

Title Page:

Project Title:

Improving Ecological Resilience through Water Management Activities
in the
Teton River Watershed

Applicant Information:



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Please note that this grant application is comprised of 55 consecutively numbered pages, which includes 1 page for the official board resolution and 6 pages for letters of support. Per the grant application guidelines, the official board resolution and letters of support are not to be counted toward the total page limit. If those pages were not included, the total page count would be 48.

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I. Documentation in Support of Applicant Eligibility

a. Self-Certification that Group Meets Definition of “Watershed Group,” as defined in Section 6001(5) of the Cooperative Watershed Management Act:

Friends of the Teton River FTR is a 501(c)3 non-profit, grassroots, non-regulatory legal entity which was founded in 2000 by a diverse group of stakeholders, including farmers, anglers, scientists, agency personnel and environmentalists concerned by declines in the health and quality of the Teton River fishery, and the quality and quantity of the watershed’s valuable water resources. Since that time, FTR has completed an ambitious research agenda that addresses water quality, hydrology and fisheries. Our program work is focused on Stream Habitat Restoration, Stream Flow Restoration, Fish Passage, and Community Education. Our work has earned a prestigious “Model Watershed” designation and 10-year support from the Bonneville Environmental Foundation (2010-2020).

FTR is a nationally-recognized leader in community-based watershed protection and restoration; basing all of our projects in sound science and collaboration. We live and work in a community that is a melding of the old and new West, where a strong agricultural heritage exists side-by-side a tourism and recreation-based economy. We collaborate with a diverse group of stakeholders to accomplish our work; from farmers and ranchers, to subdivision and golf course developers, municipalities and small business owners, to NGO’s, and state and federal agencies. We recognize that our success rests largely upon stakeholder involvement, support and buy-in. Thus, a large component of our work centers on building bridges and cultivating effective communication between these various interests. Over the past decade, we have successfully completed habitat and fisheries restoration projects, water conservation and efficiency improvements, water quality and trout monitoring programs, and flow restoration projects with a diverse group of constituents. Due to our unique positioning, FTR is uniquely situated to address water quantity and quality issues within the watershed in a manner which promotes water conservation, ecological resiliency, reduces water conflicts, and promotes the sustainable use of water resources in the watershed.

Friends of the Teton River has more than 800 members, and over the past 17 years has partnered with a range of individuals and organizations including NGO’s, government agencies, elected officials, local businesses, public and private schools, and landowners to conduct research, restoration, and education programs.

- NGO’s play a pivotal role in natural resource protection in the Greater Yellowstone Ecosystem and particularly in the Henry’s Fork and Teton watersheds. FTR works closely with the Henry’s Fork Watershed Council (HFWC) to review proposed projects, participate in the Water Quality and Native Trout subcommittees, and conduct educational field trips. FTR has adopted the HFWC consensus-based approach for stakeholder groups and builds on relationships established at the HFWC to design and implement restoration strategies in the Teton basin. The Henry’s Fork Foundation research program served as a model for FTR’s research efforts and both organizations continue to collaborate on important regional issues such as increased Teton Basin storage opportunities, Teton Basin water management, stream restoration strategies and cross-basin water management. In the Teton watershed, FTR, Teton Regional

Land Trust (TRLT) and Valley Advocates for Responsible Development (VARD) have until quite recently worked parallel tracks in watershed, land easement, and land use protection. Over the past several years the organizations have had joint planning sessions to address gaps in governance for land development planning. Additionally, TRLT, FTR and TU's Idaho Western Water Project Director have worked on joint conservation strategies, to incorporate land easement work with water management strategies for Teton Valley. At a larger scale, FTR participates regularly in the Columbia Basin Water Transaction Program, through a unique partnership with the Idaho Water Resource Board, to learn from efforts throughout the Columbia Basin to restore streamflow.

- FTR also has active partnerships with state and federal agencies. We partner with, and are contracted by, IDEQ and Wyoming TCD to conduct water quality monitoring in the Teton Valley. The U.S. Forest Service (USFS), Idaho Fish and Game (IDFG), and Wyoming Game and Fish Department (WGFD) partner with us to monitor trout populations in the Teton River and its tributaries. The U.S. Fish and Wildlife Service (USFWS) Partners for Fish and Wildlife and Fisheries Restoration and Irrigation Mitigation (FRIMA) programs fund FTR's restoration work on Teton Creek and Trail Creek; NRCS frequently partners with FTR to work with individual landowners on stream restoration projects through the WHIP and EQUIP programs.
- FTR is sought out as a resource when State and Federal agencies – IDFG, USFS, WGFD, USFWS, and BOR - are considering projects in the region. FTR's depth of regional and state knowledge regarding water administration, water rights, native and local fisheries issue, and public interest make FTR a valued member of any collaborative effort.
- FTR has partnered with Idaho State University and Utah State University on fishery, hydrology, and watershed planning studies. We recently concluded a three-year, \$640,000 U.S. Department of Agriculture grant, in partnership with Humboldt State University (Dr. Rob Van Kirk, Principal Investigator) to develop a conjunctive ground and surface water management plan for the Henry's Fork and Teton watersheds.
- FTR has close working relationships with the Driggs, Victor, and Teton city councils and planning and zoning commissions, and since its inception has worked with the Teton County Commissioners on water-related technical issues in the county.
- We have partnered with the Teton County School District to develop watershed and place-based curriculum throughout the school system and are currently providing training for teachers in this curriculum.

These numerous relationships speak to the breadth of work that FTR has been able to accomplish over the course of the past seventeen years.

b. Articles of Incorporation:

Friends of the Teton River's Articles of Incorporation are attached to this grant submission, identified as Attachment A.

c. Bylaws:

Friends of the Teton River's Bylaws are attached to this grant submission, identified as Attachment B.

d. Mission Statement:

Friends of the Teton River’s mission is to work for clean water, healthy streams, and resilient fisheries now, and for future generations, in the Teton River watershed.

e. Meetings:

Friends of the Teton River hereby certifies that it holds regular board, committee, staff and public meetings, all of which are a critically important to implementing its mission. Friends of the Teton River’s Board of Directors meets bi-monthly, staff meets monthly, public outreach events are hosted at least twelve times per year, and special working groups, such as the Teton Water Users Association, generally meet on a monthly basis.

f. Watershed Restoration Plan

Through Phase I of the Bureau of Reclamation’s Cooperative Watershed Management Program, FTR expanded its work in the Teton River watershed to form a diverse working group known as the Teton Water Users Association. Friends of the Teton River, in partnership with individuals and entities who comprise the Teton Water Users Association, developed a Phased Watershed Restoration Plan for the Teton River Watershed (Restoration Plan). The Restoration Plan helps Friends of the Teton River and its partners, including the Teton Water Users Association, plan for and implement restoration activities in the watershed aimed at achieving tangible water related goals and outcomes to benefit the Teton River Watershed, as well as the people and communities within it. The Restoration Plan is attached to this grant submission, identified as Attachment C.

II. Technical Proposal and Evaluation Criteria

a. Executive Summary:

Date: February 15, 2017

Applicant: Friends of the Teton River

City and State: Driggs, Idaho

County: Teton County, Idaho

Friends of the Teton River (FTR) is a grassroots, membership-based, non-profit organization legally incorporated as a 501(c)(3) that works in Teton County, Idaho to promote clean water, healthy streams, and resilient fisheries in the Teton River watershed. Through Phase I of the Bureau of Reclamation’s Cooperative Watershed Management Program, FTR expanded its work in the Teton River Watershed to form a diverse working group known as the Teton Water Users Association (TWUA). FTR, through the TWUA, developed a Phased Watershed Restoration Plan for the Teton River Watershed (Restoration Plan), see Attachment C. The Restoration Plan is premised on the reality that the region is facing ever increasingly significant water challenges and issues, which traditional water management approaches and philosophies are unable to address. The Restoration Plan outlines a local solution to reduce conflicts over water through the implementation of collaborative conservation efforts which will improve ecological resilience in the Teton River Watershed by promoting both incidental and managed recharge activities, serving to decrease water temperature and increase the quantity of water available in the Teton River during those times when the river is at its warmest. There are additional

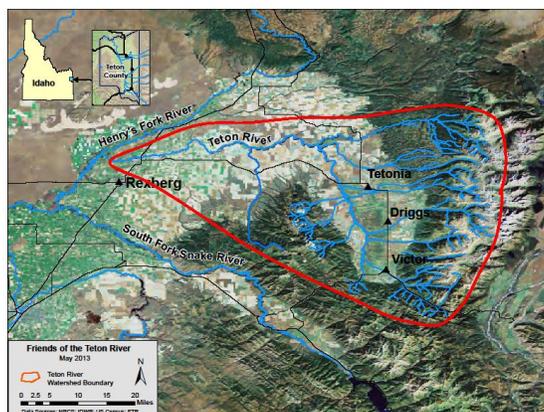
benefits to the recharge efforts outlined in the Restoration Plan including increased water reliability for local agricultural water users, stabilization of the local aquifer, and increased water availability to address downstream water supply issues including stabilization of the Eastern Snake Plain Aquifer, but paramount are the aquatic and riparian ecosystems benefits, including the creation of stream conditions beneficial for trout. Funds will be used to support a watershed coordinator, establish and maintain a stream gaging station on the Teton River, map and catalog the condition of existing canals and canal infrastructure, prioritize and implement canal and infrastructure upgrades necessary to facilitate recharge efforts, establish a website, and conduct community outreach and education. These activities are part of Phase I of the Restoration Plan, which aims to recharge approximately 10,000 acre feet of additional water to the Teton Valley aquifer through incidental recharge activities annually.

Grant activities will be completed within two years of grant award, with work being conducted from approximately October 2017 through September 2019.

The proposed project is not located on Federal land or a Federal facility.

b. Background Data

The Teton River drains an area of 806 square miles in Idaho and 327 square miles in Wyoming. The river originates from headwater streams in the Teton, Big Hole, and Snake River mountain ranges and flows more than 64 miles to the point at which it discharges to the Henry's Fork of the Snake River. Twenty river miles southwest of this point, the Henry's Fork joins the South Fork to form the main stem of the Snake River. FTR works in the Teton River watershed, outlined on the map below, which extends from the headwaters down to the confluence with the Henry's Fork River, with a primary focus on the upper Teton River near the towns of Victor, Driggs, and Tetonia. FTR's decision to focus efforts in the upper Teton River was influenced by the presence of greater development threats and a gap in governance and coordination of water resource issues.



The Teton River Watershed encompasses approximately 664 square miles of the Greater Yellowstone Ecosystem, with Grand Teton National Park to the east, and Yellowstone National Park to the north. Approximately 25% of the Teton River Watershed is federally or state-owned, and the majority of this land is managed by the Caribou-Targhee National Forest. Land use on the forest in the eastern portion of the subbasin, most of which is located in Wyoming, is

determined primarily by its status as wilderness and grizzly bear habitat. The Jedediah Smith Wilderness Area, which borders Teton National Park, has experienced limited timber harvest but receives heavy recreational use with more than 60,000 visitors each year. Grand Targhee Ski and Summer Resort is adjacent to the wilderness area and is a major tourist destination. Management of forest lands in the Big Hole Mountains is directed toward opportunities for motorized and non-motorized recreation, improvement of big game habitat, and improvement of ecosystem health. The Big Hole Mountains have been logged extensively and livestock grazing is a common land use.

Water has long played a central role in the cultural and economic prosperity of the Teton River Watershed. From its earliest days, Native Americans frequented the Teton River and its tributaries, which provided resources – including wild game, berries, and native Yellowstone Cutthroat Trout – that were relied upon to sustain the tribes. The first permanent settlers of Teton Valley, members of the Church of Jesus Christ of Latter Day Saints, arrived in the early 1880's from Utah and other parts of Idaho and established dairy, potato, and grain farms. Since that time, agriculture has remained one of the central drivers of the regional economy. More recently, the region has attracted new residents, both full and part-time, that place a high value on recreational access and intact ecosystems which support high quality fish and wildlife habitat. This led the population of Teton County, Idaho to grow by 39% between 2000 and 2007, making it the fourth fastest growing county in the nation during that time.

Currently a variety of water related issues are playing out in the Teton River Watershed. Cumulative impacts on water quality from fertilizer application and livestock have resulted in elevated nitrogen levels in both ground and surface water. Over the past twenty years, accelerated development pressures have resulted in rip-rapping and channelization of tributary streams, destruction of riparian vegetation, and loss of connectivity between stream channels and their floodplains. Further, relevant climate science indicates that as a result of climate change, the Greater Yellowstone Ecosystem can expect hotter, drier summers with warmer, wetter winters, leading to a higher potential for winter flooding, reduced snowpack, earlier runoff, summer drought, and increased wildfires.¹ It is expected that in general, higher elevation habitat, including that in the Upper Snake River region, will provide important refugia from climate change impacts. Yet in the Teton Watershed, the majority of core high-elevation habitats are disconnected from the main stem Teton River at least part of the year due to dewatering of tributary streams for agricultural use. In addition, the Bureau of Reclamation's Henrys Fork Basin Study, which occurred from 2010-2015, evaluated the Teton River and its tributaries to determine if a new dam or storage facility may be constructed to shore up and secure water for out-of-basin water needs. Strong interest in the ideas identified in the Basin Study, as well as aquifer storage and water efficiency project, remains. And recently, Teton Valley water users have begun to face the reality that stabilization of the Eastern Snake Plain Aquifer will impact this region, likely resulting in changes to the timing of surface water delivery calls, mitigation and water-supply requirements for municipalities, and impacts associated with the formation of the Eastern Snake Plain Aquifer Groundwater Management Area. All of these issues, especially when working in concert, are serving to influence both the landscape and hydroscape of Teton Valley.

¹Corey Hatch. "Climate Change Will Endanger Trout" Jackson Hole Daily [Jackson, WY] 12/6/2007

In addition to the physical changes in the Teton River Watershed, discussed above, the introduction of non-native fish species has had a negative effect on native Yellowstone cutthroat populations in the Teton Watershed. Eastern Brook Trout (*Salvelinus fontinalis*) and Rainbow Trout (*O. mykiss*) were introduced beginning in the early twentieth century. Altered hydrology and degraded habitat conditions have favored these non-native species. Competition for resources and direct predation has resulted in fish assemblages in the main stem Teton River and most tributary streams that are now dominated by non-native species.

