Bureau of Reclamation
Environmental Water Resource Project Grant Proposal
March 28, 2023

Warm Springs Preserve
Stream Restoration and Irrigation Improvement Project

Submitted by:

WOOD RIVER LAND TRUST

In partnership with

KETCHUM

Applicant: Wood River Land Trust
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Date: March 28, 2023

Applicant Name: Wood River Land Trust

Project Name: Warm Springs Preserve Stream Restoration and Irrigation Improvement Project

City, County, State: Ketchum, Blaine County, Idaho

Project Manager:

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Applicant Category: B

Project Funding Request: **$1,733,154**

Total Project Cost: **$3,759,329**

Project Summary

The Warm Springs Preserve Stream Restoration and Irrigation Improvement Project is located on Warm Springs Creek in Ketchum, Idaho. The 65 acre Warm Springs Preserve is owned by the City of Ketchum, a critical partner in the proposed project. The Preserve includes Warm Springs Creek and the surrounding riparian corridor. Warm Springs Creek is one of the largest tributaries to the Big Wood River, and supports a unique lineage of Rainbow trout *Onchorhynchus mykiss*, the Wood River sculpin *Cottus leiopomus*, and genetically divergent populations of Bridgelip Sucker *Catostomus columbianus* and Mountain Whitefish *Prosopium williamsoni.* Over the years, the project site has been degraded by fill and habitat conversion. The proposed project will improve an aging and inefficient irrigation system in tandem with planting drought tolerant native vegetation, saving at least 150 acre-feet of conserved water for instream use. The project will also restore 1.3 miles of Warm Springs Creek, create nine acres of floodplain and 1 acre of wetland habitat. The Warm Springs Preserve Master Plan was guided by the local community, and has been endorsed by elected officials, the Friends of the Warm Springs Preserve Committee, conservation groups, and government agencies.

Length of Time and Estimated Completion Date

Once funding has been awarded, the contract is estimated to be signed in fall of 2023. The project will require final site review and engineering work before preparing the environmental documents and bidding. This final design will occur in tandem with environmental review that will take place from fall of 2023, to early spring 2024. The City of Ketchum Floodplain Development Permit and Riparian Alteration Application, as well as the joint permit from the

U.S. Army Corps of Engineers (Corps), the Idaho Department of Water Resources (IDWR), and the Idaho Department of Lands (IDL) will be applied for in March 2024 and is expected to be secured by May/June 2024. Bidding April 2024. Construction August 2024 – January 2025. Project closeout and final reports in February 2025.

Federal Facility

The project is not located on or within a Federal Facility or Federal land. The Preserve is adjacent to land managed by the U.S. Forest Service and Bureau of Land Management.

Project Location

Geographic Location

The Warm Springs Preserve is located at the base of Bald Mountain in Blaine County Idaho, approximately one mile northwest of the resort area of Ketchum and Sun Valley. Warm Springs Creek runs through the Preserve, and its confluence with the Big Wood River is approximately 0.25 miles from the southern edge of the Preserve. The project latitude is {43° 41' 21.55" N} and longitude is {114° 23' 8.99" W}. See Attachment A – Project Location Map. See Attachment B – Warm Springs Preserve 30% Design Drawings for a detailed location map.

Figure 1. General project location.

Technical Project Description

Background Information

In 2022, the City of Ketchum purchased the 65-acre Warm Springs Ranch property and established the Warm Springs Preserve for public use. The City of Ketchum has partnered with the Wood River Land Trust (WRLT) and other stakeholders including the Friends of the Warm Springs Preserve (FWSP) to create a renewed landscape to enhance the streamside Preserve. The enhancement of the Warm Springs Preserve property includes a wide range of objectives related to restoration, water conservation, and recreation. The scope of this funding request is only concerning irrigation efficiency improvements, as well as restoration and enhancement of Warm Springs Creek and the adjacent floodplain. The main components of this project include irrigation upgrades, restoration of aquatic habitat within the existing creek, creation of side channels, enhancement of floodplain connectivity, flood conveyance improvements, and establishment of native plant communities.

The Warm Springs Preserve project site is located just upstream from the confluence with the Big Wood River, which joins the Malad River just before it flows into the Snake River. The project reach runs along the base of Bald Mountain and adjacent land includes a former golf course, riparian zone, and steep, densely forested areas. The nearby Warm Springs Creek canyon

drains a mountainous and forested area to the west, but is densely developed with residential homes within the direct vicinity of the project area. Idaho Department of Environmental Quality (IDEQ) has conducted programmatic monitoring (Beneficial Use Reconnaissance Program, BURP) throughout the Warm Springs Assessment Unit since 1998. Most sites reflect moderate-to-good water quality, though Warm Springs Creek has exhibited poor BURP scores periodically since 2013 due to wildfire and low water (IDEQ, 2017).

Warm Springs Road is the major arterial providing access to residential areas and recreation, including Sun Valley Ski Resort on Bald Mountain. Elevations within the project reach range from 5,800 to 6,200 feet above sea level. Warm Springs Creek historically meandered through a narrow river valley, changing its course due to flooding and waterway developments but has been stabilized into its current channel with riprap and fill to protect residential developments and historical land uses (Figure 2). In the southeast portion, the channel moves along the former golf course and through land previously used for ranching. This area contains topsoil and gravel that previous landowners removed from the stream channel. The golf course abuts the steep face of Bald Mountain, which is heavily forested with Douglas fir trees and riparian understory (Walsworth, 2009).

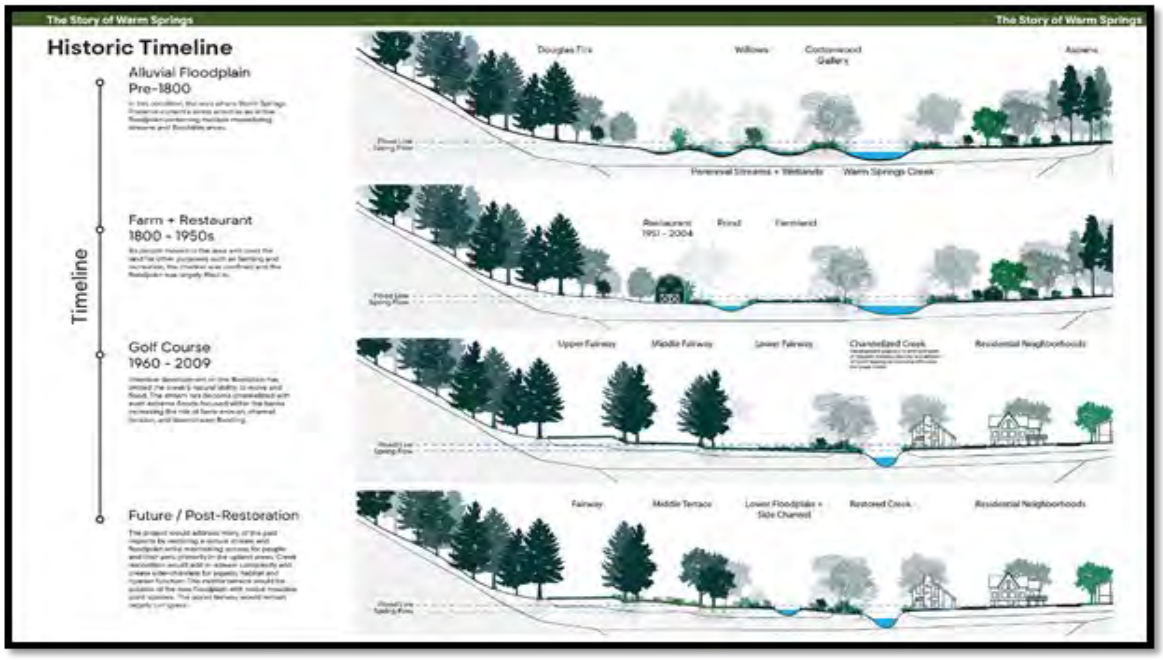

Figure 2. Illustrative cross section of the Warm Springs Preserve over time.

Within the project area, Warm Springs Creek flows through and over relic glacial outwash and alluvium. As with many drainages in the region, Warm Springs Creek exhibited much greater discharge during the last ice age, generating large volumes of sediment (i.e., glacial outwash) that filled the valley (Pierce & Scott, 1982). Over the past several thousand years, the modern Warm Springs Creek has slowly incised through this material, leaving behind sets of terraces. More recently, the terraces within the project area have been mechanically altered to accommodate land use and development, including a golf course. Similarly, the stream channel

has been artificially confined, concentrating flow and creating further incision and floodplain abandonment. There is virtually no floodplain connectivity within the northern half of the project reach, even at the 100-year recurrence interval flow (see Figure 3 and Attachment C – WSP 30% Design Hydraulic Model). The southern half of the project has marginally better floodplain connectivity, activating at around the 5-year recurrence interval flow. Channel incision is expected to continue where flood flows lack the ability to spread out and dissipate energy on the floodplain, and instead are concentrated on the bed and banks.

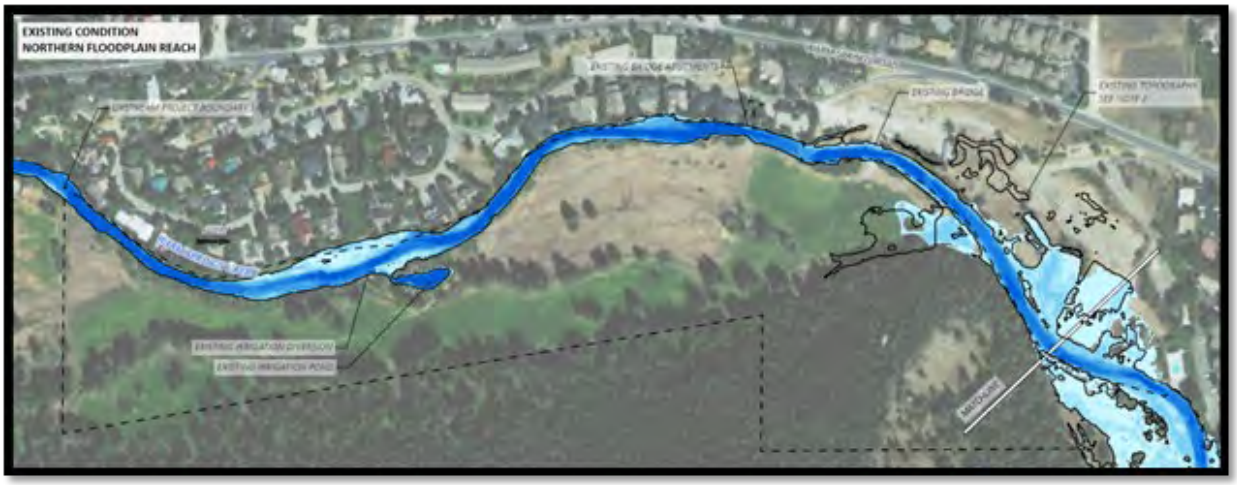

Figure 3. Existing hydraulic conditions at 100-year recurrence interval flow.

As a result of incision and concentrated stream flow, much of the fine sediment has been scoured from the streambed, leaving behind a relatively uniform layer of coarse cobble bed armor. This condition has created a channel morphology that is predominantly plane-bed with only occasional pools formed by large flow constrictions caused by boulders, logs, tree roots and/or human infrastructure such as bridge abutments. Fine sediment introduced to the system tends to fill interstitial spaces between the armor causing severe embedment, further reducing pool formation and spawning habitat quality. The project reach has an average bed slope of 0.83% with sub-reaches that vary from 0.4% to a constructed boulder riffle at 6.4%. Most of the Warm Springs Creek banks within the project area are stable; many are also armored with riprap (Figure 4). Bank erosion is only prevalent where there is a lack of bank material stability including tree roots and riprap.

Figure 4. Image depicting armored banks of Warm Springs Creek, adjacent to the Warm Springs Preserve.

