

## Title Page:

**Project Title:**           **Implementing Priorities of the Teton Watershed Restoration Plan:  
Working with Farmers and Ranchers to Improve Water Quality,  
Ecosystem Function, and Water Management in Teton Basin**

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## Technical Proposal and Evaluation Criteria

### a. Executive Summary:

November 17, 2020

Friends of the Teton River (applicant)

City of Driggs, Teton County, Idaho

Friends of the Teton River (FTR), a non-profit 501(c)(3) organization based in Teton County, Idaho will work with members of the Teton Water Users Association and the farming and ranching community to implement two priority watershed management projects that address water supply needs, water quality concerns, and conservation objectives for native Yellowstone Cutthroat Trout (YCT) in the Teton Basin.

On the upper Teton River, FTR will work with a private rancher and Teton County to stabilize 1,500 linear feet of streambank, reducing sedimentation by 416 tons/year, improving water quality, instream, and riparian habitat, as well as implementing recommended grazing management and livestock watering best management practices to address TMDL exceedance for sediment and temperature in the Teton River.

On South Leigh Creek, FTR will work with irrigators to construct a corrugated fish screen on the Desert Canal, to eliminate entrapment and mortality of Yellowstone Cutthroat Trout (YCT) in the canal, while providing improvements to canal infrastructure and reliable delivery of irrigation water. This project will provide 11 miles of connectivity for YCT to complete their life cycle in this high-priority spawning tributary and source population of native trout for the Teton River.

Project objectives are supported by the *TWUA Watershed Restoration Plan (2016)*, which was developed through a WaterSMART Phase 1 grant; by the *Teton River TMDL Addendum Implementation Plan for Agriculture (2020)*, Idaho Soil and Water Conservation Commission); as well as management objectives for the recovery of Yellowstone Cutthroat Trout in the Teton Watershed (Idaho Fish and Game, US Fish and Wildlife Service, and others). It is expected that these locally developed solutions will promote cooperation amongst stakeholders, thereby decreasing the potential for water conflicts, now and in the future, and will be “model projects” that bring together diverse interests to address habitat degradation, sedimentation, elevated stream temperatures, and fish entrainment, while also meeting the needs of canal companies, farmers and ranchers, county government, state fish and wildlife managers, recreationalists and the conservation interests working together in the watershed.

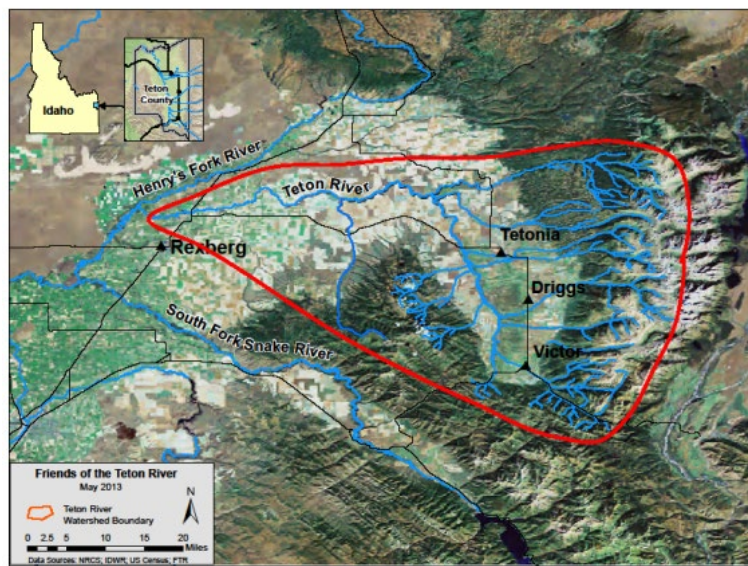
Grant activities will be completed within two years of grant award, with work being conducted from October 1, 2021 through June 30, 2023.

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

## b. Project Location

### ***Watershed Location and Characteristics:***

The Teton Watershed drains an area of 806 square miles in Idaho and 327 square miles in Wyoming. The river originates from snowmelt dominated 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. FTR works in the Teton Watershed, outlined on the map, which extends from the headwaters to the confluence with the Henry's Fork River, with a primary focus on the Teton River upstream of the old Teton Dam site (managed by Reclamation).



Approximately 75% of land in the Teton Watershed west of the Idaho-Wyoming border is privately owned, 25% is State or federally-owned, where the principal land use (~50%) is cultivated agriculture.

The proposed projects are located in Teton County, Idaho in the upper Teton Watershed (USGS Teton Basin HUC 17040204).

The **Buxton Streambank Restoration Project** is located on the Teton River, 6 miles west of Driggs, Idaho just downstream of the Buxton River Park public access and boat ramp. The project will take place on streambanks owned by the Piquet family and Teton County, Idaho.  
Lat: 43;43'31"N      Long: 111;11'31"W

The **Desert Canal Fish Screen Project** is located on South Leigh Creek, a tributary to the Teton River. South Leigh's headwaters originate on the western slope of the Tetons (Caribou-Targhee National Forest) in Wyoming. The Desert Canal is located ~5 miles east of Teton, Idaho.  
Lat: 43;48'08"N      Long: 111;03'36"W

***Project Locator Map on next page.***



# Upper Teton Watershed Project Locator Map



### c. Technical Project Description

Agricultural land use and human (development) pressures have most greatly impacted water quality and quantity, and critical fish and wildlife in the Teton Watershed. Cumulative impacts on water quality from agricultural production, irrigation diversion, and over-grazing have resulted in riparian de-vegetation, erosion, increases in sediment and stream temperatures (for which the Teton River is 303(d) listed with TMDL targets in place), elevated nitrogen levels in both ground and surface water, as well as habitat fragmentation and fish passage issues. For the past twenty years, development pressure has also accelerated pressures on habitat (stream alterations, destruction of riparian habitat), residential impacts to water quality (e.g. increase in the number of individual septic systems) and supply (individual wells, lawns, and growing municipalities).

In spite of these challenges, the Teton Watershed is one of the few remaining watersheds where Yellowstone Cutthroat Trout persist in the entire Greater Yellowstone Ecosystem (GYE) and it is the predominant wild fishery left in the range. Historically, YCT occupied much of the region stretching across southern Idaho, Montana, and northwest Wyoming. Currently, non-hybridized YCT are found in 23% of their historic range. The protection, conservation, and restoration of YCT and their spawning habitats are a priority for numerous agencies (and associated management plans) including the Idaho Department of Fish and Game (IDFG), US Forest Service, US Fish and Wildlife Service (USFWS), and the National Fish Habitat Partnership, to name a few. Primary threats to the persistence of YCT include: (1) non-native species competition (2) habitat degradation and fragmentation—primarily surface water diversions for agricultural production, grazing, road building and development and (3) climate change impacts including a reduced and unpredictable water supply (Gresswell 2009).

While agriculture is often viewed in direct opposition to achieving conservation and water management objectives in much of the West, FTR and agricultural partners in the Teton Watershed are shifting this paradigm. Irrigators, farmers, and ranchers across the watershed, are working with FTR and the Teton Water Users Association on localized solutions—including implementation of innovative water management strategies (such as stream flow restoration, irrigation diversion improvements, and aquifer recharge), best management practices for improved soil and water health (stream restoration, conservation farming and ranching techniques), and practices that support the persistence of critical fish and wildlife species (habitat restoration, fish passage improvements) in order to address water supply needs and reliability, water quality concerns, and restoration priorities. As a result, farming and ranching community in the Teton Watershed are shaping a water management paradigm where well-managed farms and ranches *and* conservation go hand-in-hand. Given the various interests that rely on water in the region, and the dynamic social, environmental, and political drivers affecting water use and water resource management, it is essential to promote collaborative approaches that facilitate local solutions. This proposal seeks Reclamation funding to work with ready and willing stakeholders (farmers and ranchers) to implement stream restoration and irrigation improvement objectives as outlined in the *TWUA Watershed Restoration Plan (2016)*, which was developed through a WaterSMART Phase 1 grant, as described under **Evaluation Criterion B—Watershed Restoration Planning**.

The projects forwarded for this application have been prioritized by FTR, the Teton Water Users Association, and have the support of fish and wildlife agencies who serve on the FTR *Science*

**Review Committee**<sup>1</sup>. FTR has conducted extensive research and monitoring since 2001, to establish baseline data for fisheries populations (including passage barrier assessments, spawning and migration studies), water quality, stream habitat, and stream flows. This data has been used to inform watershed-wide conservation strategies and has led to the development of a *YCT Decision Support Model (2017)*, which is used by FTR and our partners to identify the highest-ranked projects.<sup>2</sup> The Buxton Streambank Restoration Project and the Desert Canal Fish Screen Project are both highly ranked based on model criteria, stakeholder, and agency support.

### ***Buxton Streambank Restoration Project Description:***

The majority of land on the mainstem Teton River is in private ownership with a primary land use of agriculture and cattle grazing (totaling 251,000 acres) directly adjacent to the river (*Teton Subbasin TMDL Implementation Plan 2014*). As previously mentioned, historical agricultural and grazing practices have led to excessive streambank erosion, impaired water quality (the upper Teton River is on Idaho's 303(d) list for sediment and temperature) and degraded fish and wildlife habitat. When FTR began stream restoration efforts in earnest in 2003, the organization's main focus was on restoring tributary streams, as the critical spawning grounds for YCT, a contributing source of sediment to the Teton River, and as the most opportunistic for partnerships with private residents, subdivisions, and landowners interested in watershed restoration activities. Since that time, the organization has completed over 40 conservation projects totaling 5.6 miles of streambank and channel improvements. Independent analysis by agency partners IDFG (creel surveys, harvest, and population sampling) and the US Geological Survey (stream temperature and hydrology data) have concluded that targeted conservation efforts on tributary streams (stream bank/channel stabilization, instream and riparian habitat enhancements, water quality improvements/sediment reduction, and hydrologic restoration), have provided the cleaner gravels and more desirable habitat and conditions that are responsible for increased native trout densities watershed-wide and in the main stem Teton River.

The most significant improvements in water quality and trout populations have occurred in the Nickerson Reach—which is located just upstream of the Bates Bridge and downstream from the majority of completed restoration work. Sediment reduction measured from Teton Creek alone is 2,800 tons per year. Between 2003-2017 trout populations (for all species) in the Nickerson sampling reach increased from 420 trout per mile to 3,867 trout per mile. Specifically, YCT

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<sup>1</sup> The FTR "Science Review Committee" reviews the most current data available for the Teton Watershed and makes recommendations regarding future monitoring and research needs and restoration activities at an annually held meeting. Participants include the Idaho Department of Fish and Game (IDFG), Wyoming Game and Fish Department (WYGF), US Forest Service (USFS), US Fish and Wildlife Service, the Bonneville Environmental Foundation, USGS Northern Rocky Mountain Science Center (USGS), Teton Regional Land Trust (TRLT), and Henry's Fork Foundation (HFF).

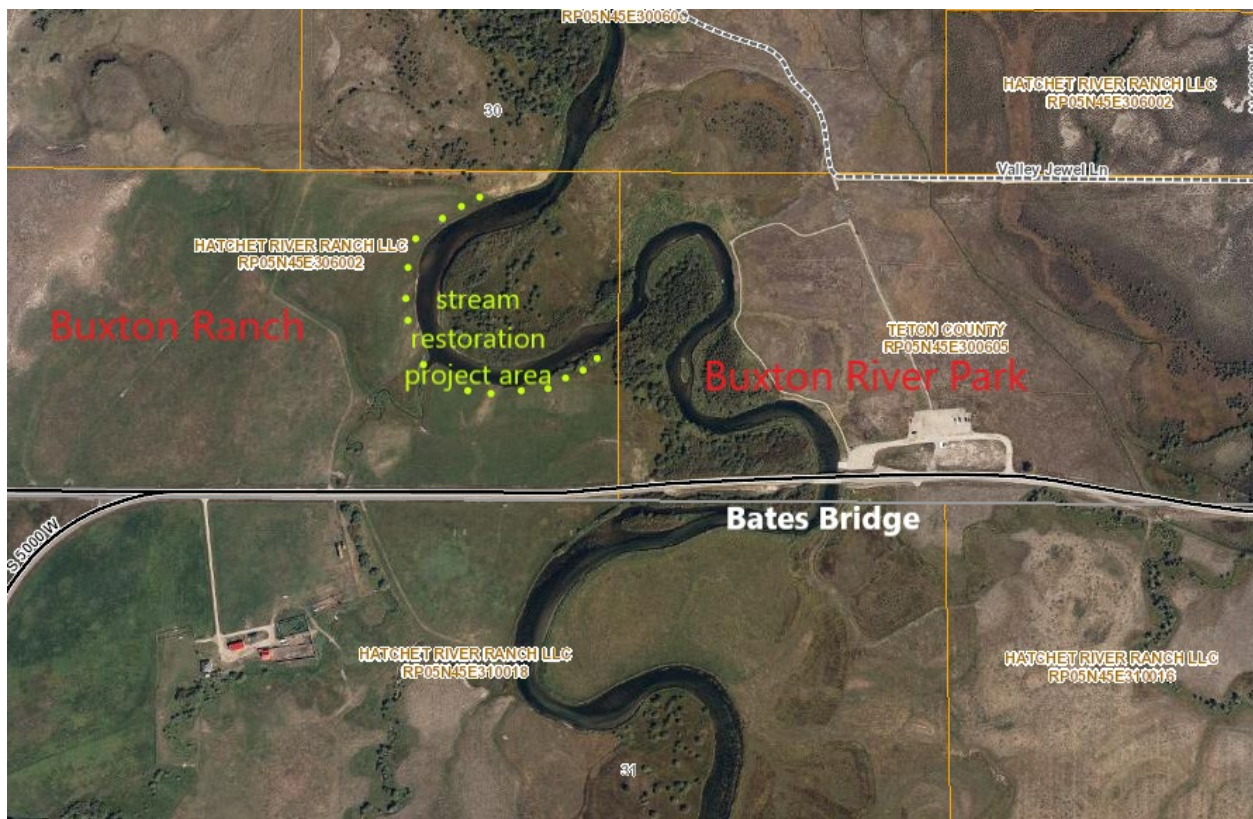
<sup>2</sup> The YCT Decision Support Model was developed by FTR Fisheries Research and Restoration Director Mike Lien and Dr. Robert Al-Chokhachy of the USGS. There are 82 potential projects currently on the Teton Watershed Conservation Project list in the categories of fish screens, barrier removal and placement, habitat restoration, non-native suppression, water management changes and stream flow restoration. Conservation projects are ranked using criteria such as ecological benefits; economic, social and regulatory feasibility; social and project costs; a cost-benefit ratio; and overall potential to benefit Yellowstone Cutthroat Trout populations.



populations have increased in this reach from 14 YCT/mile to 936 YCT/mile, for the same time period. This is the most significant increase in trout populations over this sampling period in the entire watershed.

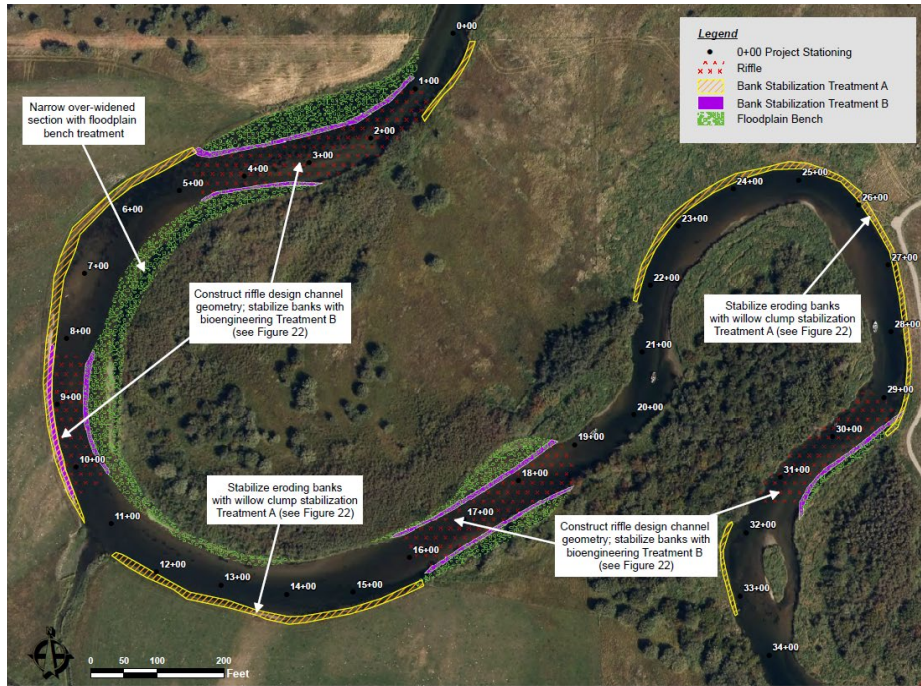
At the downstream end of the Nickerson reach near the Bates Bridge, stream habitat characteristics change significantly, with an increase in fine sediment, a greater lack of riparian vegetation, and eroding stream banks, due to current and historic grazing and land use practices. This section of Teton River has been a restoration priority for FTR for many years, but until recently the opportunity to work with adjacent landowners and stakeholders did not exist. Since the formation of the Teton Water Users Association in 2016 and the development of the *TWUA Watershed Restoration Plan*, FTR has been able to establish the trust and relationships necessary to work with the farming and ranching community on watershed management activities, specifically the establishment of an aquifer recharge program, as the implementation of this plan to-date. TWUA and FTR have prioritized areas for restoration on agricultural adjacent lands to the Teton River, where implementing best management practices to reduce impacts from cattle grazing and improving instream and riparian habitat are mutually beneficial for farms and fish. The Buxton project reach is located just downstream of the Bates Bridge, and the newly-formed Buxton River Park. The 80-acre Buxton River Park property on the east side of the river is owned by Teton County, Idaho with 42-acres placed in a conservation easement. The west side of the river is grazed ranchland owned by the Buxton family (Hatchet River Ranch LLC).

*See location map below.*

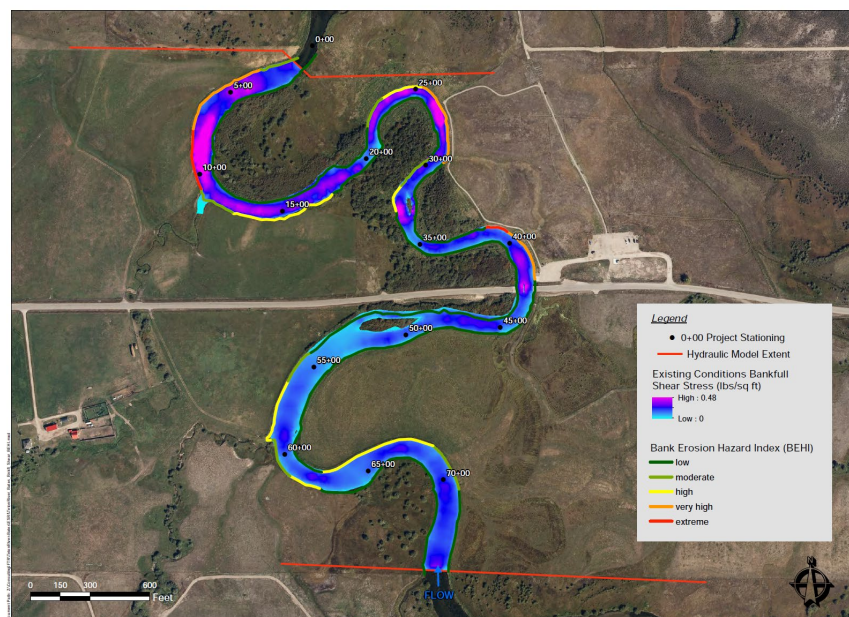


With the interest and support of these partners, FTR completed a detailed geomorphic assessment of the project reach in January 2020, which is available upon request. Assessment results found that unstable and eroding streambanks are contributing large amounts of sediment throughout the property (Figure 1; stations 5+00, 10+00, 15+00), which was historically de-vegetated, used for grazing and watering cattle, and is contributing to water quality and aquatic habitat impairments. The assessment also includes habitat characteristics, hydraulic modeling and sediment conveyance that have been used to recommend specific restoration treatments (Figure 2).

**Figure 1**



**Figure 2**





## **Proposed Activities:**

### ***Pre-project planning and permitting***

FTR Restoration Director Mike Lien, Biota Research and Consulting, and the project partners are completing a restoration design that meets environmental criteria and receives buy-in from the stakeholders. This project will be designed through a collaborative process, which FTR has had great success with on similar projects throughout the watershed. The restoration design plan for the project area will combine the best science available and the stakeholders' vision for the project area. With an engineered restoration plan in place, FTR and contractor Biota Research and Consulting, will finalize permitting (ACOE, IDWR and Teton County) and NEPA compliance (USFWS) once project implementation is scheduled.

