causes of the declining fishery between Dillon and Green Mountain reservoirs and determine whether (and how) the decline can be reversed or mitigated. To determine the limiting factors within the Blue River, the team conducted the following tasks:
- **Objective 2.** To compile, review and integrate existing basin studies, plans and other information regarding physical and biological aspects of the Blue River basin water resources for the purpose of formulating objectives and goals that will guide future water management decisions.

2020, the project team reviewed consumptive and non-consumptive water use in a broad basin wide assessment. Consumptive uses such as municipal, agricultural, recreational (snowmaking/ golf course irrigation) and non-consumptive uses such as fishing, boating, etc. were all assessed with respect to supply and environmental impacts. In addition to this broad view, the project team began to assess biotic conditions (temperature, periphyton/ aquatic invertebrate analysis, Rapid Stream Assessment and water chemistry) in the Blue River to determine the reasons for the declining trout fishery. These efforts were summarized in the Phase 1 report. Feedback from stakeholders was positive, however the consensus was that in subsequent years the BRIWMP focus should narrow to Objective 1, identify the cause and develop solutions to the declining fishery between Dillon and Green Mountain Reservoirs.

2021, the BRWG publicly released the first draft of the Blue River Integrated Water Management Plan (BRIWMP). The 2021 report summarized reports, studies, and field data which identified a vast array of challenges facing the Blue River basin. Community feedback was positive and resoundingly encouraged the continued focus on the causes and solutions to address the declining Blue River fishery. BRWG also received additional CWMP funding through BoR to continue supporting staff and manage the development of the BRIWMP.

From 2021-2023, the BRWG and TU developed a thorough survey and monitoring program to scientifically determine the cause of the declining fish populations considering seasonal variation. Resultantly, the partners collected three consecutive years of data on water temperature, water chemistry, periphyton populations, aquatic invertebrate populations and

have worked with the Town of Silverthorne on reducing non-point pollution caused by salts, hydrocarbons, pesticides and fertilizers. Habitat Assessments were conducted and reports generated for the upstream 10 miles of the river. These assessments included the habitat surveys, river cross section surveys, hydrologic and hydraulic analyses, and the development of recommendations focused on the improvement of habitat for the benefit of aquatic life.

Three years of sampling and surveys built a fairly comprehensive database of the biotic conditions on the river. The team accomplished the tasks listed below to determine the limiting factors within the Blue River.

- Task 1: Develop scientifically valid habitat restoration strategies through evaluation of existing stream flows – both temporally and quantitatively – in relationship to the geomorphology of the stream.
- Task 2: Seasonally sample macroinvertebrates at 10 sample sites consecutively for three years.
- Task 3: Seasonally sample periphyton at 10 sample sites (coincident with Macro sites) 3 times during the growing season consecutively for three years.
- Task 4: Create temperature profiles at the sample sites to offer variable correlations and demonstrate habitat conditions.
- Task 5: Work closely with stakeholders including the Technical Advisory Team to ensure the BRIWMP tracks community priorities and concerns. Advisors provide critical expertise and vetting of procedures and outcomes for the project scope.

By the close of the field season in 2022, BRWG and TU, in conjunction with the Technical Advisory Team, believed that they could draw conclusions and make recommendations on projects to improve environmental conditions and possibly repair ecosystem function to improve the fishery.

One of the most critical limiting factors, as concluded by prior planning and survey work on the Blue River is the reduced flow regime caused by Dillon Reservoir and upstream trans-basin diversions to the Front Range of Colorado. Pre-reservoir flows were three to four times that of current flows. The resulting discontinuity between the existing channel and reduced flow has resulted in substantially reduced depth, cover and other essential habitat conditions.

2022 and 2023, the project team generated a draft of the BRIWMP Restoration Master Plan report[19] to modify the channel to meet the permanently reduced flow regime and build scalable habitat conditions. The draft Restoration Master Plan outlines restoration suggestions along the Blue River between Dillon Dam and the USFS Blue River Campground. Project partners and the Technical Advisory Team conducted a thorough review of the suggestions and project scope then prioritized two reaches within study area that have the greatest potential to enhance ecosystem function and improve the fishery.

[19] https://drive.google.com/file/d/1L6Ugv--LN7sERnaY-BRjlDAF6OT10iFp/view?usp=share_link

The two prioritized project reaches are now identified as the Blue River Habitat Restoration Project. Habitat restoration projects will bring the Blue River low flow channel into sync with today's flow regime.

Next Steps: Based on the past 7 years of study and planning, BRWG is seeking AERP funding to finalize design of the restoration plan for two prioritized reaches and prepare for implementation. Once this project is complete BRWG will continue to complete additional recommended projects, including construction of site-specific projects and will continue to work with numerous stakeholders to bring this important fishery back to its Gold Medal status.

Stakeholder Involvement and Support

Integrated Water Management Plans (IWMP's) were conceived and codified in the 2015 Colorado Water Plan. They were designed (and funded) for communities to bring consumptive and non-consumptive water users together to collaboratively explore multiple benefit policies and identify projects that could be implemented for the benefit of all water users within a defined basin.

The Blue River Integrated Water Management Plan (BRIWMP) is intentionally multidisciplinary and inclusive. The plan offers an approach to managing water holistically considering water supply, wastewater, and stormwater systems while balancing consumptive and non-consumptive use. The BRIWMP addresses water as a single connected system and promotes coordinated development and management of water, land, and related resources to maximize the economic and social benefits while promoting ecological function.

Technical Advisory Team

The IWMP process began by engaging a broad spectrum of stakeholders. Stakeholders were invited to participate in meetings and surveys to understand the communities current and future needs, concerns, and uses for the Blue River.

Initial stakeholder engagement objectives were identified as:

- Build on local knowledge and provide meaningful opportunities for stakeholders and community members to engage throughout the process
- Understand and address diverse perspectives, interests, and needs
- Increase education and awareness of issues and opportunities surrounding a healthy Blue River
- Strengthen partnerships for long-term collaboration and success
- Create a transparent planning and decision-making process
- Develop solutions supported by local ownership and buy-in

Initial interests of the stakeholder group included:

- Building project sustainability through long-term community involvement and stewardship by BRWG,
- Acknowledging community engagement is critical to project success.

- Understanding current and future water use
- Developing long-term goals and objectives

To ensure progressive collaboration, stakeholders were asked to:

- Uphold appropriate collaborative behaviors by being sensitive to diverse interests and perspectives,
- Work toward building consensus on opportunities
- Increase their awareness of river health, different interests, and impacts of types of management actions

Stakeholder List

Note:
A blue bullet indicates significant in-kind contributions that are not accounted for in the budget.

BRWG Project Team

- Blue River Watershed Group, Kendra Fuller — Executive Director
- Blue River Watershed Group, Jay Pansing — Board of Directors, President
- Trout Unlimited. Richard Van Gytenbeek — Colorado River Basin Projects
- Colorado Trout Unlimited, Greg Hardy — Board of Directors, President
- TetraTech, Peggy Baily — Sr. Hydraulic Engineer

Agriculture

- Friends of the Lower Blue, Jonathan Knopf — Executive Director
- CSU Extension, Dan Schroder — County Extension Agent / Director
- Blue Valley Ranch, Rob Firth — Ranch Manager
- Blue Valley Ranch, Brien Rose — Director of Natural Resources & Fisheries Biologist
- Reeder Creek Ranch, Paul Bruchez — Rancher
- Irrigators in Lands in the Vicinity of Kremmling (ILVK)

Recreation

- Copper Mountain, Jeff Grasser — Project & Efficiency Manager
- Arapahoe Basin, Tony Cammarata — Operations Director
- Cutthroat Anglers, Ben McCormick — Owner
- The Colorado Angler, Andrew Peterson — Owner/Guide
- Mountain Angler, Jackson Streit — Owner
- Trouts Fly Fish, Zeke Hersh — Regional Outfitting Manager
- Breckenridge Outfitters, Tim West — Owner

- Frisco Rowing Club, Joanne Stolen — Executive Director
- Summit County Chamber, Blair McGary
- Summit County Chamber, Cheri Ryan — Membership Director
- Summit County Chamber, Jim Curnutte — Community Development Director