Much of the abandoned floodplain vegetation has been cleared or converted to non-native species. The incised stream channel has likely lowered the groundwater table and has certainly reduced the frequency and magnitude of groundwater recharge via the floodplain. Past geotechnical explorations on the site reveal the late-summer groundwater table is over 10 feet below the floodplain surface in many areas. Few riparian species can survive on the abandoned floodplain. Cottonwood trees and willow shrubs persist only along the near-bank riparian area where water is accessible. At the downstream end of the reach, where Warm Springs Creek approaches the Big Wood River, less incision has occurred, the floodplain is more accessible, the groundwater table is presumably higher (relative to the floodplain elevation), and healthy, native riparian vegetation is much more prevalent.

Due to the incised/entrenched nature of the existing Warm Springs Channel there is a narrow riparian fringe and few wetlands. The northern half of the project reach has a narrow riparian corridor that exists on the channel margins. Both right and left banks through this reach are steep (2:1 or greater), which means that vegetation must be within a few feet laterally of the channel to access the adjacent groundwater associated with the channel. This reach also is considered a losing reach, meaning that groundwater elevations drop moving away from the channel, making the transition from riparian to upland even more abrupt.

The left bank through this reach is on private property, resulting in a patchwork of riparian conditions. Some landowners have left mature trees and a small riparian buffer, while others have converted their bank to mowed lawns, poured concrete, or placed riprap to protect the bank. The river right bank is within the Warm Springs Preserve property and has a fairly consistent corridor of mature trees and brush, but all contained within a narrow margin due to the steep and tall nature of the bank. There are no wetlands within the north half of the project other than the immediate channel margins and an artificial pond used for pumping water to irrigate the fairway lawn.

The southern half of the project has better floodplain connectivity on the river right side. The southern floodplain is mostly grasses with stands of quaking aspen and cottonwood, as well as some wetlands along the toe of the hillslope. The river right bank is lower and more gradual than upstream, which allows for a wider riparian corridor. The river left bank through this reach is all private property as well, with a similar assortment of riparian conditions as the northern reach. A summary of healthy riparian conditions targeted for the project site is provided in the Attachment D – Warm Springs Preserve 30% Design Report.

One single space two-lane bridge currently provides access to the Warm Springs Parcel and is located approximately at the midpoint of the project reach. Concrete abutments with piles provide a bearing surface. Based on the hydraulic model results the bridge structure appears to adequately convey the 100-year flow.

Within the Project Reach, the Warm Springs Preserve irrigation diversion headgate serves the Warm Springs Preserve parcel. The diversion is piped into a pond that is used to pump water for irrigation purposes. The banks of the pond are nearly vertical, and pose a danger for recreationalists and dog walkers. The pond has been known to entrap older dogs that utilize it for

swimming or chasing sticks. Community members and Preserve users have expressed strong interest in relocating or regrading the pond for public safety.

Three water rights are stacked and have a combined use limitation of 27.9 acres and a combined diversion rate of 1.12 cfs (see Attachment G - Warm Springs Ranch Water Right Evaluation). The primary water right, 37-212A, has a priority date of 6/23/1888 and authorizes diversion of 1.12 cfs for irrigation of 27.9 acres between April 15 and October 31. The other two water rights, 37-2621 and 37-20381, are supplemental water rights for irrigation at the same place of use. Water right 37- 2621 has a priority date of 8/6/1959 and a diversion rate of 0.48 cfs. Water right 37-20381 has a priority date of 11/12/1936 and a diversion rate of 0.50 cfs. The stacked rights and have a combined use limitation of 27.9 acres and a combined diversion rate of 1.12 cfs. According to the previous water master of district 37, 37-212A (1888) and 37-2621 (1959) are valuable because of the amount of water that is allotted. These water rights allow for the irrigation of the entire grassy area to be pulled from sources other than municipal water. Due to this priority date, it's essentially free water that can be used for irrigation and is likely exempt from any water call or curtailment.

Presumably associated with the irrigation diversion, and in the immediate vicinity of the diversion, are two pipes (possibly conduit) crossing Warm Springs Creek, both exposed in the bed (Figure 5). The design team is engaging with local utility companies and the City of Ketchum to determine the use of these pipes, if they are active, and potential appropriate replacements.

Figure 5. Exposed utility pipes running across the streambed of Warm Springs Creek.

The WRLT and City of Ketchum are committed to the following priorities for the WSP, with items in bold being aspects covered under this grant application proposal: a passive park for open space in perpetuity, off-leash dog access, nordic ski trails, public restrooms, **new irrigation system, and restoration of the riparian zone adjacent to Warm Springs Creek and its floodplain.** Primary stream and floodplain restoration goals are to enhance and increase the natural channel function of Warm Springs Creek and geomorphic processes that improve habitat suitability for trout; create a pond that will enable storage of water for irrigation; increase floodplain inundation and floodway conveyance; create side channels through the floodplain to provide more diverse aquatic and riparian habitat; wetland establishment to help recharge groundwater and mitigate loading of pollutants. These objectives were developed to address the primary limiting factors, which include the quantity and quality of habitat diversity, large wood pieces, native shrubs and trees density, floodplain connectivity, and number of pools.

Project Description

The design team has identified specific restoration actions for the Project Reach. These actions are listed below and depicted in the Irrigation Plan (Attachment F – WSP Irrigation Plan), and 30% Design Drawings (Attachment B).

Irrigation Improvements:

- As designed the new system would water in 6 hours putting down .30" uniformly over the entire site as shown on the drawing plans.
- Areas typically requiring temporary irrigation for revegetation would get permanent irrigation to provide future cost savings and uniformity of water application.

    a. Once the areas along the river are revegetated, those sprinkler sub mainlines will be isolated and the sprinklers pulled out, but saved to be used for replacement heads in the future. This would keep the Ketchum Parks Department from having to purchase replacements for many years, saving thousands of dollars.

- Pressure regulated Hunter Golf Rotors will be installed at each sprinkler assuring perfect pressure at each nozzle which is critical to achieve the highest Distribution Uniformity and save water by reducing dry spots.
- As designed the entire site would have 238 Valve-in-Head rotors that cover 90% of the site. These are easily serviced without additional excavation or shovel work. They are top side serviced, so solenoid replacement, pressure adjustments, valve repair or replacement are implemented without digging.
- The system will be controlled with two Baseline 3200X controllers and a FlowStation which will read the flow of each station and maximize the pump station for optimal performance and efficiency.

    a. Soil Moisture Sensors will be added to the Baseline control system to automatically adjust irrigation on volumetric soil moisture readings. This could save hundreds of thousands of gallons of water and thousands of dollars in power.

- The pump station will have Variable Frequency Drive (VFD) control panels for the motors which will adjust the hertz of the motors to minimize power usage, extend pump life and maximize sprinkler performance. It would also contain a self-cleaning automatic filter system so maintenance would be cut to a minimum for the Ketchum Parks Department.

Restoration and Earthwork:

- Habitat improvement at the WSP diversion by creating a constructed riffle and replacing the existing concrete headworks.
- Instream earthwork (excavation and fill) within the existing mainstem channel to create pools, point bars, and constructed riffles to develop a more complex riverine network.
- Installation of large and small woody debris structures to promote in-channel complexity, force hydraulic response (scour, deposition, split flow, floodplain connection, sediment

sorting, and overall hydraulic diversity), and provide concealment cover for juvenile trout.
- Floodplain earthwork (excavation) to lower the floodplain to an elevation activated on a roughly semi- annual basis (2-year recurrence interval flood or greater) and to create off-channel habitat including multiple perennial side channels and a small floodplain, oxbow pond.
- Revegetation with native species within the riparian zone and transplanting local vegetation harvested near the project site as available. Existing mature vegetation will be preserved to the extent possible and used as floodplain roughness and/or bank roughness where available and appropriate. Existing, mature riparian vegetation is extremely limited within the project area.

Recent biological studies of salmonids (Idaho Governor's Office of Species Conservation, 2019) suggest that juvenile fish heavily utilize side channels but tend to occupy areas near inlets or outlets. Telemetry studies indicated the maximum daily movement of a juvenile salmonid is approximately 415 ft. Therefore, rather than having a single, long, independent side channel, multiple, shorter-length side channels were selected to maximize the number of flow convergences and divergences. A long side channel bordering the upland terrace has also been proposed to facilitate floodplain groundwater recharge and for upland irrigation needs. This long side channel has been divided into segments by including an inline oxbow pond and beaver wetland. This diversity of habitat was selected to increase complexity and provide shorter stream lengths between various habitat types.

Design channel dimensions were selected based on target flow splits at the 1.5-year discharge and at low flow (selected as 29 cfs, which is the 95% exceedance flow during the summer season). Channel dimensions were initially estimated based on average reach slopes and calculations for normal depth at riffle locations. Obtaining low-flow perennial discharge was the primary factor in determining channel inverts at side channels leaving the Warm Springs Creek. Channel width was largely driven by the desired flow during the 1.5-year discharge. The combination of these two controls required side channels to have a lower width-to-depth ratio than the main channel.

Large woody material structures are proposed in the main channel and side channels to provide roughness and habitat throughout the project area. There are approximately 10 different types of proposed structures. These structures will consist of key log members that act as the skeleton of the structure. The structure will then be completed with the addition of woody racking material and slash. These structures are intended to emulate natural log jams.

Rio ASE will analyze perceived risk to public safety and property damage associated with large woody material using the Large Woody Materials–Risk Based Design (Knutson & Fealko, 2014). Rio ASE will establish design stability and factors of safety for buoyancy and for sliding and rotation in coordination with WRLT. This analysis is expected to be completed in the final design iteration.

Rio ASE will evaluate estimated shear stresses at the riffle locations for the 1.5-, 5-, 25- and 100-

year discharges. Based on these shear stresses, a suitable riffle matrix will be estimated to be acceptable for in situ riffles and a riffle matrix will be developed for more critical riffle locations. More critical riffle locations will be determined by the project team and are intended to be more stable to ensure lateral connectivity and reduce the risk of incision. This analysis is expected to be completed in a future design iteration.

Equipment necessary to complete the project likely will include dozers, excavators, loaders, and a variety of service vehicles. General Conservation and Implementation Measures are included as notes in the 30% Design Drawings (Attachment B), and those notes indicate biodegradable lubricants are required for work below the ordinary high water mark (OHWM).

Applicant Category and Eligibility of Applicant

WRLT is applying as a Category B applicant, acting in partnership with a Category A partner, the City of Ketchum. WRLT and the City have been close partners in this project, with WRLT donating $500,000 towards the Preserve acquisition campaign, and being a key partner in the public Master Planning process. WRLT is an eligible Category B applicant as a 501(c)(3) non-profit organization located in Idaho that is significantly affected by the quality or quantity of water in the watershed because of our mission to protect and sustain the life-giving waters of the Wood River Valley and inspire love of this special place for generations to come. WRLT significantly affects water quality and quantity via its leadership with collaborative groups like the Wood River Water Collaborative, the river restoration projects it constructs within the watershed, and through its advocacy for water and land use policy within the watershed. WRLT is capable of promoting the sustainable use of water resources, as demonstrated by its existing education programs, including the Trout Friendly program which educates property owners on drought-resistant landscaping and the impacts of herbicide and fertilizer use on water quality.

WRLT has been instrumental in leading restoration efforts along the Big Wood River. The WRLT produced the first memo in 2005 calling for a major river restoration effort, commissioned the first geomorphic study of the river (Rapp, 2006), and has participated in all subsequent studies. WRLT has partnered with Blaine County and other agencies for decades to implement habitat restoration and protection efforts. Since 1994, WRLT has been a growing a dynamic presence in the Wood River Valley, preserving and protecting the Big Wood River, its tributaries, and the treasured landscapes of central Idaho. In 2021, the WRLT was awarded the National Land Trust Excellence Award by the Land Trust Alliance. To date, the WRLT has preserved nearly 27,000 acres, created 16 public preserves, 41 conservation easements, and completed several in stream and riparian enhancement projects.