### ***Stabilize Streambanks***

Approximately 1,500 linear feet of eroding stream bank will be restored, starting in October 2021 when the Teton River stream flows are low. The project will use bioengineered restoration techniques, which will likely include willow clump plantings, rootwad-log toe protection, wetland sod transplanting, revegetation and recontouring of the stream bank. This project will be designed so that the channel can convey sediment more effectively, as to provide better water quality, habitat, and gravels for native trout. The cost estimate for stabilizing this streambank is \$78.82/linear foot, according to the NRCS guidance for restoration treatments similar to the bioengineered treatments proposed for the site. The NRCS has obligated a payment of \$118,230 to Robert Piquet through the Environmental Quality Incentives Program (EQIP) for restoration. FTR is facilitating the design, bid and project implementation process for Mr. Piquet. Once a design is complete, FTR will seek competitive bids from qualified local stream restoration contractors to meet the project budget, which will have costs above the NRCS obligation (some of which may be off-set by in-kind match). In the past, competitive bids for FTR stream restoration projects have been awarded to MD Nursery, Oxbow Earthworks and AquaTerra Restoration.

### ***Riparian Revegetation***

As a previously grazed property, and one that has/will see recreation use, revegetating stream banks will provide critical habitat, stream shading, and streambank stability. Reforestation and revegetation will mimic nearby reference reaches with a half-acre of native plants including willows, hawthorne, serviceberry and current. New plants will be fenced to improve establishment in the first few years. Riparian plantings will be a part of subcontracted work with a stream restoration contractor.

### ***Implement BMP's***

As a part of project sustainability, FTR will work with the landowner and the lessee to improve grazing management and conservation outcomes for the long-term. The lessee of the property., Robert Piquet, is a member of the Teton Soil Conservation District Board and the Teton Water Users Association and is piloting innovative soil health improvement practices and low-impact grazing techniques on an upstream property. As a part of this project, FTR will work with the Buxton family and Mr. Piquet to develop a BMP plan for the property to improve water quality and land management practices during and after the grant period through grazing management, that may include management intensive grazing, the use of conservation forage, riparian buffer management, and off-stream watering of cattle.



### ***Buxton Restoration Project Outcomes***

- Stabilized and revegetated streambanks will decrease erosion and improve water quality in the Teton River;
- Increased riparian vegetation will create stream shading, promote cooler stream temperatures, stabilize banks, provide desirable fish and wildlife habitat, slow stream velocities and promote the natural capture of sediment in stream banks with increased “vegetative roughness.”
- This project will improve sediment conveyance through the reach, which will promote cleaner spawning gravels and improve native trout habitat and connectivity with other reaches up and downstream.
- Identifying BMP’s and development of an implementation plan for the property will ensure ongoing sustainability and conservation outcomes for the property that promote management strategies leading to water quality improvements to meet TMDL’s.
- This project provides a rare opportunity to implement a highly visible and ecologically valuable restoration project with multiple partners. It will demonstrate a stream restoration process from start to finish, using a science-based approach, and will provide ample opportunity for monitoring conservation outcomes. The TWUA and neighboring farmers and ranchers are supportive of this “showcase project.” It a goal of the partnership that other ranchers and landowners will realize the benefits that this project will have for the river and ranch operations and will provide a model for future partnerships and restoration work on the Teton River.

### ***Desert Canal Fish Screen Project Description:***

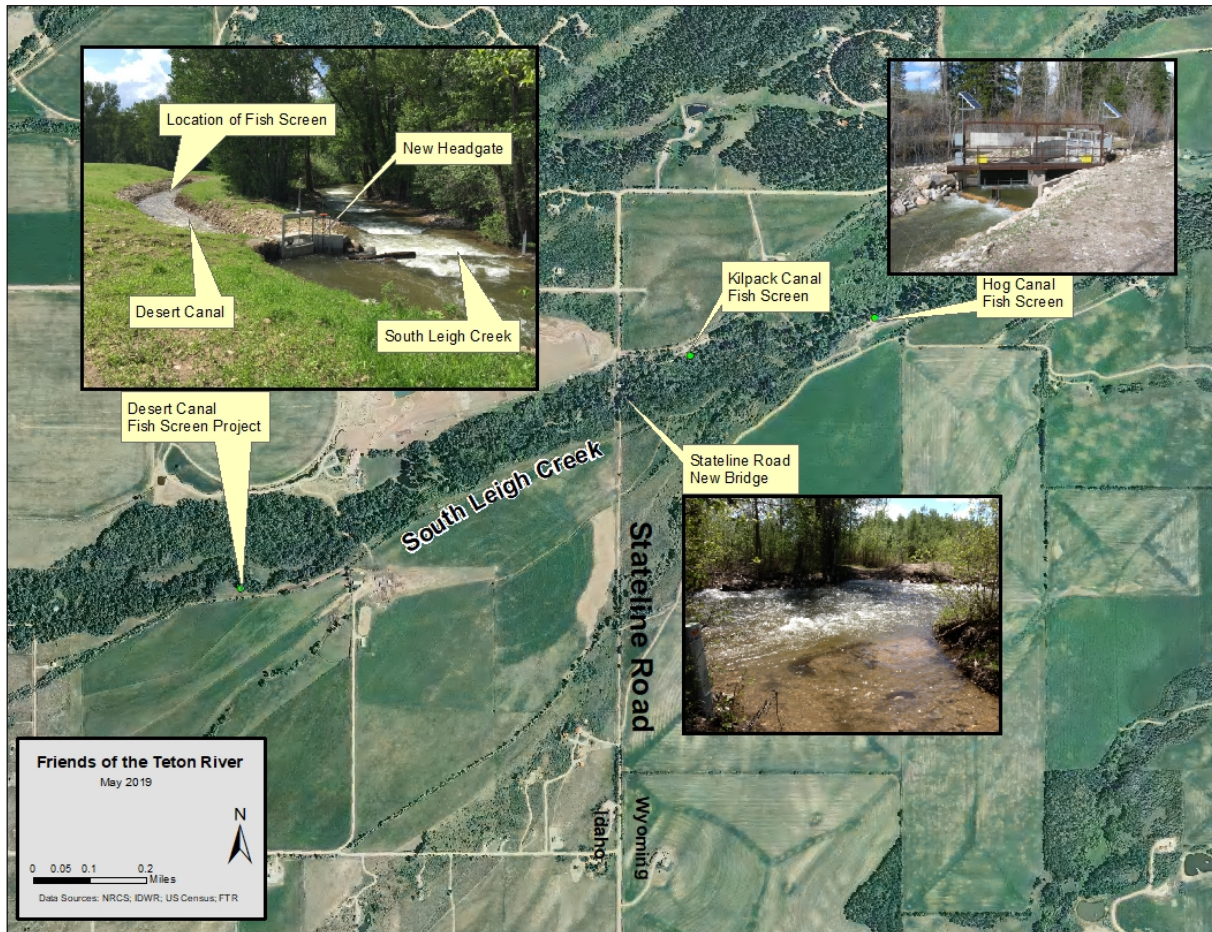
South Leigh Creek originates on the western slope of the Tetons (WY) and is characterized by a unique hydrology, comprised of 1) a perennial headwaters section that flows year-round to the point of diversion at the Desert Canal; 2) a middle section that becomes dewatered in mid-summer, in part, due to the diversion at the Desert Canal; and 3) a lower, ground water-fed section that is connected to the Teton River year-round through springs. This intermittent middle section provides a seasonal barrier to fish passage that has protected the upper South Leigh perennial reach from invasion by nonnative species present in the Teton River including brook trout.

The headwaters of South Leigh Creek contain the largest allopatric population of YCT in the upper Teton River Basin, with an estimated population size of ~6,000 individuals. Fluvial YCT migrate upstream through the middle reach in the spring to lay their eggs and return to the main stem Teton River before it becomes disconnected. During early to mid-August, YCT fry emerge and either reside in desirable perennial habitat or attempt to out-migrate. The Desert Canal is the transition point between the upper and middle (seasonally dewatered) reach and is the only remaining unscreened irrigation diversion on this tributary. When creek flows begin to naturally drop, the Desert Canal diversion takes the majority of the water out of the tributary at this point, thus the irrigation canal provides the most desirable habitat (the canal and South Leigh Creek are very similar in size), creating a significant entrainment and mortality hazard for YCT. The number of out-migrating juveniles is unknown, although irrigators report fry and young age classes of trout are stranded and dry up in the canal. A recent IDFG genetic sourcing study

indicates that the South Leigh YCT population is a significant contributor to the overall native trout fishery found in the main stem Teton River.

It is widely recognized by the irrigators in Teton Basin that sustaining and improving YCT populations will be critical to preventing a potential future ESA listing for this Idaho “species of greatest concern,” which would bring with it conflict and regulations for water users and conservation groups. Canal companies and ditch systems are run by a local volunteer operator or small boards, which have very limited resources for making improvements such as infrastructure upgrades including new headgates, metering, and fish screens. This is where FTR has been able to assist willing irrigators with project development, funding and implementation.

### ***Project Area Map***



### ***Pre-project planning and design***

The FTR Restoration Director has worked with the Desert Canal irrigators over the past three years to vet solutions that will deliver irrigation water rights while meeting conservation goals. FTR has scoped various fish screen options with the Desert Canal irrigators and agency partners to reach a proposed screen design that is appropriate for amount of flow and other specifications. The irrigators have decided to construct “self-cleaning” type screen that can accommodate a maximum flow of 50 cfs in the canal. Great West Engineering (Helena, MT) conducted an initial site visit and survey in 2019 to assess suitability and placement of a Corrugated Water Screen





***Project outcomes:***

- Decrease entrainment potential on the Desert Canal, thus reducing mortality and improving life history for out-migrating juvenile and adult YCT on South Leigh Creek.
- Improve safe passage and connectivity on a headwater spawning tributary and the main stem Teton River;
- Protect a core “source” population of YCT for the Teton River and improve YCT populations (trout density) and age class distributions in South Leigh Creek and the Teton River.
- Enhance scientific understanding of South Leigh and similar streams, to verify the efficacy of conservation strategies which will inform future work.
- Improve irrigation infrastructure and delivery of irrigation water; and
- Successfully model collaboration on restoration projects that provide a win-win for stakeholders and conservation of native trout.

***Overall project outcomes:***

Taken together, these projects highlight the successful process of collaborative and science-based watershed management and will set an example to be replicated throughout the watershed. FTR and the TWUA have been able to build trust with the farming and ranching community through the implementation of the Aquifer Recharge Program (R17AP00105) and seek to expand on this success through the currently proposed projects that meet the Watershed Restoration Plan goals.

**d. Performance Measures**

FTR has established monitoring programs for fisheries, water quality, and quantity (stream flow and groundwater monitoring) in place to evaluate the short- and long- term efficacy of our project work, and measure successes against the existing baseline data to adaptively manage our watershed restoration strategies, further detailed under Evaluation Criteria E—Performance Measures.

The following performance measures will be used to quantify the effectiveness of project implementation during the project period:

Buxton Restoration Project

- a. **Stream Restoration**—Improved stream bank stability and riparian habitat will result in reduced erosion/sediment loading to the Teton River; improved fish habitat, water quality, sediment delivery, and improved connectivity of the instream and riparian corridors. The defining characteristic of many agricultural and ranching properties on the Teton River is the lack of riparian vegetation and unstable stream banks.

b.

**Stream Restoration Performance Measures:**

- 1,500 feet of eroding streambank will be stabilized using bio-engineered stream restoration techniques.

- .25 acres of streambank will be planted with native vegetation.
- Forested/revegetated riparian buffer increased 90%.
- Stream shading increases by  $\geq 22\%$

**Methods:**

FTR has monumented cross-sections surveyed throughout the project reach to assess width-to-depth ratios, streambank and channel contouring. FTR will Re-survey habitat conditions in the Buxton project area to compare to project goals and baseline data upon project completion. FTR utilizes arial and traditional photography to assess an increase in vegetative cover. FTR will monitor progress of plant establishment by conducting a census of the planted native trees and shrubs at the end of the first and third growing season, with a goal of 70% survival at the end of the third growing season.

- c. **Water Quality**—Restoration of the project site will reduce erosion /run-off; increase filtration; decrease stream temperatures and provide more desirable habitat conditions for YCT. The Teton River is 303(d) listed for sediment and temperature, with obvious siltation problems in this particular reach. Improvements will also have demonstrable benefits for native trout.

**Water Quality Performance Measures:**

- Water quality will be improved by reducing sediment loads by 416 tons/year.
- Stream temperatures will be reduced due to shading from planted vegetation and conveyance of water in the stream channel.

**Methods:**

Conduct pre-and post-monitoring at the Buxton project site for water quality parameters including stream temperature, turbidity, nitrates/nitrites, gravel counts, and other parameters of concern. During the grant period, FTR will place a logging device just up and downstream from the project area to gather temperature and stream flow data (often linked and will help address improved sediment conveyance.

- d. **Native Trout Populations/Habitat**—This project will provide greater connectivity of quality fish habitat including gravels and pools, and the creation of desirable habitat/holding water. Trout population monitoring will assess how native trout populations utilize restored reaches. Since this reach is just downstream of the most productive habitat for YCT in the Teton River, it will provide valuable data to fisheries managers about the effectiveness of habitat restoration.

**Fisheries Performance Measures:**

- Fish habitat will be improved in the project reach 80%
- Native trout populations and habitat utilization will increase in the project reach and the Teton River (a statistically significant increase in population densities or trout/mile).

**Methods:**

Conduct an electro-fishing survey (mark/recapture) using raft-mounted e-fishing gear within the project reach and up-and downstream of the completed restoration project ( $\geq 4,000$  feet) to monitor the response of the native and non-native trout fishery to restoration activities (improved habitat and passage). Baseline fisheries data is already established to compare post-project data, during and after the grant period.

- e. **Planning Efforts**—Improved management and restoration at the Buxton site will improve water quality due to reduced erosion/run-off; long-term establishment of riparian vegetation and stable stream banks by reducing impacts from grazing and recreation. BMP's will be implemented as a part of the restoration project, with additional BMP's identified by the landowner and lessee for future implementation.

**Planning Performance Measures:**

- Complete a BMP Plan for the Buxton site, for implementation during and after the project period.

**Methods:**

Meet with the landowner/lessee to identify near- and long-term best management practices and treatments for the property. The lessee is an active member of the TWUA, and is motivated to implement BMP's. Planning will occur through site visits and in-person/virtually held meetings.

**Desert Canal**

- a. **Native Trout Populations**—This project will provide connectivity of fish habitat through the project reach to upstream National Forest lands, eliminating entrapment for spawning or out-migrating Yellowstone Cutthroat Trout and mortality in the canal. The effectiveness of the project will be measured through the following fisheries performance measures and methods:
  - YCT entrapment in the Desert Canal will be significantly reduced/eliminated. FTR will also be able to measure the presence/absence of fish in the canal to ensure that entrapment has been significantly reduced or eliminated. FTR has data from electro-fishing the first 100 meters of canal downstream from the head gate, confirming the presence of YCT in the canal (three YCT in 2014, twelve in 2019 of various age classes). FTR estimates that approximately 5% of the South Leigh Creek headwaters YCT population is entrained in the canal annually even using the lowest of the 2 survey densities (30 YCT/km of canal x 12 km of canal = 360 YCT in the canal system or about 5%). The irrigators have reported seeing numerous YCT stranded in pools and fields within the Desert Canal system when they shutoff the canal at the end of the season. FTR will electro-fish the first 500 meters of the canal following the installation of the fish screen and assess the canal with the irrigators when they shut the head gate to ensure that entrainment has been eliminated. FTR and the irrigators will do this by walking the



length of the canal system, focusing on known pools and places where fish are typically stranded at the end of the irrigation season.

- After project completion, YCT will have access to over 11 miles of upper South Leigh Creek without entrainment hazards. FTR will assess connectivity through visual observation and survey of the creek. FTR has a completed survey of entrainment hazards and barriers to fish passage for the Upper Teton Watershed. FTR will continue to conduct electro-fishing surveys for presence of YCT in South Leigh Creek, to assess population densities and abundance.
- Native trout populations will increase in South Leigh and the Teton River. As a proven source population of YCT for the Teton River, FTR will primarily use bi-annual (odd years) electro-fishing survey data on the Teton River and Tributary Trout Population Assessment Data (every five years) to assess native trout population trends.

- b. **Irrigation infrastructure**—upon completion of the project, the new fish screen is expected to be fully functional in supplying irrigators with their water right, while returning YCT to the natural stream via a by-pass pipe.

**Infrastructure Performance Measures:**

- The Desert Canal fish screen passes the irrigation water right.
- The screen functions as per design expectations.

**Methods:**

FTR, the engineer, and the irrigators will assess the effectiveness of new fish screen and fish return by installing a new staff gage in the canal and establishing a rating curve to ensure the water users are diverting their water right. These partners will assess the functionality of the screen, bays, and by-pass pipe to ensure proper flow of water and velocities through the structure. It will be the responsibility of the irrigators to maintain the fish screen and routinely check functionality.

**Other Performance Measures:**

- Project Partners will summarize project outcomes in a final report.
- Update the TWUA Watershed Restoration Plan with current priorities, goals, and objectives (2022 and beyond).

**Methods:**

Through a series of four TWUA meetings, FTR will work with project partners (TWUA, landowners, irrigators, and ranchers) to evaluate project processes, success, lessons learned, and assess the effectiveness of management changes (land/livestock management at the Buxton property and water management at the Desert Canal) for a final report. Based on the outcome of these projects (and the Aquifer Recharge Program), the TWUA will update their Watershed Restoration Plan to reflect current and future priorities for the group.

## **e. Evaluation Criteria**

### **E.1.1. Evaluation Criterion A—Project Benefits**

- *Will the project result in long-term improvements to water quality?*
- *Will the project benefit aquatic or riparian ecosystems within the watershed?*
- *Will the project benefit specific species and habitats?*
- *Will the project make more water available to meet water needs?*

The expected benefits of the proposed projects include improvements to water quality and improved habitat, fish passage, and instream conditions for native Yellowstone Cutthroat Trout; as well as improved water management for irrigators on the Desert Canal.

The Buxton streambank restoration will reduce sediment loads by 416/tons per year in the Teton River. Stream bank recontouring will restore sediment conveyance throughout the reach, downstream. Currently, the reach is a major source of erosion in this part of the Teton River and is “sediment trap,” for areas upstream; with healthy reference reaches and productive fish habitat just up- and downstream. Stabilized and revegetated banks will reduce sources of sediment and stream temperatures, to help meet Total Maximum Daily Loads in the Teton River. The Idaho Department of Environmental Quality has set five-year reduction targets for 303(d) listed stream segments on the Teton River for sediment and temperature. Both sediment and temperature are recognized as non-point source pollutants, thus targets are listed as a percentage for the Teton River or by tributary. The sediment load reduction target for the Teton River is 64%, and the solar load reduction (as measured by ariel photos of natural stream shading vegetation) is 22%. (according to the Teton River Subbasin 2016 TMDL five-year review). This project will successfully reduce sediment, as measured within the project area, by  $\geq 64\%$  and increase vegetative cover by  $\geq 22\%$  to measurably reduce stream temperatures. Nutrient loading will also be reduced through grazing management and erosion reduction.

Fish habitat and the riparian ecosystem will improve at the Buxton restoration site through a reduction in streambank erosion, increase in vegetative cover, sediment reduction promoting cleaner gravels and more desirable holding water, cooler stream temperatures and connectivity with healthy aquatic and riparian habitats up- and downstream.

The Desert Canal fish screen will benefit South Leigh Creek and Teton River Yellowstone Cutthroat Trout populations, which is an Idaho “species of greatest concern.” The project seeks to eliminate entrainment potential on the Desert Canal, thus reducing mortality and improving life history for out-migrating juvenile and adult YCT on South Leigh Creek. Safe passage and aquatic connectivity will be improved on South Leigh Creek, a headwater spawning tributary for YCT. This will also provide a conservation benefit to the main stem river, as South Leigh is a “source” population of YCT for the upper Teton River corridor (25 miles). The current number of total out-migrating juveniles is unknown, although irrigators report that fry and young age classes of trout are stranded and dry up in the canal, annually. While electro-fishing the first 100 meters of the canal in 2019, FTR captured twelve YCT of different age classes. The qualitative goal for this project is to eliminate YCT entrainment in the canal, thereby protecting and improving survival of a pure source population. FTR and IDFG will continue to monitor trout populations in tributaries and the Teton River to quantitatively assess long-term trends. It is expected that the construction of the Desert Canal fish screen will also provide the twenty

irrigators on the canal system with better management of irrigation water to ensure delivery of their water right without negatively impacting the fishery.

