

Bureau of Reclamation
Cooperative Watershed Management Program Phase 1
Grant Proposal
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The Wood River Water Collaborative

Submitted by:



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Technical Proposal and Evaluation Criteria

Executive Summary: January 31, 2018, Trout Unlimited, Hailey, Blaine County, Idaho

Trout Unlimited is applying for a Cooperative Watershed Management Group Grant on behalf of the Wood River Water Collaborative. The Wood River Water Collaborative (the “Water Collaborative”) represents seventy-five diverse water users that came together at a critical juncture in the Big Wood basin’s history. This group formed to ensure the long-term health of the Wood River watershed, which is facing environmental issues and increasing demand for multiple uses of water. The Collaborative is collaboratively working towards watershed restoration planning and project design while continuing to develop the existing watershed group.

Trout Unlimited, along with staff from The Nature Conservancy and Wood River Land Trust, administers and facilitates the Collaborative. To date, this work has been funded in-kind by the three organizations. Bureau of Reclamation grant funding is necessary to effectively addressing watershed solutions through outreach, planning, analysis, prioritization, and continued coordination of the Collaborative. Outcomes of this grant include: facilitation and administration of the existing watershed group; continued outreach to the public; project planning and prioritization; research and technical project development; and identifying funding sources for implementation. We value the opportunity to work with diverse partners and the Bureau of Reclamation to find long term, sustainable solutions for our watershed and its multiple water uses.

Two years of Bureau of Reclamation funding will increase the capacity of the non-profit partners to address Collaborative needs. The non-profit partners have a long history in this region and are all committed to supporting the Collaborative beyond this grant’s estimated completion date of March 31, 2020. There is one Bureau of Reclamation facility within the Wood River watershed, the Little Wood Reservoir outside of Carey, ID.

Background Data:

The Big Wood basin includes the Big Wood River, Silver Creek, Little Wood River, and Camas Creek (See [Appendix A: Big Wood Watershed Map](#)). The Big Wood River originates from snow pack in the upper valley and flows down valley, exiting to the west into Magic Reservoir and, through the aquifer and irrigation, to Silver Creek to the east. The Big Wood river attracts visitors from all over the world because of its scenic beauty and robust fishery, and is the third most popular fishery in Idaho. Development and infrastructure within the floodplain have largely affected water quantity, water quality, and habitat. The Big Wood fishery above Magic Reservoir is limited by habitat conditions, loss of proper floodplain function, increased lateral channel erosion and sedimentation, which are concerns of the Collaborative. In addition, existing rock sills and bank armoring

(riprap) maintain reduced aquatic habitat conditions and inappropriate channel form. Critical species for ecosystem restoration are native redband trout (*Oncorhynchus mykiss gairdnerii*), endemic Wood River sculpin (*Cottus leiopomus*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), and mountain whitefish (*Prosopium williamsoni*). The cottonwood forest along the Big Wood River is also potential habitat for the yellow-billed cuckoo (*Coccyzus americanus*), a species listed as “Threatened” under the Endangered Species Act.

Silver Creek is a unique high desert spring creek system surrounded by fertile agricultural ground in the Big Wood River watershed. Silver Creek flows into the Little Wood River south of Carey, ID. For decades, conservation groups have worked with local communities and farmers on restoration efforts, modifying agricultural practices and establishing conservation easements to protect Silver Creek and its ecosystem. These efforts have benefited the area’s wildlife habitat, improved water quality, and increased land values. Despite this success, Silver Creek’s health remains threatened by a wide range of stressors, including high summer water temperatures related to decreased flows.

In the Little Wood River drainage, elevations range from about 5,700 feet in lower reaches to over 11,000 feet in the upper reaches. It features glaciated mountains, fluvial mountains, and depositional lands. Wood River sculpin, a US Forest Service Region 4 sensitive species, and redband trout occur throughout the area, and introduced brook trout are also present. Localized grazing impacts and high natural sedimentation rates have affected fish habitat in some area streams. The Little Wood River Bureau of Reclamation Dam and Reservoir serve irrigated cropland within an area 2 miles wide and 12 miles long surrounding Carey, Idaho. The Little Wood Reservoir provides a supplemental irrigation water supply for approximately 9,550 acres of land. Flood control is provided by operation of the reservoir on a forecast basis.

Camas Creek’s headwaters originate in the flat Camas Prairie, flow through the Camas Prairie, and then discharge into Magic Reservoir. Spring snow runoff events, which can occur rapidly and in great quantities, feed the drainage. Ground water also plays an important role in maintaining perennial flows, as the majority of the subbasin lies over the Camas Prairie aquifer. As in the Silver Creek area, maintaining adequate aquifer levels is a concern for the watershed. Agricultural land uses divert water from natural channels and have altered the natural course of the creek. According to the Department of Environmental Quality, twelve water body segments of the Camas Creek subbasin were identified as being impaired in 1998. Several segments are impaired by bacteria, dissolved oxygen, nutrients, sediment, and flow alteration. The beneficial uses that were being impacted by pollutants were cold water aquatic life, salmonid spawning, primary contact recreation, and secondary contact recreation.

Project Location

The Big Wood watershed includes the Big Wood (HUC 17040210), Little Wood (HUC 17040221), and Camas Creek (HUC 17040220) subbasins. The Big Wood watershed is situated in a high desert environment receiving an average of between 10 and 18 inches of rainfall per year. The majority of land cover (70%) is sagebrush steppe or grasslands with only a fraction of the land developed. Approximately 14% is classified as agricultural.