The City of Ketchum is an eligible Category A Partner, that has authority of municipal water delivery. The City of Ketchum Utilities Department consists of full-time water and wastewater operators and administrative staff. All water and wastewater operations personnel are licensed by the Idaho Bureau of Occupational Licenses. The City of Ketchum owns the Warm Springs Preserve. The city has an extensive history of maintaining public spaces including partnering with with Blaine County School District at Atkinson Park, managing the pump park, and previously accepted a donation of Farnlun Park (to remain a park in perpetuity). Warm Springs Preserve represents an iconic piece of the community with significant conservation value, and

the city is well-equipped to manage the Warm Springs Preserve and associated water rights.

Performance Measures

WRLT and the City of Ketchum will work collaboratively to monitor changes in Preserve water use and restoration effectiveness, as outlined in the Memorandum of Understanding (Attachment E). WRLT began implementing a Restoration Effectiveness Monitoring (REM) program in 2022 to assess whether efforts were meeting restoration project objectives. See *Evaluation Criterion E – Performance Measures* for plan details.

Evaluation Criteria

Evaluation Criterion A – Project Benefits

Sub-Criterion A.1 – Project Benefits

E.1.1.1.1 General Project Benefits

Explain how the project will benefit ecological values that have a nexus to water resources or water resources management, including benefits to plant and animal species, fish and wildlife habitat, riparian areas, and ecosystems that are supported by rivers, streams, and/or other water sources, or that are directly influenced by water resources management.

The restoration plan for the Project Reach integrates elements of improving irrigation efficiencies, restoring processes for improved river-floodplain function, and rehabilitation and enhancement of fish habitats. Applying this strategy is intended to improve habitat complexity, floodplain connectivity, and increased riparian tree- and shrub-dominated habitat to provide long-term structure and cover. The following actions were developed to support or enhance ecological values in the project reach:

- Restore process and habitat by distributing flow and energy laterally through enabling channel migration to the extent practical, floodplain reconnection, and/or reconstructing appropriate primary and secondary channel planforms, improving water quality, sediment transport, and flood conveyance.
- Restore hydraulic processes, floodplain reconnection, and habitat by providing a greater diversity of channel forms. Channel geometry and planform restoration should focus on reducing channel confinement and increasing geomorphic complexity. Secondary channels will be incorporated where possible to support a variety of fish life stages.
- Protect existing areas of dense woody riparian vegetation where hydraulic complexity and habitat conditions are already favorable, providing shade and temperature improvements.
- Restore riparian processes by planting woody vegetation (especially native cottonwood) with greater plant density along the outside of bends and in floodplain areas susceptible to channel migration and/or avulsion to ensure future channel evolution results in favorable conditions.
- Restore process and habitat by increasing the abundance of instream structure (e.g., large woody debris and boulders), that juvenile fish rely on.
- Restore localized hydraulic processes and habitat by modifying primary channels to result in diverse habitat units, including greater frequency of pools and greater overall range of channel geometry to support adult life stages of native trout.

Will the project improve watershed health in a river basin that is adversely impacted by a Reclamation water project?

N/A.

Is the project for the purpose of meeting existing environmental mitigation or compliance obligations under Federal or State law?
N/A.

If the project will benefit aquatic or riparian ecosystems within the watershed, explain the extent of those benefits. Estimate expected project benefits to ecosystems and provide documentation and support for this estimate, including a detailed explanation of how the estimate was determined.

On the WSP, large portions of the floodplain were previously filled in to create the old golf course. Currently the 100-year flood is largely contained within the channel resulting in deep, high velocity water increasing erosion and flood risk (Attachment C – WSP 30% Design Hydraulic Model). This further limits plant types and diversity that could be found in a functioning floodplain.

The proposed project intends to reconnect up to nine acres of floodplain and remove over 30,000 cubic yards of fill material, improving flood conveyance and mitigating flood hazard to neighboring and downstream homeowners. By removing fill, the new floodplain will activate at a 1.5-year recurrence interval storing water and fine sediment on the landscape. This process will benefit surface to groundwater depths, allowing native riparian vegetation to establish and increase in density overtime. The 30% Design Drawing (Attachment B) describes in detail the estimates for floodplain and wetland creation.

If the project will benefit specific species and habitats, describe the species and/or type of habitat that will benefit and the status of the species or habitat. Describe the extent to which the project will benefit the species or habitat, including an estimate of expected project benefits and documentation and support for the estimate.

The primary focus on restoring Warm Springs Creek within the project reach is to maintain and preserve the unique gene pool of fish species endemic to the Wood River Basin, and the habitats they depend on at different life stages. The isolated Wood River Basin has been noted previously as having “faunal peculiarities” (Hubbs & Miller, 1948). The basin contains an endemic species of sculpin *Cottus leiopomus*, and genetically divergent populations of Bridgelip Sucker *Catostomus columbianus* (Smith, 1966) and Mountain Whitefish *Prosopium williamsoni* (Miller, 2006). Results from a recent genetic study indicate that *O. mykiss* in the Wood River Basin appear genetically diverged from all other sampled *O. mykiss* populations in Idaho (Campbell, Delomas, Meyer, & Peterson, 2022)

The Wood River Sculpin is classified by the Bureau of Land Management as "Sensitive Species Type 2," by the US Forest Service Intermountain Region as "Sensitive Species," and by Idaho Fish and Game as "Protected Non-game". A natural history survey by Sigler and Zaroban says the following about Wood River Sculpin, "Wood River Sculpin are prevalent to the Wood River

Basin of South-central Idaho. This characteristic makes them an important natural history entity. They serve as important forage for other piscivorous taxa, particularly native salmonids, and contribute to the circulation of energy and nutrients in Idaho aquatic ecosystems."

"Wood River Sculpin are considered an imperiled species (G2/S2), are at risk because of restricted range and other factors, and are classified as protected non-game species by the State of Idaho. **Potential threats to Wood River Sculpin include human-accelerated rates of streambed sedimentation, stream channelization, flow alteration, introductions of piscivorous fishes, and degraded water quality."** The proposed project helps address noted threats by augmenting instream minimum stream flows, undoing stream channelization, and providing floodplain connectivity, which is known to convey and store fine sediment sources that lead to streambed embeddedness (the extent to which rocks and snags are covered or sunken into silts, sand, or mud of the stream bottom).

Both creek banks within the project reach have been heavily armored with rip rap to limit channel migration onto the former golf course, or onto dense development along the northern bank. The negative impacts of riprap on trout populations were well documented by the Idaho Department of Fish and Game, who conducted snorkel surveys along transects in association with cover, no cover, mid-channel, and riprap areas. One study on trout habitat preferences in the Big Wood Basin indicated that riprap cover accounted for 4% of trout observations, while covered areas accounted for 71% (Thurow, 1987; Idaho Department of Fish and Game, 1990).

Large woody material structures are proposed in the main channel and side channels to provide roughness and habitat throughout the project area. There are approximately ten different types of proposed structures, which are intended to emulate natural log jams. Over 1,900 wood pieces will be added to the project reach, and over 1,300 live cuttings will be installed to benefit bank stability, nutrient inputs, and provide shade and cover for native fish. Log jams promote in-channel complexity, diverse hydraulic responses, and provide concealment for juvenile fish. Adult trout need deep pools and cover, which is often associated with instream wood and boulders. Deep pools provide a number of habitat benefits such as thermal refugia (during winter months), concealment, and a preferred stratum of water velocities across the water column to suit energetic demands. Seven pools are proposed for the project reach, with several more anticipated as a result of log jam scour and sediment sorting processes.

If the proposed project will benefit federally listed threatened or endangered species, address the following:

There are no known federally listed or endangered fish species in this section of Warm Springs Creek.

Will the project address drought conditions or drought-related impacts on water supplies, habitat, species, or the ecosystem as a whole? Is yes, describe past and current drought conditions and impacts and forecasted drought conditions and anticipated impacts. How will this project help build resilience to drought?

The Natural Resource Conservation Services data shows that snowpack in the Big Wood River

Basin has declined by 9% from the 1971-2000 average to the 1981-2010 average. Drought and water supply shortages are a recurrent condition in the Wood River valley; the most recent Order Declaring Drought Emergency was issued June 16th, 2021, which was preceded by another in June 2nd, 2020, which was preceded by another in April of 2014. In September of 2021, the Big Wood River was nearly dry below the City of Hailey (roughly 14 river miles from the WSP), and was flowing at 47% of its median, as reported by Boise State Public Radio.

The proposed project will build resilience to drought conditions by leasing saved water to the Idaho Water Supply Bank, under a rental agreement to meet minimum instream flow rights (Right no. 37-07919, 1981) from the confluence of Warm Springs Creek downstream 18 miles to the point of diversion of the Bellevue diversion. Repurposing irrigation rights (priority date 1888) from WSP to the Big Wood River will support minimum stream flows in reaches that have run dry, benefitting fish and other aquatic species that rely on perennial flow regimes. Additionally, increasing instream flows even by marginal amounts may benefit downstream agricultural economy. See *E.1.1.1.2 Water Conservation and Efficiency Project Benefits* for detailed calculations.

If the project will result in long-term improvements to water quality, explain the extent of those benefits (i.e., magnitude and geographic extent). Estimate the expected project benefits to water quality and provide documentation and support for this estimate, including a detailed explanation of how the estimate was determined.

Riparian buffers have been widely accepted as a best management practice for water quality protection of their ability to reduce sediment inputs, filter surface runoff, and reduce pollutant concentrations (Dosskey, et al., 2010; Osborne & Kovavic, 1993). The buffers are also effective at reducing instream temperatures by shading the river and trapping cool air beneath the water surface (Tabacchi, Correll, Hauer, Pinay, & Wissmar, 1998). These functions are particularly important for much of Warm Springs Creek, whose water quality has been federally listed as impaired for total phosphorus (Idaho Department of Environmental Quality, 2017). Warm Springs Creek has been impacted by urban development and wildfires, via encroachment or elimination of riparian vegetation in many locations. As proposed in the Master Plan, re-introducing a multi-species forested riparian corridor to over a mile of stream bank will serve as a solution to water quality impairments. These corridors have been shown to remove 90% of sediment and 80% of phosphorus from overland flow in certain conditions (Daniels & Gilliam, 1996)

It has been found that one acre of wetland can filter 7.3 millions of gallons of water a year. The proposed one acre constructed wetland complex was thoughtfully designed with water quality in mind. The 2,000 foot “baldy” side channel and floodplain grading are directed under the entrance road into the wetland complex as outlined in the 30% Design Drawings (Attachment B). The wetland complex will function as a bioswale to trap and filter pollutants from the Preserve or upstream sources. The wetland will include a diverse array of mesic or wet meadow vegetation that provides carbon sequestration and drought insurance.

Are there project benefits not addressed in the preceding questions? If so, what are these

benefits?

The number one guiding principles of the Master Plan was to create a Preserve that is connected and accessible to all. Though much of the area surrounding Ketchum and Sun Valley are publically owned and attract people from all over the world, it is largely inaccessible to certain user groups. The project partners and community stakeholders recognize the importance of a passive outdoor space near an urban environment that offers a gradient of uses. When every phase of the Master Plan is complete, the Warm Springs Preserve will benefit both locals, visitors, and the natural environment for many years to come.

E.1.1.1.2 Water Conservation and Efficiency Project Benefits

Describe the amount of estimated water savings (in acre-feet per year) that are expected to result directly from the project. Include a specific quantifiable water savings estimate; do not include a range of potential water savings. Describe the support/documentation for this estimate, including a detailed explanation of how the estimate was determined, including all supporting calculations.

There is an anticipated water savings of 150 acre-feet annually. See below for detailed calculations:

Idaho Water District 37 records indicate that water is delivered to the WSP property south of the creek through headgate "6-P Golf". Delivery records from 2015-2019 for this headgate are included in Attachment G - Warm Springs Ranch Water Right Evaluation. As shown, the records indicate delivery of approximately 2.0 cfs all season except 2018 when no water was delivered, which was an oversight by the Water District. The records further indicate that annual water delivered to the property ranged from 384 acre-feet to 725 acre-feet, with an average delivery period of 131 days. The City of Ketchum Facilities Maintenance Supervisor indicated that in 2022 the delivery and use period was 150 days, with the irrigation system operating on 12 hour shifts, and that the current system is not fashioned with a flow meter to gauge water consumption, due to its age.