○ *Will the project benefit watershed stakeholders in ways not addressed in the preceding questions?*

In addition to environmental and species benefits, these projects are collaborative in nature and have an expressed goal of meeting the needs of diverse users and stakeholders within the watershed. The Buxton stream restoration is a showcase project for the ranching community and is located in a highly visible and one of the most utilized recreation sections of the Teton River, just downstream from a popular public access point. Public outreach for the project will focus on the partnership with the agricultural community to achieve a common goal for conservation and supporting the local livelihoods of farmers, ranchers, and fishing guides, as well as the value of the Teton River as a natural resource and sport fishery. The Desert Canal fish screen, while not as visible to the general public, is a valuable demonstration of collaboration and effective partnerships to the greater Teton Valley irrigation community. In the not-so-distant past, irrigators in Teton Valley refused to work with outside groups to make improvements to irrigation structures or water delivery systems. This project will demonstrate that effective collaboration is a win-win for farms and fish.

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. Additionally, this project helps promote ancillary land use benefits. By planning for and implementing best management practices, farmers and ranchers are making an investment in the sustainability of their operations for the long-term. Large agricultural land tracts are invaluable as winter range, as migratory corridors, and maintaining the integrity of stream channels and riparian corridors. Thus, both of these projects provide a model for working together--as a community--to reduce conflicts over water, user conflicts, and promote long-term solutions for sustaining lives, livelihoods, and the natural resources we depend on.

### **E.1.2. Evaluation Criterion B—Watershed Restoration Planning**

The projects put forward in this application are based upon priorities identified in the *Teton Water Users Association Watershed Restoration Plan* (2016), in [Attachment 5](#).

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

With the goal of proactively addressing several emerging water related issues (changing water and land management, climatic conditions, and natural resource concerns), Friends of the Teton River brought together a diverse working group, called the Teton Water Users Association (TWUA) in 2015 under a Reclamation Phase 1 WaterSMART grant to develop a voluntary Watershed Restoration Plan. The group includes 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 a 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 year-long process, spanning the course of nearly a year and described in detail below, the Watershed Restoration Plan for the Teton River Watershed (Plan), was finalized in 2016 as a guiding document for project prioritization and implementation.

*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 and water quantity issues for fish and wildlife, human health and wellness, agricultural and recreational use; as well as management issues that specifically impact native Yellowstone Cutthroat Trout. The Restoration Plan aims to address those topics outlined in the TWUA's vision statement, and identifies specific projects that address irrigation, municipal, and ecological needs/goals.

*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, and agricultural, municipal, tribal, environmental, 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 includes 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
- Henry’s 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 with partners to:

**(1) Identify water management problems, goals, and objectives.**

Each interest group within the TWUA –irrigation, conservation, municipalities/government entities—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.

**(2) Identify activities and projects that meet documented partner goals.**

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. 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.

**(3) Prioritize project selection based on the potential to optimize outcomes for all three interest groups (agricultural, municipal/county, and conservation).**

Due to the community-wide and natural resource benefits, the TWUA agreed that a Teton Basin Aquifer Recharge project would be the first phase of implementation for the Plan. This work was funded, in part, by a Reclamation WaterSMART grant R17AP00105 (2017-2019).

*Describe how the existing restoration plan provides support for your proposed watershed management project. Does the proposed project implement a goal or need identified in the restoration plan?*

The proposed projects are supported by goals and objectives the Plan in the following ways:

#### Buxton Restoration:

- Identify a means by which to secure water quantity and quality for fish and wildlife in critical tributary stream and river reaches.
- Identify resources and develop partnership opportunities for projects that address limiting factors impacting YCT.
- Promote agricultural management decisions that enhance conditions for YCT.
- Support agricultural producers, to ensure that farming [and ranching] remains a viable endeavor.

#### Desert Canal Fish Screen:

- Identify resources and develop partnership opportunities for water users to secure funds for infrastructure upgrades
- Evaluate function and status of water delivery systems and develop plan for making repairs and improvements
- Supply irrigation water through conservation, management, and best practices.
- Identify resources and develop partnership opportunities for projects that address limiting factors impacting YCT.

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

As stated, the first phase of the Plan was to implement aquifer recharge management scenarios, which has developed into successful program with active participation (2017-to current year). Improving water quantity, supply, and reliability is only one aspect of the Plan, thus the currently proposed projects aim to address other priorities set forth in the TWUA Plan.

The Teton Watershed Restoration Plan includes an addendum, *YCT Prioritization for the Teton River Watershed*, developed by the agencies participating in the TWUA process; in Attachment 6. State and federal partners, including Idaho Department of Environmental Quality, Idaho Fish and Game, US Forest Service, and US Fish and Wildlife Service, set out to develop a document which would provide a concise picture of the desired conservation outcomes in the Teton River watershed, as applied to Yellowstone Cutthroat Trout. The document clearly describes the applicable threats, necessary conservation measures, and stream priorities necessary for the protection and restoration of YCT in the Teton River watershed. The document functions to solidify the interests of these various entities and can be used to ensure that aquifer recharge efforts promote the maintenance and recovery of YCT in the Teton River watershed in the future.

The document has multiple benefits, including the following: (1) provide landowners and water right holders with a clear, concise picture of the conservation need as it pertains to YCT in the Teton River watershed; (2) generate dialog between entities working to implement conservation projects in the Teton River watershed, and define the roles and responsibilities for those entities; and (3) ensure that conservation work is directly tied into, and is in fact guided by, agency management plans.

The proposed projects meet one or more of the following limiting factors identified by agency partners in this guiding document:



- Lack of quality stream habitat (Buxton)
- Sedimentation (Buxton)
- Fish entrainment (Desert Canal)
- Elevated stream temperatures (Buxton)
- Competition with non-native fish species (Desert Canal)
- Physical passage barriers--Lack of or presence of; harmful in some locations and beneficial in other locations (Desert Canal)

In addition to meeting fisheries management goals, the projects are directly supported by recommended actions in the *Teton River TMDL Addendum Implementation Plan for Agriculture* (2020, Idaho Soil and Water Conservation Commission), see Attachment 7 as a supplement for the *Teton Subbasin Total Maximum Daily Load Implementation Plan for Agriculture*. <https://www.deq.idaho.gov/media/1117197/teton-river-ag-imp-plan-0214.pdf>

The purpose of the “Addendum” to the TMDL plans for Teton Basin is to identify and recommend best management practices (e.g. streambank stabilization, tree and shrub establishment/critical area plantings, use exclusion) needed to meet updated TMDL’s in the Teton River and tributaries. The Addendum specifically recognizes the recent efforts and success of the Aquifer Recharge Program and identifies agricultural lands adjacent to the Teton River as a high priority for addressing TMDL’s for sediment and temperature. Fish spawning habitat is also addressed as being most impacted by excessive sediment and removal of riparian vegetation. There are no state water quality criteria that pertain to habitat alteration however, agricultural areas that contribute excessive pollutants to water bodies are defined as “Critical Areas” for BMP implementation. The Buxton site meets the definition of a Critical Area within the subbasin as one with direct proximity to the Teton River and where a recommended treatment is considered necessary to address “unstable and erosive stream banks, over utilized pasture and range lands, feed operation adjacent to stream corridors...and areas of channelization or vegetation removal.”

Outside of a management planning processes, both projects are considered high priorities for implementation by FTR, agencies, and stakeholders. As detailed in the Technical Project Description, the proposed restoration projects are highly ranked by the *YCT Decision Support Model* and through partner meetings. The Desert Canal project is one of the top 20 restoration projects in the Teton Watershed (out of # projects watershed-wide), and is the highest ranked fish passage/fish screening project. This project also directly addresses the following objectives and strategies of the IDFG Fisheries Management Plan (2019-2024) for Teon River:

- Restore connectivity to improve spawning, rearing migration success of Yellowstone Cutthroat Trout;
- Identify tributaries with minimal risk of invasion by non-native species as candidates for improving connectivity.
- Minimize loss of juvenile fish to irrigation diversions where these losses are deemed to be having a population-level impact on the resource.
- Obtain adult fish passage around/through hazards, barriers, and blockages (in this case, an entrainment hazard).

- Project supports a strategy of the Idaho State Wildlife Action Plan (2017) to “restore/improve connectivity to fluvial tributaries of the Teton River” through public-private partnerships.

### **E.1.3. 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.2.2.9. 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 a high level of diverse stakeholder support, as detailed in previous sections, and projects have been developed by a diverse and well represented group of stakeholders. Please see attached letters of support from the following partners, in section D.2.2.9. Additionally, the Teton Water Users Association, Robert Piquet, and Kane Brightman are contributing in-kind time or materials to the project, as indicated in their letters.

- The Teton Water Users Association
- Robert Piquet (Buxton Property lessee)
- Kane Brightman (Desert Canal Irrigators Representative)
- Idaho Department of Fish and Game
- Idaho Department of Environmental Quality

*Please explain whether the project is supported by a diverse set of stakeholders. For example, is the project supported by entities representing agricultural, municipal, tribal, environmental, or recreation uses?*

The proposed restoration projects have the support of the Teton Water Users Association (TWUA), a group made up of individual farmers and ranchers, the Farm Bureau, the Teton Soil Conservation District, NRCS, FTR, TRLT, HFF and other conservation organizations who are working to improve and sustain farming operations, improve soil health, protect and restore stream flows and water quality in the Teton River and its tributaries.

*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?*

FTR undertakes all its projects with willing landowners and stakeholders with the input, technical knowledge and support of the pertinent state and federal agencies, partner organizations and governing and/or regulatory agencies. The proposed projects are supported by the following entities and are consistent with the management plans and priorities of these entities:

- Idaho Department of Fish and Game
- Wyoming Game and Fish Department
- US Fish and Wildlife Service
- Idaho Department of Lands

- Idaho Department of Environmental Quality
- Idaho Department of Water Resources (Water District #1)
- Teton Soil Conservation District
- Natural Resources Conservation Service
- Teton County, Idaho

*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.*

In coordination with the aforementioned agencies and entities, along with non-profit partners and landowners, FTR is the organization implementing on-the-ground restoration and conservation projects and programs in the Teton Watershed; doing so strategically to collaborate with partners where appropriate to pool expertise and resources and avoid replication of effort. There are numerous ongoing activities and relevant efforts taking place in the watershed that complement the projects proposed in this application.

- **Farms and Fish Initiative**— As previously described, this program is a direct outgrowth of the watershed planning process and partnership with the Teton Water Users Association. FTR’s current work under this program is driven by the specific projects identified by this group to meet the needs of diverse constituents within the community including “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.”
- Over the past three years, FTR has been working with TWUA, landowners, water users, and agency personnel to securing significant federal, state, and foundation funding for a number of projects under the Farms and Fish Initiative. This Initiative includes implementation of no-till and cover crop farming methods, an Aquifer Recharge Program, and a “Rivers and Ranches” stream restoration program aimed specifically at restoring agricultural adjacent lands to the Teton River.
- FTR works closely with TWUA participant and NGO science partner, the Henry’s Fork Foundation (HFF), with whom we share a staff member, the Landowner Outreach Coordinator, to implement regenerative farming techniques such as piloting (test and control parcels) conservation tillage, cover crop, and managed grazing strategies to improving soil health, moisture retention, and water quality—which are monitored by FTR in partnership with the Idaho Department of Environmental Quality.
- **Fish passage restoration**— In 2005, FTR completed a fish passage barrier assessment to prioritize restoration of entrainment hazards or impoundments preventing the migration of native trout into spawning tributaries. FTR has completed fish passage improvements on Trail, Teton, South Leigh, Badger and Canyon Creeks including irrigation diversion and head gate improvements, and installation of fish ladders or step-pools instream. FTR worked with Canyon Creek stakeholders from 2011-2014 to improve fish passage at three locations, which helped build stakeholder trust while meeting irrigator needs and conservation objectives.

From 2008-2014, FTR completed three high-priority fish passage projects on the perennial section of South Leigh Creek including replacing two major diversions with new head gates and fish screens (Hog and Kilpack Canals) and replacing the Desert Canal head gate and check dam with a new head gate and step-pools. In 2019, Teton County, Wyoming completed a new one-lane bridge on the Idaho-Wyoming state line, which spans South Leigh Creek. Previously, there was no bridge to connect the road, and at low water levels, vehicles were permitted to drive directly through the creek itself heavily destabilizing the creek, causing sedimentation and disturbing fish habitat and YCT redds. Completion of the bridge in September (2019) provides an additional investment in restoring a healthy and functioning South Leigh Creek headwaters and corridor.

- **Bates Public Access/Buxton River Park**—This project is located just upstream and on the opposite side of the Teton River (east side) from the Buxton Restoration project site. FTR, along with the Trust for Public Land, the Teton Regional Land Trust (TRLT), Teton County, Idaho and IDFG, jointly raised \$775,000 to acquire the 80-acre property, placing 42 acres under easement with TRLT. Ownership of the property has been transferred to Teton County for the formation of a county park that encompasses a popular public access site and boat launch on the Teton River. Formerly a grazed wetland area, FTR, TRLT and Teton County are concurrently working together to implement a variety of activities with secured funding over the next year, restoring instream and riparian habitat while providing public access, improved safety, and recreation benefits. The Bates Public Access Project dovetails with the proposed Buxton Restoration downstream, which will together provide continuity and value to the resource, landowners and the public.

*Is the project completely or partially located on Federal land or a Federal facility? If so, explain whether the agency supports the project, whether the agency will contribute toward the project, and why the Federal agency is not completing the project?*

The projects are not located on federal facilities. FTR has the cooperation and permission of adjacent landowners to complete both projects.

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

There is no opposition to the proposed projects and they have the full support of the stakeholders. As previously mentioned, FTR has taken a concerted effort to develop relationships, trust, and a planning process with water users and agricultural producers in Teton Valley to garner support for these and similar projects and has overcome significant cultural barriers to facilitate win-win solutions to complex water resource issues. While opposition does not currently exist, this does not adequately reflect the amount of legwork put in by FTR and our community to get to this point. The work proposed at the Buxton property would not have been possible just three years ago without the involvement of the TWUA and the trust other projects have established between FTR and our “ag” producers. Likewise, FTR has invested time over three years to gain the support of the irrigators on the Desert Canal and work through numerous infrastructure options (some of which were turned down), in order to reach consensus.

#### E.1.4. Evaluation Criterion D—Readiness to Proceed

The proposed projects at the Buxton Restoration site and the Desert Canal have had substantial pre-project monitoring and planning completed, with significant matching funds secured for implementation (see Budget section, starting on page 33). The Technical Project Description details implementation plans for these projects. The table below outlines the major tasks, milestones and a timeline for implementation.

<b>Table 1: Buxton Restoration Project</b>		
<b>Task Description</b>	<b>Timeline</b>	<b>Milestone</b>
<p><b>Pre-project monitoring</b></p> <ul style="list-style-type: none"> <li>• Complete Geomorphic Assessment (habitat, sediment conveyance, hydraulics).</li> <li>• Conduct electrofishing survey</li> </ul>	<p>Completed January 2020</p> <p>Completed September 2019</p>	<p>Inform Project Design Plan</p>
<p><b>Final Project Design</b></p> <ul style="list-style-type: none"> <li>• FTR has secured funding to hire contractor Biota Research and Consulting to complete a design plan based on the results of the Geomorphic Assessment.</li> </ul>	<p>Completed by 2/1/2021</p>	<p>Final design and engineering completed for Buxton Restoration Project</p>
<p><b>Permitting/environmental compliance</b></p> <p>Finalize permitting (ACOE, IDWR) and compliance (NEPA, SHPO)</p>	<p>Completed by 9/1/2022</p>	<p>Permitting and environmental compliance for the project are complete.</p>
<p><b>Materials procurement and contracting</b></p> <p>The FTR Restoration Director will oversee all procurement of materials: rock, vegetation, and restoration supplies (e.g. wetland sod and matting) and contracting (via competitive bid) to implement the project.</p>	<p>Completed by 9/1/2022</p>	<p>Materials for the project are secured and/or staged at the project site.</p> <p>Contract with restoration contractor is in place.</p>
<p><b>Project construction/implementation</b></p> <p>The majority of the streambank stabilization will take place between 9/1/2022 and 12/31/2022, when stream flows are the lowest. Some additional revegetation work may occur the following year, before spring run-off.</p>	<p>9/1/2022- 4/30/2023</p>	<p>Buxton Restoration Project complete</p>

<b>Monitoring/Evaluation</b> Data points will be collected pre- and post-project implementation for evaluation and reporting purposes including: <ul style="list-style-type: none"> <li>• Take photos</li> <li>• Install temperature/flow logger</li> <li>• Collect fisheries data</li> </ul>	During the grant period: 10/1/2021-6/30/2023	See Table 3
<b>BMP Planning</b> FTR Water Resource Dir. will work with the landowner and lessee to develop a best management practices for the Buxton property	Completed by 6/30/2023	BMP Plan in place for the Buxton Property

<b>Table 2: Desert Canal Fish Screen Project</b>		
<b>Task Description</b>	<b>Timeline</b>	<b>Milestone</b>
<b>Final Project Design</b> FTR has secured funding to hire contractor GreatWest Engineering to complete a final design for the project.	Completed by 2/1/2021	Final design and engineering completed for Desert Canal Fish Screen Project.
<b>Permitting/environmental compliance</b> Because the project will take place on and adjacent to the existing canal, it is exempt from permits and outside approvals.	N/A	N/A
<b>Materials procurement and contracting</b> The FTR Restoration Director will oversee procurement of materials: concrete, steel and fish screen components; and contracting to implement the project.	Completed by 10/1/2021	Materials for the project are secured and/or staged at the project site. Contract with construction contractor is in place.
<b>Project construction</b> The fish screen will be constructed in the fall, when irrigation water is turned off and natural stream flows are lowest.	10/1/2020—12/31/2021	Fish Screen construction is complete and operational
<b>Monitoring/Evaluation</b> Data points will be collected pre- and post-project implementation for evaluation and reporting purposes including: <ul style="list-style-type: none"> <li>• Electro-fish Desert Canal and South Leigh Creek</li> </ul>	During the grant period: 10/1/2021-6/30/2023	See Table 3



<ul style="list-style-type: none"> <li>• Install a staff gage</li> <li>• Evaluate fish screen and structure functionality</li> </ul>		
<b>Table 3: Project Reporting and Planning</b>		
<b>Task Description</b>	<b>Timeline</b>	<b>Milestone</b>
<p><b>Hold TWUA Meetings</b></p> <p>FTR Water Resources Director will facilitate six meetings of the TWUA during the grant period.</p>	<p>Throughout the grant period</p> <p>Completed by 6/30/2023</p>	<p>Update the <i>Teton Watershed Restoration Plan</i> to reflect priorities of the TWUA for future projects.</p>
<p><b>Final Project Report</b></p> <p>Use monitoring data collected at project sites during the grant period to evaluate effectiveness of projects compared to relevant watershed and baseline data.</p> <p>Collect feedback from project participants and TWUA to generate lessons learned and qualitative success.</p>	<p>1/1/2023—6/30/2023</p>	<p>Submit Final Report</p>

As of the submission of this application, FTR has secured matching funds to proceed with engineering and design for both projects, which are expected to be complete by 2/1/2021. FTR has found that having design plans in-hand for priority watershed projects enables funding to move forward and clarity for budgeting and fundraising efforts.

FTR has the required permission to proceed and access to both project sites, as privately held property, and has signed landowner agreements in place, which is a standard practice for FTR before project work begins (please see letters of support from Robert Piquet and Kane Brightman as documentation).

See the Project Budget for associated project costs and estimates. FTR has included 5% of the total project costs in the budget to cover the costs associated with environmental and cultural resource compliance.

### **E.1.5. Evaluation Criterion E—Performance Measures**

Once the projects are complete, Friends of the Teton River has a robust monitoring program in place to measure the overall effectiveness of restoration work in the watershed, as individual

projects and cumulatively. FTR's Watershed Restoration and Monitoring Strategy was developed with funding and support from the Bonneville Environmental Foundation's Model Watershed Program from 2010-2020. The strategy includes a framework for adaptively managing watershed restoration objectives and goals based on clearly defined monitoring objectives. FTR has been nationally recognized for taking a collaborative and science-driven approach to watershed restoration and has the respect of fisheries experts and science peers.

FTR has conducted extensive research and monitoring since 2001, to establish baseline data for fisheries, water quality, stream habitat, and stream flows, with the goal of improving our overall understanding of watershed issues and threats, as a driver for prioritizing projects that will improve watershed function, increase collaborative conservation efforts, and benefit native YCT populations. Until the organization was founded in 2000, very little data existed for the Teton Watershed. Since that time, FTR has worked with relevant agencies to fill in the data gaps. With limited personnel and funding for government agencies, FTR has remained the trusted science partner and "boots on the ground" for these entities.

Major areas of research include a juvenile trout study, outmigration, spawning, genetic, and telemetry studies; remote temperature and stream flow data logging, ground and surface water quality testing; modeling of ground and surface water flows, floodplain mapping/modeling and habitat/geomorphic studies. The established monitoring programs for fisheries and water quality will aid in measuring the long-term effectiveness of the projects at the Buxton Property and the Desert Canal.

