



**BIG HOLE**  
**WATERSHED COMMITTEE**  
*Conservation Through Consensus.*

**RESTORATION PLANNING:  
HOLDING BACK SNOWPACK IN  
THE BIG HOLE**

USBR WaterSMART Phase I Grant Application

**Big Hole Watershed Committee**

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# 1. Technical Proposal and Evaluation Criteria

## 1.1. Executive Summary

### **Proposal Date**

December 4, 2023

### **Organization**

Big Hole Watershed Committee, 501(c)(3) non-profit  
Divide, Beaverhead County, Montana

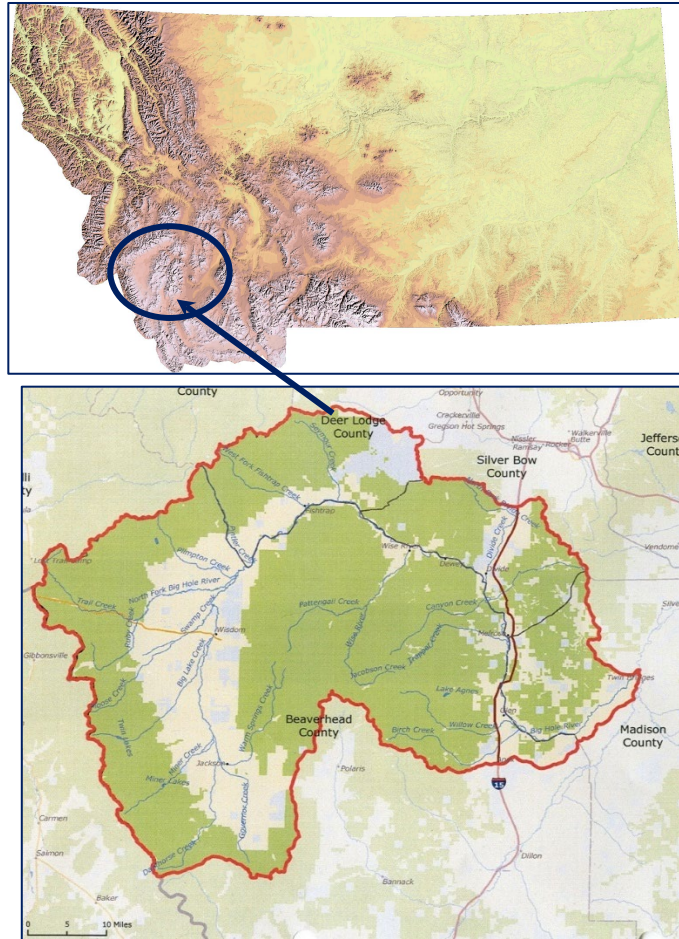
The 22-member Governing Board of the Big Hole Watershed Committee proposes to create an updated Watershed Restoration Plan (WRP) centered on enhancing hydrologic resilience and improving water quality in our basin for all water users and wildlife. This plan will deliver an innovative framework for watershed planning that characterizes and analyzes existing and potential conditions for water storage at the HUC-10 sub-watershed scale. It will also prioritize projects that enhance ecosystem functions, particularly water capture and retention, for the benefit of water quality as well as groundwater returns and late-season flows. Led by a landowner collaborative who will guide project prioritization most relevant to the needs of the people most affected by water availability, it also has the support of the US Forest Service, Montana Department of Natural Resources' (DNRC) water planning department and its lead hydrologist working on Arctic grayling recovery, the Montana Bureau of Mines and Geology, The Nature Conservancy's Sage Grouse Partnership, the Montana Watershed Coordination Council, the University of Montana Western and the Big Hole River Foundation. This project will take three years to complete, with work occurring from Spring 2024 through December 2027.

### **Federal Lands/Facilities**

Approximately 68% of the land area in the Big Hole watershed is on Federal land, with 60% on US Forest Service within the boundaries of the Beaverhead-Deerlodge National Forest (Forest) and the remainder on Bureau of Land Management (BLM), with a small acreage at the National Park Service's Big Hole National Battlefield. The Forest and BLM will provide input into all aspects of restoration planning for lands under their management and in accordance with their forest management directives. BHWC currently holds multi-year Partnership Agreement contracts with both these federal agencies, and the regulatory and programmatic priorities of these agencies will be reflected in our WRP. This watershed planning effort will identify a myriad of potential projects within the Forest and on BLM grounds to achieve water quality and quantity objectives. Through the process of collaboration and prioritization of projects, NEPA processes will be catalyzed at the appropriate scales to get projects shovel-ready.

## 1.2. Project Location

Our project covers the entirety of the Big Hole River watershed of Southwest Montana, a HUC-8 basin (10020004) as defined by the US Geological Survey (USGS). The Big Hole is the most upstream headwater of the Upper Missouri River, contained within four counties, draining an area of nearly 2 million acres into a 156-mile, free-flowing river system. The upper watershed is entirely within Beaverhead County, proceeding east through Anaconda-Deer Lodge County, Silver Bow County, and southeast into Madison County. After Federal lands, the next largest ownership is private land at 26%, predominantly along valley bottoms. State-owned lands comprise an additional 6%, predominantly in Wildlife Management Areas. A total of 4% of the total land cover in the Big Hole is under conservation easements.



The Big Hole is the largest stronghold for the last fluvial population of grayling in the lower 48 states. Over 80% of the private land ownership in the upper valley is enrolled in a voluntary conservation program for arctic grayling recovery with the US Fish and Wildlife Service (USFWS) called the Candidate Conservation Agreement with Assurances (CCA). In 2014, and again in 2020 the CCA's successful water conservation and habitat projects was credited as part of the reason for the USFWS's decision not to list the Arctic grayling under the Endangered Species Act, a designation that would come with federal regulations for river stakeholders. In the middle and lower sections of the river, the majority of large landowners with the oldest water rights participate in our Drought Management Plan (DMP), which was first published in 1997 and is still reviewed and updated annually. The first of its kind in the state of Montana, the DMP designates voluntary water conservation targets and mandatory fishing restrictions during periods of drought to protect the Big Hole River fishery.

With no large reservoirs, the Big Hole River and tributaries supply all the water needs for irrigated agriculture, the dominant private land use, as well as up to 15 million gallons per day of water (equivalent to 40-60% of the municipal water supply) for the 34,000 residents of Butte, Montana. The pipe and pump network connecting the Big Hole to Butte represents the first ever cross-continental water conveyance project in the United States, dating back to the mining boom of the early 20<sup>th</sup> century.

### 1.3. Applicant Category

The BHWC seeks WaterSMART Phase I funding as an **existing Watershed Group**. Established in 1995, we are a local, grassroots watershed group and central hub of diverse viewpoints on resource and community conservation concerns. Our work is comprehensive, spanning rivers, floodplains, uplands, communities, wildlife, water, and fisheries. We provide education, facilitate conversations and planning for issues in our area, and deliver meaningful restoration.

Our organization, directed by a 22-member Governing Board, has always made decisions by consensus. Our board represents diverse interests including ranching, water utilities, local government, local businesses, sportsmen, conservation groups, fishing outfitters, and concerned citizens. Representatives from local, state, and federal agencies participate as technical advisers. We work closely with other conservation organizations as well as local, state, and federal agencies on watershed restoration and management plans. We are committed, by our charter, to:

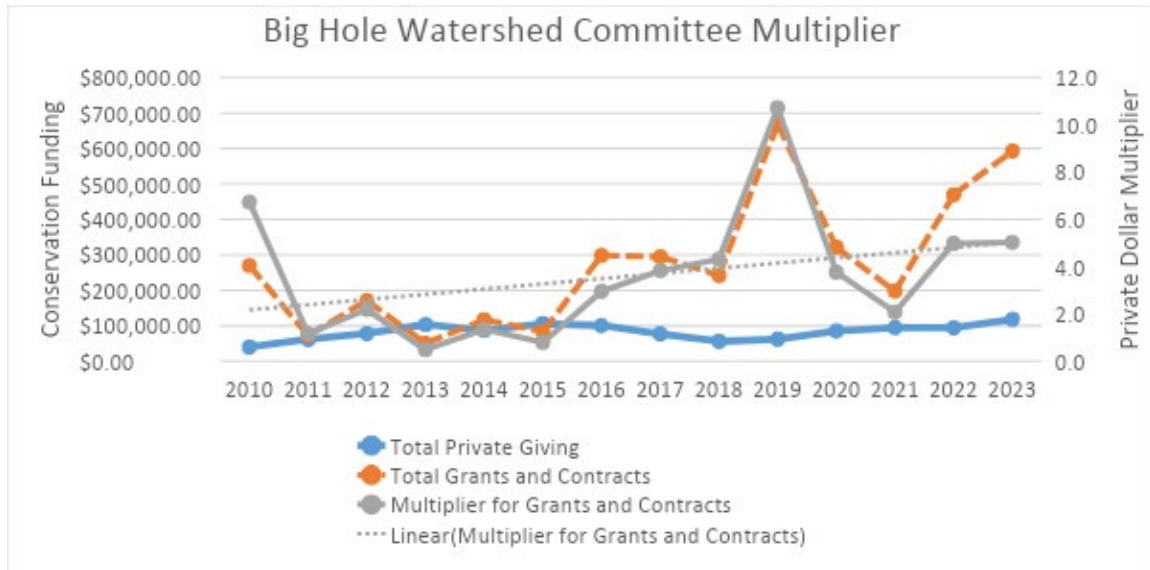
- Involving all interests that are willing to seek practical solutions that benefit all interests;
- Promoting a common understanding among individuals and groups with diverse viewpoints;
- Fostering the ability of local individuals and groups to create effective solutions to local problems; and
- Seeking long-term solutions based on sound information.