Together, these factors and emerging forces are shaping a future water management paradigm that by necessity will look different from the past. As highlighted by the Bureau of Reclamation Henrys Fork Basin Study (2010-2015), in which FTR participated as a key conservation stakeholder, given the various interests which rely on water in the region and the dynamic social, environmental, and political drivers affecting water use, it is necessary to promote collaborative approaches to address water resource issues. In 2015, through funding support from the Bureau of Reclamation's Phase I Cooperative Watershed Management Program, FTR expanded its work in the Teton River watershed to form a diverse working group known as the Teton Water Users Association (TWUA). Throughout the grant term, extending from 2013-2016, the TWUA successfully brought together individuals who can, collectively, identify solutions that satisfy the needs of all constituents within the community – farmers, municipalities and residential water users, and conservation interests hoping to secure water for fish and wildlife. This proposal seeks to build on the work catalyzed by the Bureau of Reclamation's Phase I Cooperative Watershed Management Program, by implementing a portion of the Phased Watershed Restoration Plan for the Teton River Watershed (Restoration Plan) which was developed out of that grant.

c. Project Description

Historically water has played a key role in the cultural and economic prosperity of the Teton River watershed, and it currently supports robust agricultural and recreational economies. Yet, there are several emerging water issues that promise to shape a future water management paradigm that looks dramatically different from the past. These factors include declines in Idaho's aquifer and river levels, prolonged drought, development pressure to convert farmland to subdivisions, increased winter moisture in the form of rain and earlier runoff, mitigation and water-supply concerns for growing cities and rural areas, continued declines of Yellowstone Cutthroat Trout in both distribution and abundance, water-quality concerns, changes in the timing of surface water delivery calls, and the formation of a Groundwater Management Area for the Eastern Snake Plain Aquifer which will impact water use in tributary basins like the Teton River Watershed.

In response to these issues, Friends of the Teton River (FTR) brought together a diverse working group, termed the Teton Water Users Association (TWUA) in 2015, serving to bring together individuals who can, collectively, identify solutions that satisfy the needs of all constituents within the community – farmers who depend on water for crop and livestock production, municipalities that require clean and adequate water for residents, and conservation interests seeking water for fish and wildlife. The TWUA is a collaboration of interests and is represented by a true cross-section of Teton Valley's population, being comprised of approximately 50%

agricultural water users, 30% conservation water users, and 20% municipal/residential water users.

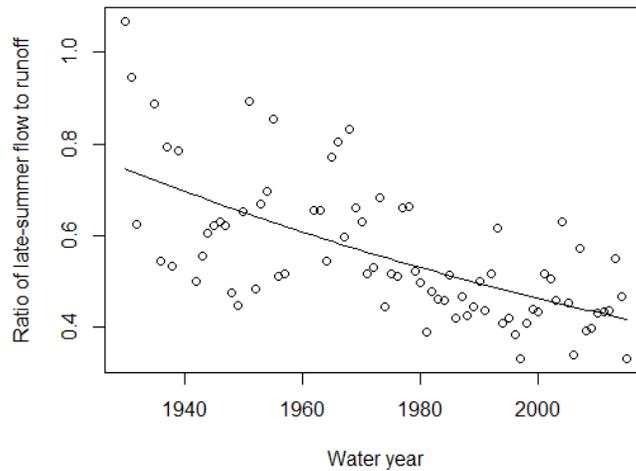
The vision of the TWUA working group reflects its diversity by addressing problems and implementing projects that:

- Keep working lands working by securing and maintaining a reliable and affordable supply of water to sustain agriculture,
- Protect and restore stream flows and water quality in the Teton River and its tributaries, for the benefit of people, wildlife and fish.
- Secure and maintain a safe, affordable, and high-quality water supply for municipalities and residential water users.

The TWUA developed a Phased Watershed Restoration Plan for the Teton River Watershed (Restoration Plan), described in detail below. The formation of the Restoration Plan was driven largely by the realization that the incremental conversion of land from agriculture to suburban use has negatively impacted Teton Valley's prime economies. In fact, a recent multi-disciplinary study conducted by Humboldt State University and funded by the U.S. Department of Agriculture documented the loss of functionality of traditional canal and ditch irrigation systems in Teton Valley due to fragmentation of agricultural lands and socioeconomic changes within canal companies^{2,3}. These declines in Teton Valley's historical agricultural practices (i.e. – conversion of land from agriculture to development, and conversion to pressurized pipeline systems and sprinklers) are linked to: (1) local water-level reductions of up to 55 feet in Teton Valley's aquifer, (2) a dramatic reduction in base flows in the Teton River (see graph below), and (3) decreased wetland habitat available for fish and wildlife. Cumulatively, these trends are raising concerns about long-term water availability for municipal and residential use, wetland and river stream flows for fish and other wildlife, and water availability for agricultural production. In an effort to work proactively, the Restoration Plan sets forth a series of steps aimed at recharging the Teton Valley local aquifer, thereby improving local aquifer levels, increasing base flows in the Teton River to address regional water supply issues including those on the Eastern Snake River Plain, and sustaining water availability for fish and wildlife which are critical contributors to the local economy.

² R. Van Kirk et al. 2012. In the Henry's Fork Watershed, Every Drop Leaves a Ripple. Available online at http://www2.humboldt.edu/henrysfork/Documents_Presentations/HFW%20Booklet%20final.pdf

³ J.M. Baker et al. 2014. Patterns of irrigated agricultural land conversion in a western U.S. watershed: Implications for landscape-level water management and land-use planning. *Society and Natural Resources* 27:1145-1160.



Ratio of late-summer (August 1 – September 30) mean flow in the Teton River to mean flow during runoff (May 15 – July 15). Curve depicts statistically significant decline in this base-to-peak flow ratio over time.

Through the efforts described below, the Restoration Plan aims to:

1. Stabilize the Teton Valley aquifer, thereby protecting municipal and residential water supply;
2. Insulate local farmers against changes in water availability and increase water-supply reliability, particularly during times of drought;
3. Maintain valuable wetland habitat and create stream flow conditions (temperature and volume) beneficial for fish and wildlife, helping to sustain the local tourism economy; and
4. Quantifiably increase base flows in the Teton River, thereby decreasing water supply and demand pressure on the Henrys Fork River and Island Park Reservoir, and helping to address Eastern Snake Plain Aquifer stabilization goals.

These goals will initially (particularly through implementation of Phases I of the Restoration Plan, the subject of this grant proposal) be achieved by actively diverting and using existing irrigation water rights to promote the incidental recharge of water to the local aquifer, most likely during the first sixty days of the irrigation season (April 15-June 15). Through the diversion of water for recharge, groundwater/surface water modeling shows that the TWUA can take tangible steps toward stabilizing the local aquifer and increasing base flows in the Teton River, and in so doing address multiple levels of water need and begin to proactively plan for Teton Valley’s water future.

This proposal is unique in that it actively manages the timing of natural flow water available in the Teton River in a way that benefits water users both in and outside of Teton Valley, serving to improve the overall water budget in the Upper Snake River. The hydrogeologic properties of the Teton Valley alluvial aquifer make this possible—water recharged to the aquifer during runoff is slowly released on time scales of months rather than decades.

The efforts described in this proposal shall occur in an area commonly referred to as Teton Valley, Idaho, generally encompassing the cities of Victor, Driggs, and Teton, and the surrounding areas.

Through this grant, FTR seek funding to implement the aquifer recharge objectives outlined in Phase I of the Restoration Plan. This will be done by diverting an additional 85 cfs of water, through various canals in Teton Valley, for 60 days early in the irrigation season, and utilizing historic flood irrigation practices when possible. The following outcomes are expected:

- Aquifer Recharge: Approximately 10,000 acre feet of additional incidental recharge will result annually.
- Anticipated Local Aquifer Response: Begin to stabilize the local Teton Valley aquifer.
- Anticipated Downstream Response: Increase base flows in the Teton River, measured at Harrops Bridge, by approximately 10-15 cfs.
- Anticipated Ecological Response: Decrease stream temperature increase stream volume in the Teton River, during the warmest part of the summer (July – September), to improve ecological resilience and aquatic conditions. Sustain and enhance wetland complexes adjacent to the Teton River.

In order to achieve the goals outlined in Phase I of the Restoration Plan, FTR and the TWUA working group have identified a series of action steps for the development of this work. Work on the various action steps has been broken down into four sequential time periods, each outlined below.

October 2017 – March 2018

- Conduct community outreach and education about the program with the goal of increasing participation from canal companies and individual water right holders with the capacity to conduct incidental recharge.
- Establish a website by which to notify recharge participants as to when, and in what quantities, water can be diverted and distributed under existing water rights to maximize incidental recharge efforts.
- GIS Work - Electronically map and document the location and condition of canals and irrigation infrastructure.
- Install and maintain a stream gage downstream of Harrops Bridge to monitor river base flow response during project implementation, and compare with historic data at that gage site from years when flood irrigation was standard practice.
- Conduct canal manager training to ensure that managers can properly measure water, determine when water can legally be diverted, and how to use the program website.
- Develop groundwater and surface water monitoring procedures and protocols to evaluate aquifer and river responses resulting from the project.

April 2018 – September 2018

- April – June: Oversee and manage the diversion and distribution of the incidental recharge program, with the goal of diverting an additional 85 cfs of natural flow water through various canals for 60 days early in the irrigation season and utilizing historic flood irrigation practices when possible.
- July – September: Monitor volume and temperature response associated with incidental recharge efforts in the Teton River, and aquifer levels in the Teton Valley local aquifer.

October 2018 – March 2019

- Conduct community outreach and education about the program with the goal of increasing participation from canal companies and individual water right holders with the capacity to conduct incidental recharge.
- Identify and prioritize canal and infrastructure upgrades necessary to achieve additional recharge efforts.
- Identify locations for additional operational spills and sites where flood irrigation techniques can be intensified.

April 2019 – September 2019

- April – June: Oversee and manage the diversion and distribution of the incidental recharge program, with the goal of diverting an additional 85 cfs of natural flow water through various canals for 60 days early in the irrigation season and utilize historic flood irrigation practices when possible.
- July – September: Monitor volume and temperature response associated with incidental recharge efforts in the Teton River, and aquifer levels in the Teton Valley aquifer.

d. Evaluation Criteria

Evaluation Criterion A: Watershed Restoration Planning

- ***Describe your watershed restoration plan.***

Phase I of the Restoration Plan, upon which this proposal is based, is attached as Attachment D.

- o ***When was the restoration plan prepared and for what purpose?***

With the goal of proactively addressing several emerging water related issues, Friends of the Teton River (FTR) formed the Teton Water Users Association (TWUA) working group in the fall of 2015, bringing together individuals who can, collectively, identify solutions that satisfy the needs of all constituents within the community – farmers who depend on water for crop and livestock production, municipalities that require clean and adequate water for residents, and conservation interests seeking water for fish and wildlife.

The TWUA developed the following three tiered vision statement to guide its actions and activities:

- Keep working lands working by securing and maintaining a reliable and affordable supply of water to sustain agriculture.
- Protect and restore stream flows and water quality in the Teton River and its tributaries, for the benefit of people, wildlife, and fish.
- Secure and maintain a safe, affordable, and high quality water supply for municipalities and residential water users.

As a means to work proactively and collaboratively to address the many water issues unique to the Teton River Watershed, FTR and the TWUA knew it would be critical to develop a robust and comprehensive restoration plan to guide its work. After engaging in a lengthy process, spanning the course of nearly a year and described in detail below, the Phased Watershed Restoration Plan for the Teton River Watershed (Restoration Plan), upon which this proposal is based, was finalized in 2016.

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

The Restoration Plan addresses a suite of watershed management issues, including: water quality for fish and wildlife, human health and wellness, and human recreation, as well as water quantity for fish and wildlife, human health and wellness, agricultural use, and human recreation.

In fact, the Restoration Plan aims to address those topics outlined in the TWUA's vision statement, serving to address ecological water needs, municipal water needs, and agricultural water needs. The Plan addresses agricultural water needs, both inside and outside of the Teton River Watershed, by increasing base-flow levels in the Teton River during the driest months of the year (July, August, and September), thereby securing a more sustainable water supply for local agricultural producers and providing water for downstream agricultural needs including stabilization of the Eastern Snake Plain Aquifer. It addresses ecological flow needs by generating temperature and flow conditions in the Teton River beneficial for fish and wildlife, again during the critically hot months of July, August, and September, and helping to sustain and enhance available wetland habitat. And finally, the Plan helps secure a safe drinking water supply for residents of Teton County, Idaho by stabilizing the local aquifer, which in some areas has declined by as much as 55 feet.

o Who was involved in preparing the plan? Was the plan prepared with input from stakeholders with diverse interests (e.g., water, land or forest management interests, or environmental, agricultural, municipal, tribal, recreation uses)? What was the process used for interested stakeholders to provide input during the planning process?

The Plan was prepared by FTR, in partnership with the TWUA working group. The TWUA is a diverse collaborative, including representatives from the following organizations and entities:

- Teton County Farm Bureau

- NRCS
- Idaho Water District 01
- Teton Soil Conservation District
- Water right holders and canal companies that utilize water from the following areas:
 - Trail Creek
 - Teton Creek
 - Fox Creek
 - Darby Creek
 - Mahogany Creek
 - Spring Creek
 - South Leigh Creek
- Friends of the Teton River
- Teton Regional Land Trust
- Henrys Fork Foundation
- City of Victor, Idaho
- City of Driggs, Idaho
- City of Teton, Idaho
- Teton County, Idaho
- Idaho Department of Environmental Quality

FTR and the TWUA sought to develop a robust and comprehensive Plan by engaging in the following process. Work with partners to: (1) Identify water management problems, goals and objectives; (2) identify activities and projects that meet documented partner goals; and (3) optimize water management scenarios through modeling. Detailed information about how each step of this process unfolded is outlined below.

Identification of Problems, Goals, and Objectives

Each interest group within the TWUA – irrigation, conservation, municipalities/counties – underwent a process by which to clarify the challenges facing them. Subsequently, each interest group developed achievable goals for responding to their challenges, as well as objectives which aim to achieve their goals. Through this process, each member of the TWUA recognized its role among other water users and, ultimately, this became the cornerstone upon which the group came to develop potential projects. The results of the respective goal setting processes are summarized in table form below.