#### Fisheries Monitoring:

FTR has an established network of 12 interrogation sites on spawning tributaries throughout the watershed. Interrogation sites are fisheries monitoring stations that record the migration of individually tagged trout when they swim past an antenna. To-date, FTR has tagged 4,200 trout in the Teton Watershed, which has provided valuable data about habitat utilization, migration timing, and relative importance of tributaries to YCT life histories.

FTR assists IDFG to monitor YCT population trends by electro-fishing sites bi-annually on the Teton River (on "odd" years) and on the tributaries at established sites every five years (2005, 2010, 2015, 2020). To assess the impact of the project on fish populations, data will be available from the 2021 survey on the main stem Teton River and the 2020 tributary assessment, which will reveal the most recent population trend data. It is difficult to assess changes in the number of individuals year to year due to natural variability. FTR uses long-term data sets, statistical analysis, and trout densities to measure success.

#### Surface Water Quality Monitoring:

FTR has 12 established surface water quality testing sites in the Teton Watershed, that are monitored twice annually (since 2003) for multiple parameters of concern, and has an established stream flow and temperature monitoring program via remote sensors and loggers placed in priority locations around the watershed (in 2020, FTR had 22 temperature and stream flow monitoring locations). While FTR conducts the majority of surface water monitoring in the watershed, IDEQ provides review and guidance for interpretation of results.

Collectively, this data has been used to inform watershed-wide strategies for implementation, which is reviewed annually at a Science Review Committee Meeting in conjunction with our agency partners and organizations. See footnote 1 on page 6 for a description of the “Science Review Committee.” FTR is a non-regulatory entity, but provides valuable scientific data to agencies that is used to inform state and federal management plans and strategic documents such as the US Fish and Wildlife Service Strategic Habitat Conservation in Idaho: Landscape Conservation Strategy (IFWO 2016), IDFG Fisheries Management Plan (2019-2024), the Idaho State Wildlife Action Plan (2017), IDEQ water quality plans (IDEQ Teton River sub-basin Total Maximum Daily Load Implementation Plan) and 303(d) listings, the Idaho State Forest Action Plan, and the National Fish Habitat Action Plan, and others.

Please see the Performance Measures section for details on quantifying specific project benefits.

### **E.1.6. Evaluation Criterion F—Department of the Interior and Bureau of Reclamation Priorities**

This project proposal demonstrates support for the following Department priorities:

#### ***1. Creating a conservation stewardship legacy second only to Teddy Roosevelt***

a. Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment.

All project development, and design is based on the best available science to identify best practices for land and water management and prioritize those projects with a long-term benefit. FTR uses robust monitoring and evaluation to assess the efficacy of our work and adaptively manage our approach to conservation as existing conditions change. will be developed to meet conservation metrics and outcomes, which will be adaptively managed as existing conditions change.

#### ***2. Utilizing our natural resources***

d. Manage competition for grazing resources

The proposed activities support the goal of “keeping working lands working” as an integral part of watershed conservation and stewardship. Well managed family farms and ranches keep agricultural and grazed parcels of land out of development. However, desirable grazing lands that offer natural water sources for cattle (rivers), compete with natural resource sustainability. The proposed project at the Buxton Property demonstrates how this competition can be addressed through mutually beneficial solutions that both utilize and conserve our natural resources.

#### ***3. Restoring trust with local communities***

b. Expand the lines of communication with governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, tribes, and local communities

The proposed projects have been an outgrowth of building trust amongst the agricultural community, fish and wildlife entities, local government, and state and

federal agencies. FTR coordinates open lines of communication and collaborates on projects that restore trust with our community of diverse stakeholders.

*Bureau of Reclamation Priorities:*

2. Leverage Science and Technology to Improve Water Supply Reliability to Communities

FTR and the Teton Water Users Association have sought to use science-based approaches to maintaining reliable water supplies for our community, including irrigation interests. In order to improve reliability and access to appropriated water rights, FTR has sought projects that improve delivery of those rights while also benefiting the fishery. The Desert Canal Fish Screen project demonstrates how technology can meet the needs of both.

*---End of the Technical Proposal---*

## II. D.2.2.5. Project Budget

### 1. Funding plan

Project Funding Sources	amount	match type	status
Jackson Hole One Fly Foundation	\$60,000	cash	received
Patagonia World Trout Initiative	\$11,000	cash	received
Cushman Family Foundation	\$25,000	cash	received
Friends of the Teton River	\$64,406	in-kind/cash	received
Desert Canal Irrigators	\$15,000	in-kind	pledged
Robert Piquet	\$22,500	in-kind	pledged
Teton Water Users Association	\$4,050	in-kind	pledged
<b>Total Non-federal match secured</b>	<b>\$201,956</b>		
<b>NRCS-EQIP (Federal)</b>	<b>\$ 118,230</b>	<b>Federal cash</b>	<b>Obligated to project partner</b>

The listed non-federal cash share (\$96,000) has been received, including funding from the Jackson Hole One Fly Foundation, Patagonia, and the Cushman Family Foundation. Please see the next page for the grant award/agreement letters documenting these match amounts.

FTR is contributing a total of \$64,406 (cash and in-kind) for the project:

- \$19,000 cash for the project design plans (NOTE: The project designs are currently underway and will be paid in-full before the award period).
- \$10,500 in-kind restoration materials (willows, restoration supplies)
- \$15,000 in-kind personnel expense (Restoration Director and Field Technician)
- \$299 in-kind mileage reimbursement
- \$290 in-kind monitoring supplies (temp loggers, staff gage)
- \$19,317 in-kind materials and equipment rental

Third-party in-kind contribution amounts documentation are found in the letters of support provided by Kane Brightman, Robert Piquet and the Teton Water Users Association in Section D.2.2.9. These include:

- The Desert Canal Irrigators (Kane Brightman) have committed to providing concrete services, calculated at \$15,000 as an in-kind match.
- Robert Piquet has committed to a \$22,500 in-kind match for Buxton restoration materials (willow poles) calculated at \$3 per pole, with 7,500 estimated for the restoration project.
- The Teton Water Users Association has valued their time for meetings and planning at \$4,050 (calculated as 6 meetings x 15 participants x 3 hours each x \$15/hour of in-kind volunteer time).

The total of the non-federal cash and in-kind contributions secured is \$201,956, to meet the 50% match requirement: with a request of \$201,285 from Reclamation. Federal matching funds (not counted as part of the cost-share) total \$118,230; for a combined project budget of \$521,471.

**Federal matching funds:**

As per communication with the NRCS office in Driggs on 11/10/2020, \$118,230 in EQIP funding has been obligated for the Buxton Restoration Project. FTR will be providing additional technical and construction assistance to Mr. Piquet beyond the scope of this funding, including plans and in-kind restoration materials. Please see the signed Operator Agreement and NRCS correspondence with funding commitment letters, in Attachment 1. These funds will be available before the start of the Reclamation Phase II grant period and FTR will document the obligation of these funds and their use on the project.

**2. Budget proposal**

TOTAL PROJECT COST Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$201,285
Costs to be paid by the applicant	\$278,636
Value of third-party contributions	\$41,550
<b>TOTAL PROJECT COST</b>	<b>\$521,471</b>

BUDGET Table

Budget Item Description	\$/Unit	Quantity	Quantity Type	Total Cost	Indirect Calculations
<b>Salaries and Wages</b>					
FTR Restoration Director (Project Manager)	\$28.15	600	hours	\$16,890.00	\$16,890.00
FTR Water Resources Director (TWUA Coordinator)	\$35.08	240	hours	\$8,419.20	\$8,419.20
FTR Field Technician	\$25.00	600	hours	\$15,000.00	\$15,000.00
<b>Fringe Benefits</b>					
Restoration Director Benefits	\$4.73	600	hours	\$2,838.00	\$2,838.00
Water Resources Director Benefits	\$3.86	240	hours	\$926.40	\$926.40
<b>Travel</b>					
FTR Mileage to sites	\$0.58	520	miles	\$299	\$299
<b>Supplies/Materials</b>					
Concrete *	\$1,000	30	cubic yards	\$30,000	\$30,000
By-pass return pipe*	\$32	62	feet	\$1,984	\$1,984
Boulders for canal abutment *	\$130	25	cubic yards	\$3,250	\$3,250
Embankment material*	\$21	173	cubic yards	\$3,633	\$3,633
1" Minus bedding material*	\$90	27	cubic yards	\$2,430	\$2,430
Geotextile*	\$10	107	square yards	\$1,070	\$1,070
Erosion Control*	\$750	1	per quote	\$750	\$750
Seed and mulch*	\$100	1	per quote	\$100	\$100

Willow clumps	\$35	300	per each	\$10,500	not used (in-kind)
Temperature logger	\$130	2	per each	\$260	\$130
Staff Gage	\$30	1	per each	\$30	\$30
<b>Equipment</b>					
Corrugated Water Screen w/Components*	\$90,000	1	per each	\$90,000	
Galvanized steel Parshall Flume*	\$21,600	1	per quote	\$21,600	
Access Walkway for Fish Screen*	\$7,500	1	per each	\$7,500	
24" Slide Gate*	\$7,500	1	per each	\$7,500	
Trash Rack*	\$7,000	1	per each	\$7,000	
<b>Contractual/Construction</b>					
GreatWest Engineering (see project estimate)*	see contractor estimate			\$45,304	\$25,000
Biota Research and Consulting	see contractor estimate			\$19,000	\$19,000
Buxton Restoration Construction Estimate	\$75	1500	linear foot	\$118,230	not used for MTDC
<b>Other (equipment rental)</b>					
Welder*	\$100	30	hours	\$3,000	
Dump truck*	\$120	30	hours	\$3,600	
skid steer*	\$100	30	hours	\$3,000	
compactor*	\$80	20	hours	\$1,600	
Excavator Rental*	\$150	60	hours	\$9,000	
Mobilization*				\$7,200	
<b>Third-Party In-Kind Contributions</b>					
Teton Water Users Association	\$15	160	hours	\$4,050	
Robert Piquet: Willow poles	\$3	7500	each	\$22,500	
Kane Brightman: Concrete	\$1,000	15	hours	\$15,000	
Total Direct Expenses				\$483,463	\$131,750
<b>Indirect Expense</b>					
10% de minimis	10%	\$131,750		\$13,175	
<b>TOTAL PROJECT COSTS</b>				<b>\$496,638</b>	
5% environmental Compliance				\$24,832	
<b>TOTAL BUDGET</b>				<b>\$521,471</b>	



### 3. Budget Narrative

#### *Salaries and Wages:*

The project manager for on-the-ground implementation of work at the Buxton property and the Desert Canal will be Mike Lien, FTR’s Restoration Director. It is estimated that Mike will spend 480 hours (or 6 weeks annually) on project work over a two year grant period, with an additional 120 hours (or 1.5 weeks per year) spent on stakeholder coordination and project evaluation (equivalent to 20% of salaried time each year of the project). Mike will oversee pre- and post-project monitoring, contracting, procurement and staging of materials, landowner and agency coordination, project construction, data analysis, and reporting of technical data.

Sarah Lien, Water Resources Director will coordinate BMP planning for the Buxton property, facilitate TWUA meetings, obtain input from stakeholders, and use this information to update the *Teton Watershed Restoration Plan*. It is estimated that Sarah will spend 240 hours over the course of the grant period on these tasks (with the majority of work in the second year).

FTR employs a seasonal Field Technician during a 7-month period each year to assist with monitoring programs, data collection, and assist with field projects. This position is paid hourly, without benefits at \$25/hour (including FICA/Worker’s Comp/unemployment costs). The Field Technician will directly report to and assist the Project Manager, Mike Lien, with water quality, fisheries and habitat monitoring, as well as assisting with willow pole collection, data logging, and analysis.

Compensation calculations and rates for salaried employees are shown in the table below, and reflect the total cost of employment, per employee. FICA, Workers’ Comp and Idaho State Unemployment Costs were calculated using standard rates for Idaho.

<b>Personnel Salary Table</b>						
Employee	Base Salary	FICA Taxes	Workers Comp	State Unemployment	Total Cost of Employment	Hourly Cost
Water Resources Dir.	\$66,536	\$5,089.97	\$805.08	\$536.28	\$72,967	\$35.08
Restoration Director	\$40,054	\$3,064.13	\$484.65	\$307.89	\$43,911	\$28.15

#### *Fringe Benefits:*

Fringe benefits are calculated using the annual health insurance premium rate (Idaho Blue Cross), a \$600 FSA/DRCA employer contribution (flex spending account/dependent care), a 3% employer matched retirement contribution with employee match, and a cellular phone plan reimbursement for \$360/annually. Please see the table below for rates/calculations.

<b>Fringe Benefits Table</b>						
Employee	Health Insurance	FSA contribution	Retirement 3% match	Cellular Phone Plan	Total Cost of Benefits	Hourly Cost
Water Resources Dir.	\$5,086.20	\$600	\$1,996.07	\$360	\$8,042.27	\$3.86
Restoration Director	\$5,223.93	\$600.00	\$1,201.62	\$360	\$7,385.55	\$4.73

***Travel:***

The anticipated travel expenses include local travel from the FTR office located in Driggs, Idaho to the Buxton Property (10 miles RT \* 20 trips =200 miles) and the Desert Canal (16 RT \* 20 trips =320 miles). FTR has calculated the cost of travel using the federal mileage rate of \$.575/mile. Travel associated with contractors is included in their bid.

***Equipment:***

Equipment costs are associated with project construction at the Desert Canal and include prefabricated fish screen and screen bay components, as listed on the project estimate from GreatWest Engineering. The contractor provided FTR with the cost estimate for these items and FTR will purchase them for installation by the contractor. FTR has experience installing other fish screens in the watershed. The corrugated water screen design is the most cost-effective for this application. Equipment rental costs are listed under the Budget category “other.”

***Materials and Supplies:***

Costs for materials and supplies for the Desert Canal have also been estimated by GreatWest Engineering. FTR will be able to purchase some of these supplies locally, while some will be provided by the contractor.

FTR will donate stockpiled willow clumps valued at \$10,500 (a quantity of 300 @ \$35/each). FTR will also provide two Tidbit onset stream temperature loggers for the Buxton site (\$130/each) and a metal staff gage at the Desert Canal (\$30) for project monitoring. Other in-kind restoration materials (willow poles) for the Buxton site are listed under “Third-Party in-kind contributions” and will be donated by the landowner. In-kind quantities of materials were estimated by the Project Manager for what can reasonably be expected to be collected on-site and utilized for streambank stabilization and revegetation efforts.

***Contractual:***

FTR has been working with GreatWest Engineering and Biota Research and Consulting to develop design plans and cost estimates for the Desert Canal and Buxton projects, respectively. Both contractors are qualified and experienced in implementing projects of the size, type and scope of the proposed work.

The work estimate provided by GreatWest Engineering includes project design costs at \$18,000, which FTR has already contracted for and will be counted as non-federal match for this grant. All other costs of supplies/materials, equipment, equipment rentals, mobilization, project management and travel expenses are estimated for implementation once funding is secured.

The estimate provided by Biota Research and Consulting is for project design costs (\$12,000) and project oversight (\$7,000). FTR has secured non-federal funding to pay for the project design before the start of the grant period and will count this toward the cost-share requirement.

FTR has a wide experience working with a number of private engineering firms over the past twenty years, and has selected these contractors based on expertise, cost-effectiveness and ability to do the work in a collaborative manner. The contractors named in this application and who are developing project design plans will have an opportunity to bid on project construction.

However, FTR will seek other qualified contractors through a competitive bid process to complete these projects on-time and budget. The cost estimates by GreatWest and Biota are in-line with local prices, going rates, and FTR's recent cost estimates for similar work.

The detailed estimate for the Buxton Restoration work has not been provided prior to the design plan, however, FTR uses a calculation of \$75/linear foot for estimating restoration costs (including supplies/materials, equipment, equipment rental, and contracted labor), which is very similar to the NRCS calculation of \$78.82/linear foot. FTR will help the lessee put the project out to bid at this rate. Since federal funding is being used for this portion of the project, it was omitted from the indirect cost base calculation, as noted.

Please see Attachment 2 for estimates from GreatWest and Biota.

***Other:***

This category includes equipment rentals, as listed in the GreatWest Engineering estimate. Also included as a line item is a lump sum quote for mobilization costs for staging/trailing equipment to the site (\$7,200). The estimate provided by GreatWest is very similar to mobilization costs for other FTR projects, recently completed (10/15/2020).

***Third-Party In-kind Contributions***

Third-party in-kind contributions are identified under "funding plan" on page 33.

***Indirect Costs***

FTR does not have an approved indirect cost-rate agreement and uses the 10% de minimis rate of modified total direct costs. Please refer to the indirect cost calculation in the right column of the Budget Proposal.

***Environmental Compliance***

FTR has included the 5% of the total project costs (direct and indirect) required for environmental compliance, totaling \$24,832.

***III. Environmental and Cultural Resources Considerations***

- 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.

Earth disturbing work requiring proper permitting and environmental compliance will occur at the Buxton Stream Restoration site. FTR will put in place the appropriate mitigation measures for all instream work and conduct activities in the fall, when flows are the lowest. These measures include silt screening, booms, and other erosion control measures. FTR completes project work with revegetation and restoration of the entire area of impact, including areas used to access the property. FTR will take the same measures on the Desert

Canal Fish Screen project, even though it receives an “irrigation exemption” as a canal. Any monitoring equipment placed in or near a waterway has no significant impact or disturbance, and has been considered “exempt” in past Reclamation grants.

- **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?** No federally threatened or endangered species are in either project area.
- **Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.** Yes, both project areas encompass “Waters of the United States.” The Desert Canal is adjacent to South Leigh Creek, but with the project site located on the downstream side of a canal headgate, there will be no significant negative impact to the natural waterway. The proposed restoration at the Buxton property is located on agricultural land adjacent to the Teton River that is also considered marginal wetland. The current use and grazing practices as well as the streambank stabilization will positively impact water quality and the ecology of this historically grazed area.
- **When was the water delivery system constructed?** While there are no written records for the construction of the Desert Canal, the oldest water right on the system is dated to 4/1/1889, which is the assumed date for when this water delivery system was brought into existence.
- **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 construction of the fish screen on the Desert Canal will not modify the conveyance of irrigation water down the canal system nor impact the headgate.
- **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.** No.
- **Are there any known archeological sites in the proposed project area?** No.
- **Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?** No.
- **Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?** NO. There are no tribal lands in the vicinity of the project areas.
- **Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?** No. FTR practices “clean, drain and dry” for all personal gear (waders, wading boots, and dip nets); and has an inspection and cleaning procedure for all heavy equipment within the project area to keep it free of invasive species. Restoration materials and supplies are free of invasive species.

#### **D.2.2.6. Required Permits or Approvals**

Please see section E.1.4. “Readiness to Proceed” for a description of required permits and approvals.

#### **D.2.2.8. Documentation in Support of Applicant Eligibility**

*Watershed group that meets the definition of a “Watershed Group,” as defined in Section 6001(5) of the Cooperative Watershed Management Act :*

Friends of the Teton River (FTR) certifies that it is a grassroots, non-regulatory, non-profit organization legally incorporated as a 501(c)(3). FTR was started in 2000 by a group of farmers, fishing guides, scientists, conservationists, and government agency representatives who shared concerns about the health of the watershed, specifically declining water quality, ground water supplies and the fishery. FTR uses sound science to protect and restore the water resources of the Teton Watershed by collaborating with local and regional partners to implement effective on-the-ground watershed projects and programs. FTR spent its first few years primarily focused on research and establishing baseline data for water quality, ground and surface water hydrology, and fisheries in the Teton River and its tributaries. Building on the results of this intensive (and ongoing) research, FTR developed an action-based strategic plan to guide work in the watershed, focusing on instream habitat improvements, stream flow restoration, and activities to limit sediment and nutrient inputs on the Teton River tributaries to the main stem. To implement this plan, FTR has organized its work in the following program areas: (1) stream channel and habitat restoration, including fish passage improvements, fish screens, and ladders (2) stream flow restoration (3) a “Farms and Fish” Program that works specifically with the farming and ranching community to implement strategies for improving soil health, water quality and use; (4) community education and outreach; and (5) watershed research and monitoring. FTR is committed to a collaborative approach, and regularly works with other nonprofit groups (local, regional, and national), government agencies (local, state, and federal), and a diverse cross-section of local stakeholders, both formally and informally, to find creative solutions to water resource problems in the Teton Watershed. As a membership-based charitable organization, FTR has more than 500 individual members who financially support our work. While too numerous to list, FTR has formed collaborative partnerships with a range of individuals and organizations including NGO’s, government agencies, elected officials, local businesses, educational institutions, local stakeholders and landowners to conduct research, restoration, and education programs. The members of the Teton Water Users Association and the partners with whom we conduct most of our work are listed in Evaluation Sections B and C.