Source of Water Supply

Mountain snowpack is an important mechanism for satisfying late spring and summer water demand lower in the watershed and the main water supply for rivers and streams. There are no man-made reservoirs above the Little Wood Reservoir and Magic Reservoir; Magic Reservoir is relatively downstream in the Big Wood system and water supply above the reservoir is dependent on snowpack and the underlying aquifer. Climate models evaluated by the Pacific Northwest Climate Impacts Research Consortium for this watershed show clear trends in the timing and amount of snow expected in the future. In general, the amount of snow tends to continue the current downward (less and earlier) trend predicted in broader, regional studies.

The underlying aquifer system is also an important water source which is recharged by snowfall and surface water supplies. Timing of snowmelt and spring run-off, and lack of opportunity for above-ground storage, influences supply to the aquifer, which is critical to stream flows and agricultural water demands in the lower watershed. The Idaho Department of Water Resources, in conjunction with the United States Geological Survey, has finalized a Wood River Ground Water Flow Model to help water managers understand water inputs, demands and aquifer response in the upper watershed and its effect on surface water delivery to the lower watershed. The Department is currently in the initial phases of running the model with different water management scenarios.

Water Delivery System

Surface Water District 37 encompasses the Big Wood River and all of its tributaries. Water District 37M encompasses Silver Creek and its tributaries, along with the Little Wood River and all of its tributaries. Both river systems (Big and Little Wood) come together to form the Malad River, which is a tributary to the Snake River. Both Water Districts (37 & 37M) are managed cooperatively as Basin 37 by one Watermaster's office located in Shoshone, Idaho. Water District 37B encompasses Camas Creek and its tributaries upstream of Magic Reservoir.

Most of the upstream or northern reaches of Water Districts 37 & 37M lies within the Wood River Valley in Blaine County. The majority of Blaine County's population resides in the cities of Ketchum, Sun Valley, Hailey and Bellevue, with a total population of approximately 20,000. This area includes world famous Sun Valley, a renowned tourist destination for skiing, hiking, biking, fishing and conventions. The primary economic

activity is tourism, with roughly 75% of the 1.8 billion GDP attributable to cultural and recreational visitors. Reliance on tourism puts pressure on development in the cities and in the county. Municipal and domestic uses that occur with development are often thought of as non-consumptive, but these uses also impact available water for the river ecosystem and other uses. In 2011 alone, the recreational fishery contributed approximately \$10 billion to Blaine County's economy, according to an Idaho Dept. of Fish and Game report. In this way, maintaining a healthy river is vitally important to the local economy, as well as fishery and aquatic resources.

The largest current water use in the upper reaches of the Big Wood watershed is agricultural irrigation in the lower area of Blaine County and southern reaches of the basin. The growing season in central Idaho is typically from May until the end of September. In lower Blaine County, over half of the irrigation water applied is surface water diverted by irrigation canals; the rest is supplied by groundwater pumping. This contrasts sharply with the lower watershed where 95% of the water use comes from surface water rights. Irrigation water is distributed based on a system of water rights which is regulated by water right priorities and water availability. According to Idaho Dept. of Water Resources database, there are over a thousand irrigation water rights in the project area.

The southern reaches of the basin are served either by Magic Reservoir, which is filled by runoff from Camas Creek and the Big Wood River, or the Little Wood River. A large percentage of these crops are for livestock feeds including alfalfa, pasture, corn and barley. Other crops include malting barley, wheat, potatoes and sugar beets. There are some industrial use of water within Water Districts 37 & 37M, but much of the industrial use is non-consumptive in nature.

Over the last 5 years, total water use in Water District 37 & 37M has peaked at around 437,000 acre feet per year (see [Appendix B: Big Wood Watershed Delivery Blocks and Affected Stakeholders](#)). The upper watershed green and orange delivery blocks have been quantified at peak demand of 167,000 acre-feet per year. The blue, yellow and pink blocks characterize the lower watershed demand at peak demand of 260,000 acre-feet per year. The last five years have been below average in water supply, but even in the best water years, water users are curtailed because of insufficient supply. Current water supply does not meet the demands for the variety of uses and the needs of the watershed and aquatic ecosystem. Until 2015, groundwater use in Basin 37 was not regulated or subject to senior priority delivery calls. This changed with conjunctive management in 2015. Now, groundwater diversions can be curtailed along with junior surface diversions.

Environmental Issues

Over-allocation of water for agricultural, municipal, and industrial use severely depletes streamflow across the American West, degrading aquatic and riparian ecosystems, and posing economic risk to sectors that depend on reliable water supplies. Voluntary water transactions and agreements present a significant opportunity to restore streamflow

and enhance water supply reliability within states that use the prior appropriation doctrine to administer water rights, which is coined as “first in time, first in right.”

The riparian and floodplain ecosystems along the Big Wood, Little Wood, Silver Creek, and Camas Creek are important to maintaining instream flows and the health of these important waterways. Elected officials, along with conservation groups and the public, are concerned about the long-term health of streams and rivers and are working to develop watershed plans to prevent further impairment to these systems. In some areas of the Big Wood, Silver Creek, and the Little Wood, high stream temperatures are a concern during summer months. There are several stream segments of the Big Wood and numerous tributaries that are on the Idaho Department of Environmental Quality’s 303 – D list because they do not meet water quality standards. Stream impairments include temperature, sedimentation, phosphorus, nutrients, and *E. coli*. The Department of Environmental Quality works with willing landowners to implement best management practices to improve water quality in impaired reaches.