Local, State, Federal Agencies

- U.S. Bureau of Reclamation, Victor Lee — Operates Green Mountain
- U.S. Forest Service, Bill Jackson — District Ranger
- U.S. Forest Service, Mark Hane — East Zone Aquatic Biologist
- U.S. Fish and Wildlife Service, Pam Sponholtz — Project Leader
- U.S. Bureau of Land Management, Bill Mills — Kremmling Field Office Manager
- CO Parks and Wildlife, Jon Ewert — Local Biologist
- CO Dept of Transportation, Jennifer Klaetsch — Mountain Water Quality Program
- CO Dept of Transportation, Paula Durkin — R3 Wetland Program Lead
- CO Water Conservation Board, Andrea Harbin-Monahan — Watershed Scientist
- NW CO Council of Government, Lane Wyatt — Watershed Services Director
- Summit County, Josh Blanchard — County Commissioner
- Summit County, Jim Cox — Fire and EMS Authority Board
- Grand County, Ed Moyer — Town Manager
- City of Golden, Les Major — Utilities Division
- Town of Silverthorne, Tom Daugherty — Director of Public Works
- Town of Frisco, Jeff Goble — Public Works Director
- Town of Dillon, Mark Helman — Utilities Superintendent
- Town of Breckenridge, James Phelps — Town Manager
- Town of Blue River, Michelle Eddy — Town Administrator/Clerk

Water Managers/ Providers

- Colorado River District, Jim Pokrandt — Director of Community Affairs
- Denver Water, Nathan Elder — Raw Water Supply Manager
- CO-DNR – Division 5, Troy Wineland — Blue River Water Commissioner #36
- Heeney Water District, Richard Seal — Board Member
- East Dillon Water District, Ron Mentch — Operations/ Water Quality
- East Dillon Water District , Tom Oberheide — Administrator

- Dillon Valley Water District, Deborah Polich — District Administrator
- Snake River Water District, Scott Price — District Administrator
- Colorado Springs Utility, Maria Pastore
- Colorado Springs Utility, Tyler Benton

Environmental Groups

- Summit Water Quality Committee, Lane Wyatt
- Friends of the Dillon Ranger District, Mike Connelly — Executive Director
- Friends of the Dillon Ranger District, Doozie Martin — Programs Manager
- High Country Conservation Center, Jennifer Schenk — Executive Director
- High Country Conservation Center, Rachel Zerowin — Community Programs Manager
- Gore Range Anglers (TU Chapter), Greg Hardy — President
- Cloud City Conservation Center, Jane Schaefer — Program Director
- TU, Abandoned Mines Projects. Tanner Banks — Project Manager
- Forest Health Task Force, Howard Hallman — Task Force President
- Eagle Summit Wilderness Alliance, Mike Browning — Chair
- Eagle Summit Wilderness Alliance, Bill Betz — Past Chair
- The Nature Conservancy, Catherine Schloegel — Watershed Forest manager
- Sustainable Hiker, Tom Koehler — Founder
- American Whitewater, Hattie Johnson — Southern Rockies Director
- American Whitewater, Kestrel Kunz — Stewardship Assistant

Industry / Land Development

- Climax Molybdenum, Aaron Hilshorst — CO Land & Water Manager
- Climax Molybdenum, Diana Kelts — Environmental Manager
- Peak Materials, Joanna Hopkins — Development Strategies

Individuals

- Jim Williams, Former aerospace engineer; part-time resident of summit county; angler
- Richard Strauss, Angler, interested in access and use issues
- Tim McKennie, Angler, and 30 year Breckenridge Resident
- Karn Stiegelmeier, Prior Summit County Commissioner
- Lee Beard, 5 year Silverthorne resident, Motorsports Crew Chief, Angling Channel Athlete

- Michael Cutter, Senior Project Manager at WSB (Water quality)
- Hank Wiethake, Angler/Boater, also works in Summit County in Real Estate Development
- Matt Mulica, The Keystone Center
- Rob Baer & L ynne Baer, Owners of The Pad
- Michael Bartosch, Angler, Town of Blue River resident
- Steve Bond
- Derek McGregor

Consistent stakeholder communication of key messages ensured the project team was held accountable to follow a community supported scope, schedule, and budget. The Advisory Committee participation faded with the onset of the COVID-19 as the project studies were put on hold due to lab closures and in-person meetings were canceled. To adapt, the project team drove communication of the BRIWMP through virtual options. General participation of the Advisory Committee faded as a result and the Technical Advisory Team was formed to meet the updated needs of the project.

Looking ahead, current stakeholders have committed to participation and support of the engineering and construction phases. Numerous stakeholders have expressed their support for the project through letters of support. See the Letters of Support in APPENDIX 1.

Technical Advisory Team

As the BRIWMP developed, the scope of the project narrowed. The 2021 report summarized reports, studies, and field data which identified a vast array of challenges facing the Blue River basin. Community feedback was positive and resoundingly encouraged the continued focus on the causes and solutions to address the declining Blue River fishery.

A Technical Advisory Team (TAT) was established with representatives from the major stakeholder groups to guide and inform on the identification of concerns and the important issues, goals and objective, analyses and studies, framework for long-term monitoring and the development of a community driven plan.

The TAT has given invaluable credibility to the BRIWMP. The TAT has, and will continue to advise on data collection methodology, dam operations, and other technical components of the project. The purpose of the Technical Advisory Team is to add diplomacy to the project's decision-making to ensure stakeholder input and shared responsibility. The goal is to create a formalized small team of technical experts for the main stem Blue River. A detailed explanation of the TAT expectations and members can be found in APPENDIX 5.

In 2022 and 2023, the project partners have had frequent interaction with the Technical Advisory Team and received technical input to help ensure data collection methodology and conclusions are consistent, repeatable, and scientifically valid. The Technical Advisory Team also collaborated to identify next steps, expand project scope as relevant issues arose, and provided input on project prioritization.

Looking ahead, the current members of the TAT have committed to continued participation and support. Members of the TAT are not required to contribute funding but participation requires a donation of staff time, knowledge, and participation. The value of these in-kind contributions has not and will not be accounted for in grant applications due to the variable nature of these donations. Letters of support are provided from all entities within the TAT.

Upcoming Stakeholder Engagement

Now that the Technical Advisory Team has drawn conclusions and determined two priority reaches for habitat restoration, vast stakeholder involvement will ensure the project is relevant, inclusive, and collaborative. Public outreach efforts will continue encourage inclusion of any additionally interested groups and individuals who are not yet represented at this time. Outreach methods are outlined in the Readiness to Proceed section of the application.

Note: There is no known opposition to this project effort at this time.

Project Implementation and Readiness to Proceed

As described in the section on "Prior Planning and Design" the Blue River Habitat Restoration Project is a prioritized project resulting from the Blue River Integrated Water Management Plan.

The Blue River Habitat Restoration Project will use the Draft Master Restoration Plan[20], developed by the Blue River Integrated Water Management Plan to communicate with stakeholders, build community support, secure financial backing, and initiate final engineering design. The report, identifies chronic low flow regimes and channel morphology as the priority mitigation project.

To enable the restoration of three miles of the Blue River, BRWG and TU are seeking grant funding (herein and from matching sources) to complete engineering and design of restoration plans that will guide a project to alter channel morphology, accommodate lowered flow regimes and improve the river's fishery.

The below gantt chart outlines the estimated project schedule, defines project stages, and the duration of proposed study and design work.

[20] https://drive.google.com/file/d/1L6Ugv--LN7sERnaY-BRjlDAF6OT10iFp/view?usp=share_link