#### **Articles of Incorporation and Bylaws**

Friends of the Teton River’s Articles of Incorporation and Bylaws are attached to this grant submission, identified as Attachment 3

#### **Mission Statement**

“The mission of Friends of the Teton River is to restore and conserve the Teton River Watershed, ensuring a lasting legacy of clean water, healthy streams, and a vibrant wild fishery. We implement programs and projects founded on sound science, community education, and in cooperation with landowners, citizens, and agency partners.”

## **Meetings**

FTR holds a regular annual meeting of the membership, as per its bylaws, usually in August. This meeting was held in an online format in 2020 to accommodate the Covid-19 pandemic. The Teton Water Users Association also holds regular meetings, at least bi-annually in the spring and fall. These meetings are currently being held by conference call, instead of in-person.

## **Watershed Restoration Plan**

The Teton Watershed Restoration Plan is attached in Appendix A. The portions of the plan supportive of the proposed projects are listed under Evaluation Criteria B, page 22.

### ***D.2.2.9. Letters of Support***

See letters of support from the following entities and project partners in Attachment 3.

- **Idaho Department of Environmental Quality**
- **Idaho Department of Fish and Game**
- **Lynn Bagley**, representing the Teton Soil Conservation District and the Teton Water Users Association
- **Robert Piquet**, project partner and Buxton Property lessee
- **Kane Brightman**, representing the Desert Canal Irrigators

### ***D.3 Unique Identifier and System for Award Management***

FTR is registered in the System for Award Management (SAM) with the unique Cage #3N4Y6 and DUNS #110921801



**D.2.2.10. Official Resolution**



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 signed copy of a resolution that was passed by the Friends of the Teton River (FTR) Board of Directors (Board), by voice vote and endorsed by a quorum of members at the Board Meeting 11/4/2020.

RESOLVED, that this Board of Directors hereby authorizes and directs Amy Verbeten, Executive Director to enter into a Cooperative Watershed Management Program Grant agreement, to support the implementation of the WaterSMART Phase II Grant for the Desert Canal Fish Screen and Buxton Restoration Project.

RESOLVED, that this Board of Directors has reviewed the grant application and supports 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.

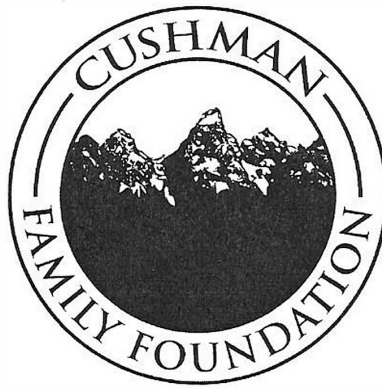
RESOLVED, that the applicant will work with the Bureau of Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

**11/5/2020**

---

**Lee Holmes, President**

**Date**



May 27, 2020

Friends of Teton River  
Attn: Amy Verbeten  
PO Box 768  
Driggs, ID 83422

Amy,

On behalf of the Cushman Family Foundation, enclosed is a check in the amount of \$50,000.00 to support Friends of Teton River. Please see detail below as to where funds shall be allocated;

- \$25k restricted to the Teton Creek project
- \$25K to the Teton River Restoration project between the Bates Bridge and Rainey Creek

The recipient's deposit or endorsement of the enclosed check will constitute the recipient's agreement with the terms set forth above.

Please send a copy of your 501c3 letter and any receipts, grant confirmations or other correspondence regarding this contribution to the mailing address or email specified below.

With any questions, please contact Laura Peterson at Johnson Financial Group, the administrator for the Cushman Family Foundation, at 720.475.1195 or [lkp@jfgllc.net](mailto:lkp@jfgllc.net).

Thanks,

Laura K. Peterson  
Administrator, Cushman Family Foundation  
Johnson Financial Group  
1144 15<sup>th</sup> Street  
Suite 3950  
Denver, CO 80202

ENCL: Check #1594 - \$50,000

**Jackson Hole One Fly Stream Habitat Improvement Committee  
Grant Agreement--2020**

**GRANT AGREEMENT ID:** 2020-042

**PROJECT TITLE:** Restoring Safe Passage for Yellowstone Cutthroat Trout in South Leigh Creek (ID)

**RECIPIENT:** Friends of the Teton River

**RECIPIENT TYPE:** Non-profit organization

**TAX ID NUMBER:** 82-0527505

**RECIPIENT CONTACT INFORMATION:**

Anna Lindstedt, Development Director  
Friends of the Teton River  
PO Box 768  
Driggs, ID 83422  
Email: [anna@tetonwater.org](mailto:anna@tetonwater.org)  
Office: 208-354-3871

**PERIOD OF PERFORMANCE:** 7/1/2020—12/31/2022

**PROJECT DESCRIPTION ABSTRACT:** This project will install a corrugated fish screen and passage return pipe which will help protect a priority spawning population of Yellowstone Cutthroat Trout (YCT) from entrapment and mortality in the Desert Canal, the last remaining unscreened irrigation diversion on upper South Leigh Creek. Fisheries monitoring since 2005 has indicated that South Leigh contains the largest allopatric YCT population in the upper Teton River Basin; it contains only native trout; and is a major source population for the main stem Teton River. It is estimated that a significant portion of the current population is lost to the canal each year. Installing a corrugated fish screen on this diversion will complete the last major passage improvement project on this perennial headwater stream as a part of a larger suite of projects undertaken since 2008. It will improve safe passage and connectivity for juvenile and fluvial trout migrating between National Forest habitat and the main stem Teton River, greatly reducing the risk of population loss to the canal and improving overall population numbers for pure YCT in South Leigh Creek and the Teton River.

**ONE FLY AWARD AMOUNT:** \$60,000

**MATCH REQUIREMENT:** \$215,000 (cash, inkind or combination)

**GRANT CONDITIONS:** The Jackson Hole One Fly Stream Habitat Improvement Committee awards grants for projects to improve habitat, water quality and instream flows for native fish conservation, and fishing access. The following grant agreement will represent the legal, valid, and binding obligation of the recipient, and is an enforceable contract between the recipient and

the One Fly to implement the project proposal submitted by the recipient and approved by One Fly on March 27, 2020.

Please assure reports are submitted on time and the proposed budget is followed as approved. Any variations to the approved grant project must receive pre-approval by One Fly via written amendment request.

**Documentation of Match:** The recipient is responsible for documenting the match directly related to implementation of the awarded project and received by the recipient, as described in the grant proposal, by the end of the period of performance.

**Restriction on use of funds:** The recipient may only use the funds as approved and awarded by the One Fly as described in the proposal. No funds may be used for lobbying or advocacy activities.

**Payment of funds:** Upon signature of the grant agreement, the recipient may request up to 90% of the total grant award in advance of initiating the project by submitting a written request to the authorized One Fly representative. Upon successful completion of the project and approval of the final report, the recipient can request the final 10% of the grant award in writing.

**Reporting due dates:**

Final Programmatic and Financial Report: January 31, 2023

**Amendments:** During the life of the approved project, the recipient is required to inform One Fly of any changes in contact information or scope of work, as well as any significant difficulties in completing the project as proposed and approved. The recipient must request any modifications to the grant activities or the budget in writing to One Fly in advance of undertaking those changes in order to initiate the preparation of an amendment to the grant award. Failure to do so may require One Fly to nullify this grant agreement.

**Termination:** This grant agreement may be terminated by either the recipient or One Fly upon written request.

**Subawards and subcontracts:** The recipient may not assign this grant agreement, in whole or in part, to any other individual or other legal entity, and shall not enter into subcontracts or subawards without the prior written approval from the authorized One Fly representative. Subawards or subcontracts with known parties disclosed in the proposal budget are deemed to be approved.

**Unexpended funds:** The recipient is responsible for managing their budget in accordance to the budget submitted in the proposal. If more than 10% variation of the total grant award will need to be modified, the recipient must contact the One Fly representative and request a budget amendment prior to the change in budget expenditures. Any unexpended funds at the end of the grant period will be returned to One Fly within 90 days of the end of the project period.

**Publicity and acknowledgement of One Fly support:** The recipient agrees to give appropriate credit to One Fly or any other funding source associated with this grant agreement for their financial support in any and all press releases, publications, annual meetings and reports, video credits, and other public communications regarding this grant agreement or any project deliverables associated with this grant agreement. The recipient must obtain prior approval for the use of the One Fly logo and any public information releases concerning this award.

**Posting final reports:** The recipient gives One Fly the right and authority to publicize the recipients grant on the web site, in press releases, publications and other public communications. The recipient hereby acknowledges its consent for One Fly to post its final reports on respective websites. If the recipient requests that the project reports not be posted on the One Fly website, the recipient will notify the One Fly in writing and provide the legal clarification as to why the information needs to be protected from public access.

**ONE FLY CONTACT:**

For project related questions, contact Krystyna Wolniakowski, One Fly Grants Manager by email [Krystyna@jacksonholeonefly.com](mailto:Krystyna@jacksonholeonefly.com), or cell phone 503-703-0245.

**SIGNATURES**

*Jackson Hole One Fly Stream Habitat Improvement:*

  
Robert Williamson \_\_\_\_\_ 4-3-20 Date

*Friends of the Teton River*

  
Anna Lindstedt, Development Director \_\_\_\_\_ Date: 3/31/2020  
(Name and Title)

# patagonia works

December 18, 2019

Anna Lindstedt  
Friends of the Teton River  
PO Box 768  
Driggs ID 83422

Dear Anna,

On behalf of Patagonia, I'm happy to send the enclosed check for \$11,000.00. Please use this grant for your project, Eliminating Entrapment for Cutthroat on South Leigh Creek.

By accepting this grant you acknowledge that Patagonia has not earmarked any portion of the grant funds to influence the outcome of any election for public office, carry on any voter registration drive, support lobbying activity or to otherwise support attempts to influence local, state, federal, or foreign legislation.

Important Grant Requirements: In an ongoing effort to reduce paper waste, our grant requirements are all handled through Cybergrants - the same online system you used to submit your original request. Please be sure to save your username, password and the link you used to apply to get back into the Cybergrants system. If you are having any technical difficulties or you have forgotten your username and/or password, please contact our Cybergrants support team by emailing them at [cgsupport@cybergrants.com](mailto:cgsupport@cybergrants.com).

1. Check Acknowledgment Letter: you should receive an automated email around the time you receive this check asking you to log back into your account in Cybergrants and follow the directions to upload a letter from your organization acknowledging that you received this check (to be used for our tax purposes).

2. 8-Month Progress Report: we will contact you in about 8 months via an automated email, asking you to log back into Cybergrants to answer a few simple questions about how your work has progressed so far. You will have one month to complete this report from the time you receive your email. This will be your only reporting requirement for this grant.

From all of us here at Patagonia, thank you for your important work.

Sincerely,



Keith Shattenkirk  
Environmental Program Officer  
Patagonia



Alex Cangialose  
Environmental Grants Officer  
Patagonia

259 W. Santa Clara St. Ventura CA 93001-2717  
P.O. BOX 428 Ventura CA 93002-0150  
(805) 643-8616 FAX (805) 653-6355

Subsidiaries: Patagonia, Inc., Great Pacific Iron Works (a California corporation)



**Patagonia.org**

259 W. Santa Clara St., Ventura, CA 93001  
(805) 643-8616

107427

Page 1 of 1  
Date: 12/16/2019

Account # 601974



Invoice Date	Invoice Number	Description	Gross Amt	Discount Amt	Net Amt
12/11/2019	58702435	34496895-Friends of the Teton	11,000.00		11,000.00
<b>TOTALS:</b>			11,000.00	0.00	11,000.00

WARNING: THIS DOCUMENT CONTAINS SEVERAL DOCUMENT SECURITY FEATURES - DO NOT CASH IF THE WORD VOID IS VISIBLE - SEE REVERSE SIDE FOR LIST OF SECURITY FEATURES

**Patagonia.org**

259 W. Santa Clara St., Ventura, CA 93001  
(805) 643-8616

Union Bank  
San Fernando Valley Corporate Deposits  
5855 Topanga Canyon Blvd., Suite 200  
Woodland Hills, CA 91367-4619

107427

16-49/1220

DATE	AMOUNT
12/16/2019	\$**** 11,000.00

**PAY** Eleven Thousand And 0/100 Dollars

**TO THE ORDER OF** FRIENDS OF THE TETON RIVER  
PO BOX 768  
DRIGGS, ID 83422-0768

*Yvonne Berwald*

*[Signature]*

AUTHORIZED SIGNATURE  
SIGNATURE HAS A BLUE-GREEN BACKGROUND - BORDER CONTAINS MICROPRINTING MP



## **Teton River Stream Restoration: Robert Piquet Project**

### **OPERATOR AGREEMENT**

#### **I. PURPOSE**

The following agreement details requirements of both **Friends of the Teton River** and Robert Piquet hereinafter referred to as "Operator", regarding a stream restoration project on Teton River. The costs of the project will be covered by the Natural Resources Conservation Service (NRCS) and Friends of the Teton River. Operator managed property and the project site are located approximately four miles west of Driggs on Bates Road and downstream of Bates Bridge on Teton River and is more particularly described as follows: Township 5 N, Range 45 E, SW ¼ of Section 30.

Operator certifies that it holds right, title, or interest in the property through which the project site to be accessed. Operator understands the objectives of the project as set forth in the project meeting held on June 19, 2020 with Friends of the Teton River and the NRCS. The project has been explained to Operator by Friends of the Teton River, and Operator supports the goals of the project. A set of Final Project Plans will be submitted to the Operator for approval once they are developed. All project costs will be the sole responsibility of the NRCS and Friends of the Teton River.

#### **II. PROJECT COST**

All cost for the Stream Restoration Project not covered by the NRCS will be covered by Friends of the Teton River including but not limited to the following: project engineering, project plans, permitting, project surveying, project materials, project construction, and project management. No costs for any aspect of the project will be incurred by the Operator.

#### **III. PROJECT IMPLEMENTATION**

Project development and implementation will proceed as follows: 1) Friends of the Teton River will develop a restoration plan set for the Operator to review prior to finalizing. Operator input is very valuable to the project success and will be incorporated into the plans to the Operator's

and the NRCS's satisfaction; 2) All necessary Permits will be submitted by Friends of the Teton River and secured prior to the start of construction. The Operator will be given copies of the permits; 3) Friends of the Teton River will chose a qualified contractor to construction the project; 4) Friends of the Teton River and the project designer will manage all aspects of the project and coordinate project activities with the Operator to the Operator's satisfaction; 5) The Operator will help provide materials for project construction such as willow poles, willow clumps, and sod when practical; and 6) Friends of the Teton River will remediate all areas disturbed by construction activities to the Operator's satisfaction.

#### **IV. ACCESS PERMISSION**

Operator hereby grants Friends of the Teton River, its contractors, representatives and agents permission to enter onto real property managed by the Operator to access the project site to conduct pre-project evaluation, project work, project inspections, and to monitor the project for needed maintenance following project completion. Access shall be limited to those portions of Operator's real property necessary to access the actual project site and those additional portions of the real property which must be traversed to gain access to the project site. Access areas will be approved of by the Operator prior to the start of construction activities.

Friends of the Teton River hereby agrees to minimize, to the greatest degree possible, any impacts to the property during each stage of the project, and to ensure that the project is constructed according to plan and in compliance with all necessary permits. All property used for the purpose of this project will be rehabilitated to the Operator's satisfaction. All fencing removed for the project will be replaced to the Operator's satisfaction.

#### **V. LANDOWNER ACKNOWLEDGEMENT**

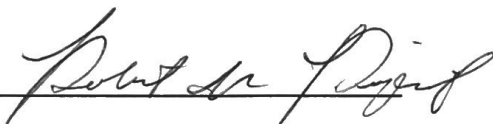
The Landowner acknowledges the project and has given the Operator permission to implement the project as set for forth in the terms and conditions of this Operator Agreement. A signed Landowner Acknowledgement Form used by the NRCS will be used to confirm Landowner acknowledgement of the project and permission to proceed with the project according to the terms and conditions in this Operator Agreement and is attached as Exhibit A.

#### **VI. DURATION OF NOTICE**

The term of this agreement shall be 5 years for work performance, maintenance, inspection, and monitoring purposes from the last date of execution shown below. Friends of the Teton River shall give the Operator reasonable and actual notice and coordinate any necessary arrangements prior to each needed access. Reasonable and actual notice may be given by mail, in person, or by telephone.

**Operator**

By: Robert Piquet

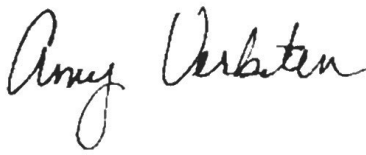
Signature: 

Title: Operator

Date: 7-23-20

**Friends of the Teton River**

By: Amy Verbeten

Signature: 

Title: Executive Director

Date: 7-23-20

violator to civil or criminal penalties. If you believe you have received this message in error, please notify the sender and delete the email immediately.

Attachment A

### Landowner Concurrence Form to Install Structural or Vegetative Conservation Activities

Applicants who are tenants of the land on which they have applied to receive NRCS assistance for the implementation of structural or vegetative conservation activities should use this form to obtain written documentation of landowner concurrence to the installation and maintenance of such conservation activities on the leased land. Structural and vegetative conservation activities are those activities with a lifespan greater than 1 year.

Applicant Name: <u>Robert Piguet</u>		Landowner Name: <u>Hatchet River Ranch</u>	
Application No.: <u>740211120142</u>		Farm Name (opt):	
Conservation Activity:	Farm No & Tract No.	Field Nos.	Lifespan (yrs)
1. <u>Streambank</u>	<u>F1263</u>		
2. <u>Shoreline protection</u>	<u>T 239</u>	<u>2</u>	<u>20</u>
3. <u>661 Heavy use area</u>	<u>F1263</u>	<u>12</u>	<u>10</u>
4. <u>1178 stream crossing</u>	<u>T 239</u>	<u>2, 10</u>	<u>10</u>
5. <u>378 truck water pond</u>	<u>F1263</u>	<u>1</u>	<u>20</u>
6. <u>516 pipeline</u>	<u>T 239</u>	<u>4, 5, 7, 9</u>	<u>20</u>
7. <u>614 watering facility</u>	<u>F1263</u>	<u>4, 5, 9</u>	<u>10</u>
8. <u>527 structure for water control</u>	<u>T 239</u>	<u>2</u>	<u>20</u>
9. <u>928 prescribed grazing</u>	<u>F1263</u>	<u>1, 2, 4, 5, 7, 9, 10</u>	<u>1</u>
10.			
11.			
12.			

\* The practice lifespan is the period in which the conservation activities are to be used and maintained for their intended purposes, as defined by NRCS standards.

#### Landowner Concurrence

By signing this form, I, the landowner, hereby agree that the above-named applicant, if awarded a contract with the USDA Natural Resources Conservation Service (NRCS), has permission to install and maintain conservation activities on the land identified. I understand that I am not a party to any contract between NRCS and the applicant to install the above-listed activities.

Landowner Signature:

Hatchet River Ranch by:

Ann Buxton

Print Name

Ann Buxton

Signature

Date: 7/9/2020



# Conservation Plan Map

Client(s): ROBERT M PIQUET  
Teton County, Idaho

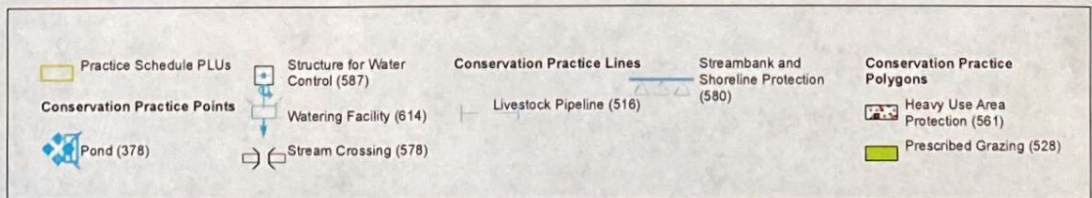
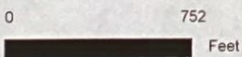
Assisted By: LINDSAY MARKEGARD  
USDA NRCS  
DRIGGS SERVICE CENTER  
TETON SOIL CONSERVATION DISTRICT

Land Units: Tract 239, Fields 1,10,2,4,5,7,9



USDA-NRCS-NGCE & USDA-FSA-APFO

Prepared with assistance from USDA-Natural Resources Conservation Service



---

**From:** Markegard, Lindsay - NRCS, Driggs, ID <lindsay.markegard@usda.gov>

**Sent:** Tuesday, November 10, 2020 8:00 AM

**To:** Anna Lindstedt <anna@tetonwater.org>

**Subject:** RE: Piquet EQIP funding

Hello!

Robert's project has been obligated, and it is a go. I have a dollar figure in there for the river work at \$118,230. I estimated the footage and he will get paid based on ft. of practice installed. We will pay 78.82/ft up to 1500 feet of measured installed practice after it is complete, then I will pay Robert that amount unless we make arrangements to do alternate payee with an assignment. Based on the design that Mike provided of the nearby project, this is the rate I anticipate using unless the design is much different.