Irrigators – Problems, Goals, and Objectives

	Financial	Development/Urbanization	Regulatory Compliance	Water Supply
Problem	<p>Increasing operations and maintenance costs due to aging infrastructure.</p> <p>Cost of improving, upgrading, and repairing aging irrigation infrastructure (both on-farm & system wide infrastructure).</p> <p>Cost of installing lockable headgates and weirs/staff gages, as mandated by State law, to allow for regulatory compliance.</p>	<p>General public doesn't understand the need to maintain canals & how water is used on agricultural land.</p> <p>Right-of Way encroachments (i.e. – dumping trash in canals & building fences over canals) leading to an increase in operations and maintenance costs.</p> <p>Disproportionate amount of water used on lawns (when compared to farm land), leading to need for installation of water metering.</p>	<p>Stricter water administration oversight from WD 01, leading to earlier curtailments in accordance with Idaho Water law.</p> <p>Impacts of managing surface water and groundwater together (conjunctive management), such as impact to futile call, which may result in an effort to stabilize the Eastern Snake Plain Aquifer.</p>	<p>Need for increased water supply reliability on a year-to-year basis resulting from changes in runoff timing and prolonged drought.</p>
Goal	<p>Improve long-term financial security & increase revenue opportunities.</p>	<p>Increase general public's understanding of how canals work and how water is used on agricultural land.</p> <p>Prevent future right-of-way encroachments.</p> <p>Ensure that subdivision/municipal water use is proportionate to agricultural water use, on a per acre basis.</p>	<p>Account for potential regulatory activities by acting proactively and manage potential adverse impacts on agricultural operations.</p>	<p>Insulate against changes in water availability, particularly in times of drought.</p>
Objectives	<p>Generate additional revenue sources.</p> <p>Improve water delivery efficiency and effectiveness.</p> <p>Improve cost management practices.</p>	<p>Educate the public and local city/county about canals and agricultural water use.</p> <p>Upgrade infrastructure in urban environment and reduce operations and maintenance costs.</p>	<p>Develop a strategy that provides sufficient water for agricultural users even if there is more administrative oversight and if futile call is no longer available.</p>	<p>Supply water through conservation, management, and best practices to address: 1. agricultural water user supply needs; 2. drought conditions; and 3. Increased demand for water associated with ESPA.</p> <p>Generate alternative or additional sources of revenue to keep farms going, even when crop production is low.</p>

Municipalities/ County – Problems, Goals, and Objectives

	Financial	Development/Urbanization	Regulatory Compliance	Water Supply
Problem	<p>Operational expenses and maintenance costs occasionally outpace income generated.</p> <p>Cost of improving, upgrading, and repairing infrastructure.</p>	<p>Uncertainties surrounding short-term and long-term growth projections make it challenging to plan for and sustain a sufficient water supply.</p> <p>A growing number of unregulated domestic wells throughout the county increase the opportunity for water quality concerns, including: nitrate contamination and the increased opportunity for septic system contamination.</p> <p>Conversion of land to subdivisions has the potential to decrease aquifer recharge, thereby decreasing water levels in domestic and municipal wells.</p>	<p>Potential impacts of managing surface water and groundwater together (conjunctive management), such as curtailment of municipal water use for lawn and garden and industrial water use (without sufficient mitigation).</p>	<p>Need for increased long-term water supply reliability.</p>
Goal	<p>Improve long-term financial security & increase revenue opportunities.</p>	<p>Plan for and provide sufficient water for the future.</p> <p>Ensure that domestic wells, regardless of their location, are not contaminated.</p> <p>Stabilize aquifer levels.</p>	<p>Account for potential regulatory activities and manage potential adverse impacts on municipal operations.</p>	<p>Insulate against changes in water availability.</p>
Objectives	<p>Ensure that water users pay the true cost of water.</p> <p>Generate additional revenue sources.</p> <p>Improve cost management practices.</p>	<p>Develop plan and strategy for providing long-term municipal water supplies.</p> <p>Educate the public about well contamination issues.</p> <p>Develop local guidelines aimed at preventing well contamination.</p> <p>Contribute to efforts that aim to stabilize local aquifer levels.</p>	<p>Develop a strategy that provides sufficient water for municipal users even in the event of curtailments.</p>	<p>Supply water through conservation, management, and best practices to address:</p> <ol style="list-style-type: none"> 1. municipal water user supply needs; and 2. drought conditions. <p>Generate alternative or additional sources of water.</p>

Conservation Organizations – Problems, Goals, and Objectives

	Financial	Development/Urbanization	Regulatory Compliance	Water Supply
Problem	Listing of YCT under the Endangered Species Act will impact the local economy dramatically - including ag producers and fishing industry.	<p>Transition of land out of agriculture and into subdivision use has many negative impacts on natural resources, water, and local culture – loss of wildlife habitat, loss of agricultural heritage values, increased water use – which negatively impacts fish and wildlife.</p> <p>A great deal of development has occurred along the riparian corridors, serving to impede stream function and inhibit functional flood plains, which over time impact the spawning capacities of streams and their ability to function properly for fish and wildlife.</p>	Stricter water administrative oversight from WD 01 and implementation of conjunctive administration, may lead to curtailments in accordance with Idaho water law, which in turn may negatively impact ag producers, serving to decrease the local aquifer levels and result in a transition of land out of ag.	<p>Lack of water supply availability and reliability for environmental flows on a year-to-year basis, particularly in tributary streams critical to fish and wildlife.</p> <p>Development of addition storage which includes construction of storage facilities on the Teton River or tributaries.</p>
Goal	Ensure that YCT are not listed under the ESA.	<p>Ensure that agricultural lands remain in agriculture.</p> <p>Ensure that future development does not occur in the flood plains, and seek to mitigate for the impacts of subdivisions already constructed in flood plains.</p>	Account for potential regulatory activities and manage potential adverse impacts on agricultural operations.	<p>Identify a means by which to secure water for fish and wildlife in critical tributary stream and river reaches.</p> <p>Identify ways to bolster water supply for ag producers, without constructing any dams on the Teton River.</p>
Objectives	<p>Connect State and Fed resource managers with private landowners, to couple infrastructure improvements with projects that support YCT.</p> <p>Promote management decisions that enhance conditions for YCT.</p>	<p>Support agricultural producers, to ensure that farming remains a viable endeavor.</p> <p>Develop guidelines that prevent the construction of homes and subdivisions in flood plains.</p>	Develop strategies that provide sufficient water for ag users even if there is more oversight and if futile call is no longer available.	<p>Implement water transactions program to secure water for fish and wildlife in high priority streams.</p> <p>Promote the storage of water in local aquifers.</p>

Development of Potential Projects

The second part of developing the Plan involved the development of potential projects. This process was launched with a partner meeting in which all TWUA partners were encouraged to openly generate and brainstorm projects ideas. The TWUA partners then worked collectively to identify those projects that would address documented partner goals, which are outlined in table form above. As a result, the problems, goals, and objectives identified by the various interests groups in the initial stages of plan formation set the stage for, and in fact, directed the identification of potential projects. Potential projects identified by the TWUA working group are listed below.

Potential projects that address irrigator goals

- Identify resources, develop partnership, and assist with securing opportunities for water users to procure funds for infrastructure upgrades, locking headgates, staff gages, and weirs.
- Evaluate function and status of water delivery systems and develop plan for making repairs and improvements.
- Develop public education and outreach program to increase awareness about use and purpose of canals, and to decrease canal right-of-way encroachments.
- Work with cities and counties to develop ordinances that prevent canal right-of-way encroachments.
- Install water metering devices on subdivision lines and develop canal company rules/regulations to ensure that the meters remain functional.
- Form a local water users association.
- *Evaluate, develop and implement plan to stabilize & bolster aquifer levels, as well as delay senior calls for water.*
- Form a local water bank to facilitate the movement of water locally, and explore how the bank may facilitate a means by which agricultural producers can get “credit” for conducting recharge.
- Supply irrigation water through conservation, management, and best practices.
- Identify and evaluate programs available to agricultural users that generate alternative sources of revenue, such as small hydropower and water leasing.

Potential projects which address municipal goals

- Adjust municipal water billing, where necessary, to: (1) ensure that the expense of providing water is recovered and (2) generate revenue for future expenses.
- Identify resources and develop partnership opportunities for municipalities to secure funds for infrastructure upgrades.
- Develop a source water protection plan, or revisit existing source water protection plan to ensure its relevancy.
- Develop public education and outreach program to increase awareness about potential for domestic well contamination, and provide free water quality testing.

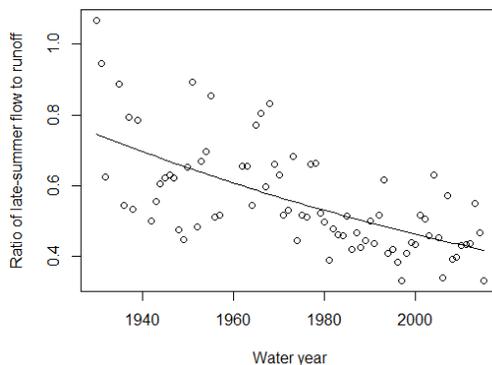
- Develop city and county ordinances that prevent well contamination.
- *Encourage and provide mechanism for municipalities and the county to participate in efforts to conduct recharge in Teton Valley.*
- Evaluate, develop and implement plan to get “credit” for conducting recharge in Teton Valley, as a means to mitigate for continued municipal water use.
- Supply municipal water through conservation, management, and best practices.

Potential projects that address conservation organization goals

- Identify means by which to acquire additional water for environmental use.
- Identify resources and develop partnership opportunities for projects that address limiting factors impacting YCT.
- Encourage and provide mechanism for conservation organizations to participate in the water users association, and cultivate dialog between resource managers and private landowners/water users.
- Work with agricultural producers to identify sustainable sources of water to support agricultural production.
- Work with agricultural producers to identify alternative sources of revenue and reduce overhead costs associated with farming.
- Work with cities and counties to develop ordinances that prevent the construction of homes in flood plains.
- *Evaluate, develop and implement plan to stabilize & bolster aquifer levels, as well delay senior calls for water.*
- Form a local water bank to facilitate the movement of water locally, and explore how the bank may facilitate a means by which ag producers can get “credit” for conducting recharge.
- Work with land managers to identify stream flow restoration priorities – where, when, what quantities.
- Work with private water right holders to develop scenarios that restore stream flow, while keeping water right holders whole.
- Conservation organizations identify a means by which to promote and participate in aquifer recharge efforts.

Of these potential projects, the TWUA working group identified one project with the potential to optimize outcomes for all three interest groups (agricultural, municipal/county, and conservation) – development and implementation of a strategy to increase groundwater recharge in Teton Valley. The selection of this alternative was driven largely by the realization that the incremental conversion of land from agriculture to suburban use has negatively impacted Teton Valley’s prime economies. In fact, a recent multi-disciplinary study conducted by Humboldt State University and funded by the U.S. Department of Agriculture documented

the loss of functionality of traditional canal and ditch irrigation systems in Teton Valley due to fragmentation of agricultural lands and socioeconomic changes within canal companies^{4,5}. Declines in Teton Valley’s historical agricultural practices are linked to local water-level reductions of up to 55 feet in Teton Valley’s local aquifer, a dramatic reduction in base flows in the Teton River (see graph below), and decreased wetland habitat available for fish and wildlife. Cumulatively, these trends raise concerns about long-term water availability for municipal and residential use, wetland and river stream flows for fish and other wildlife, and water availability for agricultural production.



Ratio of late-summer (August 1 – September 30) mean flow in the Teton River to mean flow during runoff (May 15 – July 15). Curve depicts statistically significant decline in this base-to-peak flow ratio over time.

Implementation of a recharge project in Teton Valley is unique in that it actively manages the timing of natural flow available in the Teton River in a way that benefits water users both in and outside of Teton Valley, serving to improve the overall water budget in the Upper Snake River. The hydrogeologic properties of the Teton Valley alluvial aquifer make this possible—water recharged to the aquifer during runoff is slowly released on time scales of months rather than decades.

Due to the community wide benefits, discussed above, the TWUA agreed that the water recharge project would serve as the cornerstone of the phased watershed restoration plan it would develop. However, the group acknowledged that water recharge is multi-faceted in nature and would, by necessity, incorporate implementation strategies which speak to a number of additional projects identified by the TWUA. Those include:

- Identify funding and partnership opportunities for irrigation infrastructure upgrades and repairs (head gates, staff gages, measurement weirs, pressurized systems).
- Increase communication between cities, county, and canal companies to reduce canal right-of-way encroachments, incentivize subdivision water metering, reduce impacts of development on ground and surface water resources.

⁴ R. Van Kirk et al. 2012. In the Henry’s Fork Watershed, Every Drop Leaves a Ripple. Available online at http://www2.humboldt.edu/henrysfork/Documents_Presentations/HFW%20Booklet%20final.pdf

⁵ J.M. Baker et al. 2014. Patterns of irrigated agricultural land conversion in a western U.S. watershed: Implications for landscape-level water management and land-use planning. *Society and Natural Resources* 27:1145-1160.

- Explore water efficiency saving mechanisms such as advanced water metering in cities and subdivisions, waste water reuse and headgate automation.
- Develop a local water banking or water trading system to facilitate the legal movement of water.
- Investigate conservation and management strategies to insulate community water supplies against changes in water availability, particularly in times of drought.
- Identify and evaluate programs available to agricultural users that generate alternative sources of revenue, such as small hydropower and water leasing.

Optimization of Water Management Scenario

Dr. Rob VanKirk was then hired to assess the viability of conducting groundwater recharge in the Teton River Watershed, and to help define attainable recharge objectives. Dr. Rob VanKirk utilized the upper Teton River surface and groundwater model which was developed through a USDA grant, and subsequently utilized by the Bureau of Reclamation in the Henrys Fork Basin Study. With the incorporation of Dr. Rob VanKirk’s work, the Restoration Plan was finalized in 2016.

As reflected above, the Restoration Plan is a direct outgrowth of an iterative process and the work of a multitude of stakeholders, all of whom had an opportunity to provide input throughout the entire planning process.

o If the restoration plan was prepared by an entity other than the applicant, explain why the watershed group applying did not prepare its own plan. In cases where the applicant did not prepare the restoration plan, the applicant must provide documented support for the proposed project by the entity that authored the plan.

Not applicable – the Restoration Plan was prepared by FTR, with immense support and input from the TWUA working group.

• Describe how the existing restoration plan provides support for your proposed watershed management project.

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

The proposed project seeks funding to support implementation of Phase I of the Restoration Plan, which aims to conduct approximately 10,000 acre feet of addition incidental recharge, each year of the grant term.

o Describe how the proposed project is prioritized in the referenced restoration plan.

As described above, the Restoration Plan was developed through a robust, iterative planning process which prioritized various needs and potential projects developed throughout a series of TWUA working group meetings. Phase I of the Restoration Plan, which serves as the driving force behind this proposal, was identified as the initial starting point for implementation and by consequence is considered the highest priority and most logical place to begin.

Evaluation Criterion B: Project Benefits

• Describe the expected benefits of the proposed project. Address all of the following sub-bullets that apply to the project (the described benefits are not listed in order of priority). In your responses, describe the extent and significance of the benefits associated with the project, including the geographic extent, the magnitude of expected project, and the significance of the benefits to addressing important issues within the watershed. Project benefits should be supported and quantified where appropriate, including support for the type of project and the methodology. Support for project benefits can include the existing watershed restoration plan, or other relevant planning efforts, research and science.

o Will the project make more water available to meet water needs, or make water available at a more advantageous time or location? If so, how and to what extent?