The average annual delivery from 2015 to 2019 was 540 acre-feet. Records between 2017 and 2021 indicate an annual delivery of 129 annual cfs, or 65 acre-feet annual average, likely due to drought emergency declarations in 2020 and 2021 resulting in earlier curtailments. In total, the average annual delivery between 2015 - 2021 to the property for irrigation is roughly 300 acre-feet.

After new irrigation system installed: The local irrigation supply company has been consulted to draft cost estimates, drawings, and water savings estimates with a new efficient irrigation system (see details in Project Description). The new system would work in tandem with construction of a new diversion headgate and relocating the storage pond. Using contemporary technology, software, and materials, the daily irrigation period will be reduced from 12 hours to 6 hours (at night) to cover the same area. **This is a 50% reduction in annual water use, from 300 acre-feet to 150 acre-feet.**

Explain where the water that will be conserved is currently going and how the water is currently

being used. For example, are current losses returning to the system and being used by others? Are current losses entering an impaired groundwater table, becoming unsuitable for future use? Are there any known benefits associated with where the current losses are going? For example, is seepage water providing additional habitat for fish or animal species?

Potential saved water is likely seeping into the ground below the storage pond, and or lost along its irrigation route. The Warm Springs Ranch Water Right Evaluation indicates that aerial imagery **does** support irrigation use south of the creek, though only on 16 of the allotted 24.7 acres, which is verified by the City of Ketchum Facilities Maintenance Supervisor. This presents a potential risk if place of use is not determined. Under Idaho law, forfeiture may occur when a water right, in part or in full, is not used for five consecutive years. Care must be taken to ensure that any volume of water freed up via conservation or efficiency measures on the site is managed appropriately and in a timely fashion. Several avenues provide means to avoid forfeiture for unused water rights, such as water rights placed in the state water supply bank or rented for other statutorily authorized purposes (e.g. meeting minimum stream flows).

Explain, in detail, how water conserved as a result of the project will be used to increase water sustainability for ecological values. Will the project commit conserved water to remain instream? If so, provide detailed support for that commitment. Will a formal mechanism (e.g., collaboration with a State agency or non-profit organization, or other mechanisms allowable under State law) be used? Or, if a formal mechanism will not be used, describe the arrangement proposed to contribute conserved water for ecological benefits. Explain the roles of any partners in the process and attach any relevant supporting documents.

The City of Ketchum and WLRT have entered into a formal Memorandum of Understanding (Attachment E) that states *"Once the new irrigation system is installed and restoration planting components are established, all saved water from the project will be devoted to increasing instream flows via the Idaho Water Bank or other wildlife and fishery benefits at the direction of the WRLT*". The City of Ketchum and WRLT have initiated discussions with the Idaho Department of Water Resources (IDWR) regarding the possibility of leasing the conserved irrigation water rights for non-use to augment flows in stream reaches with existing minimum stream flow water rights. As stated previously, this scenario could exist under a rental agreement to meet minimum instream flow rights (Right no. 37-07919, 1981) from the confluence of Warm Springs Creek downstream 18 miles to the point of diversion of the Bellevue diversion. Repurposing irrigation rights (Right no. 37-212A or 37-20381) from WSP to the Big Wood River will support minimum stream flows in reaches that have run dry (e.g. fall of 2020 & 2021), benefitting endemic fish species and other aquatic organisms that rely on perennial flow regimes. For the Warm Springs Ranch Water Right Evaluation Evaluation, see Attachment G.

E.1.1.1.3 Water Management and infrastructure Improvements Benefits

N/A.

E.1.1.1.4 Restoration Project Benefits

Invasive Species – Vegetation: For projects that include removal of invasive vegetation, will the project include revegetation with native species at the removal site? If not, explain why

revegetation is not necessary for the specific ecosystem in which the project is located. In addition, describe how removal of invasive vegetation will benefit water resources or water resource management. Provide references and citations.

Much of the historic floodplain vegetation throughout the Warm Springs Preserve property has been eliminated or converted to non-native vegetation. While there is an assortment of riparian conditions along different reaches of the project area, current conditions of the project area generally demonstrate limited mature riparian vegetation and wetlands. The revegetation plan will involve the planting of local native species with a detailed planting plan to be crafted in final design phases. Existing mature vegetation will be preserved to the extent possible in combination with transplanting local native vegetation harvested near the project area. The proposed plan considers native recruitment and anticipates that native cottonwood, willow, and other species will naturally recruit within the project area. Within and beyond the riparian zone, the project area has been divided into plant character zones including drought tolerant lawn, tree groves, upland meadow, xeric and mesic floodplains, near-stream riparian, instream aquatic, wet meadow, and cattail wetland. Potential lawn replacements include clover grass blend, native short grass seed mix alternative, and hybrid warm/cool season sod. Native vegetation has demonstrated more conservative water use relative to invasive or non-native species. Once established, native vegetation can require minimal irrigation due to adaptation to local environmental conditions. The root systems of native plants also help to stabilize soil and prevent flooding and erosion. Revegetation of native plants will also function to enhance biodiversity and improve air, soil, and water quality (U.S. Department of the Interior, 2023).

Invasive Species – Other Taxa:

N/A.

Forest Fuels Management Activities: For projects that include fuels management activities to reduce the risk of severe wildland fire, describe the current conditions of the forest, the likelihood of a severe wildland fire, and risks to water quality, water supply infrastructure, aquatic and riparian ecosystem health, and watershed health.

Forested areas throughout the Wood River Valley have experienced significant forest declines over the past two decades. These trends have led to uncharacteristic fire risk in the area and the incidence of two large wildfires circling Bald Mountain in 2007 and 2013. In response, the National Forest Foundation has facilitated cross-agency partnerships to create the Bald Mountain Stewardship Project (BMSP). The purpose of the BMSP is to reduce fuels and associated fire risk, improve overall forest health and wildlife habitat, and to protect water quality and supply. Some restoration actions will include targeted thinning of forests to retain healthy trees, removal of dead and dying trees, and forest replanting efforts to increase diversity. **Through the BMSP plan, the Forest Service and the Wood River Land Trust have agreed to a reduced cost timber sale. The harvested timber will be allocated to instream restoration efforts for the Warm Springs Preserve Project and will support the forest thinning and wildfire risk reduction goals of BMSP.**

Post-Wildland Fire Sediment Removal: For projects that include post-wildland fire sediment

removal, address the following:

N/A.

Subcriterion A.2: Multiple Benefits

If the project will benefit multiple water uses, explain how and to what extent the project will benefit multiple water uses.

The project will benefit both minimum instream flows, which is a limiting factor for endemic fish populations, as well as river-based recreation opportunities and access for a variety of user groups. By conserving saved water and leasing to the Idaho Water Supply Bank, downstream agricultural users will benefit from the additional water delivery.

If the project will provide multiple restoration benefits, explain how.

As stated under General Project Benefits and Water Conservation and Efficiency Project Benefits, the project will enhance and improve ecological values across the 65 acre parcel, and in Warm Springs Creek. Watershed health and fish habitat will be improved by installing instream features used by fish, expanding and replanting the floodplain and riparian buffer with native drought tolerant vegetation, and constructing 2,000 feet of side channel that will benefit multiple life stages of fish, particularly at high flow events. Improving habitat diversity along 1.3 miles of the creek will benefit fish mortality and survival. The Wood River Valley is a popular destination for fly fishing. Improvements to the watershed will benefit the local economy that relies on tourism and recreation. The near-term economic impact to Blaine County of restoration treatment construction is estimated to be $1.6 million in value added annually for five years. The long-term economic impact to Blaine County of increased use of the recreational fishery is estimated to grow to $1.3 million in value added annually over 15 years as the fishery improves (Cook & Becker, 2016).

Will the project reduce water conflicts within the watershed? If so, explain how.

N/A.

Evaluation Criterion B – Collaborative Project Planning

Strategy or Plan: *Is your proposed project supported by a specific strategy or planning document? If so, identify the strategy or planning document by name and address the following questions:*

When was the plan or strategy prepared and for what purpose?

The Master Plan for Warm Springs Preserve was prepared over the course of a year following the acquisition of the 65-acre property. The Warm Springs Preserve Master Plan is in alignment with the City of Ketchum's 2014 Comprehensive Plan (City of Ketchum, ID, 2014) and Blaine County's Comprehensive Plan (Blaine County Land Use and Building Services, 2021). Although the project property is located within the City of Ketchum's jurisdiction, it is near Blaine County's jurisdiction and reflects the shared priority for clean water, watershed health, and ecosystem health within our community.

The Master Plan was prepared to outline the priorities and plan for the full implementation of a Preserve to include the restoration of the riparian corridor in this proposal. The Plan went

through a comprehensive public engagement process and was presented to Ketchum's Planning and Zoning Commission and Ketchum's City Council on multiple occasions before obtaining final approval.

The Warm Springs Preserve 30% Design and Basis of Design Report were developed by Rio ASE to supplement and provide additional detail to the Master Plan. The design and report provide a detailed explanation of design process, analyses, and outcomes for the proposed stream and floodplain restoration.

What types of issues are addressed in the plan? For example, does the plan address water quantity issues, water quality issues, and/or issues related to ecosystem and watershed health or the health of species and habitat within the watershed?

Water quantity issues, water quality issues, and issues related to the ecosystem and watershed health are paramount to the Warm Springs Master Plan. The City of Ketchum and the broader community identified these as key priorities of the Plan and the future of the property. This is a primary reason for partnering with the Wood River Land Trust (applicant) to help develop and implement the Master Plan. The Plan addresses these issues through various strategies, from increasing irrigation efficiency to the creek restoration efforts (outlined in this application).

Is one of the purposes of the strategy or plan to increase the reliability of a water supply for ecological values?

Our community has experienced extreme drought as well as extreme flooding. This plan seeks to address the reliability of Warm Springs Creek and the broader Big Wood Watershed by both reducing the water consumed through irrigation and restoring the watershed and floodplain to its more natural state.

Strategy or Plan Development: *Was the strategy or plan developed through a collaborative process?*

Was the strategy or plan developed as part of a collaborative process by:

A water user and one or more stakeholders with diverse interests (e.g., stakeholders representing different water use sectors such as agriculture, municipal, Tribal, recreational, or environmental)?

When the City of Ketchum was presented with the opportunity to purchase the 65-acre Warm Springs Preserve, they conducted an informal planning study. By interviewing community members and community leaders, the City ultimately decided to pursue a community-support capital campaign to purchase the property. Partnering with Spur Community Foundation, our local community foundation, the project received over 1000 donations ranging from $7 to $1M+. This represents the broad support for the project. During the campaign, the City of Ketchum hosted open houses, listening sessions, and community gatherings to share the City's priorities (including water conversation) and begin to hear priorities from various stakeholders including environmental non-profits, business owners, and members of our community connected to recreation and environmental interests.

Describe who was involved in preparing the plan and whether the plan was prepared with input from stakeholders with diverse interests?

Once the property was acquired, the City of Ketchum retained the services of Superbloom (facilitators, designers, and landscape architects) and Rio ASE (water solutions experts) to lead the Master Plan process. The City and WRLT hosted 10 public meetings between September 2022 – February 2023 to inform the plan. There were over 400 online and in-person survey results collected from stakeholders. The City of Ketchum, WRLT, and Superbloom/Rio worked to incorporate community feedback while maintaining the priority of the City to improve the conservation value of the property and address water quality and quantity issues.

WRLT was heavily involved in the development of the Master Plan participating in the behind-the-scene work with the Master Plan team and engaging as part of all public sessions. WRLT was also available to the Planning & Zoning Commission and the City Council to speak to the Master Plan's approach for addressing water issues and the subsequent implementation.