Thanks,  
Lindsay

---

**From:** Anna Lindstedt <[anna@tetonwater.org](mailto:anna@tetonwater.org)>





## MEMORANDUM

**Date:** November 2, 2020

**To:** Mike Lien, Friends of the Teton River  
Anna Lindstedt, Friends of the Teton River

**From:** Great West Engineering

**Subject:** Desert Canal Fish Screen – Conceptual Submittal – Cost Summary

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The purpose of this memorandum is to summarize the estimated costs for the design, construction, bidding, and construction administration for the Desert Canal fish screen. See below for a summary of these costs; an itemized breakdown of construction costs can be found on the attached Opinion of Probable Cost sheet.

- Survey, Conceptual Design, and Final Design = \$18,000.00 (Contracted)
- Construction Administration (including preconstruction meeting and minutes, testing results review, RFI requests, inspection, submittal review, substantial walkthrough/punch list, as-built plans, closeout documents) = \$18,619.50
- Bidding (includes preparation of bidding and contract documents, bidding assistance) = \$1,434.00
- Project Staking = \$5,000
- Travel = \$2,250
- Project Materials and Construction = \$219,217
- **TOTAL = \$264,520.50**

This estimate for additional services does not include the following: adherence to other agency requirements, cultural resource inventory, permitting, wetland delineation, geotechnical investigation, biological assessment, floodplain modeling (project in FEMA Zone A), and landowner easements and agreements. Since the project is related to irrigation and does not directly affect South Leigh Creek, the assumption has been made that floodplain modeling/mapping will not be necessary.

**BUDGET TEMPLATE SHEET**

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					NOTES:	IN-KIND SERVICES**	IN-KIND CASH	TOTAL
<b>Personnel***</b>								
Survey, Conceptual Design & Final Design	1	Each	\$8,900.00	\$ 8,900.00	under contract			\$ -
Final Design	1	Each	\$9,100.00	\$ 9,100.00	under contract			\$ -
Construction Management	1	Each	\$18,619.50	\$ 18,619.50				\$ -
Bidding	1	Each	\$1,434.00	\$ 1,434.00				\$ -
Construction Staking	1	Each	\$5,000.00	\$ 5,000.00				\$ -
			Sub-Total	\$ 43,053.50		\$ -	\$ -	\$ -
<b>Travel Expense</b>								
Mileage	3000	Miles	\$0.65	\$ 1,950.00				\$ -
Per diem	6	Days	\$50.00	\$ 300.00				\$ -
			Sub-Total	\$ 2,250.00		\$ -	\$ -	\$ -
<b>Construction Materials****</b>								
Corrugated Water Screen w/Components	1	Each	\$85,000.00	\$ 85,000.00				\$ -
Trash Rack	1	Each	\$7,000.00	\$ 7,000.00				\$ -
Access Walkway for Fish Screen	1	Each	\$7,500.00	\$ 7,500.00				\$ -
Galvanized Steel Parshall Flume	1	Each	\$21,600	\$ 21,600.00				\$ -
24" Slide Gate	1	Each	\$7,500.00	\$ 7,500.00				\$ -
Non-Woven Separation Geotextile	107	Square Yards	\$10.00	\$ 1,070.00				\$ -
Unclassified Excavation and Embankment	173	Cubic Yards	\$21.00	\$ 3,633.00				\$ -
Cast-In-Place Concrete, Rebar, Formwork	45	Cubic Yards	\$1,000.00	\$ 45,000.00				\$ -
15" PIP Fish Return	62	Linear Feet	\$32.00	\$ 1,984.00				\$ -
Class I Riprap	25	Cubic Yards	\$130.00	\$ 3,250.00				\$ -
Erosion Control Components	1	Each	\$750.00	\$ 750.00				\$ -
1"-Minus Bedding Material	27	Cubic Yards	\$90.00	\$ 2,430.00				\$ -
Seed & Mulch	1	Each	\$100.00	\$ 100.00				\$ -
			Sub-Total	\$ 186,817.00	\$ -	\$ -	\$ -	\$ -
<b>Other</b>								
Fish Screen Delivery	1	Each	\$5,000.00	\$ 5,000.00				\$ -
Welder	30	Hours	\$100.00	\$ 3,000.00				\$ -
Hydraulic Excavator	30	Hours	\$150.00	\$ 9,000.00				\$ -
Dump Truck	30	Hours	\$120.00	\$ 3,600.00				\$ -
Skid Steer	30	Hours	\$100.00	\$ 3,000.00				\$ -
Compactor	20	Hours	\$80.00	\$ 1,600.00				\$ -
				\$				\$ -
				\$				\$ -
				\$				\$ -
				\$				\$ -
			Sub-Total	\$ 25,200.00	\$ -	\$ -	\$ -	\$ -
<b>Mobilization</b>								
Mobilization	1	Each	\$7,200.00	\$ 7,200.00				\$ -
<b>Summary</b>								
Personnel/Travel				\$ 45,303.50				\$ -
Construction Costs				\$ 219,217.00				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$	\$ -	\$ -	\$ -	\$ -
<b>TOTALS</b>				\$ 264,520.50	\$ -	\$ -	\$ -	\$ -

**OTHER REQUIREMENTS:**

Please see the example budget sheet

\*Units = feet, hours, inches, etc. Do not use lump sum unless there is no other way to describe the costs.

\*\*Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used for calculations). Describe here or in text.

**SCOPE OF WORK AND COSTS**  
**FINAL DESIGN, PERMITTING, CONSTRUCTION OVERSIGHT**  
**TETON RIVER RESTORATION PROJECT**  
**HATCHET RIVER RANCH LLC**  
**TETON COUNTY, IDAHO**



P. O. Box 8578, 140 E. Broadway, Suite 23, Jackson, Wyoming 83002; (307) 733-4216

November 9, 2020

**FINAL DESIGN AND PERMITTING PHASE** – Final designs will include design and construction drawings stamped by a licensed professional engineer, and complete project descriptions with construction specifications suitable for local, state, and federal permitting, as well as construction layout and oversight. The project will address the approximately 1,500-ft long river left river bank of the Teton River located on the Hatchet River Ranch LLC property. Project work will include submittal of a Joint Application for Permits and hydraulic analysis to support application for Teton County Floodplain Development Permit, and submittal of a FDP application. Project construction oversight will include treatment staking, pre-construction meeting with the contractor, oversight and direction during implementation, and post-construction meeting with the project team.

<b>TASK DESCRIPTION</b>	<b>ESTIMATED COST</b>
<b>Task 1 – Final Design</b> Develop final design plans and supporting documentation with detail suitable for permitting and construction, including detailed treatment quantities, construction methodology and specs, and project survey control.	<b>\$7,520</b>
<b>Task 2 – Joint Application Permitting</b> Complete and submit a joint application for permits to Army Corps of Engineers and Idaho Department of Water Resources.	<b>\$540</b>
<b>Task 3 – Teton County Floodplain Development Permitting</b> Complete and submit floodplain development permit application, including hydraulic modelling and reporting, to Teton County, Idaho.	<b>\$3,940</b>
<b>Task 4 – Construction Staking, Oversight, and Supervision</b> Complete construction staking, pre-construction meeting with contractor, construction direction and oversight during implementation, and post-construction meeting with project team.	<b>\$7,000</b>
<b>COST</b>	<b>\$19,000</b>



**FILED/EFFECTIVE**

ARTICLES OF INCORPORATION  
OF  
FRIENDS OF THE TETON RIVER, INC.

NOV 24 PM 4:08

STATE OF IDAHO

The undersigned incorporators, desiring to form a nonprofit corporation pursuant to the provisions of the Idaho Nonprofit Corporation Act, adopt the following Articles of Incorporation:

ARTICLE 1. Name. The name of the corporation is Friends of the Teton River, Inc.

ARTICLE 2. Purposes. The purposes of the corporation are to engage in exempt purposes within the meaning of Section 501(c)(3) of the Internal Revenue Code of 1986, as amended, in particular charitable, educational and scientific work relating to the Teton River and Teton River watershed. In furtherance of those purposes, the corporation may:

(a) Conduct scientific research and studies of the Teton River and Teton River watershed relating to the condition, preservation and restoration of water quality, wetlands, fish habitat and aquatic life.

(b) Provide input into management policies and practices for the Teton River and Teton River watershed to promote the preservation and restoration of the water quality, wetlands, fish habitat and aquatic life.

(c) Provide educational opportunities and information for youth and adults relating to the Teton River and Teton River watershed, its condition, preservation and restoration.

(d) Provide information to the public relating to the Teton River and Teton River watershed, its condition, preservation and restoration.

(e) Receive contributions and otherwise raise funds to support and further the purposes of the Corporation, including receiving, maintaining and administering such funds and expending principal and income therefrom in furtherance of the Corporation's purposes.

(f) Acquire, lease, purchase, sell, convey or otherwise dispose of real or personal property, and to invest, reinvest or deal with the principal or income of the Corporation to promote and further the Corporation's purposes.

(g) Make, enter and perform contracts of every kind and description necessary, advisable or expedient in carrying out the purposes of the Corporation with any person, firm, association, corporation, municipality, body politic, county, state, federal government or any other individual or entity.

(h) Transact any lawful activity consistent with the foregoing purposes.

C 136433

IDAHO SECRETARY OF STATE  
11/27/2008 09:00  
CK: 2621 CT: 22233 BH: 362907  
1 @ 20.00 = 20.00 INC WARD # 2  
NON EXPIRI # 3

The corporation is formed without profit as the object, shall be operated as a nonprofit corporation, and shall make no distributions of income to its members. Notwithstanding any other provisions of these Articles of Incorporation, the Corporation shall not carry on any activities not permitted to be carried on by a corporation exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code of 1986, as amended.

ARTICLE 3. Registered Office and Registered Agent. The address of the corporation's registered office in the state of Idaho is 394 South, Driggs, Idaho 83422. The name of the corporation's registered agent at such address is Tom Fenger.

ARTICLE 4. Directors. The Board of Directors shall consist of three (3) or more directors as set and elected in compliance with the corporation's bylaws. The number of individuals constituting the initial Board of Directors is five (5) and the names and addresses of the persons who are to serve as directors until the next annual meeting of the members or until their successors are elected and qualified are:

<u>Name</u>	<u>Address</u>
Lyn Benjamin	P.O. Box 564 Victor, Idaho 83455
Randy Berry	379 Adams Road Driggs, Idaho 83422
Tom Fenger	394 South Driggs, Idaho 83422
Lyle Kunz	140 North 3rd East Driggs, Idaho 83422
Boyd Moulton	156 West 550 South Victor, Idaho 83455

ARTICLE 5. Incorporators. The names and addresses of the incorporators of the corporation are:

<u>Name</u>	<u>Address</u>
Lyn Benjamin	P.O. Box 564 Victor, Idaho 83455
Tom Fenger	394 South Driggs, Idaho 83422

ARTICLE 6. Members. The corporation shall have members who are entitled to vote in accordance with the bylaws of the corporation. The corporation may have different classes of members, with and without voting rights, in accordance with the bylaws of the corporation.

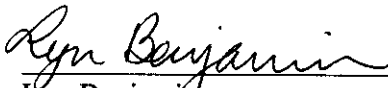
ARTICLE 7. Member Dues. The board of directors is authorized to fix the amount of dues payable by members of the corporation and the method of collection of member dues, which may be on a different basis upon different members, and may exempt some members from some or all dues in accordance with the bylaws of the corporation. Assessments of member dues may be enforced by the forfeiture of membership, upon notice given in writing twenty (20) days before such forfeiture.


ARTICLE 8. Bylaws. The initial bylaws shall be adopted by the initial board of directors by a majority vote. Thereafter, bylaws may be repealed, amended or new bylaws may be adopted as provided in the corporation's bylaws.

ARTICLE 9. Dissolution. Upon dissolution of the corporation, after the payment of all expenses and liabilities of the corporation, any remaining assets of the corporation shall be distributed to one (1) or more persons described in Section 501(c)(3) of the Internal Revenue Code, as amended.

IN WITNESS WHEREOF, the undersigned have executed these Articles of Incorporation this 22<sup>nd</sup> day of November, 2000.


INCORPORATORS

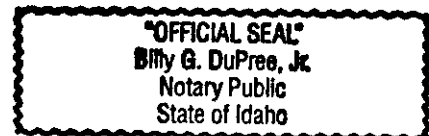
  
\_\_\_\_\_  
Lyn Benjamin

  
\_\_\_\_\_  
Tom Fenger

STATE OF IDAHO        )  
                                  ss:  
County of Madison     )

On this 22<sup>nd</sup> day of November, in the year 2000, before me, a Notary Public in and for said State, personally appeared Tom Fenger, known or identified to me (or proved to me on the oath of \_\_\_\_\_), to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

  
\_\_\_\_\_  
Notary Public for Idaho  
Residing at Rexburg, Idaho  
My Commission Expires: 12/4/04



STATE OF IDAHO        )  
                                  ss:  
County of Madison        )

On this 22<sup>nd</sup> day of November, in the year 2000, before me, a Notary Public in and for said State, personally appeared Lyn Benjamin, known or identified to me (or proved to me on the oath of \_\_\_\_\_), to be the person whose name is subscribed to the within instrument, and acknowledged to me that she executed the same.

Billy G. DuPree, Jr.  
Notary Public for Idaho  
Residing at Rexburg, Idaho  
My Commission Expires: 12/4/04



BYLAWS  
OF  
FRIENDS OF THE TETON RIVER, INC.

Adopted November 27, 2000; as further amended May 10, 2006

ARTICLE I. CORPORATION OFFICES

Section 1.1 Registered Office and Agent. The corporation shall continuously maintain a registered office and registered agent within the State of Idaho.

Section 1.2 Other Offices. Offices may be at any time established by the board of directors at any place or places where the corporation is qualified to do business.

ARTICLE II. MEMBERS

Section 2.1 Membership. The board of directors may establish classes of membership and annual dues at its discretion.

Section 2.2 Rights. Members shall be kept informed of the operations, projects, plans, and financial condition of the corporation, and any member's views presented in writing to the board or any of its officers or its executive director on significant matters shall be given consideration by the board.

Section 2.3 Annual meeting. The board shall set the time and place of the annual meeting of the members. The place of the meeting shall be within the upper Teton watershed. Notice of the annual meeting shall be given in writing to all members of record at least ten (10) days in advance. At the annual meeting, the board or staff shall bring the members in attendance up to date on the corporation's operations, projects, plans, and financial condition, and shall make available copies of the corporation's most recent annual report.

ARTICLE III. BOARD OF DIRECTORS

Section 3.1 Number and Qualification. The business of this corporation shall be managed by a board of not less than seven (7) and not more than fifteen (15) directors. Directors shall be nominated and selected for their ability to participate effectively in fulfilling the responsibilities of the board of directors and to participate in its standing or ad hoc committees. The number of directors may be increased or decreased and the qualifications changed by resolution adopted by the affirmative vote of not less than two-thirds (2/3) of the then existing board of directors of the corporation

Section 3.2 Election. New directors shall be elected at any board meeting by a majority of the existing board.

Section 3.3 Term. All directors shall be elected for a term of three (3) years. A director shall be eligible to serve consecutive terms, and may serve consecutive terms, if willing, upon

election by the board. Each director shall give the board notice of his/her willingness to serve another term at the end of their current term.

Section 3.4 Resignation, Removal, Vacancies. Any director may resign by giving written notice to the board, president, or secretary for the corporation, to take effect at the time specified therein, or, if not specified, upon acceptance by the board. Any director may be removed for cause upon a resolution by the board of directors and written notice by an officer of the corporation to the director so removed by personal delivery or by first-class mail, postage prepaid, to such removed director's last known address. Unexcused absence from four regularly scheduled meetings of the board of directors in any twelve-month period shall be, without limitation, cause for removal.

Section 3.5 Annual Meeting. An annual meeting of the board of directors shall be held at a time and place to be designated by the board. At the annual meeting, the board shall elect officers, adopt the annual budget, review the current strategic plan, and adopt any changes to the strategic plan.

Section 3.6 Regular Meeting. Meetings of the directors may be scheduled to be held during any year at such time and place as the directors may establish with all directors notified once of the schedule. No other notice to the directors of such regular meetings shall be required, and it shall be the duty of each director to attend the same without special notice. Directors shall be notified at least 10 days in advance of any change in time or place of a particular meeting.

Section 3.7 Special Meeting. Special meetings of the board of directors may be called at any time by the president or by any two (2) directors, such call stating the time and place of such meeting, and the purpose(s) for which it is to be held. Notice of a special meeting shall be given to each member at least forty-eight (48) hours prior to the meeting both by both telephone and e-mail if possible. A special meeting may be conducted via telephone or electronically at the discretion of the president or the directors calling for the meeting. Any action taken at a special meeting must be ratified by the board at its next regularly scheduled meeting.

Section 3.8 Quorum. A majority of the board shall be necessary to constitute a quorum for the transaction of business. If a quorum is present, the affirmative vote of a majority of the directors present is the act of the board, unless the Act, these bylaws, or the Articles of Incorporation require the vote of a greater number of directors.

Section 3.9 Compensation. Directors shall not receive, directly or indirectly, any salary, compensation or emolument from the corporation, for their services as a member of the board of directors or any of its standing or ad hoc committees. Directors shall be entitled to receive reimbursement from the corporation for expenses incurred while performing duties as a director upon presentation of a written statement therefor to the corporation accompanied by appropriate receipts, subject to approval by the board of directors. Nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity and receiving compensation therefor, subject to the conflict of interest provisions in Article VI.



Section 3.10 Contracts and Memoranda of Agreement. The board of directors shall be required to authorize any contract or other transaction involving a commitment of unencumbered corporate funds in excess of ten thousand dollars in any one year, or any memorandum of agreement or understanding, whether or not intended to be legally binding, with another organization. The board may authorize the executive director generally, or staff under the executive director's supervision, to enter into contracts or transactions for lesser amounts. No contract or other transaction between this corporation and any other corporation, association, firm or person shall be affected by the fact that the directors of this corporation are also interested in, or are directors or officers of such other corporation, association, or firm. Any director individually may be party to, or may be interested in any contract or transaction of this corporation, provided that such contract or transaction shall be fully disclosed, including disclosure of all material facts, and approved or ratified by the affirmative vote of at least a majority of the directors who are not so interested.

Section 3.11 Liability. No person shall be liable to the corporation for any loss or damage suffered by it on account of any action taken or omitted to be taken by him/her as a director, officer, or employee of the corporation or of any other corporation which he/she serves as a director or officer at the request of the corporation in good faith, if such person (a) exercised and used the same degree of care and skill as a prudent person would have exercised or used under the circumstances in the conduct of his/her own affairs, or (b) took or omitted to take such action in reliance upon advice of counsel for the corporation or upon statements made or information furnished by officers or employees of the company which he/she had reasonable grounds to believe. The foregoing shall not be exclusive of other rights and defenses to which he/she may be entitled as a matter of law.

Section 3.12 Committees. The board of directors may create one (1) or more committees of the board and appoint members of the board to serve on them. The standing committees of the board shall be Finance, Fundraising, and Governance. Each committee shall have two (2) or more directors, who serve at the pleasure of the board. Each committee shall have a chair, either appointed by the board or determined by the committee. The chair, or a designee, shall report to the board on the activities and recommendations of the committee at meetings of the board. The creation of a committee and appointment of members to it must be approved by a majority of all the directors in office when the action is taken. Each committee of the board may exercise the board's authority as authorized by the board at the time of creation of the committee. The board of directors reserves to itself alone the power to determine and levy assessments, adopt rules and regulations, authorize distributions in accordance with law, recommend to members any action requiring their approval, change the membership of any committee, fill vacancies therein, and discharge any committee either with or without cause at any time.

A majority of the members of any committee may fix its rules of procedure. All action by any committee shall be reported to the board of directors at a meeting succeeding such action and shall be subject to revision, alteration, and approval by the board of directors, provided that no rights or acts of third parties shall be affected by any such revision or alteration.

Section 3.13 Action Without Meeting. Action required or permitted by the Act to be taken at a board of directors' meeting may be taken without a meeting, if the action is taken by

all members of the board. The action must be evidenced by one (1) or more written consents describing the action taken, signed by each director, and included in the minutes filed with the corporate records reflecting the action taken. Action taken by written consent of the directors is effective when the last director signs the consent, unless the consent specifies a different effective date. A written consent signed by all the directors has the effect of a meeting vote and may be described as such in any document.

Section 3.14 Participation in Meetings by Telephone Conference. Members of the board of directors or of any committee of the board of directors may participate in and act at any meeting of the board of directors or committee by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other. Participation at such a meeting shall constitute attendance and presence in person at the meeting of the person or persons so participating.

Section 3.15 Powers and Duties of the Board. All corporate powers shall be exercised by or under the authority of, and the affairs of the corporation managed under the direction of, the corporation's board of directors.