This project seeks funding to support Phase I of the Restoration Plan, which contemplates the diversion and distribution of an additional 85 cfs of surface water in various canals throughout Teton Valley for a period of 60 days. This project is expected to result in the following outcomes:

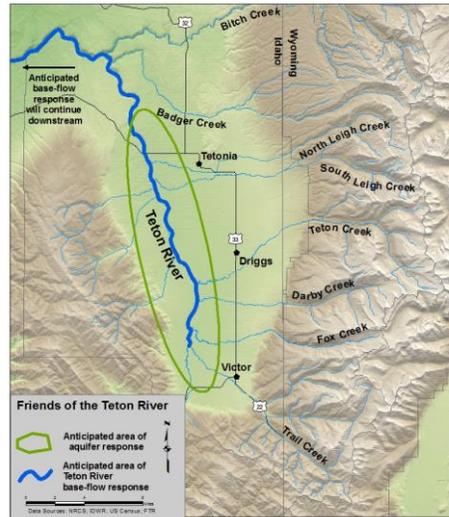
- **Aquifer Recharge:** Approximately 10,000 acre feet of additional incidental recharge will result annually during the grant term.
- **Anticipated Local Aquifer Response:** Begin to stabilize the local Teton Valley aquifer.
- **Anticipated Downstream Response:** Increase base flows in the Teton River from July through September, measured at Harrops Bridge, by approximately 10-15 cfs.
- **Anticipated Ecological Response:** Decrease stream temperature increase stream volume in the Teton River, during the warmest part of the summer (July – September), to improve ecological resilience and aquatic conditions. Sustain and enhance wetland complexes adjacent to the Teton River.

To lend perspective on the significance of the anticipated flow increase, the flow in the Teton River in 2016 dropped to a low of 115 cfs. Should similar flow conditions manifest in the future, the project will result in a 13% increase in base flow conditions. This is significant, given that the availability of cold water refugia directly impacts the success of trout during the months of July, August, and September when fish are stressed as a result of increased fishing pressure and increased stream temperature.

The stream flow increases, discussed above, were quantified by Dr. Rob VanKirk's groundwater/surface water modeling efforts, described above in relation to the development of the Restoration Plan, above.

The map, below, depicts the geographic extent of the anticipated aquifer and river responses.

Geographic Extent of Anticipated Aquifer and River Responses



o Will the project result in long-term improvements to water quality? For example, will the project decrease sediment or nutrient pollution, improve water temperature, or mitigate impacts from mining or wildfires? If so, how and to what extent?

As described above, the project is expected to increase base flows in the Teton River from July through September each year. Flows are expected to increase by approximately 10-15cfs annually as a result of increased groundwater returns to the Teton River. Because the increased volume of water is a result of increased groundwater returns, the additional water is expected to be clean and cold. Through a dilutive effect (i.e. the addition of water to the system), the project is expected to reduce sediment and nutrient loading and reduce water temperature.

The degree to which water temperature will be reduced as a result of the project has not been quantified. However, FTR is poised to measure response. The water quality of Teton Valley is an area of strong concern to residents, visitors, natural resource experts, and governmental agencies. Although the rapid rate of growth and development has slowed in the past several years, significant concerns remain about the effect of changing land use practices on water quality. Adverse changes on the upper Teton River have been observed over the last several decades including increased siltation, hydrologic alteration, elevated levels of nitrates and bacteria, and a sharp decline in the native Yellowstone Cutthroat Trout population. In 1998, the U.S. Environmental Protection Agency (EPA) designated the upper Teton River (headwaters to Highway 33) and many of its tributaries as not meeting its beneficial use, due to excessive nutrients, temperature and sedimentation under section 303(d) of the Federal Clean Water Act. A study conducted in 1999 by Idaho State University (Minshall, 2001, Origin and Fate of Water Quality Factors Affecting the Ecological Integrity of the Teton River) showed elevated nitrate levels in the upper Teton River as affecting the ecological integrity of the river system.

Due to the above concerns, in 2001, Friends of the Teton River (FTR) designed and implemented a water quality program for the upper Teton River watershed. Initially,

the program was funded by the Idaho Department of Environmental Quality (DEQ). Due to budgetary cuts within the State of Idaho, starting in 2009, the funding originally allocated by DEQ to the water quality program in Teton County, Idaho was discontinued. Since 2009, FTR has solicited private funding to continue the water quality program in Teton County, Idaho. FTR currently collects data from 11 monitoring sites twice per year. This data is summarized and provided to DEQ, Teton Conservation District, and the public at-large upon request. FTR will continue this effort, annually, into the foreseeable future. Additionally, through this grant, FTR will develop a protocol and means by which to specifically compare annual pre-project and post-project water responses in the Teton River (through data collected at the Harrops gage) and the Teton Valley aquifer.

o Will the project benefit aquatic or riparian ecosystems within the watershed? For example, will the project reduce flood risk, reduce bank erosion, increase biodiversity, preserve native species, or mitigate wildfire impacts? If so, how and to what extent?

The project is expected to provide significant benefit to trout and wildlife species dependent upon the Teton River and its wetlands. As discussed above, the project is expected to quantifiably increase base flows in the Teton River and improve water quality, all of which will preserve and protect valued trout populations in the Watershed, including native Yellowstone Cutthroat Trout (*Oncorhynchus clarkii bouvieri*).

The Upper Teton River provides vital riparian habitat for many sensitive wildlife species, including elk, moose, grizzly bears, trumpeter swans, and sandhill cranes, to name a few. This project is expected to raise groundwater levels, serving to charge the springs and wetlands upon which many of these species rely in the late summer.

o Will the project benefit specific species and habitats? If so, describe the species and/or type of habitat that will benefit. How and to what extent will the project benefit the species or habitat? Please explain the status of species and habitat that will benefit (e.g., native species, game species, federally threatened or endangered, state listed, and whether critical habitat has been designated).

The proposed grant objectives are expected to benefit trout populations, including native Yellowstone Cutthroat Trout, in the main stem of the Teton River during the months of July, August and September by boosting base-flow levels and decreasing water temperature. In addition, the project is expected to support wetland habitat along the Teton River, benefiting a host of animals including trumpeter swans and sandhill cranes, both of which are currently listed as Idaho species of greatest conservation need.

Native Yellowstone Cutthroat Trout (YCT) is considered a species of greatest conservation need in the State of Idaho and the condition of YCT populations are often an indication of the overall health of the watershed. Between 1999 and 2003, Idaho Fish and Game observed a 95% decline in Yellowstone Cutthroat Trout populations, while both Brook Trout and Rainbow Trout populations increased by 300%. Historically, YCT occupied much of the Greater Yellowstone Ecosystem (GYE), which encompasses parts of Idaho, Montana, Wyoming, and small regions of Nevada and Utah. Currently, YCT exist in just 27% of their historic range. The Teton River Watershed is one of three remaining stronghold systems for YCT in the entire GYE. Given the

range-wide decline in YCT abundance and distribution, it is likely that the species will be petitioned for listing under the ESA in the future unless significant progress is made towards stabilizing and increasing populations throughout the region.

Trumpeter Swans are currently listed as Idaho Species of greatest conservation need. Once abundant throughout North America, Trumpeter Swans were hunted heavily for their hides and feathers from the 17th through 19th centuries. By the early 1900's, Trumpeter Swans were thought to be extinct. In 1932, 69 Trumpeters found at Red Rock Lakes, Montana were thought to be the last remaining Trumpeter Swans in existence. Thanks to swift conservation efforts, Trumpeter populations have risen to stable numbers throughout most of their range. Trumpeter Swans continue to face a number of threats. In Teton Valley and across the globe, many wetlands have been drained or filled, negatively impacting countless wildlife species, including Trumpeters. In addition, declining beaver populations throughout the Greater Yellowstone region have furthered wetland resource losses. Currently, the Greater Yellowstone Trumpeter Swan nesting population is struggling due to lack of habitat. Biologists are seeing fewer nesting trumpeter swan pairs in our region, and even fewer successful nests.

Sandhill cranes are currently listed as an Idaho Species of greatest conservation need. Many bird conservation organizations identify Sandhill cranes as an important umbrella species. These cranes are drivers for conservation initiatives because protecting them and their habitat provides benefits for other wildlife species. Cranes need expansive areas like Yellowstone and Grand Teton National Parks, secure wetlands, and connected agricultural lands to nest and rear their young. In fall, a large number flock throughout Teton Valley as they prepare for their migration south to New Mexico and Mexico. Teton Valley provides crucial habitat for Sandhill cranes that summer and breed throughout the Greater Yellowstone Ecosystem (GYE) to complete their annual cycles. In fact, Teton Valley is the largest migration staging area for Sandhill Cranes in the entire GYE.

o Will the project benefit multiple water uses within the watershed (e.g., municipal, agricultural, environmental, tribal, recreation uses)? If so, how and to what extent?

This project is literally a win-win-win: a win for farmers and ranchers, a win for conservation groups looking for ecological benefits, and a win for local municipal and residential interests. By recharging water to the Teton Valley aquifer each spring, when water is plentiful in Teton Valley, this project will:

1. Stabilize the Teton Valley aquifer, thereby protecting municipal and residential water supply. In 2016, for the first time, many residential wells in Teton Valley failed to produce water and had to be re-drilled. In some locations it appears that aquifer levels have dropped by 55 feet. This project will help stabilize the aquifer, and by consequence help secure a reliable, safe, and affordable drinking water supply.
2. Insulate farmers against changes in water availability and increase water-supply reliability, particularly during times of drought. The water users in the Upper Teton Valley have relatively junior water rights when compared to those downstream, near Rexburg, ID and Sugar City, ID. Therefore, the Upper Teton Valley water users are subject to senior "calls" for water each year. By bolstering stream flow in the Teton

River senior water calls will be delayed, keeping Upper Teton Valley water users in water for a longer period of time.

3. Maintain valuable wetland habitat and create stream flow conditions beneficial for trout. See information above for a detailed explanation of the numerous ecological benefits associated with this project.
4. Quantifiably increase base flows in the Teton River, thereby decreasing water supply and demand pressure on the Henrys Fork River and Island Park Reservoir. The project will provide downstream water users with additional water during the latter part of the summer. These water users generally rely on the delivery of storage water from Island Park Reservoir, located on the Henrys Fork River, delivered to the lower Teton River via the Cross-cut Canal. There are times each summer when the Cross-cut Canal is running at capacity, but is still not able to supply water demand. This project will increase base flow levels in the Teton River, providing additional water to the lower Teton River water users (located near Rexburg, Sugar City, and Idaho Falls) during the months of July – September (when supply issues are at their worst), serve to decrease water delivery demand pressure on the Henrys Fork River and Cross-cut Canal, and make additional water available to support regional water supply goals such as stabilization of the Eastern Snake Plain Aquifer.

o Will the project benefit watershed stakeholders in ways not addressed in the preceding questions? If so, how? Will the project reduce water conflicts within the watershed? Will the project increase resiliency to drought? Will the project provide benefits other water uses not mentioned above? If so, how and to what extent?

The subtleties of this project bear some explanation. In a region where new west ideals are often pitted against old west lifestyles, in a place where intensive farming and ranching comes into conflict with modern day recreational pursuits, this project draws our community together to generate positive conservation outcomes. Through the act of farmers and ranchers actively diverting water for incidental recharge, municipal water supplies will be stabilized and the Teton River and its wetlands will remain colder and hold more water, creating much needed high elevation refugia for native fish and wildlife. As a consequence, the community as a whole will be able to recognize and acknowledge the huge contributions that ranching and farming make to our community, turning the typical narrative around. Additionally, this project helps promote ancillary land use benefits. By encouraging incidental recharge, farmers and ranchers are also encouraged to keep large swaths of land undeveloped so that incidental recharge efforts can be conducted. Those large land tracts are invaluable as winter range, as migratory corridors, and maintaining the integrity of stream channels and flood corridors. In these ways, the project is not only a win-win-win for ecological, farming, and municipal interests, it is a means to help heal the divides in the community and sustain the community values upon which this region was settled.

• Will the project address multiple issues of concern within the watershed (e.g., both water supply and fish habitat issues)?

As described, above, this project specifically addresses multiple issues of concern within the watershed.

- ***Will the project benefit multiple water uses within the watershed (e.g., municipal, agricultural, environmental, tribal, recreation uses)? If so, how and to what extent?***

As described, above, this project benefits multiple water users within the watershed.

Evaluation Criterion C: Stakeholder Support

- ***Please describe the level of stakeholder support for the proposed project. Are letters of support from stakeholders provided (see Section D.2.2.8. Letters of Support)? Are any stakeholders providing support for the project through cost-share contributions, or through other types of contributions to the project?***

The project has garnered high level stakeholder support, and was in fact developed by a diverse and well represented group of stakeholders.

Letters of support from the following stakeholders are provided: Teton County Farm Bureau; Teton Soil Conservation District; City of Driggs, Idaho; City of Victor, Idaho; Teton County, Idaho; and Teton Regional Land Trust.

Numerous stakeholders are providing support for the project through in-kind cost-share contributions, in the form of volunteer time, valued at \$9,600. Those individuals include representatives from the following entities and organizations: Teton County Farm Bureau; Idaho Water District 01; Teton Soil Conservation District; Water right holders and canal companies that utilize water from the following areas - Trail Creek, Teton Creek, Fox Creek, Darby Creek, Mahogany Creek, Spring Creek, and South Leigh Creek; Teton Regional Land Trust; Henrys Fork Foundation; City of Victor, Idaho; City of Driggs, Idaho; City of Tetonia, Idaho; and Teton County, Idaho.

- ***Please explain whether the project is supported by a diverse set of stakeholders (appropriate given the types of interested stakeholders within the watershed and the scale, type and complexity of the proposed project). For example, is the project supported by entities representing environmental, agricultural, municipal, tribal, or recreation uses?***
Each of the partners involved the Teton Water Users Association (TWUA) working group has expressed support for the project. The TWUA is diverse, including representatives from the agricultural, municipal and conservation sectors, including the following organizations and entities: Teton County Farm Bureau; NRCS; Idaho Water District 01; Teton Soil Conservation District; Water right holders and canal companies that utilize water from the Trail Creek, Teton Creek, Fox Creek, Darby Creek, Mahogany Creek, South Leigh Creek, and Spring Creek areas; Friends of the Teton River; Teton Regional Land Trust; Henrys Fork Foundation; City of Victor, Idaho; City of Driggs, Idaho; City of Tetonia, Idaho; Teton County, Idaho; and Idaho Department of Environmental Quality.

• *Is the project supported by entities responsible for the management of land, water, recreation, or forestry within the watershed? Is the project consistent with the policies of those agencies?*

The proposed grant activities conform to and meet the goals outlined by numerous resources managers. Most significantly, the Restoration Plan and this grant proposal support goals outlined by Teton County, ID (the predominant land manager, charged with managing private land), and Idaho Department of Water Resources and Idaho Department of Environmental Quality (the predominant water resource managers). All of these entities participate in the TWUA working group, and support the proposed project.