Strategy or Plan Support for Project: Describe how the plan or strategy provides support for your proposed project.

Does the proposed project implement a goal or need identified in the plan?

The proposed project will accomplish the entire stream and floodplain restoration, and irrigation improvement goals of the Warm Springs Preserve Master Plan (see D.2.2.2.6 Technical Project Description for project goals, objectives, and limiting factors).

Describe how the proposed project is prioritized in the referenced plan or strategy.

The proposed project is prioritized as it is Phase 1a and 1b of the Warm Springs Master Plan. The proposed project is considered the top priority within the Master Plan implementation timeline.

Evaluation Criterion C – Stakeholder Support

Describe the level of stakeholder support for the proposed project. Are letters of support from stakeholders provided? Are any stakeholders providing support for the project through cost-share contributions or through other types of contributions to the project?

- **Wood River Land Trust (WRLT)** is the sponsor and will be contributing cost share from its Open Space Fund.
- **The City of Ketchum** is the Category A Partner and landowner. The City of Ketchum directed the Master Planning process and will be contributing cost share funds.
- **Friends of the Warm Springs Preserve Committee** loyally supported fundraising efforts for the $9M campaign. The Committee has heavily participated in the Master Planning process and supports this project.
- **U.S. Forest Service (USFS)** has reviewed the Master Plan and supporting documentation, and has submitted a letter of support for project. USFS has offered to collaborate on mutually beneficial forest thinning projects that benefit the Bald Mt. Stewardship Project.
- **Blaine County** has reviewed the Master Plan and supporting documentation, and has submitted a letter of support for the project.
- **Idaho Department of Fish and Game (IDFG)** has reviewed the Master Plan and supporting documentation, and has submitted a letter of support for the project.
- **Trout Unlimited** has reviewed the Master Plan and supporting documentation, and has

submitted a letter of support for the project.
- **The Nature Conservancy** has reviewed the Master Plan and supporting documentation, and has submitted a letter of support for the project.
- **Idaho Flood Control District #9** has reviewed the Master Plan and supporting documentation, and has submitted a letter of support for the project.
- **Project Big Wood** is a newly formed local nonprofit whose goal is to work closely with the community to restore and protect the Big Wood River. Project Big Wood staff has reviewed the Master Plan and supporting documentation, and has submitted a letter of support for the project.

See Attachment H – Letters of Support and Partnership

Explain whether the project is supported by a diverse set of stakeholders, as appropriate, given the types of interested stakeholders within the project area and the scale, type, and complexity of the proposed project. For example, is the project supported by entities representing agricultural, municipal, Tribal, environmental, or recreation uses?

As seen above, a variety of stakeholders and community members participated in the Master Planning process, and support this project (Special meeting of City Council and Planning and Zoning Commission sees agreement on habitat restoration). Once the 65 acre parcel was acquired the community rallied together to outline priorities and guiding principles for long term success and conservation of the Preserve. The City and WRLT hosted 10 public meetings between September 2022 – February 2023 to inform the plan. There were over 400 online and in-person survey results collected from stakeholders. The City of Ketchum, WRLT, and design team worked to incorporate community feedback while maintaining the priority of the City to improve the conservation value of the property and address water quality and quantity issues. Stream restoration and water conservation were at the top of this list, given the long history of development and degradation within the parcel and lower Warm Springs Creek. The Master Plan was guided by local municipalities, several nonprofits, Friends of the Warm Springs Preserve Committee, and the U.S. Forest Service.

Is the project supported by entities responsible for the management of land, water, fish and wildlife, recreation, or forestry within the project area? Is the project consistent with the policies of those agencies?

The Idaho Department of Fish and Game, the City of Ketchum, the U.S. Forest Service, and the Wood River Land Trust are some of the entities responsible for this area of Warm Springs Creek. IDFG manages the fisheries resources, the City of Ketchum manages the Preserve in coordination with WRLT, and USFS manages adjacent forestry resources south of the Preserve. The project is consistent with the mission of each of these entities, as seen in the letters of support and partnership.

Is there opposition to the proposed project? If so, describe the opposition and explain how it will be addressed. Opposition will not necessarily result in fewer points.

There was little opposition during the Master Planning process, as stakeholders recognized the valuable opportunity to protect open space and access while restoring lower Warm Springs

Creek and instream flows associated with the water rights. This is evident, as the community was able to raise $9M to acquire and protect the parcel.

Evaluation Criterion D – Readiness to Proceed

Describe the implementation plan for the proposed project. Include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. This may include, but is not limited to, design, environmental and cultural resources compliance, permitting, and construction/installation.

- **Bureau of Reclamation Contract:** September 2023
- **Environmental Review to be Prepared by Reclamation:** September 2023 – March 2023
- **60% Design:** September 2023
- **Permits:** Programmed for submittal February 2024. Anticipate approval by May 2024
- **Bid and Pre-Construction Period:** April 2024 – July 2024
- **Final Construction Documents and Drawing Preparations:** November 2023 – June 2024
- **Construction:** August 2024 – December 2024
- **Project Closeout, As-Built Documents and Final Reports:** February 2025

Proposals with a budget and budget narrative that provide a reasonable explanation of project costs will be prioritized under this criterion.

A detailed budget and narrative are included above in the Technical Proposal.

Describe any permits and agency approvals that will be required along with the process and timeframe for obtaining such permits or approvals.

Work will continue in order to secure the following permits. It is anticipated that they will be approved by May/June 2024.

- The U.S. Army Corps of Engineers (Corps) and Idaho Department of Water Resources (IDWR) joint permit **will be applied for** in February 2024,
- The City of Ketchum Floodplain Development Permit and Riparian Alteration Application **will be applied for** in February 2024.

Identify and describe any engineering or design work performed specifically in support of the proposed project. If additional design is required, describe the planned process and timeline for completing the design. Priority will be given to projects that are further along in the design process and ready for implementation.

The project has a 30% design. The design was developed in February 2023. We anticipate having 60% design drawings by September 2023, and final design work to build final construction documents and drawings by June 2024. See Attachment B for the WSP 30% Design Drawings, and Attachment D for the WSP 30% Design Report.

Does the applicant have access to the land or water source where the project is located? Has the applicant obtained any easements that are required for the project? If so, provide documentation. If the applicant does not yet have permission to access the project location, describe the process and timeframe for obtaining such permission.

The City of Ketchum is the Category A Partner, and owns the parcel(s) and stream sections where work is proposed.

Identify whether the applicant has contacted the local Reclamation office to discuss the potential environmental and cultural resource compliance requirements for the project and the associated costs. Has a line item been included in the budget for costs associated with compliance? If a contractor will need to complete some of the compliance activities, separate line items should be included in the budget for Reclamation's costs and the contractor's costs.

The local Reclamation office was contacted to discuss the environmental compliance and develop an estimated cost associated with environmental review. A line item has been included in the budget for compliance based on cost estimates provided by the NEPA Specialist and Compliance Team. Costs related to FEMA CLOMR/LOMR have also been included.

Is the project completely or partially located on Federal land or at a Federal facility?

The project **is not** located on Federal land or Federal facility

Evaluation Criterion E – Performance Measures

Describe the performance measures that will be used to quantitatively or qualitatively define actual project benefits upon completion of the project. Include support for why the specific performance measures were chosen.

The project benefits that can be measured post implementation are as follows:

- Decrease in managed water use (measured through pump station flow meter)
- Increase in pool abundance and depth
- Useable off channel habitat created, such as side channels and alcoves (SQFT or LF)
- Bird count densities from point counts or eBird entries
- Area of wetland and riparian habitat created (SQFT or LF)
- Aquatic meso-habitat units: abundance and diversity measures (e.g., tree canopy or pollinator habitat)
- Increase native shrubs and trees (number per area)
- Active floodplain area created (SQFT)
- Aquatic macroinvertebrate richness and diversity (e.g. EPT or measures of IBI)
- Increase in large wood or jams (measured in qualifying dimensional wood pieces) that provide fish cover and refugia
- Change in noxious weed cover (annual vegetation transects per planting zone)
- Positive visitor experience (annual user surveys and interviews)

Performance measures were selected to assess whether the project is meeting the WSP Master Plan guiding principles and conservation goals. The guiding principles were built upon community comments, feedback, and support. The conservation goals were informed by watershed assessments and plans such as the Big Wood River Atlas (Cardno and Ecosystem Sciences, 2020), the Shoshone-Bannock Tribes Climate Change Vulnerability Assessment and Adaption Plan (Petersen, et al., 2017), and Blaine County Comprehensive Plan (Blaine County Land Use and Building Services, 2021).

All applicants are required to include information about plans to monitor improved streamflows,

aquatic habitat, or other expected project benefits. Describe the plan to monitor the benefits over a 5-year period once the project has been completed. Provide details on the steps to be taken to carry out the plan.

WRLT and the City of Ketchum will monitor the improvements and benefits of water conservation by generating water use reports from the flow meter. The system will be controlled with two Baseline 3200X controllers and a Flow Station, which will read the flow of each station and maximize the pump station for optimal performance and efficiency, reducing irrigation needs.

In 2022, the WRLT initiated an annual macroinvertebrate monitoring program to assess temporal and spatial trends at six different locations in the Big Wood River Watershed. Biomonitoring using biological assemblages to assess the environment is a practical approach for characterizing ecological conditions of streams because of the ability to integrate multiple stressors and stream conditions over time (Rosenberg & Resh, 1996; Barbour, Gerritsen, Snyder, & Stribling, 1999). Aquatic macroinvertebrates cope with the chemical, physical, and biological impacts of their surroundings over the course of their aquatic life cycle, which can last up to several years. Using macroinvertebrates offers certain advantages such as their ubiquitous nature, high species richness that offers a spectrum of environmental responses, longer life cycles of some taxa, easy sampling methods, and suitability of certain taxa for experimental studies of pollution effects (Bonada, Prat, Resh, & Statzner, 2006). Metrics assessed in the macroinvertebrate monitoring program include water velocity and depth, taxa richness, density, diversity, evenness, and relative abundance.

The Warm Springs Creek tributary site is located within the project area of the Warm Springs Preserve. Monitoring results in 2022 found that Warm Springs Creek presented nearly the lowest taxonomic richness and EPT richness of the six sites, and over 50% of the relative abundance was comprised of midge species. These results are correlated to the water quality and overall aquatic ecosystem health of the Warm Springs Creek. Conducting this monitoring pre and post project completion will allow for an annual assessment of improved streamflows, aquatic habitat, and other expected project benefits.

The Restoration Effectiveness Monitoring Program was also initiated by the WRLT in 2022 to ensure consistent sampling protocols on ongoing restoration projects in the Wood River Valley. The effectiveness of the WSP project will be monitored using a before/after design to determine the baseline habitat and geomorphic conditions, success of project goals and objectives, and to inform restoration and maintenance decisions moving forward. The restoration effectiveness data will be collected during the months of July and August after high flow events have occurred and sheer stress and flows have attenuated to base flow levels. Effectiveness monitoring will be conducted pre and post project completion and 3-5 years thereafter. The extent of the restoration reach and its length will be determined along with identifying the bankfull, scour line, thalweg, and pools. The reach will then be set up by monumenting the top and bottom transects. The physical habitat metrics collected will include wetted width, bankfull width, max channel depth, bankfull depth, bank slope, substrate, and canopy cover. Metrics pertaining to reachwide measurements will include pool abundance and depth and geomorphic unit mapping of various

geomorphic and hydraulic features. Protocols will also be followed for visual assessments, photo points, and drone imagery.

WRLT collects and updates photopoints across our Preserves and projects every three years. Since this property will be undergoing substantial and rapid change, photopoints will be updated annually for the first five years. Wildlife utilization is a key indicator of our monitoring process. With the substantial public use of this property, birds will be the type of wildlife most likely to be routinely observed. As such, bird surveys will be conducted annually in coordination with citizen science programs currently active with WRLT. Other wildlife use of the property will be recorded anecdotally by Stewardship staff at the end of each field season as part of the standard Preserve monitoring process. WRLT will conduct an annual vegetation transect in each identified planting zone to assess the habitat health and plant succession in these areas. Noxious weeds will be evaluated over time, including a record of control methods and implementation timing. Annual user counts/surveys will be conducted using methods such as in-person and on-site interviews and/or electronic trail counters. Data collection will include sampling from summer and winter dates to capture both high-season summer usage as well as winter usage.