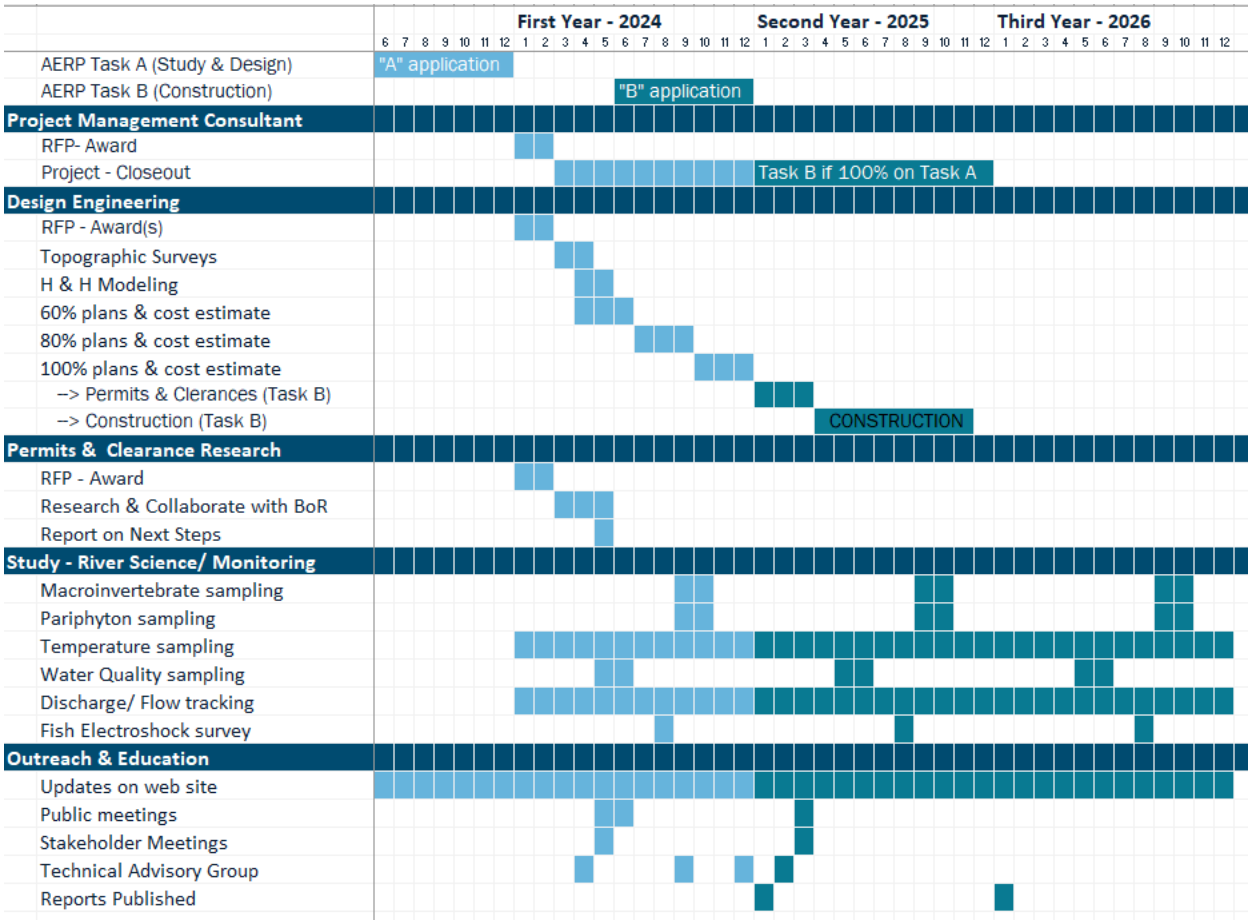


Figure 4 - Project Milestones

Additionally, applications for project funding are noted. The Colorado Water Conservation Board (CWCB) and the Colorado River Water Conservation District (CRD) will be approached for the matching grant funds to our Bureau of Reclamation Water Smart grant application. These grants, if approved, will be complete by December 2023, coincident with potential BoR grant funding.

Schedule details:

January-March 2024 BRWG/ TU will issue RFPs to solicit a project management consultant and a qualified engineering firm to oversee the project and complete design and construction level plans and specifications for the aquatic restoration plans including in-channel modifications, recreation park feasibility and design, and stormwater outfall upgrades to mitigate non-point pollution concentration points. The project team anticipates awarding the Project Management contract ahead of the design engineer to enable project oversight and engineer selection support.

April-June 2024 BRWG/ TU and the selected engineering firm will engage in a design process to complete construction plans and specifications by early July.

The engineering design process will have the following milestones:

- April-June 2024. Complete and submit 60% preliminary design engineering plans and construction cost estimates to BRWG/ TU for review and approval. Value engineering changes will be incorporated into subsequent submittals.
- June-August 2024. Complete and submit 80% design engineering plans and construction cost estimates to BRWG/ TU for review and approval. Value engineering changes will be incorporated into the final construction plans and cost estimates.
- August-October 2024. Complete and submit 95% design engineering plans and construction cost estimates to BRWG/ TU for review and approval.
- June-December 2024. The project plans and specifications will be well developed and ultimately completed during this time period.
- *TASK B—Plans and specification (and associated cost estimates) will be used for final permitting and clearances as well as to apply for construction funding from the same sources used to fund the development of plans/ specs; BoR AERP, CWCB, and CRD.*
- *TASK B--April 2025. Engineering firm will disseminate CD package to qualified contractors for bidding.*
- *TASK B—May 2025. Engineer, BRWG/ TU will conduct contractor site visits, provide CD package clarifications and accept contractor bids in June.*
- *TASK B—June 2025. Construction contractor award date.*
- *TASK B—July 2025. BRWG will complete contracts with construction contractor and provide a notice to proceed.*
- *TASK B—August-September 2025. Contractor will stage materials and mobilize equipment.*
- *TASK B—September-December 2025. Construction contractor will begin construction with the goal of being complete by year's end. If early winter conditions prevent completion, contractor will complete the project restoration in Spring 2025*

In order to expand stakeholder involvement to ensure participation by a diverse array of stakeholders, the study and design process will include the following outreach efforts:

Outreach Method	Details
Project Webpage	Frequently updated webpage to widely disseminate project status, plans, and designs
Print Outreach	Press releases and local newspaper (Summit Daily) exposes
Social Media	Updated periodically to inform followers of project status, findings, next steps, and opportunities to engage.
Surveys	Creel survey
Advisory Committee Meetings	2-3 Advisory meetings per year dive into details regarding research methodology, findings, and next steps.
Community Meetings	Community meetings offered in-person updates to interested stakeholders
Stakeholder Presentations	Ongoing presentations by stakeholders at project team meetings, and in public meetings update leadership.
Document Reviews	Stakeholders, advisors, and the public are provided draft documents for review prior to publication
Colorado Basin Roundtable Updates	Annual updates are offered to CBRT. The Colorado Water Plan project list was updated once to include additional projects and project updates as identified and refined by the IWMP
County Commissioner Updates	A minimum of once a year the County Commissioners are offered a detailed update on the IWMP, projects, and priority concerns.

Presidential and Department of the Interior Priorities

Climate Change

The BRWG and the Town of Silverthorne recognize the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our land, water, and biodiversity. The town of Silverthorne has adopted the Summit County Community Climate Action Plan:

Because of increased temperatures, water flow in the Colorado River is anticipated to reduce up to 40% by 2100.[21]

> *Our community is home to four internationally recognized ski resorts, year-round outdoor activities that attract millions of visitors annually, and stunning national forest. As a resort community heavily dependent on our natural resources, Summit County*

[21] Jonathan Overpeck and Brad Udall. (2017) Climate Change is Shrinking Our Rivers

already has been and will continue to be significantly impacted by the onset of climate change.

Average temperatures in Colorado have increased 2° Fahrenheit over the past 30 years, with an additional 2 to 5 degrees Fahrenheit warming expected by 2050.[22] In the fall when ski areas rely on snowmaking to cover the slopes, nighttime low temperatures are rising at a fast rate, delaying early season snowmaking and making it less efficient. At the end of the season, snow is melting 15 – 30 days earlier than in the late 1970s, cutting ski season short.[23] Springtime snowpack levels have decreased at most monitoring sites since 1955, and most projections for the state's river basins show decreasing annual runoff and less overall water supply.[24] Even the trees are feeling the heat. Summit County's forests have been especially affected by the mountain pine beetle – leaving our community at risk of significant fire danger and erosion.

If worldwide greenhouse gas emissions are not curtailed soon, Summit County could experience increased drought, heat, fire danger, and significantly more winter precipitation falling as rain rather than snow. In 2010, Colorado hosted 12 million skier visits (approximately 20 percent of total United States skier visits) which accounted for 37,000 employees earning $1.2 billion in wages and contributed $2.2 billion in value to the Colorado economy.[25] A reduction in skiers and winter tourists due to decreased snow pack could drastically affect our local economy and lifestyle. Lastly, a growing population across the state and in Summit County will place increased pressure on water supplies and could create conflict between water-intensive industries like recreation, agriculture, and municipal use.

As stated in the existing research and project benefits sections, seasonal flow constrictions at the Dillon Reservoir outflow is a primary concern of the IWMP. The root cause of these decadal flow restrictions and limited reservoir releases is reduced annual snowpack and precipitation events. With the average increase of 2° Fahrenheit, the accumulation and residence time of snowpack has decreased, leading to more infrequent reservoir spills during summer months (June-August). Notably, spills are more difficult to predict and manage around because of the increase volatility of local climate. Restoration of channel morphology intends to address decreased outflows and reduced timing and frequency of spills from Dillon Reservoir.