Section 3.16 Procedure of Meetings. Roberts Rules of Order Revised, latest edition, shall govern procedure at all meetings of the board of directors and its committees on matters not covered expressly by these bylaws. Minutes of each regular or special meeting shall be recorded by the secretary, or a designee, and approved at the next regular meeting. A copy of the minutes shall be kept in the corporate records.

Section 3.17 Executive Committee. The officers of the corporation who are directors, or other directors as designated by the board, shall comprise an executive committee of at least three persons which shall have authority during the intervals between board meetings to exercise any of the powers of the board in situations where exercise of such powers is necessary before the next scheduled board meeting. The committee can act only by a majority vote with at least three members in attendance and must report any actions taken to the board at its next meeting, and any such actions must be ratified, rejected, or modified by the board.

#### ARTICLE IV. ADVISORY BOARDS

Section 4.1 Establishment. An advisory board may be appointed by the board of directors, or by the executive director upon authorization by the board of directors, the members of which shall be called upon, from time to time, to advise the board of directors, the officers, or staff in the performance of their duties. An advisory board shall not exercise any of the powers of the board of directors.

Section 4.2 Members. An advisory board shall consist of such number of members as appointed by the board of directors, or by the executive director with authorization from the board, in accordance with the provisions of these bylaws.

Section 4.3 Term and Resignation. The members of an advisory board shall serve no specified term. Term of service on the Advisory Board shall be unlimited. Any member of the

Advisory Board may resign by delivering notice of his or her resignation to the president or secretary of the corporation. The member's resignation shall become effective upon receipt of such notice. Acceptance of the resignation shall not be required.

Section 4.4 Appointment and Removal. Advisory board members may be removed at any time without cause.

Section 4.5 Meetings. Meetings of an advisory board may be called by at least two (2) members of the advisory board, by a majority of the board of directors, or by an officer or the executive director. Notice of the meetings, stating the time, place and purpose of the meetings shall be given to each member of the advisory board at least ten (10) business days before the scheduled meeting date, if possible.

## ARTICLE V. OFFICERS

Section 5.1 Titles, Qualifications, Election, Terms. The officers of the corporation shall be a president, a vice president, a secretary, and a treasurer. The same person may hold more than one (1) office. The board of directors may at its discretion appoint an executive director or general manager and such other officers, staff, and agents as it may deem advisable and prescribe the duties and authority thereof. The executive director or general manager may hire part-time staff at the executive director's or general manager's discretion, subject to the limitations on expenditures herein. The officers shall be elected at the annual meeting of the board. The president and vice president shall serve terms of one (1) year, and may serve up to three (3) consecutive terms. The secretary and treasurer shall not have limited terms.

Section 5.2 President. The president shall preside at all meetings of the members and directors and shall have general supervision of the affairs of the corporation; (s)he shall countersign or sign, as may be necessary, all such bills, notes, checks, contracts, and other instruments as may pertain to the ordinary course of the corporation's business; and shall sign, when duly authorized by the board of directors, all contracts, memoranda of understanding or agreement, deeds, bonds, mortgages, and other instruments of a special nature which commit, or could subject, the Corporation to an obligation of more than ten thousand dollars in a year. The president shall perform such other duties as may properly be required by the board of directors and the law.

Section 5.3 Vice President. The vice president shall possess all the powers and perform all the duties of the president in the event of the death, absence, disability or refusal to act of that officer, and shall have such other powers and discharge such other duties as may be assigned to him/her from time to time by the board of directors.

Section 5.4 Secretary. The secretary shall ensure that minutes of all meetings of the board of directors are kept. The secretary shall give notice of meetings of the board of directors in accordance with the provisions of these bylaws. (S)he shall perform such other duties as may be prescribed by the board of directors.

Section 5.5 Treasurer. The treasurer shall be responsible for ensuring the security of any and all money and securities of the corporation; shall ensure that a full and accurate record of accounts in books belonging to the corporation is kept, showing the transactions of the corporation, its accounts, liabilities and financial conditions; shall ensure deposit in the name of the corporation all money, checks, and obligations that may come into his/her hands, or the hands of any director or employee of the corporation, for the corporation's account, in such depository or depositories as are designated by the directors; shall, in consultation with the finance committee, or otherwise as directed by the board, authorize the development director, acting as finance director, to invest funds in accordance with approved policy; and shall disburse, or authorize disbursement of, funds of the corporation in payment of just demands against the corporation or in accordance with the general or special directions of the board of directors, taking proper vouchers for such disbursements.

The treasurer shall submit a full report of the financial condition of the corporation to the annual meeting of the members and to the board at the end of the fiscal year, and generally shall perform all duties incident to the position of treasurer, subject to the control of the board of directors.

Section 5.6 Absence or Inability. In case of the absence or inability to act of any officer of the corporation and of any person therein authorized to act in his/her place, the board of directors from time to time may delegate the powers and duties of such office to any other officers, or to any directors or to any other person whom they may select.

Section 5.7 Compensation. Unless otherwise approved by a majority of the board of directors, officers shall not receive, directly or indirectly, any salary, compensation or emolument from the corporation for their services. Each officer shall be entitled to receive reimbursement from the corporation for expenses incurred by such officer while performing his or her duties as an officer upon presentation of a written statement thereof to the corporation accompanied by appropriate receipts, subject to approval by the board of directors. Nothing herein shall be construed to preclude any officer from serving the corporation in any other capacity and receiving compensation therefor.

Section 5.8 Removal. Any officer elected by the board of directors may be removed at any time, with or without cause, by the affirmative vote of a majority of the whole board of directors.

Section 5.9 Vacancies. Vacancies in any office, arising from any cause, may be filled by the directors at any regular meeting or at any special meeting called for that purpose.

## ARTICLE VI. CONFLICT OF INTEREST

Section 6.1 Conflict Defined. A conflict of interest may exist when the interests or activities of any director, officer or staff member might be seen as competing with the interests or activities of the corporation; or the director, officer or staff member might be seen as deriving a financial or other material gain or benefit as a result of a direct or indirect relationship.

Section 6.2 Disclosure Required. Any possible conflict of interest shall be disclosed to the board of directors by the person concerned, if that person is a director or officer of the corporation; or to the president or to such person or persons as the president may designate, if the person is a member of the staff.

Section 6.3 Abstinence From Vote. When any conflict of interest is relevant to a matter requiring action by the board of directors, the interested person shall call it to the attention of the board of directors, or its appropriate committee, and such person shall not vote on the matter; provided, however, that any director disclosing a possible conflict of interest may be counted in determining the presence of a quorum at a meeting of the board of directors or a committee thereof.

Section 6.4 Absence From Discussion. Unless requested to remain present during the meeting, the person having the conflict shall retire from the room in which the board or its committee is meeting and shall not participate in the final deliberation or decision regarding the matter under consideration. However, that person shall provide the board or committee with any and all relevant information.

Section 6.5 Minutes. The minutes of the meeting of the board of directors or committee shall reflect that the conflict of interest was disclosed and that the interested person was not present during the final discussion or vote and did not vote. When there is doubt as to whether a conflict of interest exists, the matter shall be resolved by a vote of the board of directors, or its committee, excluding the person concerning whose situation the doubt has arisen.

Section 6.6 Annual Review. A copy of this conflict of interest bylaw, and any corresponding conflict of interest policy, shall be furnished to each director, officer and staff member who is presently serving the corporation, or who may hereafter become associated with the corporation. This policy shall be reviewed annually for the information and guidance of directors, officers and staff members. Any new directors, officers or staff members shall be advised of the bylaw and the corresponding policy upon undertaking the duties of such office or employment.

## ARTICLE VII. MISCELLANEOUS

Section 7.1 Fiscal Year. The fiscal year of the corporation shall be the calendar year.

Section 7.2 Audit. At the end of each fiscal year, the books of the corporation shall be closed and audited by a certified public accountant selected by the board of directors. The financial report of the auditor shall be presented to the board of directors at the next regular meeting following completion of the report.

Section 7.3 Depository. The monies of the corporation shall be deposited in the name of the corporation in such depository or depositories as may be designated by the board of directors, and shall be withdrawn or transferred therefrom only by checks or other instruments signed by

the treasurer, a designee of the treasurer, or other individuals designated by resolution of the board of directors.

Section 7.4 Loans. No loans shall be contracted on behalf of the corporation and no evidence of indebtedness shall be issued in its name unless authorized by a resolution of the board of directors. Such authority may be general or confined to specific instances.

Section 7.5 Records. The books, accounts and records of the corporation, except as may be otherwise required by the laws of the State of Idaho, may be kept at such place or places as the board of directors from time to time may designate. The board of directors shall determine whether and to what extent the accounts, books and records of the corporation, or any of them, shall be open to the inspection of the members, and no member shall have any right to inspect any account, book, or record of the corporation except as conferred by law or by resolution of the members or directors.

Section 7.6 Checks. All checks, notes, drafts and other negotiable instruments of the corporation shall be signed by such officers, employees or agents as the board of directors may from time to time by resolution, or through these bylaws, designate.

Section 7.7 Rules and Regulations. The board of directors shall be empowered by a majority vote to adopt and amend internal administrative rules and regulations governing the assets of the corporation.

Section 7.8 Indemnification of Directors and Officers. The corporation shall indemnify to the fullest extent permitted by law each of its directors, officers, employees and agents who was or is a party or made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with such action, suit or proceeding, if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. Indemnification provided by these bylaws shall be in addition to and independent of, and shall not be deemed exclusive of, any other rights to indemnification to which any person may be entitled by contract or otherwise under law.

Section 7.9 Grant Applications. The executive director or development director may sign all grant applications which are consistent with the stated mission of the Corporation. The executive director or development director shall report submission of all grant applications, and plans for submission of grant applications, to the board at its regularly scheduled meetings.



ARTICLE VIII. AMENDMENTS

Section 8.1 Procedure. These bylaws may be altered, amended, repealed and new bylaws adopted only by affirmative vote of two-thirds (2/3) of the members of the board of directors of the corporation.

Certificate of Adoption

I, the undersigned Secretary of Friends of the Teton River, Inc. (the "Corporation"), hereby certify that the foregoing amended Bylaws were adopted by resolution of the board of directors of the Corporation effective as of the 10<sup>th</sup> day of May, 2006.

\_\_\_\_\_  
Phyllis Anderson, Secretary



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

900 North Skyline Drive, Suite B • Idaho Falls, ID 83402 • (208) 528-2650

Brad Little, Governor  
Jesse Byrne, Director

November 2, 2020

Bureau of Reclamation  
Water Resources and Planning Office  
Attn: Ms. Avra Morgan or Robin Graber  
Mail Code: 86-69200  
P.O. Box 25007  
Denver, Colorado 80225

Dear Bureau of Reclamation Water Resources and Planning Office,

I am writing in support of the request by Friends of the Teton River (FTR) to the Bureau of Reclamation's WaterSMART Cooperative Watershed Management Program Phase II to implement stream restoration/bank stabilization, and revegetation activities on the Teton River at the Buxton Property downstream from the Bates Bridge Public Access.

The stream channel on this and other Teton River properties have sustained many historic and current alterations and practices by property owners that have caused extreme destabilization and sedimentation. These alterations have had severe impacts on water quality and instream habitat conditions in the Teton River. The Teton River is water quality impaired due to sediment and nutrient pollution.

The Idaho Department of Environmental Quality has made significant investments (through the Clean Water Act's 319 Non-point Source Pollution grant and in-kind staff support) to restore and stabilize areas of significant erosion and sources of sediment inputs to the river for the improvement of water quality, and overall watershed and fisheries health.

The project location adjacent to the Buxton Property is experiencing significant sedimentation, due to historic unmanaged cattle watering, removal of riparian vegetation, and excessive sediment entering the reach from upstream sources. For comparison, habitat surveys just up and downstream of this reach contain cleaner gravels, and more desirable habitat for native trout and other aquatic organisms.

The planning and restoration work at the Buxton Property will demonstrate to the agricultural community and various Teton River user groups the importance of implementing stream restoration and best management practices to improve ecosystem health, while continuing to improve water quality for fish, wildlife, and human health. I urge you to support their efforts and the project dollars FTR has leveraged, with an investment in their capacity to do the work.

Sincerely,

A handwritten signature in black ink, appearing to read "Troy Saffle".

Troy Saffle  
Regional Water Quality Manager



**IDAHO DEPARTMENT OF FISH AND GAME**

UPPER SNAKE REGION  
4279 Commerce Circle  
Idaho Falls, Idaho 83401

Brad Little / Governor  
Ed Schriever / Director

November 12, 2020

Bureau of Reclamation  
Water Resources and Planning Office  
Attn: Ms. Avra Morgan or Robin Graber  
Mail Code: 86-69200  
P.O. Box 25007  
Denver, Colorado 80225

Dear Ms. Avra Morgan and Robin Graber,

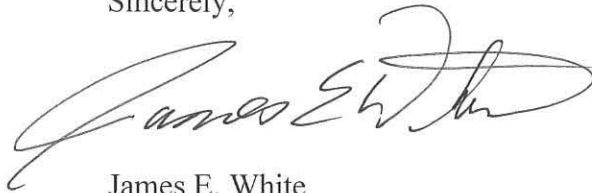
The Idaho Department of Fish and Game (IDFG) has reviewed Friends of the Teton River's (FTR) proposal to the Bureau of Reclamation under the WaterSMART Cooperative Watershed Management Program Phase II grant program. South Leigh Creek supports an ecologically important population of native Yellowstone Cutthroat Trout (YCT), and is one of only four upper Teton River tributaries to contain YCT without the presence of non-native trout.

The proposed project is expected to benefit YCT by limiting the number of fish lost from the population through entrainment into an irrigation canal and by improving habitat conditions in the Teton River near Buxton Bridge. Screening this last remaining irrigation canal on South Leigh Creek is considered a high priority for IDFG since South Leigh Creek is an important stream for YCT, both in terms of potential productivity and recruitment for the Teton River population.

Recent fisheries reports have indicated YCT abundance is lower in the Teton River new South Leigh Creek than in upstream reaches, and suspected reduced production in spawning tributaries could be part of the cause. Reducing entrainment of YCT in irrigation ditches would increase tributary productivity.

Collaborative efforts in the Teton Valley to improve stream connectivity, create quality functioning habitat, and improve relationships with landowners, management agencies, and non-profit groups has proven to be a valuable asset in YCT management and conservation efforts in Teton Valley.

Sincerely,

A handwritten signature in black ink, appearing to read "James E. White". The signature is fluid and cursive, with a large initial "J" and "W".

James E. White  
Upper Snake Regional Supervisor

bh/jew/jmh



275 Old Railroad Way  
Driggs ID 83422

October 29, 2020

Bureau of Reclamation  
Water Resources and Planning Office  
Attn: Ms. Avra Morgan or Robin Graber  
Mail Code: 86-69200  
P.O. Box 25007  
Denver, Colorado 80225

Please accept this letter of support for the proposal submitted by Friends of the Teton River (FTR) to the Bureau of Reclamation's WaterSMART Cooperative Watershed Management Program Phase II on behalf of the Teton Water Users Association (TWUA), on which I represent the Teton Soil Conservation District and local agricultural producers.

TWUA has a shared interest in improving the sustainability of agricultural business practices while implementing BMP's and priority projects aimed at reducing soil erosion, improving water quality, and meeting natural resource needs in Teton Basin. It is with this shared interest, that the TWUA are supporting the streambank restoration project on the Buxton property on the Teton River and the fish screen improvements on the Desert Canal. These project types are supported by the Teton Watershed Restoration Plan, which was developed under a WaterSMART Phase I grant in 2016.

The Association is committed to working with FTR to engage local ranchers and agricultural producers, implement treatments, and evaluate the success of the project; in order to advance land and water conservation in Teton Valley and transfer project knowledge and success to others in our area and region. We will use scientific data and stakeholder input to help guide future watershed management efforts within the Teton Basin. We estimate an in-kind match at \$4,050 for our time spent working with FTR in meetings of this group.

We fully support this project and look forward to creating win-win solutions for agricultural producers and the natural resources of our valley.

Sincerely,

Lynn Bagley, President  
Teton Soil Conservation District

November 11, 2020

Bureau of Reclamation  
Water Resources and Planning Office  
Attn: Ms. Avra Morgan or Robin Graber  
Mail Code: 86-69200  
P.O. Box 25007  
Denver, Colorado 80225

**To Whom it May Concern:**

I am the lessee of the property located approximately four miles west of Driggs on Bates Road and downstream of Bates Bridge on the Teton River at Township 5 N, Range 45 E, SW ¼ of Section 30 and have permission from owner Ann Buxton to proceed with the Stream Restoration Project proposed by Friends of the Teton River (FTR) to the Bureau of Reclamation WaterSMART Program Phase II grant funding opportunity.

I give permission to FTR, its contractors, and representatives to enter onto the property listed above, access the project site to conduct pre-project evaluation, project work, project inspections, and to monitor the project for needed maintenance following project completion.

I have met with FTR to discuss the project and support the goals as mutually beneficial for my grazing operation, improved water quality, and stream health. In addition, I am able to commit in-kind materials to the project including 7,500 poles valued at \$22,500 as a match for this project.

I would like to also add that it is a rare occurrence when all the entities involved can achieve their goals without requiring great sacrifice from another. I hope projects such as this can be used as an example for positive cooperation in the future.

Regards,

Robert Piquet

Piquet Land and Cattle

4815 Bates Rd

Driggs, ID 83422



11/2/2020

Bureau of Reclamation  
Water Resources and Planning Office  
Mail Code: 86-69200  
P.O. Box 25007  
Denver, Colorado 80225

To Whom it May Concern:

I am writing this letter on behalf of the Desert Canal Irrigators (Irrigators) to state our commitment to working with Friends of the Teton River (FTR), their contractors, and partners to install a corrugated fish screen on the Desert Canal Diversion on South Leigh Creek. I agree to allow FTR and their contractors, BOR Program representatives and associated partners or their designated staff to inspect the property at any mutually agreeable time for the purposes of this proposal. I understand I shall be notified in advance of all visits.

The Irrigators have been working directly with FTR to improve the head gate and diversion point, while reducing entrapment and fatality for Yellowstone Cutthroat Trout in the canal. After reviewing several options, the Desert Canal irrigators support a corrugated screen design, as it offers the most functional and economically feasible choice for meeting our water delivery needs and those of the fish.

The Irrigators are supportive of FTR's efforts on behalf of this collaborative project, as we do not have the capacity to undertake such a project without assistance. I will support the project through my time commitment and a pledge for concrete services valued at \$15,000.

Sincerely,

A handwritten signature in black ink that reads "Kane Brightman". The signature is written in a cursive, flowing style.

Kane Brightman  
On behalf of the Desert Canal Irrigators

**Final Performance Report**

**WaterSMART: Cooperative Watershed Management Grant**

**Expansion of an Existing Watershed Group: Improving Ecological Resilience, Conserving  
Water and Reducing Conflicts through formation of the Teton River Advisory Council**

**Grant Agreement #: R13AP80029**

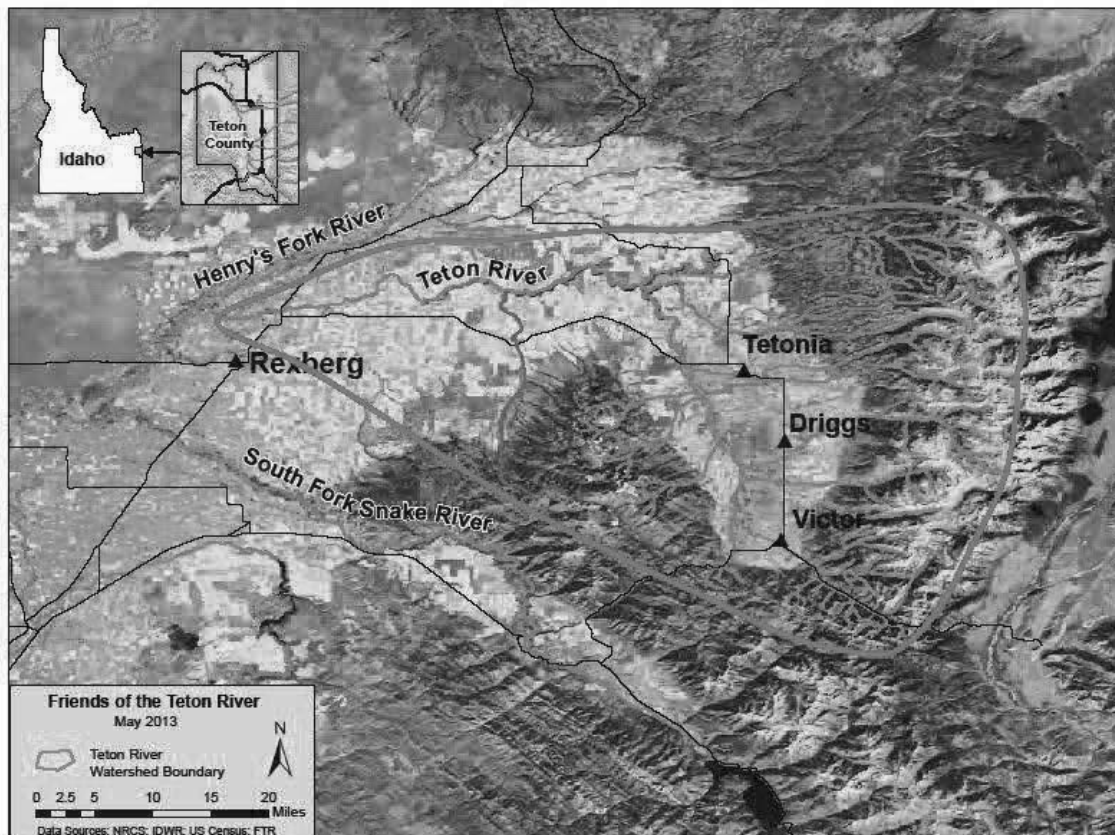
**Friends of the Teton River  
Final Report**

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## I. Background

Water has long played a central role in the cultural and economic prosperity of the Teton River watershed, outlined in the map below. 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, including:

- Cumulative impacts on water quality from fertilizer application and livestock have resulted in elevated nitrogen levels in both ground and surface water.