Technical Project Description

Description of Applicant

For more than a half century, Trout Unlimited—a grassroots sportsmen’s conservation organization—has worked to improve trout and salmon habitat across the United States. Today, Trout Unlimited is the premier 501c(3) coldwater conservation organization in the United States, with more than 300,000 members in more than 30 states. Trout Unlimited is also an acknowledged leader in collaborating with the agricultural producers in the West to find creative solutions that benefit both fisheries and producers’ bottom lines. Through cooperation, Trout Unlimited and its farm and ranch partners are pioneering a new, collaborative vision of conservation in the West—one that sustains healthy rivers, rural communities and our rich outdoors heritage for the future. Trout Unlimited partners with farmers, ranchers and irrigation companies on pragmatic, voluntary, and market-driven solutions that benefit ag operations as well as fish and wildlife habitat.

Trout Unlimited facilitates and provides administrative support for the Collaborative. The Collaborative formed in 2015 to bring together diverse water users and stakeholders to discuss the watershed issues we face in the Wood River basin. One of the most immediate needs is to address water quantity, as two water calls have been filed within the basin. The Collaborative has been successful at bringing together water users on all sides of the water calls to discuss potential solutions. These collaborative solutions also address watershed health and environmental issues. In the Collaborative, over seventy-five diverse users include:

- Canal companies (Big Wood Canal Company; Irrigation District 45, Baseline Canal)
- Big Wood River Water Users Association (Carl Pendleton)
- Little Wood River Water Users Association (Rod Hubsmith)

- Recreation (Silver Creek Outfitters; private fishing guides)
- Tourism (Silver Creek Outfitters)
- Communal well homeowner associations (Golden Eagle; Valley Club; Heatherland's Homeowners; Hulen Meadows; Timberview Subdivision; Elkhorn at Sun Valley Association)
- Irrigated agricultural producers (Picabo Livestock Co.; Hillside Ranch; Wood River Organics; John and Kristy Molyneux; Wood River Ranch)
- Smaller hobby farms (<5 acres)
- Municipalities (City of Hailey; City of Ketchum; City of Bellevue, City of Sun Valley)
- Water consultants: (Water Futures, Inc.; Jim Speck, attorney; Zac Latham, Engineer Brockway)
- Idaho Department of Water Resources (Brian Patton, Bureau Chief; Remington Buyer, Water Supply Coordinator)
- Idaho Water Resources Board (Pete VanDerMeulen, Board Member)
- Idaho Fish and Game (Doug Megargle, Regional Fisheries Manager and Mike McDonald, Regional Biologist)
- Natural Resources Conservation District (Chris Johnson; Soil Tech)
- Groundwater districts (Galena Groundwater District; South Valley Groundwater District)
- Legislators: (State Representative Sally Toone and State Senator Michelle Stennett)
- Blaine County Commissioner: (Larry Schoen)
- Water District #37: (Kevin Lakey, Watermaster)
- Camas Water District#37M: (Rusty Kramer, Watermaster)
- Sun Valley Water and Sewer District
- Property Managers: (Nichols Property Management; Sun Country Property Management; Engels Property Management; Englemann Property Management)
- Conservation non-profits (Wood River Land Trust; The Nature Conservancy; Trout Unlimited)
- Irrigation Specialists: (Travis McBride Silver Creek Supply; Kodi Farnworth, Advanced Irrigation Systems)
- Public interest: (Conservation, General homeowner, Realtors, University of Idaho Extension Educator)

In the Big Wood watershed, Trout Unlimited has completed collaborative restoration projects on two major Big Wood tributaries, Rock Creek and Deer Creek, and a tributary to Silver Creek, Loving Creek. Trout Unlimited's local volunteer Hemingway Chapter, with over 200 members, works to bring educational programming for youth, adults, and veterans as well as complete fishery habitat projects. Wood River Land Trust and The Nature Conservancy also have a long history of working on watershed health and agricultural issues in the area. Since its inception, Wood River Land Trust has been

involved with projects and programs that promote healthy and sustainable water resources and water conservation. In 2007, Wood River Land Trust founded its Trout Friendly Program, which provides education and outreach to homeowners and supports municipalities on reaching their water conservation goals. The Nature Conservancy has been involved in the Silver Creek area since the 1970s, including owning the world-renowned Silver Creek Preserve and stewarding over a dozen conservation easements in the area.

Trout Unlimited, Wood River Land Trust, and The Nature Conservancy support sustainable water use in agriculture by promoting programs offered by the Natural Resources Conservation Service that can conserve water, such as variable rate irrigation, end-gun removal, automated pivots, and planting pollinator habitat. The three non-profit partners are also highly involved in recent flood management and planning work with Blaine County and the Army Corps of Engineers.

Eligibility of Applicant

Trout Unlimited is applying for a Cooperative Watershed Management Group Grant on behalf of the Wood River Water Collaborative. The Collaborative meets approximately eight times per year. The Nature Conservancy provides meeting space and conference calling options for those unable to attend in person. Trout Unlimited and Wood River Land Trust provide meeting agendas, minutes, presentations, and handouts to all seventy-five members via email and a website. During meetings, relevant topics are discussed, informative speakers are brought in, projects are discussed, and all attendees are encouraged to participate in discussions. The Nature Conservancy staff serve as primary moderators, with support from Trout Unlimited and Wood River Land Trust.