### 1.4. Eligibility of Applicant

Begun in response to the Big Hole River running dry at the Wisdom bridge for 24 days in 1988, as well as the threat of litigation to list the grayling as an endangered species, our organization convened experts to better understand our shared water resources and created a space for convening stakeholders interested in finding solutions. Since 1995, we have met every third Wednesday of the month dedicated to this mission. Since 2016, our organization has steadily increased its capacity to deliver important projects for the water resources of the Big Hole, particularly restoration and conservation actions that lead to improvements in ecosystem functions and late-season water (see graph below). For more on our eligibility see attached documentation. We have held several WaterSMART grants with the Bureau of Reclamation in recent years:

- 2021-2023: BoR WaterSMART Phase I: Elkhorn Mine and Mill Cooperative Restoration Planning. Created a multi-stakeholder group to design a remedy for the Superfund site.
- 2020-2022: BoR WaterSMART Phase I: Planning and Stakeholder Engagement for Water Quantity in the Lower Big Hole Project (\$100,000)-used to address water scarcity issues in the lower section on the Big Hole watershed.
- 2019-2021: BoR WaterSMART Phase II: Funding for implementation of stream channel restoration project on French Creek in the middle section of our watershed (\$86,000).

- 2017-2018: Sub-award from the Montana DNRC for BOR Drought Contingency Planning Grant (\$20,000) – used to support and operate the Big Hole River Drought Management Plan and participate in Upper Missouri Headwaters Basin drought planning.
- 2008 BOR Emergency Drought Relief Act



### 1.5. Project Description

This project will finalize an updated Watershed Restoration Plan organized in a sub-watershed framework, fully accounting for agency and landowner priorities and centered on creating watershed resilience by [Holding Back Snowpack](#) in our freestone river system. This project builds from an effort begun under an earlier WaterSMART grant between 2020-2022 that developed a foundational geospatial project and produced sub-watershed maps and data tables upon which we will build this WRP.

Our existing Watershed Restoration Plans no longer serve the needs of our watershed group and stakeholders for several reasons. Due to the urgency of grayling recovery and the onset of the CCAA program, a TMDL and subsequent WRP were written for the upper Big Hole (2012) separate from a second TMDL and WRP for the middle and lower sections of our river (2013). After over a decade of success, the CCAA program is reaching the end of its initial period of performance, and CCAA partners want to include BHWC more actively in conservation in the upper river. Many of the highest priority projects identified in our Watershed Restoration Plan for the Lower/Middle Big Hole have been completed. The Deep Creek HUC-10 sub-watershed was identified as our highest priority drainage in that document. For the past decade we catalyzed over a dozen projects to address sediment and metals concerns in every major drainage of the basin with many partners. Together we were able to get a Superfund site checked off by the EPA on the State-owned Mt. Haggin Wildlife Management Area (RDU 15 of the Clark Fork River Superfund site). We documented sediment reductions over 150% of the TMDL recommendations for that drainage, improved in-stream habitat and made over 50 miles of headwater tributary streams passable and stocked with only native fish as part of the second largest native fish restoration in Montana history (and the largest on public land). Much of our

project history can be seen at [www.bhwc.org/projects](http://www.bhwc.org/projects). In addition, we implemented projects that installed new headgate infrastructure on several of the highest priority structures identified in earlier prioritization efforts.

We now want to apply the lessons we have learned in this sub-basin effort, a conservation framework we refer to as [Holding Back the Snowpack](#), to the other 12 sub-watersheds in the Big Hole. Through this three-year project, our water storage subcommittee will coordinate an effort to bring together as much data as needed to be able to compare/contrast water storage opportunities across HUC-10 watersheds, fill data gaps that emerge, convene stakeholders and write a plan that will guide our work for the next decade plus.

### Project Goals

Our specific goals for this project will be to:

1. Digitize, organize and consolidate existing water data into a coherent sub-watershed framework;
2. Analyze data at the HUC-10 scale to compare sub-watersheds for different types of projects and benefits and assess their potential contributions to late-season streamflow and enhancements to the resource;
3. Fill data gaps in water monitoring by deploying water measurement on priority tributaries in partnership with state and federal agencies; and
4. Execute a stakeholder driven process and decision-making framework to prioritize projects and finalize a model Watershed Restoration Plan.

### Approach

The project goals outlined above fall under **TASK B: Watershed Restoration Planning** activities highlighted in the NOFO. To guarantee success of the project, we will take the following approaches.

#### *Goal 1: Consolidate and Digitize Data*

As a watershed group that has funded studies about our resources for years, we are sitting on large amounts of relevant information about our water resources, much of which is in print or PDF form. Due to many factors including lack of funding, capacity, or focusing our time on delivering important projects, we have not had the resources to put all this good work and science into a framework where it can be used in a coherent decision-making process at a relevant scale for conservation planning. In this first step of our project, we will extract and digitize relevant water quality and quantity data from 28 years of our own projects and studies into a HUC-10 level organizational framework focused on major tributaries. This work will be led by our staff and Board of Directors, ensuring our watershed planning is driven by landowners with the most stake in conservation outcomes. These data will be combined with relevant data in our existing TMDLs and Watershed Restoration Plans, but consolidated into one report and organized by 13 HUC-10 sub-watersheds.

This data organization will begin in spreadsheet format in a manner that it can be easily pulled into our existing spatial project for analysis in Goal 2. Examples of some of the reports in our possession that will be reviewed for relevant data to be digitized and included into our WRP framework include:

-Marvin and Voeller (2000). *Hydrology of the Big Hole Basin and an Assessment of the Effects of Irrigation on the Hydrologic Budget.*

-DTM Consulting, Inc.; Mainstream Restoration, Inc.; and Portage Environmental, Inc. (2005). *Big Hole Water Storage Scoping Project and Water Management Review; Final Report: Water: Management Alternatives.*

-Portage Environmental, Inc.; DTM Consulting, Inc.; and Mainstream Restoration, Inc. (2005). *Big Hole Water Storage Scoping Project and Water Management Review, Final Report: Reservoir Storage Alternatives Report.*

-DTM Consulting (2006). *Vegetation Change and Impacts to the Annual Water Budget, Big Hole River, Montana.*

-Abdo, Ginette and Roberts, Mike (2008). *Ground Water and Surface Water in a Study Area within the Upper Big Hole River Basin. Montana Bureau of Mines and Geology and Montana Department of Natural Resources.*

-PBSJ (2008). *Lower Big Hole Irrigation Infrastructure Survey and Prioritization.*

-Oasis Environmental (2010). *Lower Wise River Assessment Survey and Prioritization.*

-Confluence Consulting, Inc. (2012). *Lower Big Hole River Corridor Assessment.*

-Big Hole Watershed Committee (2013). *Lower Wise River Water Resources Investigation.*

-Sladek, Helen (2013). *Big Hole River Trend Analysis of Water Temperatures Relative to Air Temperatures and Flow in the Big Hole River.* Beaverhead Deerlodge National Forest; United States Forest Service.

-Big Hole Watershed Committee (2019). *Big Hole River Drought Resiliency Plan.*

### *Goal 2: Water Storage Suitability Analysis and Mapping*

Once our data has been consolidated in the first year of the project, we will hire GIS specialists to integrate these data into the geospatial project developed under a previous BoR WaterSMART project. Contractors will perform a variety of analysis of this data at the tributary and sub-watershed (HUC-10) scale to assess the existing and potential capacity for natural and hard storage alternatives, and in particular to allow for comparison of these sub-watersheds for project prioritization. The data sets that will be used to support this analysis include:



- 10-meter resolution USGS Digital Elevation Model
- High-resolution LIDAR elevation data (pending delivery in Summer 2024)
- NHD hydrography data
- USFWS NWI wetlands
- Cadastral and land management datasets
- GAP landcover mapping
- Montana State Library water rights and infrastructure data
- MTFWP beaver inventory data (2024)
- Utah State University BRAT outputs and component data layers
- Conifer encroachment data estimates provided by The Nature Conservancy at the HUC-12 scale
- USGS and DNRC stream gage data

Following this analysis, our contractor will characterize potential restoration projects by project type and anticipated benefits, produce conceptual design specifications and drawings, and produce estimates of water storage capacity resulting from proposed treatments.