Evaluation Criterion F – Presidential and Department of the Interior Priorities

Subcriterion No. E1, Climate Change: *E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.*

1. How will the project build long-term resilience to drought? How many years will the project continue to provide benefits? Please estimate the extent to which the project will build resilience to drought and provide support for your estimate.

Primary design features that address climate change scenarios (runoff timing, lower flows, increased temperature) include side channels, wetlands, and shallow groundwater storage. In addition to these, there will be increased floodplain connectivity and wetland habitat, which should also enhance shallow groundwater storage and subsequent surface water/groundwater connectivity in warmer months and low-flow conditions. Each element of the WSP project is designed for perpetuity and success overtime. The project will reduce the water footprint by improving efficiencies for the irrigation system and integrating native plants that are less water intensive. Upgrading the irrigation system will increase instream flows in the Big Wood River and ameliorate drought conditions.

2. In addition to drought resiliency measures, does the proposed project include other natural hazard risk reductions for hazards such as wildfires or floods?

The riparian zone established along Warm Springs Creek will serve as a buffer for wildfires and will potentially reduce wildfire risks. Restoring the creek to a more natural floodplain will decrease flooding impacts on adjacent and downstream properties. Increasing floodplain connectivity and reversing the creek back to a multi-channel form will provide storage for flood water and sediment.

3. Will the proposed project establish and use a renewable energy source?

N/A.

4. Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation?

The Warm Springs Preserve is a 65-acre parcel of open space. The WSP plan will revegetate most of the 65-acre property with diverse native vegetation. The property will be revegetated with plant character zones consisting of restored lawn, tree groves, upland meadow, xeric and mesic floodplain, near-stream riparian, in-stream aquatic, wet meadow, and cattail wetland. The diverse vegetation and soil in the preserve will function as a major carbon sink in the Wood River Valley.

5. Does the proposed project include green or sustainable infrastructure to improve community climate resilience such as reducing the urban heat island effect, lowering building energy demands, or reducing the energy needed to manage water?

The irrigation system will be improved to reduce energy demands and water usage. The open space will be preserved with minimal hardscape and only soft-surface paths through the native vegetation, which reduces solar reflection and impervious cover.

6. Does the proposed project seek to reduce or mitigate climate pollutants such as air or water pollution?

The 65-acre parcel will be revegetated with a wide variety of native vegetation that will function to reduce air pollution and improve air quality. Warm Springs Creek currently functions as a diversion canal due to a long history of land use actions and alterations. Through these mutations the creek lost its natural floodway and floodplain, resulting in degraded natural river function, water quality, and habitat. The WSP project will restore 1.3 miles of Warm Springs Creek and 9 acres of floodplain habitat. Floodplain restoration and revegetation of native species along the riparian zones and throughout the preserve will collectively protect and improve the water quality of Warm Springs Creek.

7. Does the proposed project have a conservation or management component that will promote healthy lands and soils or serve to protect water supplies and its associated uses?

The City of Ketchum and the Wood River Land Trust will work together to ensure the lasting conservation values of this preserve. The Memorandum of Understanding (Attachment E) specifies that development will never occur on the Warm Spring Preserves property and that it will be upheld as a passive preserve for public open space. Through the WSP project, the land, water, and soil will be restored and maintained in perpetuity to have lasting conservation impacts throughout the valley. Establishing native vegetation will reduce the use of fertilizers and the need for irrigation and benefit soils and water quality and supply.

8. Does the proposed project contribute to climate change resiliency in other ways not described above?

The WSP project will enhance the climate change resiliency of fish and wildlife through the restoration of suitable rearing habitat, the connection of corridors, increased riparian shade and therefore lowering of water temperatures, and the increase of instream flows in dryer months.

Subcriterion No. E2, Disadvantaged or Underserved Communities: *E.O. 14008 and E.O. 13985 affirm the advancement of environmental justice and equity for all through the development and*

funding of programs to invest in disadvantaged or underserved communities.

The proposed WSP project will provide public health benefits to historically underserved communities in Blaine County, ID. Those being served will include individuals from communities to which Latino persons, persons with disabilities, and persons who live in rural areas belong.

Public parks and community green spaces, like the proposed Warm Springs Preserve, provide known physical and mental health benefits for their communities. Exposure to nature and/or green space can lower rates of heart disease, stroke, obesity, stress, and depression. Social aspects of health can also be improved by parks, as they are spaces that can facilitate a sense of belonging and connection to fellow community members.

Blaine County, and its geographical area known as the Wood River Valley, is well-known for its outdoor recreation opportunities and beautiful landscapes that play a large role in the physical, mental, and social health of its residents. Anecdotally, spending time outdoors is a valued component of the local community culture. However, these recreational opportunities are not equitably distributed or available to everyone in the region. Many spaces, such as trails or river access points, require an individual to be able bodied; have "insider" knowledge; have special equipment or permits; or have a personal vehicle.

The Warm Springs Preserve is along the free Mountain Rides bus route and is adjacent to a public bike path that connects to downtown Ketchum, making it accessible to those who do not own or have the ability to operate a car. Park amenities funded outside of this proposed funding request will include ADA compliant trails with wheel-chair accessible creek crossings and a public restroom. Providing a bathroom will benefit all preserve users, and will provide an even greater benefit for those who are deterred from visiting the preserve due to a lack of facilities. Removing this barrier helps ensure children, the elderly, and people with disabilities can enjoy the river, nature, and open spaces. The preserve will also include passive park space, picnic tables and benches, and a disc golf course, which will all enhance social connection opportunities.

Due to an affordable housing crisis, many members of the workforce in Blaine County, and in Ketchum in particular, are forced to commute from other towns or counties. According to an article from the local newspaper, the Idaho Mountain Express, "in Ketchum, only 7% of workers live in town." Most live in the towns of Hailey and Bellevue to the south, or even out of the county. According to a Blaine County Comprehensive Plan, "the high cost of housing in Blaine County has resulted in a large influx of commuting employees from other areas... The Idaho Department of Labor shows that of the 11,328 employees in 2017, 3,086 (27%) commuted into Blaine County from adjacent counties." Many commuters work in industries related to construction, landscaping, housekeeping, and hospitality services and may not have access to traditional office-type private spaces to take breaks. Warm Springs Preserve can act as an inclusionary space for workforce members to physically and mentally recharge before, during, or after their workday.

Blaine County is classified as a non-metro rural county under the USDA definitions based on

Office of Management and Budget (OMB) metro counties and Economic Research Service Rural-Urban Commuting Areas (RUCA). Per data from the US Census Bureau, 6.1% of county residents under the age of 65 have a disability; 7.2% of the county population lives in poverty; 23.9% are Hispanic or Latino; and 22.9% speak a language other than English at home. Anecdotally, the number of Hispanic or Latino persons has likely grown since the census data was collected, as Blaine County saw an unprecedented surge of Peruvian immigrants in 2022, many of whom are experiencing homelessness and food insecurity, according to the local non-profit, the Hunger Coalition.

Subcriterion No. E.3, Tribal Benefits: The Department of the Interior is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum, Tribal Consultation and Strengthening Nation-to Nation Relationships, asserts the importance of honoring the Federal government's commitments to Tribal Nations.

The indigenous tribal people of the Wood River Valley are the Shoshone-Bannock Tribe (SBT). Historical records show the SBT used the Wood River Valley as gathering and trading place among tribal members and as a route to harvest salmon and steelhead from the Upper Salmon River basin. There are no known tribal benefits from the proposed project, though we have consulted with the SBT Climate Change Assessment and Adaptation Plan, which included the BWR basin, and feel the proposed project will benefit species and resources of interest to the tribe (Petersen, et al., 2017). Page 18 describes how modeled results show an increase in stream temperatures and further states "Projected increases in temperature as well as shifts in precipitation and associated hydrological changes will all affect the species and resources that the Tribes value".

Project Budget

Funding Plan and Letters of Commitment

Describe how the non-Federal cost share of project will be obtained.

WRLT will provide cost share from its Open Space Fund. The City of Ketchum will provide cost share via funds raised from private donors to support additional irrigation and restoration work.

Identify the sources of the non-Federal cost-share contribution for the project, including:

Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments).

$1,876,175 will be contributed by WRLT and its partner, the City of Ketchum. These funds are all restricted community donations received for the WSP restoration and irrigation improvements.

Any costs that will be contributed by the applicant.

See above.

Any third-party in-kind costs (i.e., goods and services provided by a third party).

N/A.

Any cash requested or received from other non-Federal entities.

N/A.

Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied.

The City of Ketchum has submitted an application for $150,000 in funding from Blaine County's Land, Water, and Wildlife Program. This program was a two-year levy that raised over $3.3 million from a portion of property taxes. We anticipate a response in July of 2023. The pre-proposal was well-received, so we are optimistic this will be funded. If, however, it is denied, WRLT and the City would look to raise those funds through an additional donor campaign or look for other local foundation funding.

Budget Proposal

Table 1 – Total Project Cost Table

Source	Amount
Costs to be reimbursed with the requested Federal funding	$1,733,154
Costs to be paid by the applicant and partner	$2,026,175
Value of third-party contributions	$0
Total Project Cost	**$3,759,329**

Table 2 – Summary of Non-Federal and Federal Funding Sources

Funding Sources	Amount
Non-Federal Entities	
1. City of Ketchum	$1,000,000
2. Wood River Land Trust	$876,175
3. Land, Water, and Wildlife Program	$150,000
Non-Federal Subtotal	$2,026,175
Requested Reclamation Funding	**$1,733,154**

Table 3 – Budget Proposal

Budget Item Description	Computation		Quantity Type	Total Cost
	$/Unit	Quantity		
Salaries and Wages				**$ 18,816.50**
Project Manager	$ 35.71	400	Hours	$ 14,284.00
Conservation Specialist	$ 27.47	100	Hours	$ 2,747.00
Lands Program Director	$ 35.71	50	Hours	$ 1,785.50
Fringe Benefits				**$ 4,515.96**
Full-time Employees	$ 0.24		Rate	$ 4,515.96
Travel				$
Equipment				$
Supplies and Materials				$

Contractual / Construction				**$**	**3,462,980.87**
General				**$**	**213,714.00**
Mobilization	$ 143,714.00	1	LS	$	143,714.00
Environmental Controls	$ 10,000.00	1	LS	$	10,000.00
Temporary Construction Access Route	$ 5,000.00	1	LS	$	5,000.00
Work Area Isolation (e.g. cofferdams)	$ 30,000.00	1	LS	$	30,000.00
Construction Staking/Surveying	$ 25,000.00	1	LS	$	25,000.00
Site Work				**$**	**1,237,137.87**
General Excavation	$ 12.00	35,270	CY	$	423,240.00
Fill	$ 8.00	500	CY	$	4,000.00
Constructed Riffle	$ 70.00	700	CY	$	49,000.00
Habitat Boulders	$ 200.00	200	EA	$	40,000.00
Gravel Bar	$ 24.00	124	CY	$	2,976.00
Timber Sale and Acquisition	$ 55,000.00	1	LS	$	55,000.00
HS-2 - Six Log Structure	$ 7,000.00	2	EA	$	14,000.00
HS-5 - Single Log Structure	$ 1,400.00	50	EA	$	70,000.00
HS-6 - Whole Tree Structure	$ 2,000.00	50	EA	$	100,000.00
HS-8 - Constriction Jam	$ 5,500.00	10	EA	$	55,000.00
HS-9 - Small Apex Jam	$ 4,300.00	10	EA	$	43,000.00
Beaver Dam Analog	$ 80.00	269	LF	$	21,520.00
Modular Steel Bridge Acquisition and Install	$ 150,000.00	2	LS	$	300,000.00
Topsoil Amendment	$ 59,401.87	1	LS	$	59,401.87
Planting and Seeding				**$**	**224,400.00**
Seeding	$ 4,000.00	7.3	AC	$	29,200.00
Planting	$ 26,740.00	7.3	AC	$	195,200.00
Irrigation				**$**	**1,167,950.00**
Irrigation System Material and Install	$ 2.00	520,000	SF	$	1,040,000.00
Pump Station Housing	$ 16,000.00	1	LS	$	16,000.00
Electrical Connection for Pump System	$ 35.00	570	LF	$	19,950.00
Diversion Intake Structure	$ 40,000.00	1	LS	$	40,000.00
Lawn Restoration	$ 0.10	520,000	SF	$	52,000.00
Trails and Preserve Amenities				**$**	**188,000.00**
Trash	$ 1,500.00	8	EA	$	12,000.00