In between meetings, subcommittees meet and individuals work on projects with non-profit partner staff support. Three grants have been applied for and two have been funded. Grant funding has been awarded through the Bureau of Reclamation WaterSMART Water, Energy and Efficiency Grant program for the City of Hailey turf removal rebate program and the Galena Groundwater District for canal headgate telemetry in the southern part of the watershed and a water quantity/habitat improvement project on Silver Creek. Non-profit partners assisted in grant writing and applying for grants.

Goals

The overarching goal of the Wood River Water Collaborative “is to create a long-term, practical water management framework providing new tools to help balance the consumptive needs of upstream and downstream users in order to provide water for people, crops and fish, both now and in the future.” For a complete mission and goals statement, please see [Appendix D: Wood River Water Collaborative Mission and Goals](#). Since the Collaborative’s inception, Trout Unlimited, The Nature Conservancy, and Wood River Land Trust have provided in-kind support for its administration. Relying solely on

in-kind support limits our capacity to accomplish all of the necessary Collaborative planning and administrative tasks. Funding for a Cooperative Watershed Management Grant will enable us to advance our existing watershed group by developing strategies that holistically benefit the watershed, performing project planning and design, and creating innovative water management strategies. These actions are necessary to address critical watershed issues and develop community-driven solutions; there is no other forum to address and resolve current watershed issues. We propose to leverage the work of the three non-profit partners (Trout Unlimited, The Conservancy and Land Trust) to increase staff's capacity for the Collaborative. Without support from the Bureau of Reclamation, the non-profit partners will continue to provide limited administrative support to the Collaborative, dependent on capacity.

Approach

Trout Unlimited, along with Wood River Land Trust and The Nature Conservancy, envision achieving our goals for Tasks A, B, and C over two years. In year one, we will conduct pre-planning and outreach activities, gather a list of potential watershed projects, and develop general project concepts. In year two, we will create a project priority list through consensus of the collaborative, conduct project planning and technical analyses, complete project-specific design and engineering, and identify funding mechanisms. Please see [Appendix E: Tasks and Milestones](#) for detailed information.

Identifying and advancing community driven solutions for future watershed management has several facets. It includes researching opportunities to increase agricultural water delivery, aquifer recharge, aquatic habitat, and instream flows. Working with state agencies, partners, and subcontractors will provide non-profit partners the leverage to complete project goals.

Task A – Watershed Group Development

- Conduct outreach activities
 - Continue to expand and develop stakeholder interest in the collaborative by coordinating meetings, transcribing and disbursing minutes, hosting speakers and studies and identifying further outreach needs
 - Improve communication among members of the WRWC, increase public awareness, and manage website as a repository for information
 - Work with municipalities, Home Owner's Associations, and small water users to promote water conservation through policy changes with cities and/or HOA guidelines
- Conduct pre-planning activities
 - Work with a Collaborative subcommittee and Idaho Dept. of Water Resources to plan groundwater model runs that will inform aquifer recharge and other watershed project pre-planning

- Gather information from the Natural Resources Conservation Service on surface water supplies and predictive tools that can aid crop planning and water conservation transactions

Task B – Watershed Restoration Planning

- Conduct mapping and other technical analyses
 - Perform one groundwater model run that will inform watershed project goals, as determined by the Collaborative
 - Evaluate instream flow and groundwater recharge opportunities in Silver Creek and its tributaries with assistance from the Idaho Department of Water Resources
 - Develop goals and milestones for watershed restoration projects
- Interview watershed group members and stakeholders for project ideas
 - Work Collaborative members to assess and develop projects that meet the needs of water users, river health, and improve aquifer health
 - Continue to work on existing project development (Silver Creek/Hwy 26; Gardener/Purdy demand reduction; Dietrich pipeline 702; Brossy agricultural drip-irrigation; Camas Creek stream flow measurements)
 - If supported by the Collaborative, work with the Idaho Water Resources Board and Idaho Dept. of Water Resources to develop water market or water exchange programs to facilitate aquifer recharge and downstream surface water delivery
 - Work with water users to explore alternatives to existing crop patterns throughout the basin to reduce water demand during times of low water conditions
 - Interview other Collaborative members for project ideas and development, such as:
 - Developing a managed aquifer recharge program for Bellevue triangle to increase aquifer health and improve instream flow in Silver Creek and the Little Wood River
 - Improving water delivery infrastructure by planning for conservation measures such as canal lining or piping, improving and/or consolidating points of diversion, head gate automation, and other projects that increase efficiencies in water delivery and conserve water
 - Identifying water acquisition opportunities to increase instream flow and aquifer recharge. This would include an analysis of the State of Idaho Water Supply Bank and prioritizing water rights for acquisition
 - Enhancing surface water measurement by installing additional stream gaging in the Big and Little Wood Rivers, Camas Creek, and Silver Creek to better monitor water use and achieve downstream flow delivery targets
- Review watershed-specific best management practices for water quality and determine how to incorporate into projects
 - Research best management practices outlined by government agencies

- Implement county-wide best management practices for new residential development with municipalities that have been developed over the past two years
- Increase the role of science to better understand the biological and physical needs for improved river health in the Big Wood River Watershed in order to identify key reaches for instream flows and fishery needs

Task C – Watershed Management Project Design

- Complete an analysis to prioritize watershed management projects
 - Build off existing project prioritization template with input from members
 - Utilize prioritization template for project design and funding
 - Research and apply for funding for project implementation using public funding, such as the Idaho Water Resources Board, Bureau of Reclamation Water Energy and Efficiency Grant, and the Natural Resources Conservation Service
- Complete project-specific project design and engineering for prioritized projects
 - Complete project design and engineering or priority projects, through Natural Resources Conservation Service technical assistance or subcontracting engineers
- Develop project timelines and milestones for prioritized projects