Some of the analysis we foresee under this task has been identified already, for example, overlaying the existing Beaver Restoration Tool

(BRAT) model for the Big Hole with an upcoming data layer contracted by Montana FWP of beaver presence. The presence of beaver will serve as an important filter for the high priority beaver restoration sites from the BRAT model. Further, the proximity of existing beaver populations to high priority and low-hanging fruit projects identified in the BRAT will allow us to quickly map out the highest priority locations to expand LTPBR projects on private and public lands.

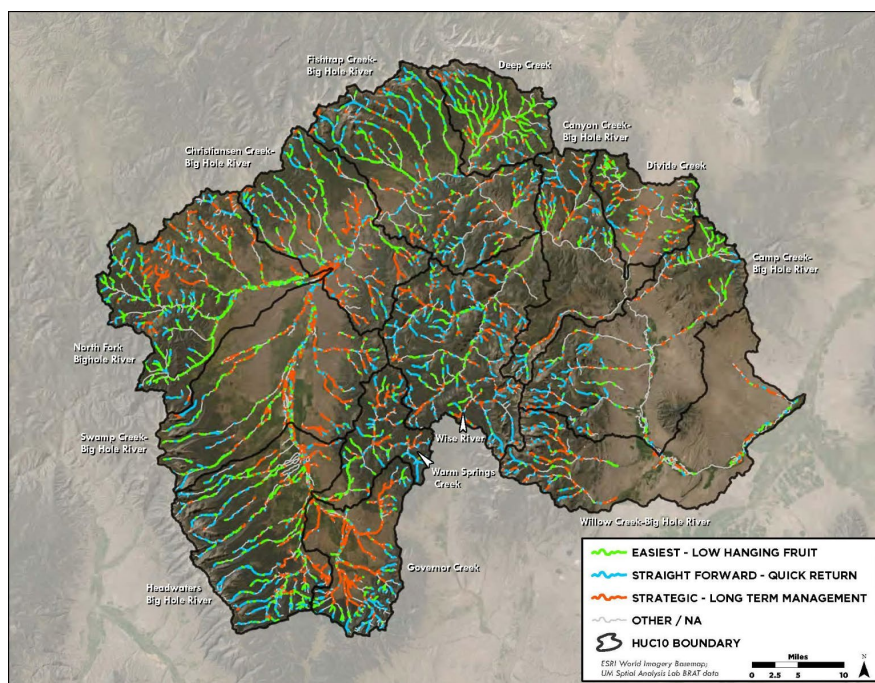


Figure SEQ Figure \\* ARABIC1. Beaver Restoration Assessment Tool developed under previous BoR planning effort. This data will be refined by currently occupied beaver habitat spatial layers to be developed by Montana FWP in 2024.

### *Goal 3: Enhance water monitoring to fill critical data gaps*

In partnership with the DNRC and partners in the CCAA program, we will purchase and deploy up to 15 pressure transducers and staff gages on tributaries and canals where critical data gaps exist for water supply and delivery. In cooperation with willing landowners, the US Forest Service and DNRCs hydrologist, we will provide additional staffing capacity to deploy and monitor these pressure transducers over three irrigation seasons.

Stream monitoring in the first year will require at least 3-4 site visits per irrigation season for each new monitoring site. We will take sufficient cross section and stage measurements to develop rating curves for each tributary or canal. Combined with the data collected at over 120 points on streams and ditches as part of the CCAA program, this additional monitoring will allow us to more fully understand how much surface water is available and where it is used on the landscape. The DNRC will add this monitoring data into its Aquarius program and quality control all data consistent with its CCAA responsibilities. An additional outcome of this field-based effort will be a survey and assessment of the irrigation infrastructure at points of diversion on US Forest Service property. We will evaluate the condition of headgates, their ease of operation, and the presence or absence of measuring devices in order to determine where efficiencies can be gained in our water delivery.

Capacity funding will also provide for active monitoring of our current stream gage network and seasonal communications through our Drought Management Program.

### *Goal 4: Engage a Stakeholder Process and Complete a Watershed Restoration Plan*

This goal funds the writing of a final WRP for the Big Hole. We will convene our Board of Directors and numerous agency partners at multiple times throughout the project to review the data consolidated in the prior three project goals. Together, we will develop criteria for the evaluation of each sub-watershed's potential for different types of water enhancement projects and come to agreement on the most viable types of projects and best locations for those projects.

With support from our GIS contractor hired under Goal 2, we will overlay state and federal priorities in fisheries, forestry and range, water quality, and boundaries such as wilderness areas to develop a 10 to 15-year pipeline of projects vetted by our local watershed collaborative and our State and Federal agency partners.

The final Watershed Restoration Plan will be organized by HUC-10 sub-watersheds while also addressing the 9 points of an approved Watershed Restoration Plan outlined by the Montana Department of Environmental Quality and EPA's guidance on such plans in order for projects identified there within to be eligible for Clean Water Act 319 funding, a source BHWC has accessed dozens of times over our history.

The completed WRP will provide specific projects to be pursued from the top to the bottom of our watershed, including:

- High elevation meadow restoration using LTPBR
- Ephemeral drainage restoration using Zeedyk structures
- Lake, small dam, and reservoir enhancements
- Wetland/infiltration basins, creation, and enhancement
- Aspen restoration
- Vegetation management and conifer encroachment
- Managed aquifer recharge
- Cloud seeding

## 2. Evaluation Criteria

### 2.1 Evaluation Criterion A – Watershed Group Diversity and Geographic Scope

#### 2.1.1. Sub-criterion No. A1. Watershed Group Diversity

BHWC is represented by a 22-member board of directors representing ranching, sportsmen, conservation groups, recreation interests, outfitters, local governments and utilities, local businesses, and landowners. Since its inception, the composition of our board has been committed to a broad-based representation of all relevant stakeholders in the Big Hole watershed. We have active working relationships with many of the relevant landowners, state and federal agencies, academic researchers, conservation groups, tour guides, grazing associations, irrigation districts, guides/outfitters, and recreation groups in the upper watershed. For nearly three decades, BHWC has taken a leadership role in enhancing the vitality of the Big Hole River, the surrounding watershed and communities, and the diverse and rare wildlife that inhabits the Big Hole Valley. By proactively working to conserve this precious resource, BHWC is enriching one of Montana’s last, best places for local residents and visitors from around the world.

Our focus is on finding common ground on the actions and projects most likely to support the long-term resilience of our water resources. These common ground priorities will be reflected in the projects defined in the WRP deliverable for this project.

In the late 1980s to mid-1990s, the Big Hole region saw the impacts of prolonged drought in the Big Hole valley, including water shortages, river closures and major impacts to fish populations. Instead of just hoping for better days ahead - or engaging in bitter water rights disputes - founding members established BHWC in 1995 and released the state’s first completely voluntary Drought Management Plan in 1997. Today, BHWC and the Big Hole River Drought Management Plan are used nationally as a model for how innovative partnerships can create powerful stewardship initiatives. We have also taken the lead on critically important landscape and species conservation programs.

BHWC has also taken the lead in hosting management programs to address livestock-predator conflict; land use planning to guide appropriate, safe development and landscape protection; vital habitat restoration projects; and serving as a resource for public information about our watershed. Resource managers present on a monthly basis about the resources of the

watershed. By spearheading these initiatives, we are helping to redefine how various interest groups can coexist and thrive across Montana and the West. BHWC's leadership and ability to work closely with diverse stakeholders has helped conserve Montana's natural legacy and the rural character of the watershed for current and future generations. Our collaborative, proactive approach to water management, watershed restoration, and wildlife protection ensure that local residents benefit from a thriving economy while practicing environmental stewardship. That balanced approach allows for a deep connection to the land and inspires action to protect the region's natural resources.