Idaho Department of Water Resources, Water District 01 Watermaster – The WD01 Watermaster is legally deputized by the State of Idaho to administer and deliver water in Teton Valley, and has expressed a great deal of support for the project. The diversion and delivery of water contemplated by this project will be done in compliance with Idaho water law, and will serve to benefit numerous water users by increasing available water supply in the Teton River Watershed. Further, the Director of the Idaho Department of Water Resources recently issued an order designating the Eastern Snake Plain Aquifer a Ground Water Management Area. The Order clarifies that the Eastern Snake Plain Aquifer is hydrologically connected to the Teton River, via the Snake River, and thus efforts to stabilize the Eastern Snake Plain Aquifer will impact water use in the Teton River Watershed. The Restoration Plan and the grant activities outlined herein will increase the quantity of water available Teton River, thereby helping to address downstream water supply issues such as stabilization of the Eastern Snake Plain Aquifer.

State of Idaho – The State of Idaho Water Plan and Eastern Snake Aquifer Comprehensive Management Plan enumerates a series of objectives and strategies aimed at stabilizing the Eastern Snake Plain Aquifer. A number of those objectives and strategies, including those listed below, are directly supported by the proposed project which will generate additional water in the Teton River, accruing to the Snake River, and become available to support ESPA stabilization objectives. The following are enumerated objectives and strategies in State of Idaho Water Plan and Eastern Snake Aquifer Comprehensive Management Plan:

- Increase predictability for water users by managing for a reliable supply.
- Implement actions that will enhance aquifer levels and spring flows.
- Reduced water-related conflict in the Snake River Basin.

Teton County, Idaho – The Teton County, Idaho Comprehensive Plan serves as the vision for the future direction of Teton County, Idaho. The Comprehensive Plan specifically seeks to “[p]reserve natural resources and a healthy environment,” and sets forth the following guiding principles to ensure such preservation:

- Conserve our public lands and natural resources (air, water, wildlife, fisheries, climate, trail systems, wetlands, dark skies, view sheds, soundscape, soils, open space, native vegetation)
- Balance private property rights and protection of our natural resources
- Respect sensitive habitat and migration areas for wildlife
- Recognize that tourism is a fundamental component of our economy and is dependent on healthy natural resources

- Regularly update all natural and scenic resource inventories, to assess the incremental impacts of development on the resource and as a basis for regulatory amendments, as necessary.
- Work with municipalities and public water systems to ensure safe and adequate drinking water.
- Encourage the conservation of high water quality in rivers and streams.

The proposed project will advance and support all the goals outlined above.

Idaho Department of Environmental Quality – The Teton River Subbasin Assessment and Total Maximum Daily Load (2003) was prepared pursuant to the Idaho total maximum daily load (TMDL) development schedule (Idaho Sportsmen's Coalition v. Browner, No. C93-943WD, Stipulation and Proposed Order on Schedule Required by Court, April 7, 1997), §303(d) of the Clean Water Act (Public Law 92-500 as amended, 33 U.S.C. §1251 *et seq.*), and the United States Environmental Protection Agency (EPA) Water Quality Planning and Management Regulations (40 CFR Part 130.7). The goal of the TMDL is to restore identified impaired waterbodies to a condition that meets state water quality standards. Several waterbodies (stream reaches) located within the Upper Teton River Watershed, including the Teton River itself, are listed under the Clean Water Act and have associated TMDL's which seek to restore applicable state water quality standards. The proposed project will help address the TMDL on the Teton River.

• ***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.***

Given the diversity of the Teton Water Users Association working group, the proposal has been met with limited opposition. There are, of course, always individuals that are skeptical of new plans. FTR and the TWUA have hosted numerous outreach events and informational meetings to provide members of the public, and water users in particular, with an opportunity to learn about the Restoration Plan. Generally, once explained, water users and members of the public support the Restoration Plan and its community based goals.

It is important to note that some of the land and resource managers in the region, particularly IDFG, have expressed concern for the unknown or unintended consequences of manipulating the ascending limb of the hydrograph to conduct recharge. IDFG has, specifically, expressed concern that manipulation of the hydrograph may negatively impact Yellowstone Cutthroat Trout populations. This concern is indicative of a larger conversation surrounding the impact that changing natural hydrologic stream conditions have on the success of native fish populations. Traditionally, scientists have believed that Yellowstone Cutthroat Trout, and other native fish, populations benefited when stream conditions most closely resemble the natural hydrograph. However, recent scientific analysis may indicate that this factor, alone, is not as significant as once thought, and that other factors, such as non-native species invasion, climate change, stream temperature, and drought may, cumulatively, have a greater impact on the success of native Yellowstone Cutthroat Trout populations.

In short, there is currently disagreement in the relevant scientific community as to the relative impact and associated consequences for Yellowstone Cutthroat Trout populations when conducting recharge of this type. FTR is currently working with the top scientists in the field to collect and analyze data relevant to this question, and is particularly poised to shed light on this question given its robust fisheries research and monitoring program (outlined, below, in the next question). FTR has formally empaneled the region's most notable fisheries biologists, fisheries resource managers, and climatologists to serve as a formal technical team which will review, analyze, and interpret research, as well as design and analyze monitoring efforts, in order to advise FTR and the TWUA on whether specific recharge activities, in specific tributaries and during specific times and quantities, are likely to, or are actually measured to, impact native Yellowstone Cutthroat Trout. This technical team meets at least annually, and more often as needed.

Given the discussion above, it is worth noting that most partners acknowledge that climate change and pending water right management and administrative changes make it unrealistic to maintain or restore a natural hydrograph in the Teton River and its tributaries and, therefore believe that the well-rounded community based benefits associated with this proposal and the Restoration Plan, generally, likely outweigh any negative impacts which may result from the project.

• ***Will the proposed project complement other, ongoing watershed management activities by state, Federal, or local government entities, non-profits or individual landowners within the watershed? Please describe other relevant efforts, including who is undertaking these efforts and whether they support the proposed project. Explain how the proposed project will avoid duplication or complication of other ongoing efforts.***

There are numerous ongoing watershed management activities occurring in the Teton River watershed, a couple of the most noteworthy, ongoing projects are discussed below.

- **Bates River Access Project:** Together, Teton County, Idaho, the Trust for Public Land, the Idaho Department of Fish and Game, and local non-profits including Friends of the Teton River, LegacyWorks Group, Valley Advocates for Responsible Development, the Community Foundation of Teton Valley, and the Teton Regional Land Trust, are partnering on the Bates Teton River Project to purchase, improve, and forever protect the Bates Bridge public access. Flowing through Teton County, the Teton River is a prized fishery where people travel from all corners for their chance to catch a native Yellowstone Cutthroat Trout or to simply relax while paddling the waters. This project provides the opportunity for our community to protect one of the most popular public access sites on the Teton River, to improve the safety and parking of the river access, and to permanently protect the riverbanks and surrounding wetlands, wildlife habitat, and agricultural land from residential development and other incompatible uses. The new public access site will be located on the north side of Bates Road will include an enlarged boat ramp, ample parking, restrooms, informational kiosks and areas for families to picnic and play. Once the improvements are complete, the existing access and parking areas will be decommissioned and restored. The Bates Access Project is a great investment in the Teton Valley community, the local economy and our wildlife, and

dovetails harmoniously with the benefits associated with the proposed grant activities.

- **Fisheries Research:** Friends of the Teton River (FTR) has collaborated with private individuals and agency partners to collect comprehensive and nationally recognized fisheries and hydrological data in the Teton River Watershed since 2005. In 2005, FTR conducted the Tributary Trout Population Assessment project which provided a detailed analysis of trout populations in 15 Teton River tributaries. From 2005-2010, FTR expanded the assessment to include Canyon Creek and the lower reaches of Fox, Teton, Badger and Bitch Creeks. In 2010, FTR repeated the Tributary Assessment to monitor trout population trends; implemented a ten year interrogation site study to track the movement of trout in key tributaries; conducted redd surveys to determine the location of fluvial Yellowstone Cutthroat Trout (YCT) and Hybrid (HYB) spawning reaches in the watershed; implemented a screw trap study on Teton Creek to determine outmigration timing of juvenile trout; started a stream temperature monitoring program; installed flow gages on key tributaries; and began tracking HYB invasions in YCT stronghold streams. In 2015, FTR repeated the Tributary Assessment and added Moody Creek to the Assessment. To date, the data generated by this research has been used to inform agency management decisions, to prioritize projects and to provide FTR with the tools needed to evaluate the efficacy of FTR's restoration efforts. The fisheries assessment and research work (2005-2020) provides the foundation for FTR and its agency partners to move forward for the protection and conservation of Yellowstone Cutthroat Trout. The outcomes of this work will ultimately lead to the range-wide prioritization of actions to benefit YCT and will help evaluate the efficacy, outcomes, and impacts of the proposed grant activities on fish, including the grant activities discussed herein.
- **Teton Creek Corridor Project:** Four local community groups, Friends of the Teton River (FTR), Teton Regional Land Trust (TRLT), Teton Valley Trails and Pathways (TVTAP) and Valley Advocates for Responsible Development (VARD) have come together for the Teton Creek Corridor, an ambitious, collaborative project to protect and enhance the Teton Creek corridor from the City of Driggs to the Idaho-Wyoming state line. A fifth group, LegacyWorks Group, is staffing the collaborative and providing transactional support. The LOR foundation has generously provided seed funding to launch the project. The goal of the Teton Creek Corridor Project is to maintain and enhance the ecological integrity and the public's ability to access and enjoy the section of Teton Creek from Highway 33 upstream to Stateline Road. The specific anticipated project outcomes are: protecting and enhancing the riparian corridor; maintaining and improving native plant communities and improving winter elk habitat; enhancing stream flows to maintain year round flows for Yellowstone Cutthroat Trout; restoring degraded sections of stream channel; decreasing development impacts along the corridor; and establishing a 4 mile recreational pathway through the area. The project is designed to build on the strengths and past successes of the partner organizations. The pathway will tie into the existing Teton Valley trails and pathways system that TVTAP has supported and expanded throughout the valley. Habitat protections will build off of and strengthen the existing 1,100 acres of conservation easements that TRLT has already protected along Teton Creek upstream and downstream of this project. FTR has already restored roughly 6,100 feet of degraded streambed along Teton Creek at a cost of roughly \$2.85

million. The grant activities proposed herein support the community based priorities of the Teton Corridor Project by promoting recreation and conservation outcomes in the Teton River watershed for the benefit of people, wildlife, and fish.

All of these ongoing projects speak to the depth and magnitude of work being conducted in the Teton River watershed – it is remarkable. Yet no other project works: (1) directly on documented local and regional water supply issues, and (2) brings together such traditionally, diverse constituents. The project outlined in this grant proposal is unique because it continues to support and rely on the quality, community based projects currently underway in the watershed (such as fisheries research, expansion of Teton River access, and tributary stream protection) but it directly addresses the needs of an extremely diverse set of water users.

Evaluation Criterion D: Project Implementation

- *Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.*

Expected Project Outcomes:

- Aquifer Recharge: Approximately 10,000 acre feet of additional incidental recharge will result annually.
- Anticipated Local Aquifer Response: Begin to stabilize the local Teton Valley aquifer.
- Anticipated Downstream Response: Increase base flows in the Teton River, measured at Harrops Bridge, by approximately 10-15 cfs.
- Anticipated Ecological Response: Decrease stream temperature increase stream volume in the Teton River, during the warmest part of the summer (July – September), to improve ecological resilience and aquatic conditions. Sustain and enhance wetland complexes adjacent to the Teton River.

In order to achieve the outcomes outlined, above, FTR and the TWUA working group have identified a series of action steps for the development of this work. A project schedule that shows the stages and duration of the proposed work, including major tasks, milestones and dates is set forth below.

Project Schedule

Task Description	Dates of Proposed Work	Milestone
Implementation Part 1: October 2017 – March 2018		
Community outreach and education <ul style="list-style-type: none"> • Host irrigator meeting • Host public informational meeting • Conduct one-on-one outreach to irrigators 	Ongoing October 2017-March 2018	Secure additional commitment to participate in recharge initiatives & general community support

<p>Establish website</p> <ul style="list-style-type: none"> • Define scope of work • Contract web designer • Review and edit content 	<p>Completed on or before March 31, 2018</p>	<p>Launch “live” website accessible online</p>
<p>GIS</p> <ul style="list-style-type: none"> • Define scope of work - GIS location and condition of canals and irrigation infrastructure on recharge priority streams • Contract firm to perform work • Serve as point of contact for irrigators and contractor • Review work product 	<p>Completed on or before March 31, 2018</p>	<p>GIS map completed</p>
<p>Install & maintain Harrops Bridge stream gage</p> <ul style="list-style-type: none"> • Acquire necessary equipment • Install gage and establish rated stream section • Take flow measurements • Establish rating curve 	<p>Completed on or before March 31, 2018</p>	<p>Stream gage successfully installed & rating reliable rating curve established</p>
<p>Conduct canal manager training</p> <ul style="list-style-type: none"> • Select date and identify venue • Secure teacher participation – train on how to measure water & how to use website • Arrange for room rental and food 	<p>Event hosted on or before March 31, 2018</p>	<p>Host canal manager training in Teton Valley</p>
<p>Develop aquifer and river monitoring procedures</p> <ul style="list-style-type: none"> • Identify specific scientific parameters to monitor aquifer and river response related to project, and procedure for collecting data • Contract for collection of baseline data 	<p>Completed on or before March 31, 2018</p>	<p>Preparation of document establishing monitoring criteria and procedures</p>
<p>Implementation Part 2: April 2018 – September 2018</p>		
<p>Oversee and manage the diversion and distribution of incidental recharge water</p> <ul style="list-style-type: none"> • Coordinate participating irrigators • Ensure website is operating • Collect & compile diversion data 	<p>4/1/18 – 6/30/18</p>	<p>Preparation of document cataloging the incidental recharge efforts conducted by participating irrigators</p>
<p>Monitor volume and temperature response associated with incidental recharge efforts in the Teton River and Teton Valley aquifer.</p> <ul style="list-style-type: none"> • Collect stream and aquifer data • Generate comparative pre and post project analysis 	<p>7/1/18 – 9/30/18</p>	<p>Preparation of comparative pre and post project analysis</p>
<p>Implementation Part 3: October 2018 – March 2019</p>		
<p>Community outreach and education</p> <ul style="list-style-type: none"> • Host irrigator meeting • Host public informational meeting • Conduct one-on-one outreach to irrigators 	<p>Ongoing October 2018- March 2019</p>	<p>Secure additional commitment to participate in recharge initiatives & general community support</p>

Identify and prioritize canal and infrastructure upgrades needed to facilitate incidental recharge efforts. <ul style="list-style-type: none"> Evaluate GIS data Work with TWUA to establish priorities 	Completed on or before March 30, 2019	Develop prioritized list of canal and infrastructure upgrades
Identify locations for additional operational spills and sites where flood irrigation techniques can be intensified. <ul style="list-style-type: none"> Evaluate GIS data Work with TWUA to establish priorities 	Completed on or before March 30, 2019	Develop list of locations for additional operational spills and intensified flood irrigation
Implementation Part 4: April 2019 – September 2019		
Oversee and manage the diversion and distribution of incidental recharge water <ul style="list-style-type: none"> Coordinate participating irrigators Ensure website is operating Collect & compile diversion data 	4/1/19 – 6/30/19	Preparation of document cataloging the incidental recharge efforts conducted by participating irrigators
Monitor volume and temperature response associated with incidental recharge efforts in the Teton River and Teton Valley aquifer. <ul style="list-style-type: none"> Collect stream and aquifer data Generate comparative pre and post project analysis 	7/1/19 – 9/30/19	Preparation of comparative pre and post project analysis

- Include a detailed project budget outlining costs for specific tasks.***
Please see section VIII for a detailed Project Budget and explanation of costs (page 48).