This project builds long-term climate resilience into the river system by narrowing and deepening the river channel which will reduce evaporative losses. Enhanced gravel bars will re-

[22] Natural Resources Defense Council and Protect our Winters. (2012). Climate Impacts on the Winter Tourism Economy in the United States
[23] Colorado Water Conservation Board. (2014). Climate Change in Colorado: A Synthesis to Support Water Resources Management and Adaptation
[24] United States Environmental Protection Agency. (2016). What Climate Change Means for Colorado
[25] Natural Resources Defense Council and Protect our Winters. (2012). Climate Impacts on the Winter Tourism Economy in the United States

introduce sediment, necessary for spawning material, to a sediment starved system which will support more resilient and productive fisheries. Enhanced vegetation along the riverbank will provide cover for aquatic species, introduce nutrients into an ecosystem deprived of leaf litter due to the bottom release impoundment. In general, this Habitat Restoration Project will enhance the rivers natural processes and re-size the river to accommodate reduced flow regimes as a result of anthropogenic influences such as climate change and trans-basin diversions.

In addition to improving the relationship between flows and channel morphology the project will also address non-point pollution inputs by modifying stormwater drainages to the river in the Town of Silverthorne. By incorporating detention/ retention bioswales and sand filters at storm sewer outfalls, the project will improve water quality and riparian vegetation at those locations. Improved/ increased riparian areas will result break down hydrocarbons, and sequester heavy metals in soils and vegetation.

Disadvantaged or Underserved Communities

This area of Summit County, CO cannot be characterized as disadvantaged or underserved according to the Climate and Economic Justice Tool. However, as a tourist destination on a major trans-continent interstate (I-70) the town of Silverthorne, with the Blue River running through it, serves populations from all walks of life primarily from the urban Front Range in Colorado. The area's proximity to many outdoor activities such as hiking, camping, and fishing that have a low barrier to entry/ cost for participation makes it likely that many visitors could be categorized as disadvantaged or underserved.

This project will improve public access along the reaches and particularly improve accessibility, educational opportunities, and exposure at the river recreation focused park. Signage will emphasize inclusion, safety, and sustainable angling practices. Economic growth will be realized as the fishery improves, especially if Gold Metal standards can be realized, and the attractive designation is reinstated. Recreational improvements for boaters will also bring more people to the river as enthusiasm grows for recreational participation, access, and spectator friendly events at in-river parks.

Tribal Benefits (None)

PROJECT BUDGET

Project Budget

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
STATE: CWCB Grant	$425,115
LOCAL: Town of Silverthorne CASH	$150,000
LOCAL: Colorado River District Grant	$425,115
NON-FEDERAL SUBTOTAL	$1,000,230
REQUESTED RECLAMATION FUNDING	**$1,857,570**
TOTAL PROJECT	**$2,857,800**

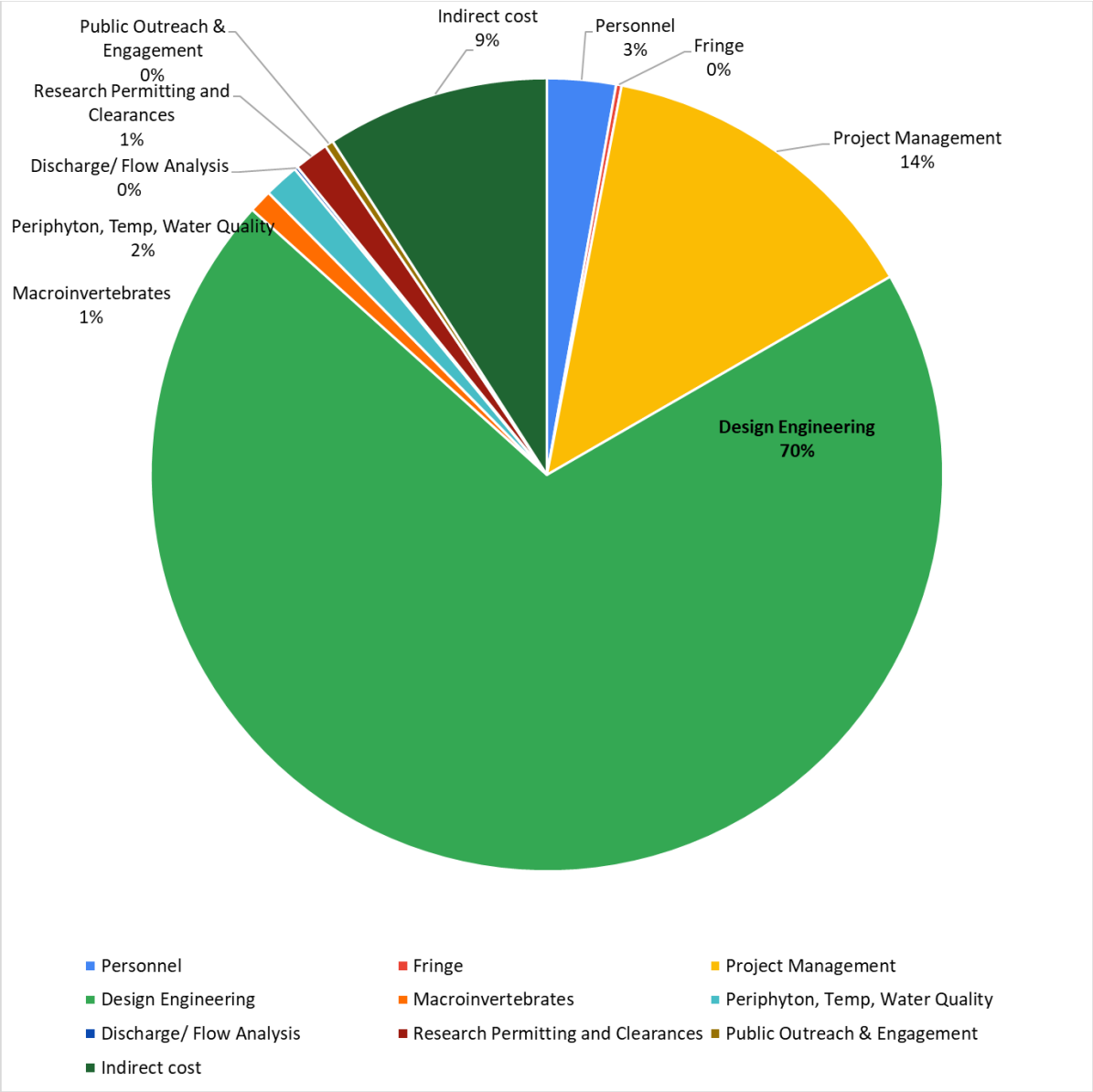
The Budget for this project has been carefully considered and vetted with the intention of creating viable cost estimates to accomplish all project goals. There will be no sub awards.

This budget does not include in-kind time from our Technical Advisory Team, which is a significant contribution, however those hours will not be tracked. Fish population estimates will be conducted as an in-kind service by Colorado Parks and Wildlife, this contribution benefit will not be tracked.

Budget estimates by category in the next section reference project tasks outlined here:

Task	Sub Task	Description
1	**Stakeholder Engagement**	
	1.a	Bi-annual public informational meetings
	1.b	Website development
	1.c	Public notice tool
	1.d	General outreach
	1.e	Technical Advisory Team
	1.f	Private landowners and business informational meetings
2	**Contractor Procurement**	
	2.a	Project Management consultant
	2.b	Engineering, Project Analysis and Design - Habitat Improvement
3	**Monitoring**	
	3.a	Macroinvertebrate sampling
	3.b	Periphyton sampling, temperature monitoring, water quality study
	3.c	Flow monitoring
4	**Fish Population Estimates**	
5	**Permitting and Compliance**	

Sub-task expenses as a percentage of total project cost are shown in the pie chart below.



See Project Implementation and Readiness to Proceed section above for a detailed timeline.