### 2.1.2. Sub-criterion No. A2. Geographic Scope

The BHWC operates throughout the entire Big Hole watershed and has a long history of broad project support from the tributaries to the downstream terminus. The size of the watershed lends itself to dramatically different landscapes, from

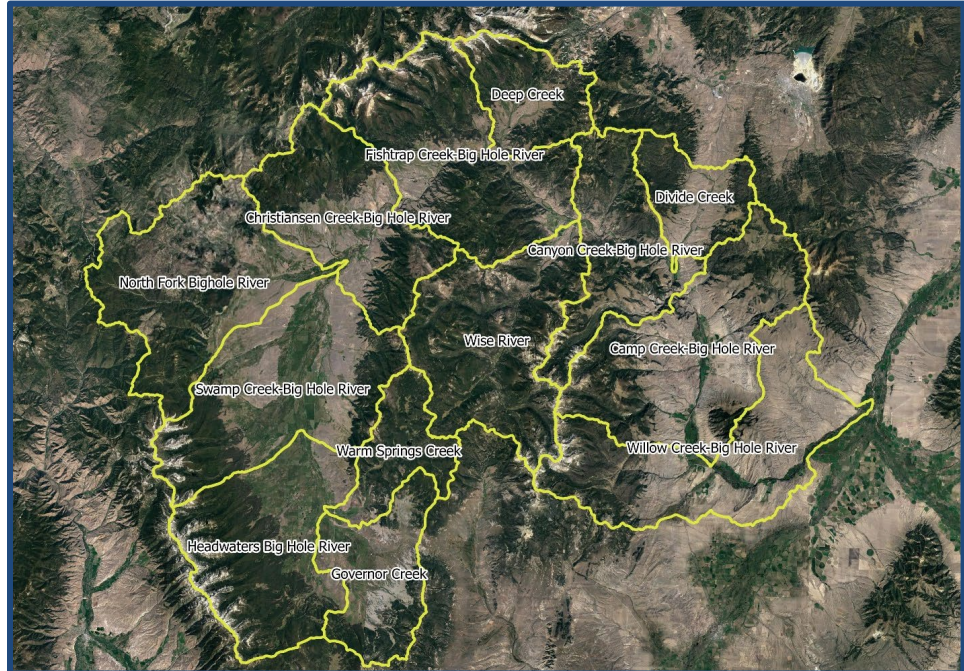


Figure 1. Big Hole Watershed and its HUC-10 subwatersheds

high desert at its confluence with the Jefferson River to the snow-filled upper Big Hole Valley. The crux of this project is to produce a watershed restoration plan and decision-making framework tailored to the unique characteristics of each sub-watershed. Our project with the Bureau of Reclamation between 2020 and 2022, though hampered substantially by Covid-19, did establish the baseline HUC-10 level characterization of our watershed on which we will build out this restoration plan.

Based on GIS analysis conducted in that report, for example, we know that the Warm Springs and Divide Creek sub-watersheds account for 2% each of the total stream lengths with listed water quality impairments. Meanwhile the North Fork Big Hole River and Camp Creek drainages account for 15% and 13%, respectively, of the total length of impaired waters. We also know from this analysis that the largest land use categories in the North Fork are "Recently Disturbed (urbanized areas)" at 37% and Forest and Woodland at 34%. Meanwhile Camp Creek is nearly half in Shrubland, Steppe (48%), and Forest and Woodland (33%).

Characterizations such as this provide us a first-cut in our planning and we have much more data already sorted by HUC-10, including diversion structures, canals, hydrology, wetlands and

existing water storage in the form of lakes, dams and reservoirs, as summarized below. Much of this public data now needs to be vetted with landowners and ground-truthed. The University of Montana Western is available to support through targeted applied student projects.

Row Labels	Lake Sum of Area (Acres)	Count of Lakes	Count of Dams	Reservoir Sum of Surface Area (Acres)	Count of Reservoirs
Camp Creek-Big Hole River	271.7	23	3	556	15
Canyon Creek-Big Hole River	103.5	17	1	27	24
Christiansen Creek-Big Hole River	122.2	13	--	1	2
Deep Creek	51.4	10	1	.1	2
Divide Creek	19.4	8	1	26	2
Fishtrap Creek-Big Hole River	187.0	19	--	59	1
Governor Creek	14.4	2	--	34	1
Headwaters Big Hole River	615.4	61	4	67	3
North Fork Big Hole River	137.5	5	1	330	1
Swamp Creek-Big Hole River	284.2	14	4	189	6
Warm Springs Creek	18.8	2	--	--	--
Willow Creek-Big Hole River	231.1	18	7	256	11
Wise River	290.5	30	--	--	--
<b>Grand Total</b>	<b>2347.2</b>	<b>222</b>	<b>22</b>	<b>1546</b>	<b>68</b>

Figure 3. Summary of lakes, dams, reservoirs by HUC-10 to be analyzed for potential expansion of water supply

## 2.2 Evaluation Criterion B – Developing Strategies to Address Critical Watershed Needs

### 2.2.1 Sub-criterion No. B1. Critical Watershed Needs or Issues

Our project will model a locally-led process by which we accomplish both our organization’s critical needs as well as statewide objectives expressed by our Governor and those in our State’s new Drought Management Plan. As the local convener of natural resource projects in the Big Hole for nearly three decades, our team will provide coherence and coordination for conservation projects at scale and across ownerships. We are not commissioning new data, but putting 28-years of prior investment to good use and charting a path for ourselves, funders and partners to achieve meaningful watershed resilience.

The first critical need for our watershed group is to get ahead of grant cycles by defining, at the local level, conservation priorities that lead to resilient hydrological systems that supply the water needed for all users. Having addressed major issues in the highest priority sub-watershed in our existing WRP, **we are in need of a new guiding document around which to focus our efforts and those of our partners across agencies and NGOs.** While we are under no illusion that our small watershed group will drive agency priorities, we do have a long track-record which reaffirms that when we apply consistent coordinating capacity to complex projects, agency personnel and funders join the effort with their expertise and dollars to achieve

commonly held resource objectives. We have seen this with the last BoR Watershed Management Grant we secured for our work on the Elkhorn Mine and Mill. Capacity support from the BoR for BHWC kept the Forest Service and partners engaged through critical data collection efforts, and we are now on our way to a remedial design and large-scale fundraising by the Forest to get that Superfund site cleaned up.

The urgency of the moment to enhance water availability in our watershed was made starkly clear between 2021 and 2023. In 2021 we suffered the worst drought the watershed has seen in over 50 years. While the precipitation year was worse than in 1988, our collaborative processes and voluntary conservation efforts prevented the river from going dry. [Our Life in the Land Film](#) captures the essence of our approach. Then in 2023, trout populations in the Big Hole were reported to be at the lowest levels since Montana FWP began counting. The fishing community called it an “All Hands-on Deck” moment and called our Governor in for a meeting to address the issue. We feel this project answers that call by convening our stakeholders around a science and data-driven framework that results in a list of projects that will collectively address the challenges of changing precipitation and snowpack conditions.

The BHWC is working to shift its drought management model from a crisis, reactionary response to a climate informed, pro-active course for survival through a comprehensive water storage program that implements and communicates the co-benefits of low-tech storage solutions on public and private lands, including release of groundwater through removal of encroaching conifers. In parallel we need to be considering hard storage projects that enhance existing water storage capacity, whether through constructed wetlands, groundwater infiltration projects, dam and lake expansion, and managed aquifer recharge.

This “all-in” approach was echoed by Montana’s Governor, who visited our watershed in August. “All forms of storage,” he said, “should be on the table.” In addition, the State of Montana’s Draft 2023 Drought Management Plan urges in its recommendations, precisely the direction we are taking with this project:

**“1. Water storage and delivery: maximize water storage and delivery by enhancing existing built storage, expanding natural storage, and assessing conveyance infrastructure”**

**“B. Assess opportunities to expand surface water storage projects”**

**“C.(A) use and incentivize nature-based solutions to maximize water capture and retention”**

The timing of this project is right for several other reasons:

- We have an existing grant with the Montana Watershed Coordination Council supporting us to identify landowners with senior water rights on priority tributaries that are willing to work with us to enhance storage of all kinds.
- Montana Bureau of Mines and Geology is undertaking a statewide exercise to establish maps of areas of highest suitability for managed aquifer recharge. Areas of highest suitability will be added to our sub-watershed mapping and prioritization.

- The State of Montana is completing a LiDAR inventory for Beaverhead and Madison County that will be available for public use in summer of 2024. This data will greatly facilitate the second goal of our project to assess potential storage sites of all types.
- Montana FWP has commissioned a mapping exercise to identify beaver-occupied habitats across the state. Available summer, 2024, this data will be analyzed over our Beaver Restoration Assessment Tool model to prioritize high alpine meadow storage projects.
- Despite the 2020 ruling by the US Fish and Wildlife Service to not list the Arctic Grayling under the Endangered Species Act the issue is being litigated again. Any efforts to enhance conservation in the Big Hole will support the grayling’s recovery and prevent its listing, which is considered an existential threat to ranchers.

### 2.2.2 Sub-criterion No. B2. Project Benefits

The result of this effort will be a completed WRP that sets our organization up with a 10-15-year pipeline of projects that will collectively provide ecological resilience to the effects of climate change, especially changing precipitation and snowpack. It will also provide local landowners and stakeholders with a framework through which to place their priorities at the forefront of conservation planning. From the mountain peaks to in-stream habitat, this effort will produce a planning document pinpointing project locations for solutions from nature-based LTPBR, vegetation management, reservoirs and hard storage, managed aquifer recharge, and irrigation efficiency improvements.