- Describe any permits and agency approvals that will be required, along with the process and timeframe for obtaining such permits or approvals.***
No permits or agency approvals are required for the completion of the proposed project. No earth moving or construction activities are contemplated as part of the proposed project. Water will be diverted in priority, utilizing existing water rights in accordance with historic use.

- Identify and describe any engineering or design work performed specifically in support of the proposed project, or that will be performed as part of the project.***
Not applicable – no engineering or design work will be performed specifically in support of or as part of the proposed project.

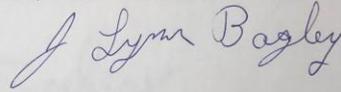
- Does the applicant have access to the land or water source where the project is located? If so, please provide documentation. If the applicant does not yet have permission to access the project location, please describe the process and timeframe for obtaining such permission.***

The letters, below, outline a commitment from water users from Trail Creek and Darby Creek to support the goals of the proposed project and divert their water rights, when legally available, to achieve the goals and outcomes set forth in this grant application.

January 25, 2017

To whom it may concern:

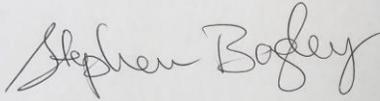
My name is Lynn Bagley. I am a shareholder and member of the Board of Directors of the Trail Creek Sprinkler Irrigation Company, and the Chairman of the Teton Water Users Association. I actively farm and ranch several hundred acres of land with water that can be delivered via canals from Trail Creek, a tributary to the Teton River located in the Victor, Idaho area. I support the project proposed by Friends of the Teton River (FTR) and commit to working with FTR throughout the grant term to divert and apply my water rights and/or canal company shares, within the legal limits of those rights, for the purpose of promoting incidental recharge in Teton Valley.



January 25, 2017

To whom it may concern:

My name is Stephen Bagley. I am a shareholder of the Trail Creek Sprinkler Irrigation Company, and member of the Teton Water Users Association. I actively farm and ranch several hundred acres of land with water that can be delivered via canals from Trail Creek, a tributary to the Teton River located in the Victor, Idaho area. I support the project proposed by Friends of the Teton River (FTR) and commit to working with FTR throughout the grant term to divert and apply my water rights and/or canal company shares, within the legal limits of those rights, for the purpose of promoting incidental recharge in Teton Valley.

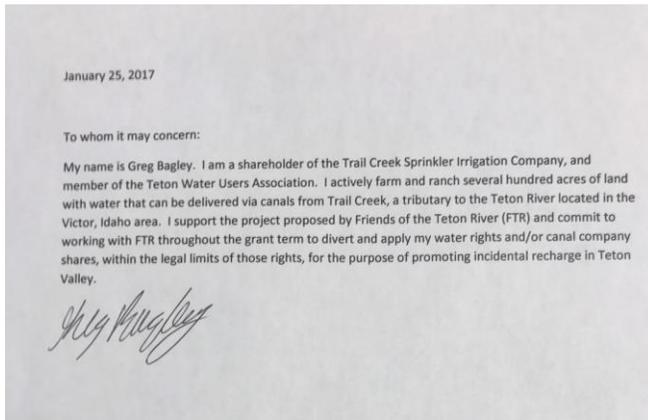


January 25, 2017

To whom it may concern:

My name is Wyatt Penfold. I am a shareholder of the Garden Water Company, and member of the Teton Water Users Association. I actively farm and ranch several hundred acres of land with water delivered via canals from Darby Creek, a tributary to the Teton River located between Driggs and Victor, Idaho. I support the project proposed by Friends of the Teton River (FTR) and commit to working with FTR throughout the grant term to divert and apply my water rights and/or canal company shares, within the legal limits of those rights, for the purpose of promoting incidental recharge in Teton Valley.





Evaluation Criterion E: Performance Measures

- ***Please describe the performance measures that will be used to quantify actual project benefits upon completion of the project. Include support for why the specific performance measures were chosen.***

The following performance measures will be used to quantify actual project benefits upon completion of the project:

1. Quantity (cfs) of water diverted and distributed for incidental recharge purposes annually
2. Analysis of aquifer response and base flows utilizing river monitoring data

Throughout the grant term, FTR will establish a gage station on the Teton River, located in Teton Valley approximately 1.5 miles below Harrops Bridge. The gage station will be capable of tracking flow and temperature response associated with the proposed project and the goals set forth in the Restoration Plan. Additionally, FTR will establish a synthesized, streamlined framework by which to track all incidental recharge efforts conducted in Teton Valley and track aquifer response. Therefore, at the completion of the grant term, FTR will be able to systematically track the quantity of water annually diverted and delivered for the purpose of incidental recharge, and the associated flow and temperature response experienced in the Teton River and the Teton Valley aquifer. FTR budgets annually to support various flow, temperature and fisheries monitoring efforts, and will thus be able to support the monitoring discussed above over the long-term.

Evaluation Criterion F: Nexus to Reclamation

- ***How is the proposed project connected to a Reclamation project or activity?***

The proposed project is a direct outgrowth of the Bureau of Reclamation’s Henrys Fork Basin Study. The Bureau of Reclamation, in partnership with the Idaho Water Resource Board, is engaged in an \$800,000 Basin Study geared at identifying potential water supply solutions to address water supply needs in the Henrys Fork Basin and beyond. The Study endeavored to “identify opportunities for development of water supplies (i.e., above-ground storage, aquifer storage) and improvement of water management (i.e., conservation measures, optimization of

resources) while sustaining environmental quality.” In that vein, the Study examined potential new dam sites, expansion of existing storage facilities, groundwater recharge, municipal conservation, piping and lining, demand reduction, and water marketing strategies. However, the Bureau and State experienced problems addressing the water supply shortages specific to Teton Valley and, further, found it challenging to demonstrate that environmental quality will be sustained if certain water supply strategies are pursued. Following the conclusion of the Basin Study, the Bureau of Reclamation supported FTR’s efforts to identify community based solutions to address water supply issues in the Teton River through a Phase I of the Cooperative Watershed Management Program, through which FTR and the TWUA working group developed a Phased Watershed Restoration Plan. This project seeks to implement the initial phase of that Restoration Plan, and therefore directly connected to Bureau of Reclamation activity in the region.

- ***Is there a Reclamation project within the watershed or is the watershed otherwise affected by a Reclamation project?***

Reclamation owns property in the Teton River canyon, a result of property acquired for the failed Teton Dam. The property is currently managed for wildlife and recreational values, and is particularly valuable stream habitat for native Yellowstone Cutthroat Trout. Reclamation has invested annually in Teton Canyon restoration since failure of the dam and is currently seeking appropriations for a more robust restoration project. The proposed project supports the current values and management goals associated with the property.

- ***Will the proposed work contribute water to a basin where a Reclamation project is located?***

The proposed project, as discussed in detail above, will increase base-flows in the Teton River by 10-15cfs. As thoroughly documented in the Order Establishing the Eastern Snake Plain Aquifer Groundwater Management Area, the Teton River is hydraulically connected to the Snake River. Therefore, water accruing to the Teton River will be used to fill American Falls Reservoir.

- ***Will the project help Reclamation meet trust responsibilities to any tribe(s)?***

Water from the Teton River, used to fill American Falls Reservoir, could be released by Reclamation in support of the Salmon Flow Augmentation Program. And therefore, the proposed project will help support the Nez Perce Water Right Settlement, among others, and potentially reduce the need to secure additional storage out of Palisades Reservoir or Anderson Ranch Reservoir to fulfill settlement obligations. Additionally, the Shoshone-Bannock Tribe holds storage rights in American Falls Reservoir. Increased base flows within the Teton River Basin will contribute to the refill of American Falls Reservoir, thus benefitting the Shoshone-Bannock storage allotment.

- ***Does the proposed project support implementation of a relevant Department of the Interior initiative?***

The proposed project supports the Department of Interior’s mission to “Ensure Healthy Watershed and Sustainable, Secure Water Supplies. The proposed project supports reliable delivery of water for multiple purposes to help balance competing water resource goals, and build collaborative partnerships with Federal and non-Federal stakeholders. This project is a

direct extension of the Bureau of Reclamation's Henrys Fork Basin Study, which developed strategies for managing water and addressing water supply shortages in the Upper Snake.

Friends of the Teton River is also involved in Great Northern LCC, which aims to support the Department of Interior's mission to provide scientific data to protect, instruct and inform communities. The Teton River Watershed straddles the border between the Great Northern LCC, which includes portions of British Columbia, Washington, Oregon, Idaho, Montana, and Wyoming; and the Great Basin LCC. After consulting with the coordinators of both the Great Basin LCC and the Great Northern LCC, FTR was invited to participate in the Rocky Mountain Partner Forum of the Great Northern LCC, due to the high degree of overlap between the goals and species of focus for FTR and the Great Northern LCC (described below).



Climate change has been identified in the draft Great Northern Landscape Conservation Cooperative (GNLCC) Strategic Framework as a priority landscape-scale stressor in the region because of its potential to directly and indirectly degrade terrestrial and aquatic integrity. In a January, 2013 meeting/webinar, it was determined that the focal resource for the partner forum in 2013 will be watershed function in the face of climate change, with a particular focus on cold water systems. This focus includes native cold water fish (with specific focus on Yellowstone Cutthroat Trout, Bull Trout, and Westslope Cutthroat Trout); other cold water aquatic species; stream flows (quantity, temperature, and timing); riparian condition and function; and upland watershed hydrology. The ultimate goal of the multi-year partner forum project is to collaboratively develop a 5-10 year cold water systems climate adaptation action plan and associated monitoring plan. Outcomes of the plan include providing managers with a menu of options for managing cold water systems as climate changes; and identifying priority science needs for making current and future management decisions for those resources. This project supports goals for preserving, protecting and enhancing high elevation cold water refugia.

III. Performance Measures

FTR proposes the following performance measures:

1. Completion of GIS map depicting location of canals and major infrastructure
2. Development of document prioritizing canal infrastructure upgrades
3. Construction of website
4. # of TWUA working group meetings hosted
5. # of Community Outreach events hosted
6. # of stream gaging stations established and maintained
7. Quantity (cfs) of water diverted and distributed pursuant to the Plan during the grant term
8. Analysis of river and aquifer monitoring data collected during the grant term
9. Document summarizing activities performed, and success in achieving goals, over the grant term to evaluate efficacy of project.

The proposed performance measures listed above are chosen because they track tangible progress, and the completion of tangible outcomes, necessary to accomplish the goal set forth in Phase I of the Restoration Plan.

IV. Environmental and cultural resources compliance

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

As described in detail above, the proposed project will positively impact water quality and quantity by increasing base flow levels and decreasing temperature in the Teton River. Additionally, the project is expected to sustain and enhance wetland habitat along the Teton River, thereby supporting and potentially expanding valuable habitat for fish and wildlife in the project area. No earth-disturbing work or any other work that will affect the air, water or animal habitat in the project area shall occur as part of this project proposal.

- ***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?***

Between 1999 and 2003 population surveys performed by Idaho Fish and Game (IDFG) on the mainstem Teton River showed a precipitous 95% decline in native Yellowstone Cutthroat Trout populations and a 319% increase in non-native rainbow/hybrid and Eastern Brook Trout in the Teton River. Following the discovery of this decline, FTR began a series of investigations to better understand why the decline had occurred and identify possible recovery strategies. Between 2004 and 2007 FTR partnered with IDFG, Utah State University, and Idaho State University to sponsor graduate research by Martin Koenig to investigate habitat and biotic factors influencing the distribution and recruitment of juvenile Yellowstone Cutthroat Trout in

the Teton River. This study concluded that numerous factors are responsible for the decline of native fish, including habitat degradation, nonnative competition, hybridization, and a loss of flow in tributaries that feed the Teton River.

In 2005 FTR partnered with the USFS, IDFG, and the National Fish and Wildlife Foundation on an extensive baseline assessment of trout populations in 15 major tributaries of the Teton River. This assessment showed that the upper sections (historically inhabited by resident and fluvial Yellowstone Cutthroat Trout) of all but 4 tributaries have been invaded by, and are now dominated by, non-native Brook Trout. And further, since 1998, resident Yellowstone Cutthroat Trout have declined in all headwater tributaries except Trail Creek (Colyer 2006). These studies suggest that the upper Teton watershed has lost much of the fluvial life history form of Yellowstone Cutthroat Trout and resident forms in the major tributaries are in decline. A subset of the original survey sites on these tributaries were re-surveyed in 2010 and 2015, and will be assessed every 5 years.

Given the range-wide decline in YCT abundance and distribution, it is likely that the species will be petitioned for listing under the ESA in the future unless significant progress is made towards stabilizing and increasing populations throughout the region. Given the reality of a potential listing and the far reaching impact that would have on the local economy, the work contemplated through this grant is timelier than ever. The proposed project will support late season flows in the Teton River and drive down late season water temperature, which will reduce late season stress on these important fish.

As discussed above, some fisheries managers in the region have expressed concern for the unknown or unintended consequences of manipulating the ascending limb of the hydrograph to conduct recharge. FTR is currently working the most notable scientists in the region to collect and analyze data relevant to this question, and is particularly poised to shed light on this question given its robust fisheries research program. In fact, FTR has empaneled the region's most notable fisheries biologists, fisheries resource managers, and climatologists to serve a formal technical team which will advise FTR and the TWUA on whether specific recharge activities, in specific tributaries and during specific times and quantities, are likely to impact native Yellowstone Cutthroat Trout. This technical team meets annually.