Budget Categories Narrative

A	**Personnel**	**$80,000**
B	**Fringe**	**$6,400**

The BWRG is managed by an Executive Director (ED), Kendra Tully, with support from an Advancement Director, and an actively involved Board of Directors. With this grant, the Executive Director will dedicate 1,000 hours annually specifically to this project. Tasks will include project oversight, stakeholder engagement, Technical Advisory Team management, outreach and education, RFP and contracts management including paying invoices. Cost is based on projected 2024-2025 salary of $40 per hour with 8% fringe, complaint with Colorado law. Over the two-year project period, it is expected that personnel hours are distributed among the project tasks as outlined in the following table:

Task	Description	Staff Member	# Hours	Price/Hour	Total Expense
1.a	Bi-annual public informational meetings, preparation, and public correspondence	ED	100	$40	$4,000
1.b	Website development oversight	ED	40	$40	$1,600
1.c	Public notice tool development oversight	ED	40	$40	$1,600
1.d	General outreach, citizen science & volunteer management, internship management	ED	300	$40	$12,000
1.e	Technical Advisory Team	ED	100	$40	$4,000
1.f	Private landowners and business informational meetings	ED	50	$40	$2,000
2.a	Project Management consultant RFP process and BRWG interface	ED	1000	$40	$40,000
2.b	Engineer RFP process and BRWG interface	ED	200	$40	$8,000
3.a	Macroinvertebrate sampling BRWG	ED	20	$40	$800
3.b	Periphyton sampling, temperature monitoring, water quality study	ED	20	$40	$800
3.c	Flow monitoring	ED	45	$40	$1,800
4	Fish Population Estimates	ED	45	$40	$1,800
5	Permitting and Compliance	ED	40	$40	$1,600
				PERSONNEL TOTAL	**$80,000**
				FRINGE RAGE	**8%**
				FRINGE TOTAL	**$6,400**

Funding will support this position part-time for 24 months, January 2024-December 2025, through the completion of Task A.

C	**Travel**	**$0**
D	**Equipment**	**$0**
E	**Supplies**	**$0**

All travel expenses will be included in contractual agreements (F). There is no need to purchase equipment nor supplies to complete this project. Any travel, equipment, or supply expenses incurred by contractors will be covered by the terms of their contract.

F	**Contractual Total**	**$2,316,600**

This project will consist of seven (7) contracts managed by the BWRG, described in detail below. The Phase II IWMP is nearly complete as we enter this project phase and the outcomes and results of this project along with Construction in the next phase will be reported in the Phase III IWMP report in 2026.

The timing of each of these contracts is discussed below.

F.1	Project Management Consultant	$390,000

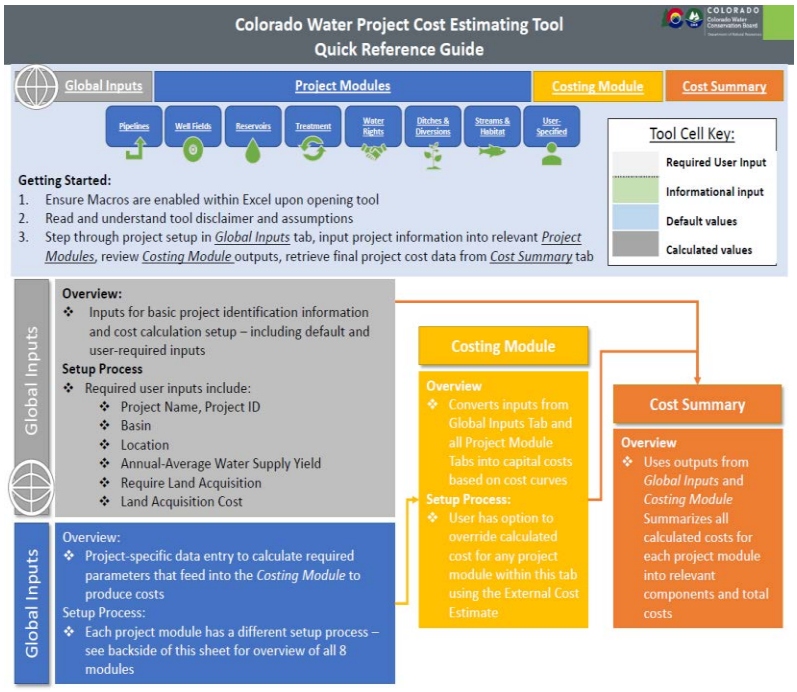
This consultant will be procured through an RFP process and will serve a technical role for project oversight and coordination. The Project Manager will have experience running projects of this scope and magnitude. Tasks will include the development of a detailed timeline, scheduling, creating the project checklist and ensuring completion. This consultant will interface with BRWG, coordinate between the technical leads (civil engineer, permitting specialist, biologists), and coordinate with agencies and municipalities to ensure contract work is performed to project specifications. The consultant will also support BRWG in review of invoices, and project deliverables. Expense is based on preliminary price analysis with average blended rates of $185/ hour assuming 20 hours per week. A 3% inflation rate was applied to the second year of consultant fees. The total expense is rounded to the nearest ten thousand to reflect an estimated consultant fee over the course of the 2-year project.

Task		Hours/week	# weeks	Blended hourly rate	Total Expense
2.a	Year 1	20	52	$185	$192,400
2.a	Year 2	20	52	$191	$198,172
				TOTAL	**$390,572**
				Rounded Expense	**$390,000**

An RFP for the Project Management Consultant will be issued immediately upon Grant Award, January 2024, with the intention of having the Project Management Consultant under contract within a few weeks so they can assist with the RFP selection process and contracting the award for the design engineer (F.2). This contract will be completed when construction designs and cost estimates are completed 100% and Task A is complete.

F.2	Lead Design Engineer	$2,000,000

A single engineering contract will be procured through a qualifications-based RFP process. This firm will prepare and deliver project design plans and specifications for construction. Tasks include topographic survey, H & H modeling, design engineering, preparation of drawings, preparation of technical specifications and estimating construction costs for habitat improvement with consideration for stormwater outfall improvements. Engineers will explore the feasibility of boat-focused in-stream recreation park designs that integrate fish passage with boating recreation.



At the time of this application only a preliminary concept plan and river health assessment report are available APPENDIX 4.

An 'Opinion of Probable Cost' was prepared for the Restoration Master Plan following the guidance outlined in the *Colorado Water Project Cost Estimate Tool* (CET).[26] The CET was developed for the Colorado Statewide Water Supply Initiative (SWSI) update to provide a common framework for the basin roundtables (BRTs) to develop planning-level project cost estimates. Its targeted use is for project concepts for which cost estimates have not yet been developed. The unit construction costs from the CET and quantities developed from the Blue River Conceptual Restoration Master Plan (Restoration Master Plan) were used as a means to estimate costs associated with Phase A, Study and Design.

[26] https://dnrftp.state.co.us/CWCB/Technical Update to Water Plan/1. Technical Update Documentation/Volume2-Section5_CostingTool.pdf

The CET defines stream restoration in four levels, ranging from Level 1 being minimal restoration within the riparian buffer such as grading and revegetation, to Level 4 which reflects channel realignment and bank reconstruction. These four levels of restoration align in general conformance with the Restoration Master Plan, which also defines a range of restoration efforts from minimal restoration such as channel bank improvements to a high level of effort for channel reconstruction. The CET construction costs were adjusted for contingencies assigned by the CET.

To evaluate the accuracy of the cost estimates from the CET, the estimates were compared to the actual construction costs for similar projects recently completed in Colorado. The first comparable projects referred to as ILVK, required channel bank reconstruction along the Colorado River near Kremmling. ILVK is similar to Level 2, as defined in the CET, and includes bank stabilization, revegetation, and installation of rootwads. Level 3 was compared to projects constructed in Colorado's more suburban areas where restoration followed the 2013 floods and includes a higher level of restoration, compared to the ILVK. Level 3 projects included the construction of point bars, pools, bank protection, revegetation, and some channel reconstruction. Level 4 is compared to construction upstream on the Blue River, in Breckenridge, which includes channel realignment and restoration in a dredge rock environment requiring channel realignment, grading, revegetation, instream structures, and overbank grading and revegetation.

Overall, there is a general agreement between the two sets of unit prices, varying from about 13 to 18% (=/-). Unit prices for each level of restoration were averaged between the CET and actual construction costs and applied to the Blue River Habitat Restoration Project sites to develop an estimate for Task B construction. The total construction costs include a 5% fee for construction observation. At the time of this application only a preliminary concept plan and river health assessment report were available, APPENDIX 4.

Task	River Section Reference	River Section Description	Restoration Level
2.b	2.1.1	Below dam recreation park	4
2.b	2.1.1	Below dam to downstream of Straight Creek	1
2.b	2.1.2	Through town recreation park	3
2.b	2.1.2	Nike bridge to Silverthorne Pavilion	3
2.b	2.1.3	Pavilion to Blue River Bridge	2
2.b	2.2.5	USFS and DNR	2
2.b	2.2.6	Campground reach	2
Approximately 3 Miles of Restoration			

The RFP for the Lead Design Engineering Firm will be issued immediately upon Grant Award, January 2024, with the intention of having the selected Lead Design Engineer Consultant under

contract before the end of February and completed 100% construction ready plans and cost estimates by the end of December 2024.