Our deliverable document will be an updated WRP organized into HUC-10 restoration plans that identify priority projects in each sub-basin. We want these products to kick off NEPA/MEPA processes at partner agencies that establish a pipeline of “shovel-ready” projects for our watershed.

Our project benefits include:

- A road map for action at a scale that is relevant to local landowners and resource managers. Local involvement and input in this process will prioritize projects most relevant to water needs felt by those whose livelihoods depend on the waters of the Big Hole;
- Consolidated data sets that will be available to agency partners and landowners for years to come for accessing funds for conservation;
- A model framework for watershed planning that can be duplicated by watershed groups throughout the State of Montana;
- Substantive scientific communications about our watershed through monthly meetings and online platforms that link actions on the ground with resource benefits.

The last time we focused on a sub-watershed through a Watershed Restoration Plan we achieved basin-wide restoration of the Deep Creek drainage, facilitating the second largest fish restoration project in the State’s history. As Arctic grayling and Westslope cutthroat trout inhabit and reproduce in the over 50 miles of headwater tributaries in that drainage, we will have created a native fish stronghold as well as immeasurable natural resource and recreation

benefits for everyone to enjoy. The benefit of this project is to replicate that success across the 12 other sub-watersheds in the Big Hole.

### 2.3. Evaluation Criterion C – Readiness to Proceed

Our organization has had substantial success operating large grant programs over the past 7 years. In many ways this project is already underway. One of the goals of our 2020 grant through the BoR was to develop the framework for this WRP document. While hampered by COVID-19, we did establish a foundational geospatial project and data tables upon which to build. Our existing MWCC grant is supplying us with capacity for landowner outreach to determine where we have willing cooperators, a key aspect of project prioritization.

Along with these, we have Partnership Agreements in place with the BLM and US Forest Service, a long-term contract with Montana Fish, Wildlife and Parks, a strong base of support from the 2,000 landowners of the Big Hole, as well as numerous NGO partners and a University ready to pitch in with student projects and labor. This grant will provide funding for us to hire additional capacity to develop this restoration plan and install water monitoring to fill data gaps. Our partners at DNRC are maxed-out on the sites they monitor, but have agreed to train our technician and house collected data in their Aquarius software, consistent with their CCAA program. An estimated project schedule is provided below.

#### Building on Relevant Federal, State or Regional Planning Efforts:

As mentioned in answers above and reflected in letters of support, this work is directly tied to and supportive of:

- CCAA program to recover the Arctic grayling;
- Priorities outlined in the DNRC's newest Drought Management Plan;
- US Forest Service goals to enhance high alpine meadow storage opportunities;
- Montana DEQ efforts to update its TMDL data sets and the Big Hole River Foundation's water quality sampling efforts;
- Montana FWPs inventory of beaver occupied habitat;
- Montana Bureau of Mines and Geology characterization of baseline conditions for managed aquifer recharge locations across the State;
- The Governor of Montana's stated priority that "All storage" should be "on the table";
- US Forest Service and BLM's goals to address conifer encroachment across its properties;
- The Nature Conservancy's prioritization of restoration in the sage steppe



Table 3. Proposed project schedule

Project Objectives	Spring 2024	Summer 2024	Fall/Winter 2024	Spring 2025	Summer 2025	Fall/Winter 2025	Spring 2026	Summer 2026	Fall/Winter 2026
<b>Data Consolidation and Digitization</b>									
<i>Hire technician and engage UM Western professors and students</i>									
<i>Deep dive into past reports, digitization of data</i>									
<i>Finalize existing data tables for GIS</i>									
<b>GIS Analysis</b>									
<i>Procure and contract GIS specialist</i>									
<i>“spatialize” data spreadsheets into GIS project</i>									
<i>Natural and hard water storage analysis</i>									
<i>Conceptual restoration design specs and drawings, estimates of storage capacity</i>									
<i>On-call GIS services and map production</i>									
<b>Stream Flow Monitoring- Filling data gaps</b>									
<i>Coordinate with DRNC and CCAA program on protocol and site selection</i>									
<i>Equipment Purchase and Deploy</i>									
<i>Streamflow monitoring and communication (DMP)</i>									
<i>Technician training</i>									
<i>Stream flow monitoring</i>									
<b>Stakeholder Engagement and WRP Writing</b>									
<i>Convene Water Storage Subcommittee, agencies on project priorities</i>									
<i>Writing and delivering WRP document</i>									

## 2.4. Evaluation Criterion D – Presidential and Department of the Interior Priorities

### 2.4.1. Climate Change

The Big Hole River Watershed is considered one of the highest resiliency landscapes in a priority area for climate adaptation in the upper Missouri River basin. The climate change scenario for Southwestern Montana and the UMH points to a warmer and wetter future. As the high mountain snowpack decreases, the timing, frequency and velocity of runoff will be variable, most likely starting and ending sooner in the year. The security and survival of the Big Hole valley and its inhabitants (human and animal) are tied to the quantity of cold water stored in the landscape and the timing of water releases. Water supply and quality have been a central focus of the Big Hole Watershed Committee's (BHWC) work since its inception in 1995 and it serves as a regional model and point of reference for innovative grassroots, voluntary, and landowner-driven conservation.

Drought in the late 80s and mid 90s sparked local ranchers, residents, state managers and recreationists to come together under a plan of shared sacrifice, shared success with the state's first voluntary Drought Management Plan. The 30 years of work before and since then were focused on crisis management and single-species restoration, inducing human responses to prevent water shortages, a dry river bed, and Endangered Species Act listing of the Arctic grayling and the potential of state control of water. Crisis was averted. Native fish are on the incline and instream flows have some capacity to weather severe drought. But perpetual cycles of crisis management and shared sacrifice are not adaptations to the prospect of earlier snowmelt and lower late-season flows.

Water storage and nature-based improvements to Holding Back Snowpack are among the most viable avenues to mitigate for the changes in precipitation patterns and snowpack. Our watershed planning process will prioritize all possible projects with meaningful impacts to late season water resilience for the benefit of all water users.

### 2.4.2. Benefits to Disadvantaged, Underserved, and Tribal Communities

#### *Disadvantaged and Underserved Community Benefits*

The rural communities of the Big Hole are underserved by Federal resources for many services, from broadband to healthcare services to access to funding for conservation projects. Our nearly 2-million-acre watershed is only inhabited by 2,000 people. But our water resources provide 40-60% of the municipal supply for the city of Butte, MT and the fishery attracts over 120,000 angler days per year, a number that has doubled in the past 10 years. While these visitors to our watershed sustain local businesses, their impact on the fishery has contributed to the low trout numbers we see today. Decreased recreation greatly affects local businesses and the local communities that hold them up.

Due to time, financial, and technical capacity constraints, our communities traditionally do not readily access the resources of the Federal Government and typically lack ways to integrate their operations with broader planning efforts, often feeling blindsided by federal actions on lands in which they lease grazing land. Without the support of a trusted local partner like

BHWC, the ocean of Federal dollars currently available for conservation will likely pass them by. Our proposal puts our locally-rooted landowners at the table and charting the direction THEY want to see for landscape resilience. Their priorities will be a key criterion used in the decision-making framework. Projects will enhance water supply and thus the fishery and local communities.

*Tribal Benefits*

The Big Hole was traditionally a shared hunting ground among many native tribes. There are no tribal boundaries within or adjacent to the Big Hole. However, our plan will highlight traditional indigenous land management practices that are widely held by our landowner base as positive for the landscape, including ecosystem services provided by beaver, fire on the landscape, respect for water and collaborative decision-making.