Technical Proposal: Evaluation Criteria

E.1.1. Evaluation Criterion A: Watershed Group Diversity and Geographic Scope

Sub-criterion A1. Watershed Group Diversity

The Wood River Water Collaborative is a grassroots collaborative formed in 2015 to provide a forum in which parties interested in and affected by water resources in the Wood River drainage to meet, discuss and resolve water issues among themselves. From its creation there has been an effort to include all interested stakeholders. Trout Unlimited, Wood River Land Trust, and The Nature Conservancy identified key water users and stakeholders within the Wood River basin and requested their attendance in the Collaborative. It currently operates under an informal, consensus-based, model. From the start, the inclusion of state representatives, county commissioners, Idaho Department of Water Resources, and Idaho Water Resource Board, has been instrumental for the collaborative. Their representation and understanding of current and future financial, legal and political implications has given us opportunities to gain broader insights and potential tools.

This group includes stakeholders from both sides of a pending water call between surface water users in the lower watershed and groundwater users in the upper watershed. Stakeholders from The Big and Little Wood Water Users Associations represent the senior surface water callers, and impacted groundwater stakeholders are represented by: municipalities, groundwater districts, homeowner associations, tourism and recreation industries, gold course managers, property managers, consultants, and small and large agricultural producers. The conservation sector is represented by four non-profit

organizations, members of the recreational fishing industry, and Idaho Department of Fish and Game. Please see Description of Applicant for the list of stakeholders and [Appendix B: Big Wood Watershed Delivery Blocks and Affected Stakeholders](#).

We are pleased to include letters of support which demonstrate the support of diverse entities and organizations. Our goals are to continue capturing stakeholder interest by coordinating meetings, transcribing and disbursing minutes, hosting speakers and studies that are pertinent to the collaborative, and responding to individual collaborative member needs. We plan to be inclusive of other potential stakeholders, such as the Cities of Gooding, Carey, Fairfield, Richfield, and Dietrich. We will also reach out to the U.S. Bureau of Reclamation staff involved with the Little Wood Reservoir, as well as the U.S. Forest Service and Bureau of Land Management.

Sub-criterion A2. Geographic Scope

The current geographic scope of the Collaborative is the Big and Little Wood River watersheds in Blaine, Lincoln, and Gooding Counties, which include HUC 17040210 -- Big Wood (area 1460 square miles), HUC 17040221 -- Little Wood (area 1120 square miles), and HUC 17040220 – Camas Creek (area 700 square miles). See [Appendix A: Big Wood Watershed Map](#). The Collaborative and its members represent the full geographic scope of the watershed, from the northern Wood River Valley, down to Silver Creek, to the lower Big and Little Wood Rivers where they come together near Shoshone and flow into the Snake River as the Malad River.

[E.1.2. Evaluation Criterion B: Addressing Critical Watershed Needs](#)

Sub-criterion B1: Critical Watershed Needs or Issues

The Big Wood watershed is faced with several critical watershed issues: riverine ecosystem health, water quality, water quantity, and public awareness. With support from the Bureau of Reclamation, the Wood River Water Collaborative will address these issues through outreach, restoration planning, and project design. Many activities and outcomes will address multiple issues, increasing the effectiveness and efficiency of the Collaborative.

The Big Wood watershed has a history of human alterations for agriculture, infrastructure, and development. These alterations have resulted in degradation and constriction of riparian areas and floodplain, channel straightening, and reduction of fish habitat and instream complexity. Water quality, particularly temperature, is a concern in the Big Wood watershed, especially in the Silver Creek and Little Wood systems. The Collaborative will address aquatic and fish habitat as we look at projects that can both contribute to ecosystem health as well as water quantity. For example, one project funded through the 2017 Bureau of Reclamation WaterSMART Water, Energy, and Efficiency Grant on Silver Creek will make 2 – 10 cfs more water available to downstream reaches of the Little Wood River, improve water delivery in an undersized culvert, provide a mechanism to maintain existing wetlands, and revegetate a section of Silver Creek.

As part of our watershed restoration efforts, we will review federal and state agency Best Management Practices and determine how to incorporate these practices into Collaborative projects and planning efforts. Wood River Land Trust has worked with local governmental organizations to develop a Blaine County best management practices guide for landscaping. We will expanded this guide to include practices for the entire watershed that protect and improve water quality.

Aquifer levels underlying the Silver Creek and Camas Creek subbasins are a concern for the Collaborative, for both environmental and water quantity reasons. These aquifers are fed by surface water infiltration through natural streams or unlined irrigation ditches. Aquifers act as a storage mechanism and provide flows into the downstream reaches of Camas Creek, Silver Creek, and the Little Wood River. These flows are important for maintaining instream fish and aquatic habitat and irrigation water. Groundwater pumping has contributed to declining levels of these aquifers, and the Collaborative is searching for ways to lessen these impacts or increase the amount of water contributing to aquifers.

Water quantity is also a primary concern of the Collaborative. Due to changes in snowpack and spring runoff, coupled with increased consumptive water use, ground and surface water supplies in the Big Wood watershed are declining. The decline in water supplies and increase in consumptive ground water use have led to lower stream flows in the Big and Little Wood Rivers and shortfalls in surface water flows critical for fish and aquatic habitat and irrigation at downstream reaches of the watershed.