F.3	Macroinvertebrates	$27,000

The macroinvertebrate study is ongoing and will be continued throughout the project. The cost is based on an existing contract with Timberline Aquatics.

Task		LS	Annual Contract Estimate
3.a	Year 1	1	$13,500
3.a	Year 1	1	$13,500
		TOTAL	**$27,000**

Samples are collected once a year in September-October with a report to follow in January.

F.4	Monitoring: Periphyton, Temperature, Water Quality	$40,600

The Periphyton, Temperature and Water Quality (pH, DO, conductivity) studies are ongoing and will be continued throughout the project. The cost is based on the existing contract with Trout Unlimited.

Task		LS	Annual Contract Estimate
3.b	Periphyton sampling Year 1	1	$9,300
3.b	Periphyton sampling Year 2	1	$9,300
3.b	Temperature monitoring Year 1	1	$3,000
3.b	Temperature monitoring Year 2	1	$3,000
3.b	Water quality sampling Year 1	1	$8,000
3.b	Water quality sampling Year 2	1	$8,000
		TOTAL	**$40,600**

Temperature is sampled year-round with remote sensors; Water Quality is sampled during spring runoff; and Periphyton is sampled once a year in September-October, with reporting in January.

F.5	Discharge & Temperature Monitoring	$4,000

The discharge and temperature studies are ongoing and will be continued throughout the project period. Tasks include the review of temperature and flow data relative to standards that support a wild fishery. Cost is based on the existing contract with KSQD Fish. Additional flow tracking will be done through volunteer citizen science efforts. Volunteer program expenses are listed under personnel.

Task		LS	Annual Contract Estimate
3.c	Year 1	1	$2,000
3.c	Year 1	1	$2,000
		TOTAL	**$4,000**

Discharge and temperature are monitored year-round with reporting in January.

F.6	Permitting, NEPA, and Cultural Clearances	$40,000

Due to federal funding requirements clearances will be necessary throughout the project regardless of land ownership. The BRWG will collaborate with the USFS and Reclamation to determine the level of clearances required and hire a consultant through an RFP process. The recipient of the award will research permitting requirements and navigate potential environmental and cultural compliance clearances. Initial conversations with USFS have indicated the likelihood of a CE and possibly outsourcing cultural clearances to avoid internal capacity constraints.

The RFP for the Consultant to research Permitting and Clearance requirements will be issued immediately upon Grant Award, January 2024, with the intention of being under contract before the end of February and collaborating with Reclamation and otherwise researching permitting and clearance needs before June 2024, thus enabling an informed Task B proposal in 2024.

F.7	Web site developer	$10,000

In collaboration with Summit County Outdoor Coalition, the project will integrate a new online public notice tool. The goal is to develop and advertise a public notice web-based platform to inform of reach assessments, planned turbid days, project progress, etcetera. Public outreach and educational messaging are integral to a successful project through publicly accessible and visible river properties.

To ensure timely and accurate public information is accessible throughout the project, an active presence online is a necessary communication tool. Website upkeep and continued development fees include domain ownership and web hosting as well as personnel time, supplies and equipment needed to maintain the Blue River Habitat Restoration Project page of blueriverwatershed.org.

Task	Description	Payee	Unit	Expense	Quantity	Total Expense
1.b	Website development	Web Developer	$/hour	$120	12	$1,440
1.b	Domain & Hosting Year 1	Weebly	fees	$200	1	$200
1.b	Domain & Hosting Year 2	Weebly	fees	$200	1	$200
1.c	Public notice web-based platform development	Web Developer	$/hour	$120	53	$6,360
1.e	Public notice web-based platform update	Web Developer	$/hour	$120	15	$1,800
					TOTAL	**$10,000**

The web site is maintained year-round with performance reports delivered quarterly and more frequently upon request. Expense is based on preliminary price analysis with average rate of $120/ hour assuming 80 hours. The web developer will be selected by sole source procurement, consistent with BRWG procurement policy.

G	**Construction**	**$0**

Construction is not a part of this project.

Anticipated fundraising for construction will coincide with AERP (Task B) funding cycle in 2024.

H	**Other**	**$0**

No other costs are anticipated for this project.

I	**TOTAL DIRECT CHARGES**	**$2,598,000**
J	**INDIRECT COST (**10% *de minimis***)**	**$259,800**

The BRWG does not have a federally negotiated indirect cost rate agreement and is therefore requesting a 10% *de mimimis* rate of modified total direct costs.

K	**TOTAL PROJECT BUDGET**	**$2,857,800**

COMPLIANCE–ENVIRONMENTAL & CULTURAL

This application is for Task A, Study and Design, and will conduct research on permitting and potential environmental compliance requirements. Anecdotal consultation with USFS, CPW and available online data informs the following statements.

- The proposed project will positively impact the surrounding environment. Aquatic and riparian habitat will benefit from the habitat restoration and water quality will improve with improvements to stormwater outfall drainages.
- In this phase of the project (Task A) there will be no field work. Project design will minimize the impacts of project construction including limits of disturbance, minimizing turbidity and use of endemic plants for revegetation.
- There are no known Federal threatened or endangered species nor designated critical habitat in the project area. If during the NEPA clearance process any are discovered, the project will be designed and scheduled such that no disturbances are made.
- The Blue River falls under CWA jurisdiction as “Waters of the United States”. The project will minimize transitory short term impacts and is anticipated to dramatically improve long term stream health and longevity in compliance with WOTUS.
- The Dillon Dam upstream of the project area was constructed by Denver Water in 1963 and is an earth-fill dam, 5,888 feet long by 231 feet above the Blue River streambed. This

reservoir diverts water from the Blue River Basin through the Harold D. Roberts Tunnel under the Continental Divide into the South Platte River Basin to serve the front range of Colorado. This project has no influence on the dam infrastructure operation nor maintenance.

- There are no known structures eligible for listing on the National Register of Historic Places, this project will consult with a cultural resources specialist at the local Reclamation office or the State Historic Preservation Office to confirm.
- There are no known archeological sites in the proposed project area.
- There will not be any adverse effects on low income nor minority populations.
- There are no Indian sacred sites or tribal lands in the project area.
- The project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

National Environmental Policy Act

This project crosses through ~0.75 miles of USFS land on river left at the bottom end of the Lower Reach, while the rest of the project is on private land, much of it owned by the Town of Silverthorne. The Upper reach is almost entirely on USFS property. BRWG understands that Reclamation has sole discretion to determine what level of environmental NEPA compliance is needed (CE, EA/FONSI, or EIS) and that Reclamation will coordinate with USFS. Initial conversations with USFS indicate internal capacity to prioritize this project reach in the next Schedule of Proposed Actions (SOPA) and the likelihood of a Categorical Exclusion.

National Historic Preservation Act

BRWG understands that to comply with Section 106 of the National Historic Preservation Act (NHPA), Reclamation must consider whether a proposed project has the potential to cause effects to historic properties, before it can complete an award. There are no known historic properties or cultural resources (historic or prehistoric districts, sites, buildings, structures, or objects) that qualify for inclusion in the National Register of Historic Places. The USFS indicates the possibility of working with an outside consultant on the archaeological clearances due to internal capacity and staffing limitations. The BRWG will work with all landowners and Reclamation to complete the Section 106 process.

Endangered Species Act

Pursuant to Section 7 of the ESA, BRWG understands Reclamation is required to consult with the United States Fish and Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service to ensure any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or destroy or adversely modify any designated critical habitat. Initial consultations indicate an absence of ESA species and critical habitat in the project area.

The BRWG will work with Reclamation to complete the ESA consultation.

PERMITS & APPROVALS

It is anticipated this project will require a Federal USACE 404 permit as well as compliance with Colorado 1041 regulations. Specifics of these permits and their requirements will be researched in this project, Task A Study and Design.

Due to federal funding requirements clearances will be necessary throughout the project regardless of land ownership. The BRWG will collaborate with the USFS and Reclamation to determine the level of clearances required and hire a consultant through an RFP process. The recipient of the award will research permitting requirements and navigate potential environmental and cultural compliance clearances. Initial conversations with USFS have indicated the likelihood of a CE and possibly outsourcing cultural clearances to avoid internal capacity constraints.