### 3. Project Budget

#### 3.1. Budget Proposal

*Table 4. Total Project Costs & Funding Sources*

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$297,830.60
Costs to be paid by the applicant	\$0.00
Value of third-party in-kind contributions	Not Calculated
<b>TOTAL PROJECT COST</b>	<b>\$297,830.60</b>

*Table 5. Itemized Proposed Project Budget*

WORK ITEMS (ITEMIZE BY CATEGORY)	ESTIMATED QUANTITY	UNIT DESCRIPTION	COST/UNIT	TOTAL COST
<b>Goal: Data Digitization</b>				
<b>Salaries and Wages: BHWC Personnel</b>				
Hours: Project Administration	300	\$/Hour	\$40.02	\$12,006.00
Hours: Project Coordination	250	\$/Hour	\$30.16	\$7,540.00
Hours: Associate Director	100	\$/Hour	\$32.48	\$3,248.00
Hours: Technician	800	\$/Hour	\$20.00	\$16,000.00
<b>Goal Subtotal</b>				<b>\$38,794.00</b>
<b>Goal: Water Storage Suitability Analysis and mapping</b>				
<b>Salaries and Wages: BHWC Personnel</b>				
Hours: Project Administration	200	\$/Hour	\$40.02	\$8,004.00
Hours: Project Coordination	200	\$/Hour	\$30.16	\$6,032.00
Hours: Associate Director	0	\$/Hour	\$32.48	\$0.00
<b>Personnel Subtotal</b>				<b>\$14,036.00</b>
<b>Contractual/Construction: Contractor A</b>				

GIS specialist- Project prioritization visuals and analysis for report	1		\$40,000.00	\$40,000.00
<b>Goal Subtotal</b>				<b>\$54,036.00</b>
<b>Goal: Water Supply Monitoring</b>				
<b>Salaries and Wages: BHWC Personnel</b>				
Hours: Project Administration	80	\$/Hour	\$40.02	\$3,201.60
Hours: Project Coordination	150	\$/Hour	\$30.16	\$4,524.00
Hours: Associate Director	400	\$/Hour	\$32.48	\$12,992.00
Hours: Technician	1080	\$/Hour	\$20.00	\$21,600.00
<i>Personnel Subtotal</i>				<b>\$42,317.60</b>
<b>Equipment</b>				
Flowtracker 2	1		\$12,500.00	\$12,500.00
Pressure Transducers	15		\$700.00	\$10,500.00
Staff Gages	15		\$100.00	\$1,500.00
Misc install materials	15		\$50.00	\$750.00
			Equipment Subtotal	<b>\$25,250.00</b>
<b>Goal Subtotal</b>				<b>\$67,567.60</b>
<b>Goal: Stakeholder Engagement and Watershed Restoration Plan Update</b>				
<b>Salaries and Wages: BHWC Personnel</b>				
Hours: Project Administration	1620	\$/Hour	\$40.02	\$64,832.40
Hours: Project Coordination	360	\$/Hour	\$30.16	\$10,857.60
Hours: Associate Director	540	\$/Hour	\$32.48	\$17,539.20
<b>Goal Subtotal</b>				<b>\$93,229.20</b>
<b>All Goals Subtotal</b>				<b>\$253,626.80</b>
<b>Indirect Costs: 10%</b>				<b>\$25,362.68</b>
<b>Supplies</b>				
WRP Printing	1	LS	\$3,415.00	\$3,415.00
Meeting support- Refreshments, food	1	LS	\$2,250.00	\$2,250.00
<i>Supplies Subtotal</i>				<b>\$5,665.00</b>
<b>Travel Costs</b>				
Grange Hall rental fee	6	rental rate	\$75	\$450.00
Travel-Mileage	13704	\$0.655/Mile	\$0.655	\$8,976.12
Travel-Nightly Lodging Costs	25	\$80/Night	\$120.00	\$3,000.00
Per Diems	25	\$30/day	\$30.00	\$750.00
<i>Travel Sub-Total</i>				<b>\$13,176.12</b>
<b>TOTAL</b>				<b>\$297,830.60</b>

## 3.2. Budget Narrative

### Salaries and Wages

BHWC Project Manager Pedro Marques will be the team lead for implementation of this project, relying heavily on support from Project Coordinator Ben LaPorte and Associate Director Tana Lynch. We provide estimated hours for our team to dedicate to each of the project goals. We will hire a technician-level assistant to support our efforts, particularly for data digitalization and stream monitoring. BHWC will hold all contracts with our funders and contract all outside services according to State and Federal procurement policies. BHWC staff time for each objective will be directed towards:

#### **GOAL 1: DATA CONSOLIDATION**

- Reviewing existing reports and documents in our archive and digitizing relevant watershed metrics and knowledge into a spreadsheet format by sub-watershed and major tributaries.
- Meeting with our water storage subcommittee, Governing Board, agency personnel, landowners, and water users to gather additional data.
- Engaging with University of Montana Western professors and students in this data effort.
- As new data emerges from efforts being undertaken by other agencies, incorporate data into our spreadsheets.

#### **GOAL 2: DATA ANALYSIS**

- Procure and oversee a GIS contractor to update our geospatial project with data collected from Goal 1.
- Guide and oversee analysis of data and deliverables and direct production of maps for final WRP document.
- Provide continued coordination with agency partners and relay information to our GIS contractor.
- Conduct our own mapping efforts for public outreach, reporting and coordination with agencies and researchers.

#### **GOAL 3: STREAM MONITORING**

- Coordinate with CCAA program personnel on purchase and deployment of additional stream flow monitoring supplies.
- Hire and oversee a technician to conduct monitoring on these additional sites over the three field seasons of this contract (from June to October each year).
- Our Associate Director will provide consistent flow monitoring to stakeholders and the public through our drought management plan from May-October of each project year, activating voluntary conservation measures and coordinating all DMP board members.
- Coordinate field work schedules and flow collection assignment. Work with landowners on all aspects of flow measurement.

#### **GOAL 4: STAKEHOLDER ENGAGEMENT AND WRP PRODUCTION**

- The bulk of our staff time will be dedicated to compiling the information from the above three goals into a coherent WRP document.
- Our Associate Director will lead coordination of public meetings and local outreach as the document is developed.
- Our Project Coordinator will be regularly interfacing with agency personnel on our WRP plans as they emerge to ensure what we propose lines up with NEPA processes and plans.
- The draft document will be released to agency partners for review.
- We will address all stakeholder comments on the draft and then release the final WRP.

### **Fringe Benefits**

Our organization applies a 16% fringe rate to each of our employees. These benefits include the costs of payroll taxes, health insurance and retirement benefits.

### **Travel**

Our staff will be required to drive from Missoula and Divide, MT to meet with our storage subcommittee, Governing Board and stakeholders throughout this effort. We have budgeted for dozens of trips per staff member per year to Butte, Dillon, cities in the Big Hole and landowner homes where key stakeholders live and work. Staff will be required to stay overnight on numerous occasions. Local hotel costs have been estimated for these stays. Updated federal mileage reimbursement rates have been included in project costs and an estimated number of miles to drive to and from project sites. A detailed travel estimate justification will be provided at the point of contracting.

### **Equipment**

We anticipate purchasing important supplies for our stream monitoring effort. This equipment has been recommended by our DNRC hydrologist for supplement to the Arctic grayling recovery program. These include a FlowTracker 2, and 15 pressure transducers, staff gages and miscellaneous materials to install these instruments into priority tributaries and ditches where existing data is insufficient to understand water yields and usage. These costs were provided by our DNRC partners who work with this equipment regularly.

### **Materials and Supplies**

We anticipate printing costs for our WRP document. We estimate printing approximately 50 color bound copies of the final document, with a likely page length of approximately 170 pages each. Additionally we envision providing light refreshments and snacks for many of our meetings with stakeholders. These costs were estimated to be around \$15 per person per meeting and us having meetings of different sizes, totaling approximately 125 people across all encounters.

### **Contractual**

Under Goal 2 we will procure and hire a GIS specialist to build on the spatial data developed during our previous BoR grant. Our cost estimates were developed by the contractor we

previously hired who understands our project objectives and the level of effort required for such. Their scope of work is reflected in our description of Goal 2 above and includes ad-hoc hours for the development of mapping products as needed in the development of our WRP. We will follow State of Montana and Federal procurement guidelines to solicit contractors for all contracted expenses related to this project.

### **Environmental and Regulatory Compliance Costs**

As this work will primarily fund capacity efforts, we do not anticipate costs associated with environmental or regulatory compliance. Compliance will become a factor in our prioritization of projects, however. For example, understanding of the regulatory burden of dam-building vs. Low-tech process-based restoration will be part of our conversation.

### **Indirect Costs**

BHWC will use the *de minimus* indirect rate of 10% for our administrative/management role in this project. These costs will cover operation and maintenance costs, our legal and accounting fees that cover payroll.

### **3.3. Funding Plan and Letters of Commitment and Support**

This project is generously supported by:

- Montana Department of Natural Resources and Conservation (DNRC)
  - o Planning Bureau
  - o CCAA Hydrologist
- Beaverhead-Deerlodge National Forest
- The Nature Conservancy
- Montana Bureau of Mines and Geology
- Montana Watershed Coordination Council
- University of Montana Western
- Big Hole River Foundation

We intend for the production of this WRP to be entirely funded through this proposal. Our Governing Board has completely endorsed the project (see attachments).

### **In-kind Contributions**

We have not quantified the amount of volunteer time and agency personnel who will willingly engage with us in this planning effort. All the above-stated partners are committed to providing innumerable in-kind hours to see our vision to fruition.

#### 4. Environmental and Cultural Resources Compliance

- *Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.*

No earth-moving activities will occur under this project.

- *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?*

Our existing WRP documents a variety of plant, animal and fish species currently on the list of endangered species or that have been litigated to be added to the list. Principal among these are the Westslope cutthroat trout (WCT), Montana's state fish, and the Arctic grayling. Because of the planning nature of this project, none of these species will be impacted by our efforts. On the contrary, the successful completion of this WRP will only benefit these species.