Further, it is worth noting that most partners acknowledge that climate change and pending water right management and administrative changes make it unrealistic to maintain or restore a natural hydrograph in the Teton River and its tributaries and, therefore believe that the well-rounded community based benefits associated with this proposal and the Restoration Plan, generally, likely outweigh any negative impacts which may result from the project.

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

Please refer, above, to the answer of the first question in this section. The proposed project is expected to sustain and enhance the wetlands adjacent to the Teton River in Teton Valley.

- ***When was the water delivery system constructed?***

Two water delivery systems will be utilized to advance the goals of the proposed project. The canals associated with the Trail Creek Sprinkler Irrigation Company were constructed in 1889-1916. The canals associated with the Garden Water Co. on Darby Creek were constructed in 1896-1916.

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

The proposed project does not contemplate any modifications to individual features of an irrigation system.

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

The applicant is not aware of any buildings, structures, or features listed or eligible for listing on the National Register of Historic Places that would be impacted by the proposed project.

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

The applicant is not aware of any archeological sites in the proposed project area.

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

The project will not have a disproportionately high and adverse effect on low income or minority populations.

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

The proposed project will not limit access to any sacred ceremonial sites or result in other impact on tribal land. There is no tribal land in the Teton River Watershed.

- ***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?***

The proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area. Weeds are primarily spread through dirt moving activities, and no dirt moving activities are contemplated in this grant application. This project contemplates the restoration ecosystem function, which generally help suppress weed activities.

V. Letters of project support

Letters supporting the proposed project are provided below.

City of Victor
P.O. Box 122
32 Elm Street
Victor, Idaho 83455



(208) 787-2940
FAX (208) 787-2357
craigs@victorcityidaho.com

RE: Support for funding request from TWUA

To Whom it May Concern,

On behalf of the City of Victor, a water user in the Teton Basin, I would like to voice our support for the proposed Water Management Plan and the associated funding request submitted by the Teton Water Users Association (TWUA). We have participated in the conversation leading to this proposal, and are impressed by the diverse makeup of the TWUA group, and the collaborative manner in which the stated mission was developed.

I applaud this proactive water management approach, and the aggressive goals established to accomplish this mission. With the financial support requested under this grant proposal, we expect to be able to achieve these goals, which stand to benefit diverse water users within the Teton Basin, as well as the greater Snake River system.

Thank you for your consideration.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Jeff Potter".

Jeff Potter, Mayor

January 25, 2017

Dear Grant Selection Committee,

As a Teton Water Users Association member, and a representative of Teton Valley's farming/ranching community, I am writing in support of Friends of the Teton River's grant proposal.

Agriculture is a cornerstone of Teton Valley's local economy and vitally important to the health of our watershed. The water that agricultural producers divert into canals and onto agricultural land each spring recharges our valley's aquifer, providing a reliable source of clean and abundant water for farms and cities. This water seeps up into wetlands and rivers to provide clean, cold water for fish and wildlife. Farmers and ranchers in this valley have a long history of implementing practices that not only feed our country and our families, but also protect healthy soil, water, and land.

However, increasing demands for water, rising land prices, and development pressure as cities grow makes our work more challenging as each year passes. Rather than bowing to these pressures, we are actively working with our community to generate solutions. We have recently formed the Teton Water Users Association, which is bringing together leaders in the farming and irrigation community with leaders of local conservation groups, including Friends of the Teton River and the Teton Regional Land Trust, as well as city and county leaders.

This group has agreed to a set of shared goals that includes keeping working lands working by securing and maintaining a reliable and affordable supply of water to sustain agriculture; protecting and restoring stream flows and water quality in the Teton River and its tributaries for the benefit of fish, wildlife, and people; and securing and maintaining a safe, affordable, and high quality water supply for municipalities and residential water users. We have created a water management plan designed to stabilize our local aquifer by restoring practices that promote incidental recharge, and we are now beginning to work on implementing this plan. I believe that this grant proposal advances those efforts in important ways.

The fact that we have pulled together this diverse group, at a time when land and water protection in the American West is increasingly contentious, is nothing short of amazing. Now, we are asking for your help. The accomplishments we have made already, and the importance of acting now, while momentum is strong and conditions are ripe, cannot be overstated.

We will continue to serve as ambassadors through our participation in the Water Users Association, and to work with Friends of the Teton River and other TWUA partners to raise and leverage matching and in-kind funds.

I fully support the proposed project, and ask you to do so also.

Sincerely,



Stephen Bagley

President, Teton County Farm Bureau

January 25, 2017

Dear Grant Selection Committee,

Please accept this letter of support, on behalf of the Teton Soil Conservation District (TSCD). The TSCD is well represented in Teton Water Users Association, with myself, Lynn Bagley, serving as the Chair of the Water Users Association, as well as the Board Chairman for the TSCD. Several other TSCD Directors are also actively participating in the Water Users Association.

The TSCD mission is to work with willing landowners in a non-regulatory manner to reduce erosion, protect water quality, improve air quality and fish and wildlife habitat, provide assistance to landowners and conduct an active information and education program. Landowners receive technical assistance through the Natural Resources Conservation Service. The TSCD has been a leader in watershed protection in the Teton Watershed for more than 50 years.

However, we recognize that, despite the progress we've made, a great deal more work needs to be done to protect our natural resources, especially in light of increasing demands for water and developed land. We recognize that, in order to continue to protect agricultural lands and the values they support, we need to work together with our entire community. To this end, we have worked with Friends of the Teton River and others to form the Teton Water Users Association, and to create a Watershed Restoration Plan, with the primary aim of conducting recharge efforts in Teton Valley, thereby stabilizing the Teton Valley aquifer and insulating farmers against changes in water availability and increasing water reliability in times of drought, while also increasing Teton River baseflows, and sustaining water availability in wetlands and streams for fish and wildlife.

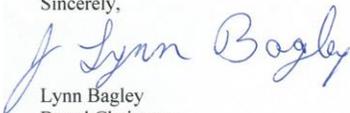
These goals will initially be achieved by actively and efficiently using existing irrigation water rights to conduct incidental recharge. Through recharge efforts, groundwater/surface water modeling shows that the TWUA can take tangible steps toward stabilizing the local aquifer and increasing base flows in the Teton River, and in so doing address multiple levels of water need and begin to proactively plan for Teton Valley's water future. We believe that this grant proposal will help us to advance our goal of stabilizing the local aquifer.

We also believe that this project will help farmers voluntarily sustain the number of acres in agriculture in our county, and these lands will continue to be managed for the benefit of soil, water, farmers, fish, and wildlife. The TSCD will support this project by continuing to chair the Water Users Association, educating landowners about the benefits of the project, and working to find matching and cost-share funds to support the projects we identify well into the future.

I also want to comment on the very special nature of this partnership. It is a rare and wonderful thing to see agricultural producers working together with conservation groups to find areas of common interest, and find ways to share resources and expertise. That's not something we see every day here in Idaho, but we hope we can use this project as a model so that it does become more common. TSCD and FTR are currently working on a Soil Health partnership to protect and improve water quality in the Teton River, while reducing soil erosion and improving agricultural business practices and returns. Based on this experience, we believe that FTR is an excellent partner in this type of work, and that they have the experience and expertise to manage this project and sustain it over time.

As the Board Chairman of the Teton Conservation District, the Chair of the Teton Water Users Association, and a local farmer, I fully support the proposed project, and ask you to do so also.

Sincerely,



Lynn Bagley
Board Chairman
Teton Soil Conservation District



CITY OF DRIGGS

OFFICE OF MAYOR HYRUM F. JOHNSON

'The Heart of Teton Valley'
Inc. 1910

January 30, 2017

RE: Support for funding request

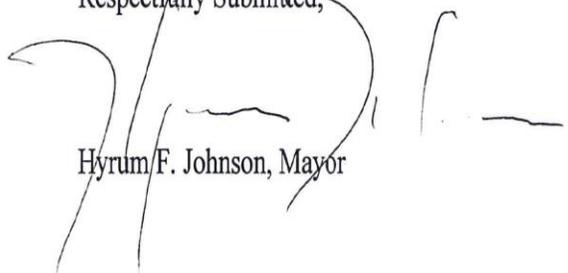
To Whom it May Concern,

On behalf of the City of Driggs, a water user in the Teton Basin, I express our support for the work of the Teton Water Users Association (TWUA). We have participated in the conversations, and are impressed by the varied makeup of the TWUA group. The collaborative manner in which the stated mission was developed is exemplary, uniting diverse voices in a common interest.

While the City of Driggs has taken no formal action regarding the Water Management Plan developed by the TWUA, I applaud this proactive water management approach, and the aggressive goals established to accomplish this mission. With the financial support requested under this grant proposal, we expect to be able to achieve these goals, which stand to benefit diverse water users within the Teton Basin, as well as the greater Snake River system.

Thank you for your consideration.

Respectfully Submitted,


Hyrum F. Johnson, Mayor

February 2, 2017



To Whom It May Concern:

As a partner in the Teton Water Users Association, and Executive Director of Teton Regional Land Trust (TRLT), I am writing in support of Friends of the Teton River's grant proposal.

There are a number of emerging water issues which face the communities of Eastern Idaho. These factors include declines in Idaho's aquifer and river levels, prolonged drought, development pressure to convert farmland to subdivisions, mitigation and water-supply concerns for growing cities and rural areas, water-quality concerns, potential changes in water management and administration, and the formation of a Groundwater Management Area for the Eastern Snake Plain Aquifer. The TWUA is proactively researching and identifying potential projects in order to provide solutions to these complex issues.

As a local non-profit organization in Teton County, TRLT's mission is to conserve working farms and ranches, fish and wildlife habitat, and scenic open spaces in Eastern Idaho for this and future generations. The mission and goals of the TWUA's Phased Watershed Restoration support the work of TRLT by providing benefits to Eastern Idaho's residents, land, and wildlife species.

Furthermore, the TWUA formed in a truly collaborative fashion and is represented by a diverse group of community members. This diverse membership ensures the needs of all constituents within our community will be addressed as they pertain to water management and use. I believe the TWUA's plan provides a holistic approach to water management and use and will help to alleviate future water management and use conflict.

TRLT understands the cultural and economic role water has played in the Teton River watershed as it has supported robust agricultural and recreational economies. The current state of this role is challenged by a multitude of issues involving how we manage and use our water. With the support of the Bureau of Reclamation, I believe the voluntary implementation of the Phased Watershed Restoration Plan will provide a means to alleviate these issues as well as serve as a model to guide other areas of the state. I support the proposed project, and ask you to do so also.

Sincerely,

A handwritten signature in blue ink that reads "Joselin Matkins". The signature is fluid and cursive.

Joselin Matkins
Executive Director



Board of County Commissioners

Bureau of Reclamation
Attn: ms. Avra Morgan
PO Box 25007
Denver, CO 80225

February 13, 2017

Dear Grant Selection Committee,

The Board of County Commissioners (BoCC) in Teton County, Idaho would like to voice our support for the grant proposal submitted to the Bureau of Reclamation by Friends of the Teton River (FTR) and the Teton Water Users Association (TWUA). The recent work of FTR, in partnership with the TWUA, is to be commended. Their collaborative effort to improve water management in the Teton Basin has successfully brought a diversity of community interests together.

The primary goals of this collaborative effort include: securing and maintaining a safe, affordable, and high-quality water supply for municipalities and residential water users; protecting and restoring stream flows and water quality in the Teton River and its tributaries for the benefit of people, wildlife, and fish; and keeping lands in agricultural production by securing and maintaining a reliable and affordable supply of water throughout the growing season, especially during times of drought. It is rare to see a partnership of this kind in rural Idaho.

The proposed grant seeks funding to implement aquifer recharge strategies in Teton Valley in order to stabilize the local aquifer to benefit residents, farmers, and fish and wildlife. The BoCC has participated in nearly all Teton Water Users Association partner meetings and the development of this proposal, and supports the efforts outlined therein.

Thank you for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Mark Ricks".

Mark Ricks
Chair, Teton County Board of Commissioners

VI. Required permits or approvals

No permits or approvals are necessary for the activities proposed in this grant application.

VII. Official resolution

The FTR Board of Director's Resolution is below.



208 354 3871
www.tetonwater.org

18 North Main Street, Suite 310
PO Box 768
Driggs, Idaho 83422

Friends of the Teton River Board of Directors Resolution

TO: Bureau of Reclamation

This is a certified copy of resolution that was passed by the Friends of the Teton River Board of Directors, via an email vote held on January 26-27, 2017.

RESOLVED, that this Board of Directors hereby authorizes and directs Amy Verbeten, Executive Director, and Sarah Lien, Water Resources Director and Staff Attorney, to enter into a Cooperative Watershed Management Program Grant agreement, to support aquifer recharge efforts in the Teton River Watershed, on behalf of the Friends of the Teton River Board of Directors.

RESOLVED, that this Board of Directors has reviewed the grant application and support the application as submitted.

RESOLVED, that Friends of the Teton River has the capability of providing the amount of funding and/or in kind contributions specified in the funding plan.

RESOLVED, that the applicant will work with the Bureau of Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

Bill Horn, President

1/26/2017
Date

VIII. Project Budget

a. Funding Plan and Letters of Commitment

Portions of this project have received commitments of support totaling \$122,460 from non-federal sources, including the Bonneville Environmental Foundation, National Fish and Wildlife Foundation, the Idaho Water Resource Board, and in-kind (volunteer time) match. Match documentation is attached, below, and includes a signed letter of match commitment (BEF), signed grant agreement (NFWF) and an email describing the contract amount with IWRB for FY2017 (similar funding is expected in FY2018, contract is pending). Funding sources have been summarized, below. The additional cost of funding this project (\$99,987), is being requested from the BOR for personnel time, equipment, supplies, contractual wages, outreach and indirect expenses.

Letters of funding commitment for match commitment are attached, below.

19. FUNDING SOURCE INFORMATION/FEDERAL AND NON-FEDERAL						
A. FUNDING SOURCE (FS)	B. NFWF FS ID	C. FS AWARD DATE TO NFWF	D. FAIN	E. TOT FED. AWARD TO NFWF	F. TOT OBLG. TO SUBRECIPIENT	G. CFDA
Ishiyama Foundation	TR.A171	N/A	N/A	N/A	\$47,850	N/A

20. NOTICE OF AWARD			
<p>The National Fish and Wildlife Foundation (NFWF) agrees to provide the NFWF Award to the NFWF Subrecipient for the purpose of satisfactorily performing the Project described in a full proposal as identified on line 1 and incorporated into this Grant Agreement by reference. The NFWF Award is provided on the condition that the NFWF Subrecipient agrees that it will raise and spend at least the amount listed on lines 15 and 16 in matching contributions on the Project, as applicable. The Project must be completed, with all NFWF funds and matching contributions spent, during the Period of Performance as set forth above. All items designated on the Cover Page and the Table of Contents are incorporated into this Grant Agreement by reference herein. NFWF Subrecipient agrees to abide by all statutory or regulatory requirements, or obligations otherwise required by law, required of a subrecipient of Federal grant or cooperative agreement funds. Subrecipient is obligated to notify NFWF if any of the information on the Cover Page changes in any way, whether material or immaterial.</p>			
A. NAME AND TITLE OF AUTHORIZED SUBRECIPIENT SIGNER (Type or Print)		D. NAME AND TITLE OF NFWF AWARDOFFICIAL	
ANNA LINDSTEDT, DEVELOPMENT DIR.		Eric Schwaab, Vice President, Conservation Programs	
B. SUBRECIPIENT BY	C. DATE	E. NATIONAL FISH AND WILDLIFE FOUNDATION BY	F. DATE
	12/15/16		1/27/17

See Reporting Schedule on the following page.