The RFP for the Consultant to research Permitting and Clearance requirements will be issued immediately upon Grant Award, January 2024, with the intention of being under contract before the end of February and collaborating with Reclamation and otherwise researching permitting and clearance needs before June 2024, thus enabling an informed Task B proposal in 2024.

APPENDIX 1: LETTERS OF PROJECT SUPPORT

1. TU
2. CTU
3. Denver Water
4. Blue Valley Ranch
5. USFS
6. Summit County commissioner

Richard Van Gytenbeek, Colorado River Basin Outreach Coordinator, Colorado Water Project

May 30, 2023

Ms. Katherine Tucker
Water Smart Program Analyst
Bureau of Reclamation
Denver, CO
ktucker@usbr.gov
303-445-2586

RE: Blue River Watershed Group-BoR AERP Grant Application-Blue River Habitat Restoration Project.

Dear Katherine

On behalf of Trout Unlimited (TU), I would like to offer our enthusiastic support for the Blue River Watershed Group's (BRWG) application to the Bureau of Reclamation's, Water Smart-Aquatic Ecosystem Restoration Program for the Blue River Habitat Restoration Project. This project represents the culmination of seven years of effort on the part of both organizations. A brief historical summary of this collaborative effort follows:

2015. Colorado adopts its first statewide water plan. A key environmental provision is the introduction of Stream Management Plans (SMPs), or as they would evolve, Integrated Water Management Plans (IWMPs). These SMP/IWMPs were designed to bring consumptive and non-consumptive water users into a collaborative process to complete community driven water plans for their respective basin.

2016. Colorado Parks and Wildlife biologists remove most of the Blue River between Dillon and Green Mountain Reservoirs, from their list of Gold Medal waters (a designation held since 1983 and only bestowed on self-sustaining trout populations meeting certain population parameters). In response the Colorado Game Commission creates the Blue River Enhancement Workgroup (BREW) to determine the reasons for the declining fishery and possible solutions to address the decline (TU and BRWG participate). While many biotic factors were postulated, none of these factors were funded for study.

2018. TU and the BRWG partnered to complete an IWMP for the Blue River basin and include a portion of that initial funding to study the biotic factors identified by BREW. BRWG applies for and receives BoR Water Smart Watershed Management grant funding to hire a full time director to manage the IWMP and community outreach.

2019. TU and BRWG make application to the Colorado Water Conservation Board (CWCB), Colorado River District (CRD) and other funders to begin the IWMP.

2020-22. The IWMP grant funding is approved for 2020. The first year focuses on community outreach and development of a large stakeholder group. The first year studies and report are general in nature, assessing all facets of water use in the basin and making recommendations for future goals and projects to address these issues. Community support is positive, however, the community directs the project team to focus future efforts on determining the reasons for the declining fishery and to make recommendations on how to reverse the downward trend. The project team makes application to BoR-Water Smart, CWCB and the CRD for additional funding to support in-depth biotic studies of the river in 2021 and 2022. Those studies and annual reports are completed.

2023. The IWMP final report on field studies (2020-22) and project recommendations is in its final form. The highest priority project selected to address the Blue River fishery is to design and restore 3 miles of the Blue in two separate reaches. To initiate the design of this project BRWG is making application to the BoR-AERP, CWCB and CRD grant programs. Once that design is complete BRWG will make application to those same funders to complete construction.

The Blue River IWMP process has been a successful community driven effort made possible to date by generous funders such as the BoR, CWCB, CRD and others. These funders have been the backbone of this effort, supporting the outreach components, literature research and field studies necessary to support this project recommendation. Both BRWG and Trout Unlimited appreciate your support of a project from its inception and again TU wishes to express our support for this grant application to help complete the Blue River community's first IWMP project. Thank you for your consideration.

Sincerely,

Richard Van Gytenbeek.

May 30, 2023
Ms. Katherine Tucker
Water Smart Program Analyst
Bureau of Reclamation
ktucker@usbr.gov

RE: Blue River Habitat Restoration Project—BoR AERP Grant Application

Dear Katherine,

On behalf of Colorado Trout Unlimited (CTU), I would like to offer our enthusiastic support for the Blue River Watershed Group's (BRWG) application to the Bureau of Reclamation's, Water Smart-Aquatic Ecosystem Restoration Program for the Blue River Habitat Restoration Project. This project represents the culmination of seven years of effort on the part of both organizations, along with TU national.

In 2016 the Colorado Parks and Wildlife Commission delisted most of the Blue River between Dillon and Green Mountain Reservoirs, from their prized status as Gold Medal waters (a designation held since 1983 and only bestowed on trout populations meeting certain population parameters for high biomass and numbers of large fish). In response Colorado Parks and Wildlife started to investigate the reasons for the declining fishery and possible solutions to address the decline. While many biotic factors were postulated, none of these factors were funded for study, and so the BRWG and TU stepped in to launch an assessment and planning process, the Blue River Integrated Water Management Plan (IWMP).

The first year of working on the IWMP (2019-2020) focused on community outreach and development of a large stakeholder group. Also in the first year studies and report were general in nature, assessing all facets of water use in the basin and making recommendations for future goals and projects to address these issues. With those results the stakeholders directed the project team to focus future efforts on determining the reasons for the declining fishery and to make recommendations on how to reverse the downward trend.

Earlier this year (2023) the IWMP final report on field studies and project recommendations was completed. The highest priority project selected to address the Blue River fishery is to design and restore 3 miles of the Blue in two separate reaches.

The Blue River IWMP process has been a successful community driven effort made possible to date with generous funders: BoR WaterSMART CWMP grant funding, twice; Colorado Water Conservation Board (CWCB); Colorado River District (CRD) and other funders including individual donors. Both BRWG and Colorado Trout Unlimited appreciate the support of the Bureau of Reclamation and express our support for this grant application to help complete the Blue River community's first IWMP project. Thank you for your consideration.

Sincerely,
Nancy
Nancy M. Johnston
Conservation Projects Coordinator

DENVER WATER

1600 West 12th Ave
Denver, CO 80204-3412
303.628.6000
denverwater.org

May 30, 2023

RE: Blue River Habitat Restoration Project

Dear AERP Grant Review Committee,

With this letter Denver Water conveys its support of the Blue River Watershed Group's (BRWG) application to the Bureau of Reclamation's WaterSMART *Aquatic Ecosystem Restoration Projects for Fiscal Year 2023* titled, "Blue River Habitat Restoration Project". The Project is part of a large-scale, collaborative effort to restore fish habitat and ecosystem function along three miles of the Blue River below the Dillon Dam in Summit County.

This project is an outcome of the Blue River Integrated Water Management Plan. The project was identified as a Tier 1 priority in the State Water Plan's list of Proposed Projects. The scope of work for the upcoming phase includes stakeholder outreach, design engineering, pre-construction monitoring, project permitting, and compliance. The deliverables associated with this phase ready the project for construction.

Denver Water has joined numerous other entities in participating in the development of the Restoration Project for the past three years through the Integrated Water Management Plan, and is supportive of this project's continuation. That said, Denver Water endorses this project and supports continued habitat restoration along the Blue River. We respectfully request that the Bureau of Reclamation give the BRWG application favorable consideration. If you have any questions regarding our support, please do not hesitate to contact me.

Sincerely,

Nathan Elder
Manager, Raw Water Supply

nathan.elder@denverwater.org
303.628.6110

BLUE VALLEY RANCH
Conservation for Wildlife & Agriculture

Blue Valley Ranch
6915 Highway 9
Kremmling, CO
May 31, 2023

Bureau of Reclamation
WaterSMART AERP Grant Review Committee

Dear AERP Grant Review Committee,

It is our pleasure to write a letter to support the Blue River Watershed Group's (BRWG) application to the Bureau of Reclamation's WaterSMART *Aquatic Ecosystem Restoration Projects for Fiscal Year 2023* titled, "Blue River Habitat Restoration Project". The proposed project is part of a largescale, science based collaborative effort to restore fish habitat and ecosystem function in the Blue River.

As you may know, Blue Valley Ranch is the largest private landowner on the Blue River, and we have invested tens of millions of dollars to enhance fish habitat on the Ranch. In addition to this effort, Blue Valley Ranch has contributed financially to the development of this Restoration Project for the past three years through the Integrated Water Management Plan and is currently invested in the project's continuation.

Blue Valley Ranch endorses the direction of the project and values the continued progress of the Blue River habitat restoration. We respectfully request that the Bureau of Reclamation give the BRWG application favorable consideration. If you have any questions regarding our support of this project, please do not hesitate to contact me at the number below.