Foot Bridges	$	10,000.00	6	EA	$	60,000.00
Non ADA Pathway	$	4.00	16,000	SF	$	64,000.00
ADA Pathway	$	4.00	13,000	SF	$	52,000.00
Design and Permitting Fees					**$**	**431,779.00**
Irrigation System Final Design	$	30,000.00	1	LS	$	30,000.00
60% - Final Design	$	113,384.00	1	LS	$	113,384.00
Permitting, and Construction Oversight (Includes FEMA CLOMR/LOMR & Wetland Delineation)	$	288,395.00	1	LS	$	288,395.00
Third-Party Contributions					**$**	**-**
Other					**$**	**94,000.00**
Environmental Compliance and Permitting					**$**	**94,000.00**
Cultural Resources	$	24,000.00	1	LS	$	24,000.00
NEPA	$	70,000.00	1	LS	$	70,000.00
Total Direct Costs					**$**	**3,580,313.33**
Indirect Costs					**$**	**179,015.67**
Grant Administration and Reporting	5% of Total Direct Costs				$	179,015.67
Total Estimated Project Costs					**$**	**3,759,329.00**

Budget Narrative

Salaries and Wages

WRLT staff salaries will be included within the project. Cory McCaffrey is the WRLT's River Program Director and is the primary project manager. Cory will supervise contractual services and agreements, construction oversight, and partner coordination.

Jori McCune is the WRLT's Conservation Specialist and is responsible for coordinating timber sales and acquisition, and leading pre and post monitoring efforts.

Keri York is the WRLT's Lands Program Director. Keri will provide water conservation technical support and Preserve stewardship plans.

Fringe Benefits

Fringe benefits for WRLT staff include such costs as social security taxes, health insurance, dental insurance, employer match for retirement contributions, 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

No travel will be necessary.

Equipment

Equipment will be part of the contracted portion of the project.

Materials and Supplies

Materials and Supplies will be part of the contracted portion of the project and documented as required.

Contractual

To determine unit costs included in the cost estimate for this project, the City of Ketchum relied upon the Warm Springs Preserve Master Plan and 30% Design prepared in 2023. Contract unit prices from similar projects recently completed and reviewed by a local contractor were used to estimate these costs. The City of Ketchum followed its procurement process and procured consulting services before applying for this grant opportunity. The City of Ketchum will bid the construction portion of the project to several prequalified construction companies. Due to the nature of these funds, the low bidder will be selected contingent upon acceptable qualifications.

Third-Party In-Kind Contributions

There will be no third-party in-kind contributions.

Environmental and Regulatory Compliance Costs

After consulting with the local Reclamation office, it is expected to cost $94,000 to evaluate the required information, prepare the report, and update any changes required from Reclamation. The cost is based on conversations with the local Reclamation office and their estimated cost to prepare the environmental review.

Other Expenses

The environmental review is listed under other expenses within the budget.

Indirect Costs

The budget includes a *de minimus* rate of 5% for indirect costs.

Pre-Award Costs

The only anticipated pre-award costs include 60% design development, budgeted at $113,384, to be conducted July through September 30, 2023. Proceeding with the 60% design development during this time period will allow us to begin environmental review and permitting as soon as an award is announced and complete the final design in time to remain on our proposed construction schedule.

Environmental and Cultural Resources Compliance

Will the proposed project impact the surrounding environment? Briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area.

Explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

Impacts will be associated with constructing stream habitat features and the wetland complex, re-grading the floodplain bench, side channel, and pond, and installing the new irrigation system, diversion intake structure, and culvert road crossing. Topsoil amendments and surface revegetation will be restored after project completion. In-stream work may temporarily increase levels of turbidity, temporarily disrupting aquatic habitat and visibility. Work area isolation and Storm water Pollution Prevention Plans are included in the scope of work.

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?

The Environmental Review will acknowledge any species listed or proposed as a Federal threatened or endandgered species or designated critical habitat. At this time, and after consulting with Idaho Department of Fish and Game, the WRLT is not aware of any. If there are any, the project will benefit threatened or endangered species or designated critical habitat in the project area by increasing aquatic and riparian habitat, as well as instream flows.

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, describe and estimate any impacts the proposed project may have.

Yes, the project will require work within the river to implement the components of the project, which include instream habitat features and the diversion intake structure. Temporary impacts to these Waters of the United States will be mitigated as outlined in the Conservation Measures (Sheet 3 & 4, WSP 30% Design Drawings). Long-term impacts to the Waters will be beneficial in terms of increased habitat, reduced temperatures, and increased in-stream flows.

When was the water delivery system constructed?

The existing diversion intake structure, pond, and irrigation system were constructed sometime in the 1960's to irrigate the former golf course. No modifications to those systems have been documented.

Will the proposed project result in any modification of, or effects to, individual features of an irrigation system? 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.

The existing diversion intake structure, pond, and irrigation system were constructed sometime in the 1960's to irrigate the former golf course. No modifications to those systems have been documented.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?

A cultural resource inventory will be completed as part of the submitted environmental document, however WRLT is not aware of any features listed as eligible for listing on the National Register of Historic Places.

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

The WRLT is not aware of impacts to or locations of archeological sites.

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

No, the project will not negatively affect these populations.

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, the proposed project will not contribute to the spreading of noxious weeds. The Attached Memorandum of Understanding (Attachment E) demonstrates the commitment to long-term stewardship, including weed management. The Master Plan calls for revegetating the middle terrace with drought tolerant native species, reseeding the upper fairway, and installation of native plants along the lower creek edge and floodplain. During the Environmental Review, this will be further considered.

Required Permits or Approvals

You should state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

Work will continue in order to secure the following permits. It is anticipated that they will be approved by May/June 2024.

- The U.S. Army Corps of Engineers (Corps) and Idaho Department of Water Resources (IDWR) joint permit **will be applied for** in February/March 2024,
- The City of Ketchum Floodplain Development Permit and Riparian Alteration Application **will be applied for** in February/March 2024.

Official Resolution

Wood River Land Trust will be adopting an official resolution during its board Meeting on April 24, 2023. This resolution will be emailed to bor-sha-fafoa@usbr.gov within 30 days after the application deadline, and will include the information requested to be a recipient of this award.

Letters of Support and Letters of Partnership

Letters of support/partnership from the following have been included and are found in Attachment H – Letters of Support or Partnership.

- City of Ketchum – Jade Riley, City Administrator
- Blaine County – Kristine Hilt, Floodplain Manager
- U.S. Forest Service, Ketchum Ranger District – Kurt Nelson, District Ranger
- Flood Control District #9 – Dean Hovencamp, Commissioner
- Idaho Dept of Fish and Game, Magic Valley Region – Craig White, Regional Supervisor

- Trout Unlimited – Kira Finkler, Idaho Water & Habitat Program
- The Nature Conservancy Idaho Chapter – Erika Phillips, Watershed Manager
- Project Big Wood – Amanda Bauman, Executive Director

Conflict of Interest Disclosure Statement

At the time of this submission, there are no actual or perceived conflicts of interest. Wood River Land Trust has internal controls in place to identify, disclose, and mitigate or eliminate identified conflicts of interest. Wood River Land Trust will notify the Financial Assistance Officer in writing of any conflicts of interest that may arise during the life of the award, including those that have been reported by any contractors. Wood River Land Trust will not use funds from this grant agreement for lobbying activities.

Uniform Audit Reporting Statement

Wood River Land Trust was not required to submit a Single Audit Report for the most recently closed fiscal year.

Overlap or Duplication of Effort Statement

The Blaine County Land, Water and Wildlife proposal mentioned in the Project Budget section is the only outstanding proposal for this project. The proposal submitted does not duplicate any proposal or project that has been, or will be, submitted for funding consideration to any other potential funding source.

Works Cited

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City of Ketchum

March 27, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Subject: WaterSMART EWRP Application for Funding Opportunity R23AS00089

Dear Application Review Committee:

I am writing this letter of partnership on behalf of the City of Ketchum for the Wood River Land Trust's application for an Environmental Water Resources Project under BOR's WaterSMART program.

In April of 2022, the City of Ketchum purchased sixty-five acres of greenspace, the last of its kind within city limits. The funds were raised entirely by the community to establish, protect, and restore the beloved 'Warm Springs Preserve'. The City immediately enlisted a team, including members of the Wood River Land Trust (WRLT), to complete a master plan for the preserve with a primary focus on the ~30 acres of riparian areas in desperate need of attention.

The project will provide restoration solutions to and water conservation management strategies within the Warm Springs Creek and the greater Wood River Valley Watershed, including:

- Increasing instream flows through irrigation efficiencies
- Improving water quality in a world class trout fishery
- Reconnecting stream channels with floodplains to restore natural functions
- Enhancing aquatic habitats for wild trout, the endemic Wood River sculpin, and waterfowl
- Restoring native plants in floodplains and riparian areas to provide stream stability and create habitat for songbirds and other wildlife
- Increasing resilience to drought, flooding, and climate variability

The City of Ketchum currently owns and manages 10+ other parks and community spaces, but Warm Springs Preserve is a legacy project; a gem of a parcel that will be enjoyed by the community in perpetuity. The City looks forward to partnering with the WRLT, to relying on their expertise to restore the creek to a naturally functioning and sustainable watercourse that will mitigate the potential for flooding and its impacts in the current unnatural state of the creek, improve habitat for native flora and fauna and provide outdoor recreational opportunities.

City of Ketchum

The City of Ketchum has $1M of committed and available funds ready to put toward the project, specifically to irrigation improvements and restoration efforts. The City of Ketchum's partnership with the WRLT is imperative to ensure the restoration's maximum potential; therefore, agrees to the submittal and content of the WRLT's grant application. As owner of the property, the City of Ketchum is committed to the project and its success.

Thank you for your consideration of this project application. If awarded, the project will bring many benefits to our watershed and our community.

Sincerely,

Jade Riley | City Administrator
City of Ketchum

IDAHO DEPARTMENT OF FISH AND GAME
MAGIC VALLEY REGION
324 South 417 East, Suite 1
Jerome, Idaho 83338

Brad Little / Governor
Jim Fredericks / Director

March 23, 2023

Cory McCaffrey: River Program Director
Wood River Land Trust
119 E Bullion Street
Hailey, ID 83333

RE: Letter of Support for Warm Springs Preserve Restoration

Dear Wood River Land Trust,

Idaho Department of Fish and Game's (IDFG) mission is to preserve, protect, perpetuate and manage Idaho's fish and wildlife resources for the public interest. In the spirit of this mission, I am writing to express IDFG's support for the Wood River Land Trust's (WRLT) & City of Ketchum's joint application to the Bureau of Reclamation's Environmental Water Resources program grant. We understand that this grant, if awarded, would be used to increase floodplain connectivity and fish habitat quality along Warm Springs Creek, one of the most significant tributaries to the upper Big Wood River (BWR).