Under Idaho's prior appropriation doctrine, inadequate supplies and resulting conflicts would be resolved by the distribution of water by priority, with any shortfalls falling on the most junior water users. However, much of the junior water use has historically not been regulated in conjunction with the surface water users. Rigid application of water right priorities, and the extension of regulation to ground water users, would lead to severe impacts on the economies of developed areas in the northern reaches of the watershed. Tension among water rights and potential curtailment threatens agriculture, aquatic habitat and ecosystem function, future residential development, and economics if holistic water conservation measures are not enacted throughout the entire watershed. Groundwater curtailment could decrease the attractiveness of the upper Wood River Valley as a recreation and tourist destination. At the same time, decreasing instream flows to the lower watershed threatens the agricultural economy, natural and recreational values and stream health. Current water supplies are inadequate to meet all important uses in the watershed, and the Collaborative is critical to developing watershed-scale solutions for all interests and needs.

Sub-criterion B2: Developing Strategies to Address Critical Watershed Needs or Issues

The Collaborative will continue to provide a forum to openly share information and develop holistic solutions to issues in the Big Wood watershed, as well as fund and implement those solutions. Accomplishments to date include:

- Initial organization and invitation to interested stakeholders.
- Facilitated the establishment of two ground water districts to organize ground water users for effective response to ground water shortages.
- Formed three initial subcommittees: 1.) southern valley irrigators; 2.) small irrigators and homeowners associations; 3.) municipal water providers.
- Developed and approved formal goals and objectives.
- Organized presentations to the group by the Idaho Water Resource Board, Idaho Department of Water Resources, Legislators, Trout Unlimited, the Natural Resources Conservation Service and others.
- Worked as a partner with the Idaho Department of Water Resources to successfully apply for a Regional Conservation Partnership Program grant from the Natural Resource Conservation Service, for water use efficiency projects in the Eastern Snake Plain Aquifer region, which includes the Big Wood watershed.
- Developed a conceptual water project list and criteria framework.
- Completed an analysis of water delivery amounts required for different stakeholder groups and a map showing delivery areas.
- Developed a draft water exchange and target flow scheme to implement voluntary water transactions ([Appendix C: Big Wood Watershed Draft Target Flow Map](#)).
- Created a website: <http://www.woodriverwater.org>
- Successfully applied for two Bureau of Reclamation WaterSMART Water, Energy, and Efficiency grants.

The Collaborative will address critical watershed needs through several avenues: continuing outreach activities, watershed restoration planning, and watershed management project design. The Collaborative provides a forum for water users and other members to discuss issues and solutions in an open environment. There is no other existing platform for these discussion to occur, other than in smaller meetings or through legal proceedings. Members have provided comments on the importance and need for the Collaborative to exist, to address watershed issues on a broad scale. Continued outreach to members through email, meetings, and the website is necessary for the Collaborative to be successful and move forward. Pre-planning activities will help Collaborative members gather information on critical watershed needs and data gaps.

Watershed restoration planning will enable the Collaborative to further develop concepts and restoration ideas that can address critical environmental and water quantity issues. One environmental project that will be researched and planned with grant funding is upgrading diversion headgates along the Big Wood River. These headgates with older designs require irrigation districts and canal associations to routinely use heavy equipment in the river to repair infrastructure or direct flow into the headgate. This disturbs aquatic and fish habitat and decreases water quality. The canals also entrain fish during irrigation shut-off periods. During 2017 flooding events, several of these structures were damaged, and irrigators are searching for infrastructure solutions. The Collaborative is interested in

upgrading these headgates with designs that both benefit irrigation users, fish populations, and the river ecosystem.

Bureau of Reclamation funding would also support planning for an aquifer recharge project in the Silver Creek area, which is of high interest to the Collaborative for both environmental and water quantity reasons. The Silver Creek ecosystem relies on the underlying aquifer that creates highly productive springs and water supply for downstream users on the Little Wood River; however groundwater pumping has decreased aquifer levels in recent years. A recharge project could entail recharge pits, incidental recharge, and/or injection wells that would directly add surface water into the aquifers underlying the Silver Creek area. The Collaborative would contract hydrologists and/or other consultants to research and help develop an aquifer recharge plan.

The Collaborative will continue to plan and design watershed projects that address water quantity issues and contribute to watershed health. Developing a water exchange, or transaction program, with the assistance of Bureau of Reclamation funding, will enable water users and non-profit partners to conduct transactions that support the purposes of the Collaborative and target flows that meet the needs of fish and aquatic habitat and consumptive use. Analyses of existing water rights, priorities for instream flow, and water exchange framework and methods are necessary to further develop this concept.

There are several agricultural irrigation projects in pre-planning stages that will require project design and technical assistance. Although these projects are primarily irrigation-related, they contribute to the overall goals of the Collaborative by reducing demand on water use and stream flows, measuring stream flows and irrigation delivery, and improving efficiency so that water can be managed more effectively in downstream reaches of the watershed. Projects currently in the pre-planning stages are demand reduction projects in the Silver Creek area, conversion to drip irrigation, streamflow measurement system in the Camas Creek subbasin, and pipeline installation in the Dietrich area in the lower reaches of the Little Wood subbasin.

Developing a project prioritization framework with Bureau of Reclamation funding will help the Collaborative evaluate existing projects, determine project status and needs, and determine priorities for funding opportunities. It will also enable members to become involved in ranking and selecting projects that are important to the entire Collaborative. By involving Collaborative members in the evaluation process, projects that address the critical watershed needs of the group will be prioritized and selected for funding opportunities.