February 13, 2017

Bureau of Reclamation
Attn: Ms. Avra Morgan
Mail Code: 84-51000
PO Box 25007
Denver, CO 80225

Dear BOR Grant Committee:

It is with great pleasure that I submit this letter of support on behalf of Friends of the Teton River (FTR) and their proposal "Improving Ecological Resilience through Water Management Activities in the Teton River Watershed."

The Bonneville Environmental Foundation entered into a ten-year Model Watershed Project partnership with FTR in 2010. This long-term commitment followed an in depth evaluation of over 80 watershed organizations located throughout the Western United States. FTR was one of two organizations that stood above the rest in demonstrating a strong commitment to applying sound scientific principles, operating at a watershed scale, and seeking to measure the long-term ecological results of their efforts.

This organization is staffed with enthusiastic and diligent people that are genuinely dedicated to restoring the upper Teton Watershed and the values it provides to local and regional communities. The Bonneville Environmental Foundation has great confidence in the capacity of FTR's staff to prioritize the most impactful restoration projects and monitor their results effectively for the long-term. BEF has committed \$33,782 to funding this effort during the grant period, October 2017 to October 2019.

If you have any questions regarding this letter, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Robert Warren', is written over a faint, light blue circular graphic element.

Robert Warren
Director, Model Watershed Program

bonneville environmental foundation

240 southwest 1st ave.
portland, oregon 97204

503.248.1905
www.b-e-f.org

From: [Cassel, Amy](#)
To: [Sarah Lien](#)
Subject: New FTR contract
Date: Wednesday, January 4, 2017 1:39:04 PM

Hi Sarah,

Happy New Year! I hope you and the family had a nice holiday season and were able to get out and enjoy all this snow we've been getting.

I am presenting the FTR monitoring contract and funding resolution to the full Board on January 24th. I think we can just tweak the last contract and funding resolution and roll with that, but wanted to touch base with you first. Do you want to set up a time to discuss?

Our CBWTP budget for the FTR contract for FY17 is \$15,614.00.

Thanks,

Amy Cassel
 Program Manager, Water Transaction Program
 Idaho Department of Water Resources
 102 S. Warpath
 Salmon, ID 83467
 O: (208) 742-0656
 C: (208) 577-1565

b. Budget proposal

Project Budget (2 years)

Funding Sources	Income
Non-Federal Entities	
National Fish and Wildlife Foundation	\$47,850
Idaho Water Resource Board	\$31,228
Bonneville Environmental Foundation	\$33,782
In-kind time	\$9,600
<i>Non-Federal Subtotal:</i>	\$122,460
Other Federal Entities	
1. None	\$ -
<i>Other Federal Subtotal:</i>	\$ -
Requested Reclamation Funding	\$99,987.00
<i>Total Project Funding:</i>	\$222,447

BUDGET ITEM DESCRIPTION	COMPUTATION \$/Unit	COMPUTATION Quantity	RECIPIENT FUNDING	RECLAMATION FUNDING	TOTAL
SALARIES AND WAGES					
Sarah Lien, Water Resources Director					
(year 1)	\$31.98/hour	1560	\$33,515.04	\$16,373.76	\$49,888.80
(year 2)	\$32.65/hour	1560	\$34,217.20	\$16,716.80	\$50,934.00
Amy Verbeten, Executive Director					
(year 1)	\$28.63/hour	480	\$6,871.20	\$6,871.20	\$13,742.40
(year 2)	\$29.23/hour	480	\$7,015.20	\$7,015.20	\$14,030.40
FRINGE BENEFITS					
Sarah Lien, benefits					
(year 1)	\$3.98/hour	1560	4,171.04	\$2,037.76	\$6,208.80
(year 2)	\$4.15/hour	1560	4,349.20	\$2,124.80	\$6,474.00
Amy Verbeten, benefits					
(year 1)	\$4.03/hour	480	\$967.20	\$967.20	\$1,934.40
(year 2)	\$4.21/hour	480	\$1,010.40	\$1,010.40	\$2,020.80
TRAVEL					
Travel (meetings, presentations, research, monitoring)	(see budget narrative)	N/A	\$4,700.00	-	\$4,700.00
EQUIPMENT					
Hatch Industries FH950 Flow Meter	\$5,047	1	-	\$5,047.00	\$5,047.00
SUPPLIES/MATERIALS					
Printer leasing, including ink and paper (25% use of office printer)	\$361.25/year	2	-	\$722.00	\$722.00
Acer Tablet	\$599/ea	1	-	\$599.00	\$599.00
Microsoft Professional Software	\$378/ea	1	-	\$378.00	\$378.00
CONTRACTUAL WAGES					
Chircop & Colyer CPA's Accounting/grant tracking & administration	\$60/hour	26	-	\$1,560.00	\$1,560.00
Rob Van Kirk, Henry's Fork Foundation Hydrologic modeling and statistical fisheries analysis	\$50/hour	108	-	\$5,400.00	\$5,400.00
Website Development (consultant quote)	(see budget narrative)	N/A	-	\$7,750.00	\$7,750.00
Flow monitoring/flow logger rental	(see budget narrative)	N/A	\$9,200.00	-	\$9,200.00
GIS Technician (irrigation canal mapping/digitization)	(see budget narrative)	N/A	-	\$21,449.34	\$21,449.34
ENVIRONMENTAL/REGULATORY COMPLIANCE					
N/A			-	-	-
OTHER					
Room rental for stakeholder workgroup meetings (4 hrs each)	\$25 per half day	10	-	\$250.00	\$250.00
Driggs Senior Center Room	\$40/hr	12	\$480.00	-	\$480.00
Irrigator/Producer Participation in meetings	\$15/hr	640	\$9,600.00	-	\$9,600.00

TOTAL DIRECT COSTS			\$116,096	\$96,272	\$212,369
INDIRECT COSTS					
Year 1 indirect	\$2.47/hr	2040	\$3,181.36	\$1,857.44	\$5,038.80
Year 2 indirect	\$2.47/hr	2040	\$3,181.36	\$1,857.44	\$5,038.80
INDIRECT COSTS SUBTOTAL (4.75% of total direct budget)			\$6,362.72	\$3,714.88	\$10,077.60
TOTAL PROJECT COSTS			\$122,460	\$99,987	\$222,447

c. Budget narrative

Salaries and Wages:

The primary project manager will be Sarah Lien, FTR’s Water Resource Director and Staff Attorney. It is estimated that Sarah will spend all of her time (1560 hours annually) on the project in Year 1 and Year 2. BOR funds are requested to cover one-third of her time (33%) spent on this work. Sarah will oversee the development and completion of all stages of the project including: community outreach and education, website development, GIS work, installation of stream monitoring equipment, river and aquifer monitoring, and the management of recharge diversion efforts.

Amy Verbeten, Executive Director will spend 23% (480 hours annually) on the project in Year 1 and Year 2. Amy will act as the direct facilitator of all workgroup meetings, assist with community outreach and education events, assist with management of recharge diversion efforts, and provide general project oversight and administration as needed.

Compensation calculations and rates are shown in the table below, and reflect the total cost of employment per year, per employee. A “Cost of Living Adjustment” for Year 2 was calculated using the existing rate of 2.1%. FICA, Workers’ Comp and Idaho State Unemployment Costs were calculated using standard rates.

Salaries Year 1

Employee	Base Salary	FICA Taxes	Workers Comp	State Unemployment	Total Cost of Employment	Employee Hourly Cost
Executive Director	\$54,579.18	\$4,175.31	\$256.52	543.60	\$59,554.61	\$28.63
Water Resources Dir.	\$45,205.99	\$3,458.26	\$546.99	682.61	\$49,893.85	\$31.98
TOTAL	\$99,785.17	\$7,633.57	\$803.51	\$1,226.21	\$110,674.67	\$ -

Salaries Year 2

Employee	Base Salary +2.1%	FICA Taxes	Workers Comp	State Unemployment	Total Cost of Employment	Employee Hourly Cost
Executive Director	\$55,725.34	\$4,262.99	\$261.91	\$543.60	\$60,793.84	\$29.23
Water Resources Dir.	\$46,155.31	\$3,530.88	\$558.48	\$696.95	\$50,941.62	\$32.65
TOTAL	\$101,880.65	\$7,793.87	\$820.39	\$1,240.55	\$111,735.46	\$ -

Fringe Benefits:

Fringe benefits are calculated using the annual health insurance premium rate (Idaho Blue Cross) and retirement contribution (3% employer match) for each employee, and are calculated proportionally to the number of hours each employee will spend on the project. A 5% increase

in health insurance was estimated in Year 2, according to anticipated increases. Please see the table below for rates/calculations.

Fringe Benefits Yr. 1

Employee	Health Insurance	Retirement	Benefits cost	Hourly Benefits Cost
Executive Director	\$6,746.09	\$1,637.38	\$8,383.47	\$4.03
Water Resources Dir.	\$4,850.64	\$1,356.18	\$6,206.82	\$3.98
TOTAL	\$11,596.73	\$2,993.56	\$14,590.29	-

Fringe Benefits Yr. 2

Employee	Health Insurance +5%	Retirement	Benefits cost	Hourly Benefits Cost
Executive Director	\$7,083.39	\$1,671.76	\$8,755.15	\$4.21
Water Resources Dir.	\$5,093.17	\$1,384.66	\$6,477.83	\$4.15
TOTAL	\$12,176.56	\$3,056.42	\$15,232.98	-

Travel:

Travel expenses associated with project work, totaling \$4,700, are committed as matching funds from a National Fish and Wildlife Foundation grant. Travel costs are broken down as:

- Travel from Driggs to Boise (for 2 TWUA individuals): mileage (\$383), 2 nights hotel (\$240), per diem (\$80)--\$700
- Monitoring mileage (2,800 miles x \$.535)--\$1,500
- Water Resources Director attend IWRB meetings (2 annually in Boise): mileage (\$1500), 8 nights hotel (\$840), per diem (\$160)--\$2,500

Total: \$4,700

Equipment:

FTR will need to purchase the following equipment to implement the proposed grant activities:

- Hatch Industries FH950 Flow Meter - \$5,047.00

Materials and Supplies:

- Printing supplies were calculated based on FTR's cost of an annual printer lease (including ink and paper supplies) x 25% of annual printing costs (as one of 4 program areas).
- A tablet computer, to be used for field work associated with the gage station, at workgroup meetings and preparation of all workgroup documents, will be purchased, along with associated software. A quote for Acer Aspire Switch 11, or Acer Aspire SW5 - 171 - 86EE, with 128 GB SSD, 4 GB RAM, and an 11.6 inch screen was used to estimate the expense at \$599. A quote from Amazon.com was used to estimate the expense for a licensing agreement for Microsoft Office Professional Plus 2010 + Software Assurance at \$378.

Contractual:

FTR contracts with Chircop & Colyer CPA's to do our accounting, grant tracking, and administration. This expense was estimated at Chircop & Colyer's rate of \$60/hour and is estimated to take .5 hours per pay period during the 2 year grant timeline (a total of 52 pay periods, or 26 hours).

Dr. Rob Van Kirk, Senior Research Scientist at the Henry's Fork Foundation, developed the groundwater-surface water model that will be used as the basis for hydrologic modeling of water management scenarios generated by the TRAC. Dr. Van Kirk will be contracted to conduct additional hydrologic (stream and aquifer) and fisheries modeling. This expense was estimated by Dr. Van Kirk, who indicated that 108 hours of time will be needed to accomplish the work, at a contractual rate of \$50/hour.

GIS Work: FTR has received a detailed quote from Harmony Design & Engineering for GIS work, irrigation canal mapping/digitization, totaling \$21,449.

Website Development: 9Cloud WebWorks provided FTR with a quote for services at \$7,750.

Environmental and Regulatory Compliance Costs:

No environmental compliance will be necessary for the implementation of the proposed grant activities.

Other:

A meeting space for the 10 Workgroup meetings will be rented for 4 hours per meeting (assumes 10 people in attendance/meeting). All of these meetings will occur at the Driggs City Council Meeting Room (\$25/half day rate). The Driggs Senior Center Room will be rented for group meetings (assumes 20 people in attendance/meeting) at a rate of \$40/hr or \$80/meeting.

In-kind time (listed as "matching funds") for participants attending these meetings was estimated at:

10 people x 40 participation hrs x \$15/hr = \$6,000

20 people x 12 participation hrs x \$15/hr = \$3,600

Indirect Costs:

FTR does not currently have a federally-approved cost rate agreement in place, but can undertake preparation of an indirect cost rate if the BOR requires. An explanation of how the indirect cost rate for this proposal was calculated is below.

The proposed Indirect Costs for this application were calculated based on the annual expenses of rent (\$16,440) telephone & internet (\$3,000), office utility fees (\$1,000), Board of Directors & Liability Insurance (\$2,200), and project insurance (\$4,300). Annual cost of these line items total \$26,940. A proportional indirect cost rate was then calculated based upon each employee's percentage time of employment (as a percent of FTE) x Annual Indirect Cost/total Organizational FTE's, as explained below.

Executive Director—1 FTE x \$26,940/5.25 (total organizational FTE's) = \$5,131.42/2080
hrs=\$2.47/hr or Water Resources Director—.75 FTE x \$26,940/5.25 = \$3,848.57/1560
hrs=\$2.47/hr

752 BOR total requested personnel hours x \$2.47/hr = \$1,857.44 annually

The BOR share of the indirect cost total represents 3.85% of the requested direct cost line items. Indirect costs for total direct cost line items are 4.75%.

Total Cost:

The total cost of the project is \$222,447. Of this, FTR respectfully requests \$99,987 from the Bureau of Reclamation. The remainder of the project funds, \$122,460 will be provided by the Bonneville Environmental Foundation, National Fish and Wildlife Foundation, the State of Idaho, and in-kind match. All matching funds are considered non-federal and have already been secured/committed.

Thank you for your consideration of this grant proposal.