Sincerely,

Brien Rose

Director of Natural Resources

Blue Valley Ranch

(970) 531-6223

USDA United States Department of Agriculture | Forest Service | Dillon Ranger District

680 Blue River Parkway
P.O. Box 620
Silverthorne, CO 80498-0620
970-468-5400
Fax: 970-468-7735

File Code: 2600
Date: May 31, 2023

Bureau of Reclamation
WaterSMART AERP Grant Review Committee
Project Title – Blue River Habitat Restoration Project
Applicant – Blue River Watershed Group

Dear AERP Grant Review Committee,

This letter transmits White River National Forest and Dillon Ranger District's support of the Blue River Watershed Group's (BRWG) application to the Bureau of Reclamation's WaterSMART Aquatic Ecosystem Restoration Projects for Fiscal Year 2023 titled, "Blue River Habitat Restoration Project". The Project is part of a large-scale, exemplary, collaborative effort to restore fish habitat and ecosystem function within three miles of the Blue River.

This project is an outcome of the Blue River Integrated Water Management Plan. The project was identified as a Tier 1 priority in the State Water Plan's list of Proposed Projects. The scope of work for the upcoming phase includes stakeholder outreach, design engineering, pre-construction monitoring, project permitting, and compliances. The deliverables associated with this phase ready the project for construction.

The Dillon Ranger District as a member of the Blue River Technical Advisory Team supports programs and projects such as the Blue River Restoration Project to support the health of local aquatic ecosystems. The USFS has participated as a stakeholder and technical advisory member to the Blue River Technical Advisory Team.

The WRNF Dillon Ranger District is supportive of the Blue River Watershed Group's Blue River Restoration Project. The WaterSMART grant funding would assist with completing all required NEPA analysis, rendering this project shovel ready.

We respectfully request that the Bureau of Reclamation's WaterSMART AERP Grant Review Committee give this application favorable consideration. If you have any questions in regards to our support, please do not hesitate to contact Mark Hane, East Zone Aquatic Biologist, mark.hane@usda.gov or by phone at 970-485-1311.

Sincerely,

Adam Bianchi

ADAM BIANCHI
District Ranger

SUMMIT COUNTY
COLORADO

BOARD OF COUNTY COMMISSIONERS

970 453 3402 ph | 970 453 3535 f
summitcountyco.gov

208 East Lincoln Ave. | PO Box 68
Breckenridge, Colorado 80424

May 25, 2023

Bureau of Reclamation
WaterSMART AERP Grant Review Committee

Dear AERP Grant Review Committee,

This letter transmits Summit County's support of the Blue River Watershed Group's (BRWG) application to the Bureau of Reclamation's WaterSMART Aquatic Ecosystem Restoration Projects for Fiscal Year 2023 titled, "Blue River Habitat Restoration Project". The Project is part of a large-scale, exemplary, collaborative effort to restore fish habitat and ecosystem function within three miles of the Blue River.

This project is an outcome of the Blue River Integrated Water Management Plan. The project was identified as a Tier 1 priority in the State Water Plan's list of Proposed Projects. The scope of work for the upcoming phase includes stakeholder outreach, design engineering, pre-construction monitoring, project permitting, and compliances. The deliverables associated with this phase ready the project for construction.

Summit County Government has contributed financially to the development of the Restoration Project for the past three years through the Integrated Water Management Plan and is invested in project continuation.

Summit County faces a multitude of threats to our shared water resources; climate change, state-wide population growth and development, increased recreation-based tourism, and wildfire impacts to watersheds pose immediate and long-term challenges to water quality and quantity. Maintaining healthy, thriving riparian and wetland habitats requires continued strategic management and public investment. Recreation, tourism and agriculture – all vital components to Summit County's economic and community health - require thoughtful, diverse approaches to water management. Collaboration with local, state and federal agencies, water managers and providers, environmental groups, and industry and land developers is critical to successful programs and projects.

Summit County Government endorses the direction of the project, values the continued progress of the Blue River habitat restoration. We respectfully request that the Bureau of Reclamation give the BRWG application favorable consideration. If you have any questions in regards to our support, please do not hesitate to contact me further.

Sincerely,

Joshua Blanchard
Summit County Commissioner/Chair

APPENDIX 2: LETTER OF PARTNERSHIP

From the Town of Silverthorne, Category A Partner to the Blue River Watershed Group

SILVERTHORNE
COLORADO

Public Works • 264 Brian Avenue • P.O. Box 1309 • Silverthorne, Colorado 80498

Partner: Town of Silverthorne

Date: May 26, 2023

Project Lead: Blue River Watershed Group

Address: PO Box 867, Silverthorne, CO 80498

RE: Letter of Partnership WaterSMART: Notice of Funding Opportunity No. R23AS00106

Dear Bureau of Reclamation:

I am writing to document the Town of Silverthorne's partnership with Blue River Watershed Group for activities related to the Blue River Habitat Restoration Plan in Summit County, Colorado. The Town of Silverthorne, which qualifies as a Category A applicant, has been working collaboratively with Blue River Watershed Group and numerous other stakeholders through the Integrated Water Management Plan to determine the limiting factors within the Blue River fisheries north of Dillon Dam.

The Town of Silverthorne understands that Blue River Watershed Group is submitting a proposal to the Bureau of Reclamation's WaterSMART Aquatic Ecosystem Restoration Projects for Fiscal Year 2023 titled, "Blue River Habitat Restoration Project". The Town of Silverthorne is familiar with the proposal, understands the general expectations, and supports the efforts to address the natural resource concerns identified herein.

Task A of the Blue River Habitat Restoration project will finalize detailed engineering design plans. The design will likely propose improvements to pool habitat, the removal of fish passage barriers, definition and improvements of public access locations, introduction of additional spawning gravel bars, and revegetation of eroding banks. The design will integrate the Town's stormwater utilities into the restoration plan to best incorporate wetland stormwater treatment into the river system. Engineers will explore designs and feasibility for a recreation park that works within the fishery habitat needs and offers in-stream boating opportunities at optimal flow regimes. The project will

SILVERTHORNE
COLORADO

Public Works • 264 Brian Avenue • P.O. Box 1309 • Silverthorne, Colorado 80498

require public outreach and stakeholder involvement, pre and post river monitoring efforts, and a detailed investigation into permitting and compliances.

As an involved stakeholder in the Integrated Water Management Plan's investigation into the cause of the declining fishery on the Blue River, the Town of Silverthorne contributed $45,000 throughout the three phases of investigation and reporting. Further, the Town of Silverthorne will contribute financial support to the current project's Task A engineering phase as identified in the application budget and letter of financial commitment.

If you have any questions, please do not hesitate to contact me at tdaugherty@silverthorne.org or (970) 262-7353.

Best Regards,

Tom Daugherty

Public Works Director

APPENDIX 3: OFFICIAL RESOLUTION FROM BLUE RIVER WATERSHED GROUP

BRWG
BLUE RIVER WATERSHED GROUP

Blue River Watershed Group Board of Directors Resolution
Authorizing Application to Bureau of Reclamation Notice of Funding Opportunity No. R23AS00106, Aquatic Ecosystem Restoration Projects for Fiscal Year 2023

"Blue River Habitat Restoration Project"

Whereas: Blue River Watershed Group (BRWG) has prepared an application for funding to improve fish habitat through a multi-stakeholder project;

The Board of Directors of Blue River Watershed Group, upon motion made, seconded, and duly carried unanimously, it is hereby resolved that:

1. Blue River Watershed Group is authorized to submit an application to the Bureau of Reclamation for grant assistance for the above-titled project.
2. Blue River Watershed Group has prepared and reviewed the application, and Jay Pansing, President of Blue River Watershed Group Board of Directors, is authorized to sign the application and enter into a funding agreement, if awarded.
3. Any grant assistance received under this application will be used for costs associated with implementation of the above-titled project. Blue River Watershed Group is authorized to commit to the provision of in-kind contributions and other resources identified in the funding application, and will work with Reclamation to timely meet all deadlines associated with award of funding
4. Blue River Watershed Group acknowledges that if the Bureau of Reclamation approves grant assistance for the project, the Bureau of Reclamation will pay Blue River Watershed Group only on a reimbursement basis. Blue River Watershed Group understands reimbursement basis means that Blue River Watershed Group will only request payment from the Bureau of Reclamation after Blue River Watershed Group incurs eligible and allowable costs and pays them.

Blue River Watershed Group
Board of Directors

Attested by: _____

Position: President

Date: 5/29/2023