- *Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States"? If so, please describe and estimate any impacts the proposed project may have.*

Due to the planning nature of this project, there will be no impacts to the many jurisdictional waters of the Big Hole.

- *When was the water delivery system constructed?*

N/A

- *Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*

No

- *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*



There are many historic features throughout our watershed that will be noted in our WRP and unaffected through this project.

- *Are there any known archeological sites in the proposed project area?*

Similar to above, none will be affected through this project.

- *Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*

N/A

- *Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on tribal lands?*

No

- *Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

No

## **5. Required Permits & Approvals**

This planning project does not require any permits or approvals. All relevant permissions are granted by the agencies supporting our application.

## **6. Overlap or Duplication of Effort Statement**

The Big Hole Watershed Committee attests that to our knowledge, there is no overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment or key personnel. The proposal does not, in any way, duplicate any proposal or project that has been or will be submitted for funding considerations to any other potential funding source – whether it be Federal or non-Federal.

## **7. Conflict of Interest Disclosure Statement**

The Big Hole Watershed Committee attests that to our knowledge, no actual or potential conflict of interest exists at the time of submission.

## **8. Official Resolution**

The attached Official Resolution indicates support from our diverse 22-member board of directors for pursuing these watershed planning and project design efforts.

## ***Watershed Group Resolution***

The Big Hole Watershed Committee Steering Committee provides leadership for the Big Hole Watershed Committee. The Steering Committee approves of the content and the commitments described in the Big Hole Watershed Committee's Bureau of Reclamation WaterSMART Cooperative Watershed Management (Phase I) application for funding.

Our Executive Director, Pedro Marques, has the legal authority to enter into an agreement with the WaterSMART program on behalf of the Big Hole Watershed Committee.

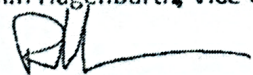
The Big Hole Watershed Committee has the experience, infrastructure, and capability to manage funds awarded from the WaterSMART program, provide any matching funds, and implement the project as described in the application.

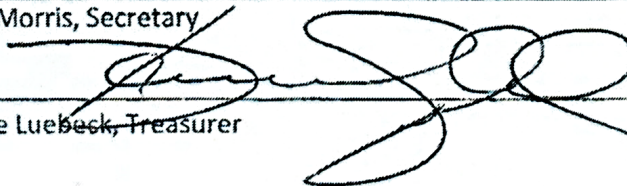
The Steering Committee agrees that the Big Hole Watershed Committee will work with the Bureau of Reclamation to meet established deadlines for entering into a financial assistance agreement.

December 4, 2023

  
\_\_\_\_\_  
Randy Smith, Chairman

  
\_\_\_\_\_  
Jim Hagenbarth, Vice Chairman

  
\_\_\_\_\_  
Roy Morris, Secretary

  
\_\_\_\_\_  
Steve Luebeck, Treasurer

Representative:  
  
\_\_\_\_\_  
Pedro Marques, Executive Director

11/30/23

Bureau of Reclamation  
Water Resources and Planning Office  
Attn: Ms. Robin Graber  
Mail Code: 86-6300  
P.O. Box 25007 Denver, CO 80225



Dear Ms. Graber,

Please accept this letter in support of the Big Hole Watershed Committee's (BHWC) proposal to assess water storage and delivery opportunities within 12 sub-watersheds of the Big Hole, with the goal of producing sub-watershed restoration plans that identify priority projects and partnership opportunities.

It is simply critical to be actively assessing opportunities for in-basin water storage as the population grows, demand increases, precipitation becomes more erratic, and other climate change associated stressors on our natural resources become more widespread and pronounced. This is especially important and timely in a headwater drainage which is refuge to a remnant population of threatened arctic grayling and home to an economically important but struggling population of wild trout. Few understand this dynamic better than BHWC, while their history of successful collaborative conservation work is proof that they are suited to the task.

Of particular interest to me within this process is the opportunity to assess the viability of managed aquifer recharge in the Big Hole. Steps already successfully undertaken by BHWC and their partners include wetland restoration, encroaching conifer removal, and riparian restoration.

Other important parallel efforts such as the installation/improvement of measurement infrastructure to quantify use, return, and voluntary sacrifice of water will also be streamlined by an initial sub-basin assessment and planning process. BHWC has demonstrated the ability to take on this type of planning and carry out projects.

I endorse this proposal and look forward to supporting BHWC in this effort through the contribution of water quality data to help inform their objectives.

Sincerely,

*Brian A Wheeler*

Brian Wheeler  
Executive Director

*Last. Best River.*

406-560-7089

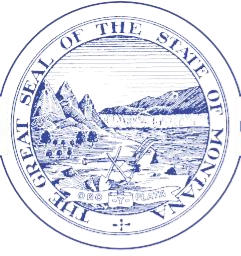
| [www.BHRF.org](http://www.BHRF.org)

| PO Box 176, Divide, Montana 59727

# DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Water Resources Division

1424 9th Ave, Helena, MT 59620-1601 Phone: (406) 444-6601 Fax: (406) 444-0533



GREG GIANFORTE, GOVERNOR

1539 ELEVENTH AVENUE

## STATE OF MONTANA

DIRECTOR'S OFFICE: (406) 444-2074  
FAX: (406) 444-2684

PO BOX 201601  
HELENA, MONTANA 59620-1601

December 5<sup>th</sup>, 2023  
Robin Graber  
Mail Code 86-6300  
P.O. Box 25007  
Denver, CO 80225

Dear Ms. Graber:

Please accept this letter of support for The Big Hole Watershed Committee's Proposal for funding from Bureau of Reclamation WaterSMART Cooperative Watershed Management Program Phase I, NOFO: R23AS00362.

I have worked with the Big Hole Watershed Committee (BHWC) for the past year; however, the Montana Department of Natural Resources (DNRC) has partnered with the BHWC since 1994 on many successful collaborative projects. Water management and understanding are key components to the health of Montana watersheds and the Big Hole River is at the top of the list. As water availability declines, increasing temperatures and multi-user demands threaten riparian ecosystems which cause significant changes in the watershed. The BHWC passionately works with private landowners and water users through their call to "*Conservation through Consensus*", and this proposal aims to deepen these relationships. Conserving this precious resource will be supported through sub-watershed restoration and evaluation of water storage opportunities across the Big Hole watershed.

As the Hydrologist for the upper Big Hole River Arctic Grayling Candidate Conservation Agreement with Assurances (CCAA), I have firsthand knowledge of how important it is to understand basin water yields during late-season low streamflows. The Big Hole Watershed Committee's proposal for funding promotes water conservation by identifying, prioritizing, and coordinating sub-watershed level restoration and storage projects, so increasingly needed to continue successful management of the Big Hole River.

DNRC supports the BHWC on this proposal which continues to demonstrate the importance of maintaining resiliency within the Big Hole Watershed for future generations. Partnerships with private landowners, state, and federal entities are critical to protecting Montana's precious natural resources. I believe this proposed project will be extremely beneficial to the continued conservation and health of the Big Hole River and its tributaries.

Thank you for considering DNRC Water Sciences support in this proposal.

Sincerely,

*Kaitlin Boren*

Kaitlin Boren  
Hydrologist  
Montana DNRC-WSB-Data Section

DEPARTMENT OF NATURAL RESOURCES  
AND CONSERVATION

Water Resources Division

1424 9th Ave, Helena, MT 59620-1601 Phone: (406) 444-6601 Fax: (406) 444-0533



GREG GIANFORTE, GOVERNOR

1539 ELEVENTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE: (406) 444-2074  
FAX: (406) 444-2684

PO BOX 201601  
HELENA, MONTANA 59620-1601

December 4, 2023

Pedro Marques  
Big Hole Watershed Committee  
P.O. Box 21  
Divide, Montana 59727

**RE: Cooperative Watershed Management – Holding Back Snowpack in the Big Hole**

Dear Pedro,

On behalf of the Montana DNRC's Water Planning, Implementation, and Communications (PIC) Bureau, I am writing to express support for the Big Hole Watershed Committee's (BHWC) proposal to create a comprehensive watershed restoration plan for enhancing hydrologic resilience and improving water quality in the Big Hole River Basin. This plan will characterize and assess water storage potential and identify high-priority projects that promote water retention to enhance ecosystem functions, promote groundwater aquifer recharge, and enhance late-season return flows in the Big Hole River Watershed.

After a decade of implementing various restoration efforts outlined in 2012 Lower/Middle Big Hole Watershed Restoration Plan, the BHWC is ready to deploy their conservation framework (referred to as 'Holding Back the Snowpack') to the other 12 Big Hole sub-watersheds. The proposed HUC 10-scale compilation of existing data and community-led process that will occur during this three-year project directly address the water storage and delivery recommendations prioritized in the Montana Drought Management Plan (2023).

This project aligns with DNRC's mission to provide sound coordination and management of water in Montana. The PIC Bureau is prepared to support this project by participating in discussions and offering any input as needed.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Holmes".