The Big Wood River and Warm Springs Creek are popular fisheries that provide anglers with the opportunity to pursue endemic redband trout and whitefish, as well as wild brown trout. This watershed also contains the endemic Wood River sculpin. Within the Big Wood drainage, IDFG strives to "preserve quality stream habitats and improve degraded stream habitats"; to accomplish this, we work closely with other agencies to prevent channel and riparian degradation in natural flood plains (Idaho Department of Fish and Game 2019). We view the proposed restoration project as consistent with this objective, given that adequate care is given in project design and execution.

IDFG appreciates the application's consideration of wildlife and fishery-relevant issues, including A) riparian sensitivity, wetland preservation and minimization of hardscapes/riprap, B) in-stream habitat design practices, and C) dog waste management and other recreational impacts. To provide the greatest benefit to the local ecosystem, these factors will need to be carefully considered and designed for. Furthermore, the Warm Springs Creek canyon has healthy populations of moose, mountain lions and black bears that occasionally have conflicts with humans and/or pets; design considerations (such as garbage disposal) should be taken to minimize conflicts. IDFG is available to give recommendations as needed through the process.

Given consideration of the described issues, we support the WRLT's grant application as it will improve floodplain connectivity and habitat quality on an important tributary system. Please contact Bradley Dawson (Technical Assistance Manager; 208-644-6310) with any questions.

Sincerely,

Craig White (Regional Supervisor)

References

Idaho Department of Fish and Game. 2019. Fisheries Management Plan 2019-2024. Idaho Department of Fish and Game.

The Nature Conservancy in Idaho
116 First Avenue North
Hailey, ID 83333

Tel (208) 578-4049
Fax (208) 788-9040

nature.org

March 20, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

RE: WaterSMART EWRP Application for Warm Springs Preserve

To Whom it May Concern,

As the Wood River/Silver Creek Watershed Manager and Restoration Specialist for The Nature Conservancy of Idaho (TNC), I am writing to express my support for the planned stream, floodplain and riparian restoration project at the Warm Springs Preserve. As a global conservation organization with field offices across the US, TNC works at the local level with stakeholders, community groups, and landowners in the Wood River Valley and Silver Creek community to restore aquatic and riparian resources, and we connect people with nature to promote a conservation ethic and sense of shared responsibility for our planet. TNC recognizes the importance of Wood River Land Trust's locally based, community-driven conservation and restoration actions. We also appreciate the value of external support from organizations like Bureau of Reclamation and the agency's WaterSMART grants program. This program enables our local Idaho community to leverage resources and bring these important projects to fruition.

The Warm Springs Preserve is a community-driven process with extensive buy-in from Ketchum residents, local and regional non-profits, and other residents of the greater Wood River Valley. Warm Springs is an important aquatic resource for the City of Ketchum and other municipalities downstream on the Big Wood River, and the benefits to flood mitigation, water quality and habitats for wild trout and other species will be significant.

On behalf of TNC, we support this project and this grant application without hesitation. As an aquatic conservation and restoration practitioner, I have worked with many of the partners and contractors involved with this project – Wood River Land Trust, Rio Applied Science and Engineering, Ecosystem Sciences Foundation, North Fork Native Plants – and I am confident that the outcomes of this project will be successful and beneficial to the community and local ecosystems.

Sincerely,

Erika Phillips
Watershed Manager
The Nature Conservancy

USDA United States Department of Agriculture
Forest Service
Sawtooth National Forest
Ketchum Ranger District
P. O. Box 2356
Ketchum, ID 83340
208-622-5371
Fax: 208-622-3923

File Code: NA
Date: March 22, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Subject: WaterSMART EWRP Application for Funding Opportunity R23AS00089

Dear Application Review Committee:

I am writing on behalf of United States Forest Service (FS) Ketchum Ranger District (KRD) in support of the City of Ketchum's application for an Environmental Water Resources Project under BOR's WaterSMART program. Forest Service land is adjacent to this project and project components align with goals outlined in the Sawtooth National Forest Land and Resource Management Plan 2012 (FP).

The project will provide restoration solutions and water conservation management strategies within the Warm Springs Creek and the greater Wood River Valley Watershed, including:

- Increasing instream flows through irrigation efficiencies
- Improving water quality in a world class trout fishery
- Reconnecting stream channels with floodplains to restore natural river processes
- Enhancing aquatic habitats for wild trout, the endemic Wood River sculpin, and waterfowl
- Restoring native plants in floodplains and riparian areas to provide stream stability and create habitat for songbirds and other wildlife
- Increasing resilience to drought, flooding, and climate variability

The above project goals align with the FP objectives in Chapter III, Management Area 4 (Big Wood River) under the Soil, Water, Riparian & Aquatic Resource section as described below:

Objective Number	Management Direction Description
0436	Restore water quality and channel stability by resolving or reducing instream flow conflicts in Warm Springs Creek, Eagle Creek, Lake Creek, and Oregon Gulch related to subdivision irrigation and changes in points of diversion.
0439	Maintain or restore dead and down wood components of riparian areas in Warm Springs Creek, Cove Creek, Lake Creek, Deer Creek and Baker Creek drainages through management of dispersed camping, firewood gathering, off-site recruitment of woody debris, and beaver re-introduction.
0440	Restore stream and streamside conditions and reduce soil compaction and vegetation trampling by effectively managing dispersed recreation use within riparian areas in the Big Wood River headwaters above Owl Creek, Silver Creek, Baker Creek, Warm Springs Creek, Prairie Creek, Boulder Creek, North Fork Big Wood River, Deer Creek, Big Wood River, East Fork Big Wood River, and Trail Creek drainages
0441	Maintain or restore Wood River sculpin habitat where main stem streams have been altered by development or other activities.

The Wood River Land Trust is a non-profit and a leader in the basin for river restoration projects and is partnering with the City of Ketchum. We look forward to collaborating with the City of Ketchum and Wood River Land Trust, where appropriate to ensure implementation of this project. Thank you for your consideration of this project application. If awarded, the project will bring many benefits to our watershed and our community.

Sincerely,

/s/ Kurt Nelson
KURT NELSON
District Ranger

cc: Ryan Santo

BLAINE COUNTY
LAND USE AND BUILDING SERVICES
219 1st Avenue South, Suite 208 Hailey, ID 83333
Planning & Zoning: 208-788-5570 ♦ Building Department: 208-788-5573

March 14, 2023

Wood River Land Trust
c/o Cory McCaffrey
River Program Director
119 E Bullion Street
Hailey, ID 83333

Re: Warm Springs Preserve Restoration

Dear Cory,

After review of the draft vision plan dated February 14, 2023, we would like to offer support for the restoration of the Warm Springs Preserve located within the City of Ketchum. Specifically, Blaine County supports habitat enhancement and off-channel habitat creation, restoration of native riparian buffers, floodplain connectivity, and balancing public access and private ownership interests. Our support is predicated upon the following science, policies, and regulations, as adopted by Blaine County.

1. Big Wood River Atlas (Atlas 2020):
    a. "*The Big Wood River watershed is valued both locally and regionally as a high quality, freestone fishery supporting abundant trout species. . . The implications for future restoration priorities are clear: efforts should be undertaken to restore lost and degraded habitats through reconnection of stream channel processes and floodplain processes."*
    b. *"Riparian buffers have been widely accepted as a best management practice for water quality protection because of their ability to reduce sediment inputs, filter surface runoff, and reduce pollutant concentrations (Dosskey et al. 2010; Osborne and Kovacic 1993). . . These functions are particularly important for much of the Big Wood River and its tributaries, whose water quality has been federally listed as impaired for sediments, total phosphorus, bacteria, and temperature in some locations (DEQ 2017)."*

2. Comprehensive Plan, Chapter 5, Natural Environment:
    a. *Policy Statement: Give conservation and stewardship of the natural environment primary consideration when working toward other goals, including economic development and recreation.*
    b. *Policy Statement: Prioritize the enhancement and restoration of degraded lands and waters for public and private benefit.*
    c. *Policy Statement: Encourage people to get out and experience nature as a key component of appreciation and conservation of natural assets while seeking to minimize human intrusion in the most sensitive areas.*

3. Blaine County Code, Title 9 Zoning, Chapter 17 Floodplain Overlay and Riparian Setback District:
    a. *9-17-2: Purpose:*
        i. *Prioritize the enhancement and restoration of degraded lands and waters for public and private benefit.*
        ii. *Prevent cumulative adverse environmental impacts to water availability, water quality, wetlands and streams;*

b. *9-17-11: Stream Alteration Permit Procedure:*

   i. The purpose of this program is to, *"more adequately control hazards from flooding existing lands within the Floodplain Overlay District, to ensure that the important environmental features of the State and localities are protected and enhanced, to protect life and property in areas subject to natural hazards at flooding, to protect, preserve and enhance fish, wildlife habitat and recreation resources, to avoid undue water and air pollution. . ."*

Currently, we are unable to offer support for additional crossings over Warm Springs Creek. We wish you luck in your efforts in securing funding through various grant opportunities.

Please contact me at (208) 788-5570 or (208) 481-0433 should you have questions.

Sincerely,

Kristine Hilt CFM
Certified Floodplain Manager
khilt@co.blaine.id.us

March 22, 2023

Wood River Land Trust
c/o Cory McCaffrey
River Program Director
119 E Bullion Street
Hailey, ID 83333

To whom it may concern:

I am writing to express my personal support as Executive Director of Project Big Wood for The Wood River Land Trust (WRLT) to act as the lead partner to assist/administer/advise the scope of work required for the restoration of Warm Springs within the Warm Springs Preserve, as proposed by the City of Ketchum's application for an Environmental Water Resources Project under BOR's WaterSMART program.

Project Big Wood is a newly formed local non profit. Project Big Wood's goal is to work closely with our community to restore and protect the heart of our valley, The Big Wood River. The Wood River Land Trust has been instrumental in paving the way for focused, science forward and community engaging ecological restoration projects for the Big Wood River, with a proven track record. The WRLT's interest in the Warm Springs Preserve project is a great opportunity to advance the conservation and restoration of Warm Springs.

Project Big Wood supports the Warm Springs Preserve project as it will address many of the pinnacle issues facing Warm Springs which have been altered from its natural state over the course of many years. Various actions by public and private interests over many years have created the current deteriorated state of Warm Springs.

The City of Ketchum and associated contractors/partners have created a plan that will reverse these past practices and greatly improve public access, protect private homeowner interests and keep the community at the center of the restoration. The opportunity at hand is unique and may not be present elsewhere in the Big Wood watershed.

In my experience as fly fishing guide and in my current position as Executive Director of Project Big Wood, I understand the past damage to Warm Springs and am excited to see the potential benefits of this work for our community. Some of the important interests outlined in the plan and close to my heart are:

- Broad restoration of floodplain connectivity, restoring natural stream and ground-water interactions through stream channel connectivity;
- Restoration of riparian buffers, providing increased and diverse habitat for all wildlife within the ecosystem;
- Reducing stream-bed disruption and protecting macroinvertebrate habitat by reducing human and domestic pet intrusions in the stream-bed and riparian zone;
- Expanding spawning and rearing habitat for fry and parr trout, leading to increased fish populations;

- Improving water quality through improved flood-plain activation;
- Reducing the existing high-water velocities (the firehose effect) with restored stream features and increased flood-plain through this stretch of the watershed;
- Increasing resilience to drought, flooding, and climate variability.

The WRLT and The City of Ketchum have shown their ability to work together collaboratively and successfully on this project so far. They have garnered community support and created a plan of action that will succeed if properly funded.

Thank you for your consideration of my views of support on this application. If awarded, the project will bring many benefits to our watershed and to our community.

Sincerely,
Amanda Bauman
Executive Director
Project Big Wood

March 25, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Subject: Warm Springs Preserve Stream and Irrigation Improvement Project

Dear Application Review Committee:

Flood Control District #9 is very supportive of this project and look forward to the potential of several projects within the Warm Springs drainage. From the campground areas to the marsh land where it converges with the Wood River, this is a beautiful free flowing river that floods in several areas as it flows to the Wood.

We support any project that mitigates flooding, potential flood zones, and look forward to contributing in any way.

Sincerely,

Dean Hovencamp
Commissioner
Idaho Flood Control District #9