E.1.3. Evaluation Criterion C: Implementation and Results

Sub-criterion C1: Understanding of and Ability to Meet Program Requirements

A proposed schedule for project implementation is outlined in Appendix E: Tasks and Milestones. The schedule delineates major tasks, milestones, deliverables, dates, and lead non-profit partner. Cost-share for this grant is provided through in-kind staff time from Trout Unlimited, Wood River Land Trust, and The Nature Conservancy, and is detailed in the Budget. The three non-profit partners are committed to completing the tasks and milestones. There are no major difficulties anticipated in implementing this schedule.

The non-profit partners have worked collaboratively with agricultural producers and the Natural Resources Conservation Service to implement land and water conservation practices within the Wood River watershed for over 20 years. Specifically, we have helped implement variable rate irrigation, remotely-operated pivots, improved flood irrigation, planted native pollinator tracts, restored wetlands, improved fish passage, supported governmental water conservation goals, and improved fish and wildlife habitat. Many of the producers we support are members of the Collaborative.

Sub-criterion C2: Building on Relevant Federal, State, or Regional Planning Efforts

The Collaborative's activities directly support the programs established by the Idaho Water Resource Board in the 2012 State Water Plan, specifically in Section 8A: Sustainability of Idaho's Water Resources, adopted in 2016, which states "Stewardship of Idaho's water resources begins with the realization that the water resources of the state are not inexhaustible. Therefore, it is necessary to manage and administer Idaho's water resources and protect Idaho's water quality. Stewardship, by necessity, also includes taking affirmative steps to address declining trends in the resource, where those trends exist, and to establish policies that will prevent future unsustainable declines..."

<http://www.idwr.idaho.gov/waterboard/WaterPlanning/StateWaterPlanning/PDFs/ADOPTED%20State%20Water%20Plan%202012.pdf>

The work of the Collaborative is also consistent with: the Idaho Water Resource Board's Eastern Snake Plain Aquifer Comprehensive Aquifer Management Plan, of which the Big Wood watershed is included, that states the following goals: "1. Increase predictability for water users by managing for a reliable supply. 2. Create alternatives to administrative curtailment. 3. Manage overall demand for water within the Eastern Snake Plain. 4. Increase recharge to the aquifer. 5. Reduce withdrawals from the aquifer..."

http://www.idwr.idaho.gov/waterboard/WaterPlanning/CAMP/ESPA/PDFs/ESPA_CAMP_lowres.pdf

The Blaine County Comprehensive Plan Local Water Policy's purpose is also aligned with goals of the Collaborative: "[Blaine County] recognizes the importance of water to property owners, residents, and visitors of the County. Unlimited supplies of water are not always available. Conservation of water resources, and the adequacy of water supplies for

future use, is deemed essential to the present and future health, safety and welfare of Blaine County's residents, visitors, and property owners... A recent aquifer study conducted by Dr. Charles Brockway indicates that the aquifer in Blaine County has declined approximately 12 feet during the past two decades..."

http://www.sterlingcodifiers.com/codebook/getBookData.php?chapter_id=19592

E.1.4. Evaluation Criterion D: Nexus to Department of Interior Initiatives

The Collaborative's goals are well-aligned with the Bureau of Reclamation's Drought Response Program. The National Resource Conservation Services data shows that snowpack in the Big Wood River Basin has declined by 9% and in the Little Wood River Basin by 7% from the 1971-2000 average to the 1981-2010 average. Drought and water supply shortages are a re-current condition in the Wood River valley; the most recent Order Declaring Drought Emergency was issued April 24, 2014.

The work of the Collaborative will contribute to drought resiliency through demand reduction projects, aquifer recharge, municipal programs, and delivery efficiency projects. Using target flows in a water exchange program will address aquatic and fishery instream flows as well as agricultural irrigation needs. Outreach components of the Collaborative are instrumental in promoting public awareness around water shortages and watershed health issues, as the seventy-five diverse Collaborative members represent multiple user groups within the entire watershed.

The Bureau of Reclamation operates the Little Wood River Dam and Reservoir north of Carey, and the Little Wood watermaster is a member of the Collaborative. Potential projects in the Little Wood River Dam area include surface water predictions above the Reservoir, demand reduction projects, and crop changes to address reduced water availability.

Required Permits or Approvals

There are no permits or approvals required for the work proposed in this grant application.