Danika Holmes  
Regional Water Planner – Upper Missouri River Basin  
Water Resources Division  
Montana DNRC  
[dholmes@mt.gov](mailto:dholmes@mt.gov)

December 1, 2023  
BOR, Resources and Planning Office  
Attn: Robin Graber  
P.o. Box 25007  
Denver, CO 80225

Ms. Robin Graber,

The Montana Bureau of Mines and Geology (MBMG), Montana's geologic survey, is pleased to support the Big Hole Watershed Committee's (BHWC) grant to the Bureau of Reclamations WaterSMART Collaborative Watershed Planning program. Their project, *'Cooperative Watershed Management: Holding Back Snowpack in the Big Hole'* provides the basis for moving forward to help restore critical stream flows and improving temperatures in the Big Hole River during the late summer. These factors are crucial to maintaining the livelihood of ranchers and anglers, providing water for municipalities, and is also a focus of conservation groups. Declining trout populations and protecting the fluvial artich grayling make restoration efforts even more imperative in the watershed.

Enhancing aquifer recharge through natural and artificial means is a high priority for Montana. The MBMG is developing aquifer suitability maps for managed infiltration and aquifer storage and recovery. The MBMG will provide a more detailed analysis of managed infiltration suitability for the Big Hole River watershed in 2024 in support of their restoration planning.

We have a long-history of groundwater/surface-water projects in the watershed and the data we have collected will be part of the data compilation proposed under this grant. This data will provide a platform for the BHWC to make informed decisions on restoration efforts throughout the watershed.

We are currently investigating groundwater/surface-water interactions in the Glen, Montana area with a focus on irrigation return flows and the effect on river discharge and temperature. This project will include developing a groundwater model. The model can be used as a tool to make predictions on different restoration options and their potential effect on groundwater and the river. This will support the BHWC objective to help identify areas of high potential for restoration activities in this area

The BHWC proposal provides a pro-active approach that addresses climate change adaptation while maintaining the culture and livelihood of the Big Hole River watershed.

Sincerely,



Ground Water Investigation Program Manager, MBMG



December 4, 2023

Bureau of Reclamation Water Resources and Planning Office  
Attn: Ms. Robin Graber  
Mail Code: 86-6300  
P.O. Box 25007 Denver, CO 80225

RE: Notice of Funding Opportunity No. R23AS00362  
WaterSMART Cooperative Watershed Management Program Phase I for Fiscal Years 2023 and 2024

Dear Ms. Graber,

I write to express The Nature Conservancy's support for Big Hole Watershed Committee's "Holding Back Snowpack" project proposal submitted to NOFO No. R23AS00362. For more than two decades, The Conservancy has partnered with the Big Hole Watershed Committee (BHWC), which has served as the premier local community and science-driven watershed group in this most critical watershed of Montana's Missouri Headwaters. Through a deliberate, grassroots, and consensus-based approach, BHWC has been able to build broad-based support for innovative and strategic restoration approaches that address this watershed's most pressing threats.

We believe BHWC's approach in this proposal is spot on and we believe that they have the capacity and credibility to assess watershed resilience at the scale they propose. The Nature Conservancy intends to continue to support, coordinate, and partner with BHWC on their watershed level restoration planning, strategic approaches to leverage our collective funds, and coordinate and team up where needed on restoration projects that this planning process identifies as highest priority.

We hope that you will recognize both the wisdom of their proposed approach and the readiness of their organization by supporting BHWC's Holding Back Snowpack proposal.

Thank You,



Jim Berkey

High Divide Headwaters Director  
The Nature Conservancy in Montana

December 5<sup>th</sup>, 2024

U.S. Bureau of Reclamation WaterSMART Grant  
**Cooperative Watershed Management Program**  
Interior Region 5: Missouri Basin

**RE: Letter of Support for Big Hole Watershed Committee's *Restoration Planning: Holding Back Snowpack in the Big Hole* project proposal**

Dear Selection Committee,

The Environmental Sciences Department and the Biology Department's Ecology Program at the University of Montana Western (UMW) in Dillon, MT support the Big Hole Watershed Committee's *Restoration Planning: Holding Back Snowpack in the Big Hole* proposal. This project would foster and grow a long and successful history collaborating on restoration and water management projects.

The work outlined in this proposal affords UMW students the opportunity for service-learning through work to compile, digitize, synthesize, and analyze watershed data. Our unique block scheduling, *Experience One*, immerses students in experiential coursework for 3 to 8 hours a day for 18 days. This learning model supports field-based learning and undergraduate research as part of class activities. With this grant, we can overlay classes with project goals. In *Environmental GIS & Remote Sensing* and *Wetlands Ecology and Management*, students can work alongside experts to learn how to conduct water storage suitability analysis and mapping (Goal 2). In *Hydrology*, students can create rating curves to support streamflow monitoring (Goal 3). In *Sustaining Water Resources* and *Natural Resource Conflict Resolution* students can collaborate in the process of stakeholder engagement (Goal 4) to build understanding and appreciation of the multi-faceted dimensions of watershed planning and management.

Many of our students are the first in their family to attend college and are eager to build livelihoods in the lands they love, hoping to bring home skills and knowledge to protect both wild and working landscapes. Partnering with the Big Hole Watershed Committee offers underserved and underrepresented students' valuable opportunities to contribute to local water management, build knowledge and skills that support their professional pursuits, and network with conservation employers.

Please reach out with any questions.

Sincerely,



Arica Crootof, Associate Professor of Environmental Sustainability  
Michelle Anderson, Professor of Ecology





United States  
Department of  
Agriculture

Forest  
Service

Beaverhead-Deerlodge National Forest  
Dillon Ranger District

420 Barrett St  
Dillon, MT  
(406) 683-3900

November 29, 2023

To Whom it May Concern,

Please accept this letter of support for the Big Hole Watershed Committee's "Holding Back the Snowpack" project proposal, a conservation framework to compare/contrast water storage opportunities in HUC 10's across the Big Hole River subbasin. This plan will characterize and analyze each HUC 10 sub-watershed's existing and potential condition for water storage and identify highest priority projects that enhance ecosystem functions, particularly water capture and retention for benefit of water quality as well as groundwater returns and late-season water.

The Beaverhead-Deerlodge National Forest has been working with the Big Hole Watershed Committee (BHWC) for over the last two decades. We share a common vision of stewardship to enhance the natural resources in the Big Hole watershed and have been involved with some of the projects they have implemented on National Forest System (NFS) lands. This proposal continues that work in the Big Hole watershed by developing a watershed plan to conserve, manage and protect water resources across the entire sub-basin. The forest entered into a 5-year participating agreement with the Big Hole Watershed Committee to implement vegetation, stream and meadow restoration and management actions to improve watershed condition and biodiversity. To date, \$25,000 has been obligated through the agreement to implement vegetation restoration actions in the Big Hole watershed. The forest is also involved with planning several projects with Big Hole Watershed Committee to implement high elevation meadow restoration in several HUC 10's across the sub-basin.

We look forward to working with the BHWC and other partners to enhance the water resources of the Big Hole River and its tributaries. I am confident as a partner that your support for these efforts will greatly improve the important resource in the Big Hole watershed. Thank you for considering this proposal.

Sincerely,

Lisa Timchak  
Forest Supervisor  
Beaverhead-Deerlodge National Forest



December 4th, 2023

Robin Graber  
Program Coordinator  
Cooperative Watershed Management Program  
Water Resources and Planning Office  
US Bureau of Reclamation

Re: Big Hole Cooperative Management Grant

Dear Ms. Graber:

Our organization is writing in support of the Big Hole Watershed Committee's (BHWC) application for a Bureau of Reclamation WaterSMART Cooperative Watershed Management Program grant to assess water storage and delivery opportunities within 12 sub-watersheds of the Big Hole, MT. Beyond creating a new Watershed Restoration Plan, the BHWC works closely with private landowners and water users by supporting "*Conservation through Consensus*", and their approach and proposal will lead to the identification of project opportunities and the deepening of local water user relationships. Working along a river system like the Big Hole is crucial as drought, increasing water temperatures, and user-demands put stress on this and similar Montana river systems.

Montana Watershed Coordination Council supports watershed groups and community-based conservation across the state, and regularly provides funds for watershed groups to build both on-the-ground projects and capacity. We have supported the Big Hole Watershed Committee throughout the process that has brought them to this application and know that local groups are the best stewards of our land and water watershed resources.

Project outcomes being pursued with the BHWC WaterSMART Cooperative Watershed Management Program grant will create an updated Watershed Restoration Plan and help support a menu of projects that will also fit well in to the goals of the MWCC Watershed Fund; that MWCC is continuously working to grow.

We encourage you to fund this proposal and the Big Hole Watershed Committee and thank you for your consideration.

Sincerely,

Amy Seaman, Executive Director