Project Budget
Budget Proposal

Budget Item Description	Computation				Quantity Type	Total Cost	Non-Federal Share	Federal Share
	Year 1		Year 2					
	\$ / Unit	Quantity	\$ / Unit	Quantity				
Salaries and Wages								
Trout Unlimited - Big Wood Project Manager, Keri York	\$24.04	624	\$24.04	624	Hours	\$30,001.92	\$15,000.96	\$15,000.96
Trout Unlimited - Idaho Water Project Director	\$42.51	104	\$42.51	104	Hours	\$8,842.08	\$4,421.04	\$4,421.04
Trout Unlimited - Legal Counsel	\$33.72	208	\$33.72	312	Hours	\$17,534.40	\$8,767.20	\$8,767.20
Trout Unlimited - Administrative Assistant	\$19.76	10	\$19.76	10	Hours	\$395.20	\$197.60	\$197.60
Trout Unlimited Fringe Benefits	\$0.43		\$0.43		Rate	\$24,412.65	\$16,412.65	\$8,000.00
Wood River Land Trust - Deputy Director	\$42.58	220	\$43.96	220	Hours	\$19,038.80	\$9,519.40	\$9,519.40
Wood River Land Trust - Project Coordinator	\$19.78	200	\$20.37	200	Hours	\$8,030.00	\$4,015.00	\$4,015.00
Wood River Land Trust Fringe Benefits	\$0.21		\$0.21		Hours	\$5,684.45	\$2,842.22	\$2,842.22
The Nature Conservancy Idaho - Dir. Cons. Initiatives	\$50.00	416	\$50.00	416	Hours	\$41,600.00	\$20,800.00	\$20,800.00
The Nature Conservancy Fringe Benefits	\$0.23		\$0.23	0	Rate	\$9,360.00	\$4,680.00	\$4,680.00
Contractual / Construction								
Hydrologists or Other Consultants	\$5,000.00	1	\$5,000.00	1	Bulk Rate	\$10,000.00		\$10,000.00
Groundwater Flow Model Run	\$4,500.00	1			Computer Output	\$4,500.00		\$4,500.00
Total Direct Costs						\$179,399.50	\$86,656.07	\$92,743.42
Trout Unlimited Indirect Costs	\$0.16		\$0.16		Indirect Rate	\$28,506.58	\$21,250.00	\$7,256.58
Total Estimated Project Costs						\$207,906.08	\$107,906.08	\$100,000.00

Budget Narrative

Work of the Collaborative supported by this grant will cost \$207,906 over two years. The Collaborative is requesting a total of \$100,000 over two years; \$50,000 each year to support the non-profit partner's work in the Collaborative, along with consultants. In-kind match funding will be provided by non-profit partners. Keri York, Big Wood River Project Manager at Trout Unlimited will oversee details of this grant, and Trout Unlimited Administrative Assistant will provide re-grants to The Nature Conservancy and Wood River

Land Trust. Trout Unlimited will also contract with consultants to complete hydrology studies and a groundwater model flow run and output.

Salaries and Wages

The budget proposal includes costs for staff of each non-profit partner for work on the Collaborative. Hours for compliance with reporting requirements are included in Trout Unlimited's total hours. Indirect costs incurred by Trout Unlimited are included separately. Indirect costs incurred by Wood River Land Trust and The Nature Conservancy are included in direct costs. Lead partners for each project task and milestone are further defined in Appendix E: Tasks and Milestones.

Trout Unlimited Big Wood River Project Manager, Keri York, will conduct outreach activities, and administer meetings and email communication. She will conduct pre-planning activities related to projects, as well as mapping and technical analyses needed for project development. She will work on existing projects, interview Collaborative members for project ideas, and subcontract with hydrologists and Idaho Dept. of Water Resources to complete a groundwater flow model run. Trout Unlimited Idaho Water Project Director, Kira Finkler, will research and assist in funding applications with projects, provide strategic direction for non-profit partners, and assist with project development. Trout Unlimited Legal Counsel, Peter Anderson, will help with project development, work on developing a water transaction program, and research and assist in funding applications, and provide legal support for conservation transactions for target flows and other environmental transactions. Trout Unlimited Administrative Assistant, Cathy Tyson-Foster will administer this grant.

The Nature Conservancy Idaho Director of Conservation Initiatives, Mark Davidson, will conduct outreach activities and administer meetings. He will conduct pre-planning activities related to projects, as well as mapping and technical analyses needed for project development. He will work on existing projects, interview Collaborative members for project ideas, and research and assist in funding applications.

Wood River Land Trust Deputy Director, Amy Trujillo, will conduct outreach activities and administer meetings. She will conduct pre-planning activities, work with municipalities and Homeowners Associations to promote water conservation through policy changes, review watershed-specific best management practices and incorporate into projects, and research and apply for funding. The Wood River Land Trust is currently hiring a new Project Coordinator, who will work with municipalities and Homeowners Associations to promote water conservation through policy changes, review watershed-specific best management practices and incorporate into projects.

Fringe Benefits

Fringe benefits include such costs as social security taxes, health insurance, dental insurance and worker's compensation insurance. The costs of all of the fringe benefits allocated to employees are then divided by total payroll to arrive at a benefit rate.

Travel: N/A

Equipment: N/A

Materials and Supplies: N/A

Contractual

Contractual services will be hired to assist in project design and technical analysis. A groundwater flow model run will be conducted by Idaho Dept. of Water Resources, to assist with Collaborative project goals and design. This will enable the Collaborative to understand how groundwater and surface water are related when developing projects, such as aquifer recharge or demand reduction. Hydrologists or other consultants will also be hired to assist with project design and technical elements because non-profit partners do not have this expertise in house.

Other Expenses: N/A

Environmental and Regulatory Compliance Costs

Environmental and regulatory compliance costs are not expected with the tasks outlined in this proposal. These costs are expected with project implementation, which will take place after project pre-planning, design, and funding are achieved. If any costs are incurred, they will be provided by in-kind funding by non-profit partners.

Indirect Costs

Trout Unlimited has negotiated a federal indirect cost rate of 15.89% with the U.S. Department of the Interior, Interior Business Center, Document Number 18-A-0192 (18D) and 18-A-0193 (19D), dated December 1, 2017.

Letters of Support

Please see attached letters of support in Appendix F: Letters of Recommendation.

Official Resolution

Trout Unlimited will be adopting an official resolution during its national board meeting on February 8-9, 2018. This resolution will be emailed to Darren Olson (dolson@usbr.gov) and be inclusive of the information requested to be a recipient of this award. We request that this information be included in the proposal when received.