- Accelerated development pressures have resulted in channelization and rip-rapping of tributary streams, destruction of riparian vegetation, loss of connectivity between stream channels and their floodplains, and changes in historic land management practices.
- 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.<sup>1</sup> 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 River 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. This has significant impacts on fish and wildlife, including native Yellowstone cutthroat trout.
- As a result of water shortage across the Eastern Snake River Plain, the State of Idaho is expected to change the way it administers groundwater and surface water, making a move toward conjunctive management and the formation of a Groundwater Management Area that would encompass the Teton Watershed. Conjunctive water management threatens to significantly change both surface water and groundwater use by agricultural users, potentially diminishing agricultural land values, and increasing the likelihood of the conversion of agricultural land to suburban use.
- Development pressure to convert farmland to subdivision could lead to declines in local aquifer levels, which in turn may threaten residential, municipal, instream, and wetland water supplies.

Together, these factors and emerging forces are shaping a future water management paradigm that by necessity will look different from the past. Given the various interests that 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 response to these issues, the Teton Water Users Association (TWUA) formed, bringing together individuals that can, collectively, identify solutions that satisfy the needs of all constituents within the community – farmers who depend on water for crop production, municipalities that require clean and adequate water for residents, and fish and wildlife who rely on flowing streams to provide critical habitat and migration corridors to ensure their persistence in the watershed. The TWUA is working through a collaborative process to identify, prioritize and implement a water management and restoration plan (Plan), outlined herein, that works for the benefit of the community as a whole.

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

## **II. Teton Water Users Association**

### **a. Purpose**

The goal of the Teton Water Users Association is to engage partners in a process to develop a voluntary Plan that can be implemented over time to improve water availability, enhance water reliability, improve streamflows, and improve water quality in the Teton River and its tributaries, while meeting the needs of irrigators, municipal water providers, residential water users, and conservation interests.

### **b. Partners**

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 Tetonia, Idaho
- Teton County, Idaho
- Idaho Fish and Game
- Wyoming Game and Fish
- US Wildlife Service
- US Forest Service
- Idaho Department of Environmental Quality



### **c. Mission**

The TWUA developed the following three tiered mission 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.

### **III. Development of Water Management Plan**

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 in the context of TWUA effort is discussed below.

#### **a. 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 below.

**i. Irrigators – Problems, Goals, and Objectives**

	<b>Financial</b>	<b>Development/Urbanization</b>	<b>Regulatory Compliance</b>	<b>Water Supply</b>
<b>Problem</b>	<p>Increasing operations and maintenance costs due to aging infrastructure.</p> <p>Cost of improving, upgrading, and repairing aging irrigation infrastructure (both on-farm &amp; 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 &amp; how water is used on agricultural land.</p> <p>Right-of Way encroachments (i.e. – dumping trash in canals &amp; 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.</p>	<p>Need for increased water supply reliability on a year-to-year basis and during drought conditions.</p>
<b>Goal</b>	<p>Improve long-term financial security &amp; 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>
<b>Objectives</b>	<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; and 2. drought conditions.</p> <p>Generate alternative or additional sources of revenue to keep farms going, even when crop production is low.</p>

**ii. Municipalities/ County – Problems, Goals, and Objectives**

	<b>Financial</b>	<b>Development/Urbanization</b>	<b>Regulatory Compliance</b>	<b>Water Supply</b>
<b>Problem</b>	<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>
<b>Goal</b>	<p>Improve long-term financial security &amp; 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>
<b>Objectives</b>	<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"> <li>1. municipal water user supply needs; and</li> <li>2. drought conditions.</li> </ol> <p>Generate alternative or additional sources of water.</p>

### iii. Conservation Organizations – Problems, Goals, and Objectives

	Financial	Development/Urbanization	Regulatory Compliance	Water Supply
<b>Problem</b>	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>Possible construction of dams on the Teton River or tributaries.</p>
<b>Goal</b>	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 quantity and quality for fish and wildlife in critical tributary stream and river reaches. Identify ways to bolster water supply for ag producers, without constructing any dams on the Teton River.</p>
<b>Objectives</b>	<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>

## **b. Development of Potential Projects**

The work of developing potential projects was launched with a partner meeting in which all TWUA partners were encouraged to openly generate and brainstorm project ideas. The TWUA partners then worked collectively to identify those projects that would address documented partner goals, as outlined in section III, above. As a result, the problems, goals, and objectives identified by the various interest groups set the stage for, and in fact, directed the identification of potential projects. Potential projects identified by the TWUA are listed below.

### **i. Potential projects that address irrigator goals**

- Identify resources and develop partnership opportunities for water users to secure 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 ag 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.

### **ii. 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.

### iii. Potential projects that address conservation organization goals

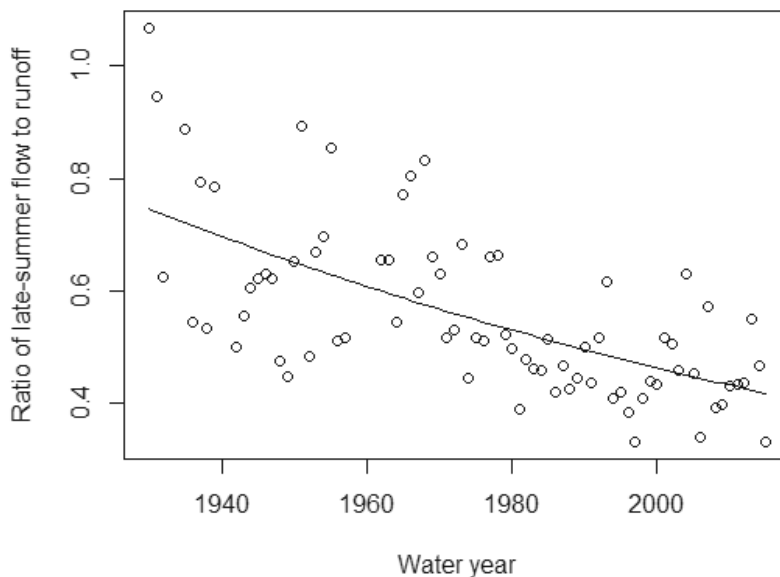
- Identify means by which to acquire additional water for environmental use.
- Identify resources and develop partnership opportunities for projects that address limiting factors impacting YCT.
- Encourage and provide mechanism for conservation organizations to participate in the water users association, 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 identified one project that has the potential to optimize outcomes for all three interest groups (agricultural, municipal/county, and conservation) – implementation of a strategy to revitalize traditional agricultural practices thereby increasing 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<sup>2,3</sup>. These declines in Teton Valley’s historical agricultural practices are linked to

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<sup>2</sup> 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](http://www2.humboldt.edu/henrysfork/Documents_Presentations/HFW%20Booklet%20final.pdf)

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 habitat and migratory corridors available for fish and wildlife. Cumulatively, these trends are raise concerns about long-term water availability for municipal and residential use, tributary 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.

The TWUA agreed that the water recharge project would consume the majority of its time and focus in the near-term. 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

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<sup>3</sup> 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.
- Development of a local water banking system
- 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

### **c. Optimization of Water Management Scenario**

The TWUA hired Dr. Rob VanKirk to assess the viability of conducting groundwater recharge in Teton Valley, 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. Dr. Rob VanKirk's work assisted the TWUA to develop the water management plan outlined in section V of this document, below. A summary of Dr. Rob VanKirk's hydrologic modeling work is attached, as Appendix A.

Dr. Rob VanKirk's work encouraged the TWUA to develop a phased water management plan that seeks to restore traditional irrigation practices in the Teton Valley to the greatest extent possible, thereby increasing groundwater recharge capacity to improve local aquifer levels, increase baseflows, and sustain water availability for fish and wildlife. Over the course of its history, Teton Valley has experienced three major development booms - one in the late 1970s, one in the mid-1990s, and one in the mid-2000s. Therefore, each phase of the water management plan aims to achieve water responses equivalent to that prior to each boom, with Phase I seeking to recharge approximately 10,000 acre feet of water, Phase II seeking to recharge approximately 20,000 acre feet of water, and Phase III seeking to recharge approximately 30,000 acre feet of water.

## **IV. Yellowstone cutthroat trout Conservation Plan**

Yellowstone cutthroat trout (YCT) are considered a species of special concern 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.

Given the current status of YCT, it became clear it would be necessary to ensure that the actions of the TWUA would preserve and protect YCT in the Teton River watershed. Thus the state and federal partners, including Idaho Department of Environmental Quality, Idaho Fish and Game, US Forest Service, and US Fish and Wildlife Service, set out to develop a document (a "YCT Conservation Addendum") which would provide a concise picture of the desired conservation outcomes in the Teton River watershed, as applied to Yellowstone cutthroat trout. The document clearly describes the applicable threats, necessary conservation measures, and stream priorities necessary for the protection and restoration of YCT in the Teton River watershed. The document functions to solidify the interests of these various entities and can be used to ensure that aquifer recharge efforts promote the maintenance and recovery of YCT in the Teton River watershed in the future.

The document has multiple benefits, including the following: (1) provide landowners and water right holders with a clear, concise picture of the conservation need as it pertains to YCT in the Teton River watershed; (2) generate dialog between entities working to implement conservation projects in the Teton River watershed, and define the roles and responsibilities for those entities; and (3) ensure that conservation work is directly tied into, and is in fact guided by, agency management plans.

The document reflects the collaborative work of all participating agency partners and is attached, as Appendix B.

## **V. Phased Water Management Plan**

The TWUA developed a phased water management strategy which defines temporal goals for accomplishing the objectives discussed above. The efforts described in the plan 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 the efforts set forth in the water management plan, set forth below, the TWUA's aim to:

1. Stabilize the Teton Valley aquifer, thereby protecting municipal and residential water supply;
2. Insulate farmers against changes in water availability and increase water-supply reliability, particularly during times of drought;
3. Maintain valuable wetland habitat and create tributary stream flow conditions beneficial for Yellowstone cutthroat trout; 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.

These goals will initially be achieved by actively and efficiently using existing irrigation water rights and, secondarily, by implementing a managed groundwater recharge program. Through the reinvigoration of Teton Valley's historic agricultural practices, 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.

The TWUA Phased Water Management Strategy is attached, as Appendix C. Cornerstone pieces of the document, including the goals, methods, and outcomes associated with each of the three phases are outlined below.

#### **a. Phase I**

**Goal:** Restore and reinvigorate traditional agricultural water practices in Teton Valley, mimicking water response comparable to the year 2000.

**Method:** More efficiently manage, divert, and distribute existing water rights in Teton Valley. Restore capacity to divert and apply an additional 85 cfs of natural flow for 60 days early in the irrigation season. Ensure that irrigation water rights are actively used for irrigation. Utilize historic flood irrigation practices when possible.

**Outcomes:**

- **Aquifer Recharge:** Approximately 10,000 acre feet of additional incidental recharge will result annually in 2017 and 2018.
- **Anticipated Local Aquifer Response:** Begin to stabilize the local Teton Valley aquifer.
- **Anticipated Downstream Response:** Increase base flows in the Teton River, measured at Harrop Bridge, by approximately 10-15 cfs.

**Timeframe:** 2017 – 2018

**Necessary Investments and Activities to Attain Goal:**

- Install stream gage downstream of Harrop 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.
- **GIS Work** - Electronically map and document the location and condition of canals and irrigation infrastructure.
- Identify and prioritize necessary canal and infrastructure repairs.
- Identify locations for operational spills and sites where flood irrigation techniques can be intensified.
- Repair canals and irrigation infrastructure to facilitate more efficient management of water and the use historic irrigation practices.
- Increase participation from canal companies and individual water right holders with the capacity to manage water more efficiently and use historic irrigation practices.

- Utilize existing groundwater-surface water models and conduct additional water availability and supply analyses in order to prioritize infrastructure improvements and optimize allocation of water supply among different uses in Teton Valley.
- Establish a website by which to notify participants as to when, and in what quantities, water can be diverted and distributed under existing water rights to maximize incidental recharge efforts.
- Partner with conservation interests, as well as Federal and State agencies, to investigate cost-share opportunities and ensure that canal repairs and improvements promote and secure fish and wildlife values. Coordinate water measurement and website training for participants.
- Conduct community outreach and education about program.

#### **b. Phase II**

Goal: Restore and reinvigorate traditional agricultural water practices in Teton Valley, mimicking water response comparable to the year 1990.

Method: Continue to more efficiently manage, divert, and distribute existing water rights in Teton Valley. Restore capacity to divert and apply an additional 170 cfs of natural flow (relative to current conditions) for 60 days early in the irrigation season. Ensure that irrigation water rights are actively used for irrigation. Utilize historic flood irrigation practices when possible.

Outcomes:

- Aquifer Recharge: Approximately 20,000 acre feet of additional incidental recharge will result annually in 2019 and 2020.
- Anticipated Local Aquifer Response: Continue to stabilize the local Teton Valley aquifer.
- Anticipated Downstream Response: Increase base flows in the Teton River, measured at Harrop Bridge, by approximately 15-25 cfs.

Timeframe: 2019 – 2020

Necessary Investments/Activities to Attain Goal:

- Maintain gaging station at Harrops Bridge and comparative base-flow analysis.
- Continue to repair canals and irrigation infrastructure necessary to promote the more efficient management of water.
- Assess opportunity for the construction of additional canal systems and laterals.
- Construct additional canal systems and laterals, where appropriate.
- Continue to secure additional participation from Teton Valley water right holders.

- Continue to partner with conservation interests, as well as Federal and State agencies, to investigate cost-share opportunities and ensure that canal repairs and improvements promote and secure fish and wildlife values.
- Develop a local water bank, groundwater district or other mechanism by which to facilitate the efficient movement and trading of water rights locally.

### c. Phase III

Goal: Restore and reinvigorate traditional agricultural water practices in Teton Valley, mimicking water response comparable to the year 1975.

Method: Continue to more efficiently manage, divert, and distribute existing water rights in Teton Valley. Restore capacity to divert and apply an additional 260 cfs of natural flow (relative to current conditions) for 60 days early in the irrigation season. Ensure that irrigation water rights are actively used for irrigation. Utilize historic flood irrigation practices when possible. Conduct management groundwater recharge.

Outcomes:

- Aquifer Recharge: Approximately 30,000 acre feet of additional incidental recharge will result annually, beginning in 2021.
- Anticipated Local Aquifer Response: Maintain the local Teton Valley aquifer.
- Anticipated Downstream Response: Increase base flows in the Teton River, measured at Harrop Bridge, by approximately 25-40 cfs, and restore the base-to-peak flow ratio depicted in the graph above to its 1975 level of 0.55.

Timeframe: 2021, and beyond

Necessary Investments/Actions to Attain Goal:

- Maintain gaging station at Harrop Bridge and base-flow response analysis.
- Assess opportunity for the construction of managed recharge sites (i.e. recharge pits and additional canal systems).
- Secure one or more recharge water rights.

## VI. Current Status of the Watershed Group – Future Work and Next Steps

The TWUA is committed to working collaboratively now, and into the future, to set in motion the phase water management plan outlined above. The TWUA partners are currently investigating and pursuing funding opportunities which will allow for the implementation of the phased water management plan. The TWUA is pursuing private, state, and federal grant funding sources. Receipt of funds will dictate the timing of implementation. Concurrently, the

TWUA has begun to work with local irrigators to assess the location and condition of existing canals and diversion infrastructure.

The expected outcomes associated with near term work outlined in Phase I and II include:

- The development of a local water bank to facilitate the timely lease and sale of water rights.
- Increased base-flow levels in the Teton River by approximately 25 cfs.
- Stabilization of local aquifer levels.
- Protection and stabilization of stream flow levels for fish and wildlife, including native Yellowstone cutthroat trout which is currently listed as a species of greatest concern in the State of Idaho.
- Continued collaboration of diverse interests to support water resource solutions founded on sound science and which address community drive goals and needs.

It is important to note that these outcomes support and are aligned with the: (1) goals and recommendations of the Henrys Fork Basin Study which was funded, in part, through a Bureau of Reclamation WaterSMART grant; (2) Idaho's Eastern Snake Plain Aquifer Comprehensive Management Plan and the recent settlement between the surface and groundwater users; and (3) the Idaho Water Resource Board's State Water Plan and specifically the water sustainability policy implementation strategies, which speak to the long-term sustainability and efficiency required in managing Idaho's water resources into the future.

## **VII. Lessons Learned**

A reflection of the work achieved through this grant, and the progress by which that work was achieved, evidences some minor deviations from how FTR originally conceived the completion of this grant. To be clear, the grant deliverables were certainly satisfied (a watershed group was formed, it developed a mission statement, it identified a series of potential projects, and then developed a resource plan which will guide years of future work and bring together a community), but the process by which the work was accomplished strayed from FTR's original grant application. In hindsight, this was critically important.

To do this work right, to really secure the buy-in of diverse stakeholders and the support of unlikely partners, requires that the path be circuitous. This work is not linear. To do something meaningful requires that the work be more organic, and that the people you ask to participate have a role in its creation. To make sure the effort assumes a life of its own requires that it look a little different than it was originally conceived. By necessity, the end product must incorporate views, perspectives, and approaches of others.

The work developed through this grant has been wildly successful. It has forged new and unlikely partnerships, it has opened constructive dialog between traditionally feuding interests, it has provided a vehicle by which to develop a water resource plan that will join, not divide a community. It has afforded Teton Valley's water users – irrigators, cities, county, and conservation interests – a means by which to plan for the future and generate solutions that address the goals of all individuals.



## **VIII. Appendix**

The following documents accompany this report:

- a.** Appendix A - Summary of Hydrologic Modeling Work by Dr. Rob VanKirk
- b.** Appendix B - YCT Prioritization Document
- c.** Appendix C – Phased Water Management Plan
- d.** Appendix D - TWUA PowerPoint Presentation

**Friends of the Teton River and the TWUA would like to thank the Bureau of Reclamation for its significant investment in this work.**

**Limiting factors potentially affecting the success of YCT in the priority streams and river reaches identified on the map include:**

- **Lack of quality stream habitat**
- **Lack of water**
- **Sedimentation**
- **Fish entrainment**
- **Elevated stream temperatures**
- **Competition with non-native fish species**
- **Physical Passage Barriers - harmful in some locations and beneficial in other locations**

**Projects that address these factors may include the following: stream habitat restoration and stabilization projects, restoring water to streams, re-vegetating stream banks, installing fish ladders and fish screens on irrigation canals, installing fish barriers, and removing fish barriers.**

**It is necessary to review and evaluate the potential impacts associated with a specific project, but in general the implementation of projects that seek to address the limiting factors listed above will be beneficial to YCT.**



### **Questions or Comments?**

**Please contact:**

- **Dan Garren - Idaho Fish and Game, Regional Fisheries Manger ([dan.garren@idfg.idaho.gov](mailto:dan.garren@idfg.idaho.gov))**
- **Rob Gipson - Wyoming Game and Fish, Regional Fisheries Supervisor ([rob.gipson@wyo.gov](mailto:rob.gipson@wyo.gov))**
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- **Cary Myler - U.S. Fish and Wildlife Service, Partners Program ([cary\\_myler@fws.gov](mailto:cary_myler@fws.gov))**
- **Lee Mabey - U.S. Forest Service, Caribou-Targhee Fisheries Biologist ([lmabey@fs.fed.us](mailto:lmabey@fs.fed.us))**

## **Streams and River Reaches Important to the Protection and Recovery of Yellowstone Cutthroat Trout In the Teton River Watershed**



**This document provides basic information about Yellowstone cutthroat trout to water right holders, river users, and private landowners to help promote actions that may protect and restore YCT populations in the Teton River Watershed.**



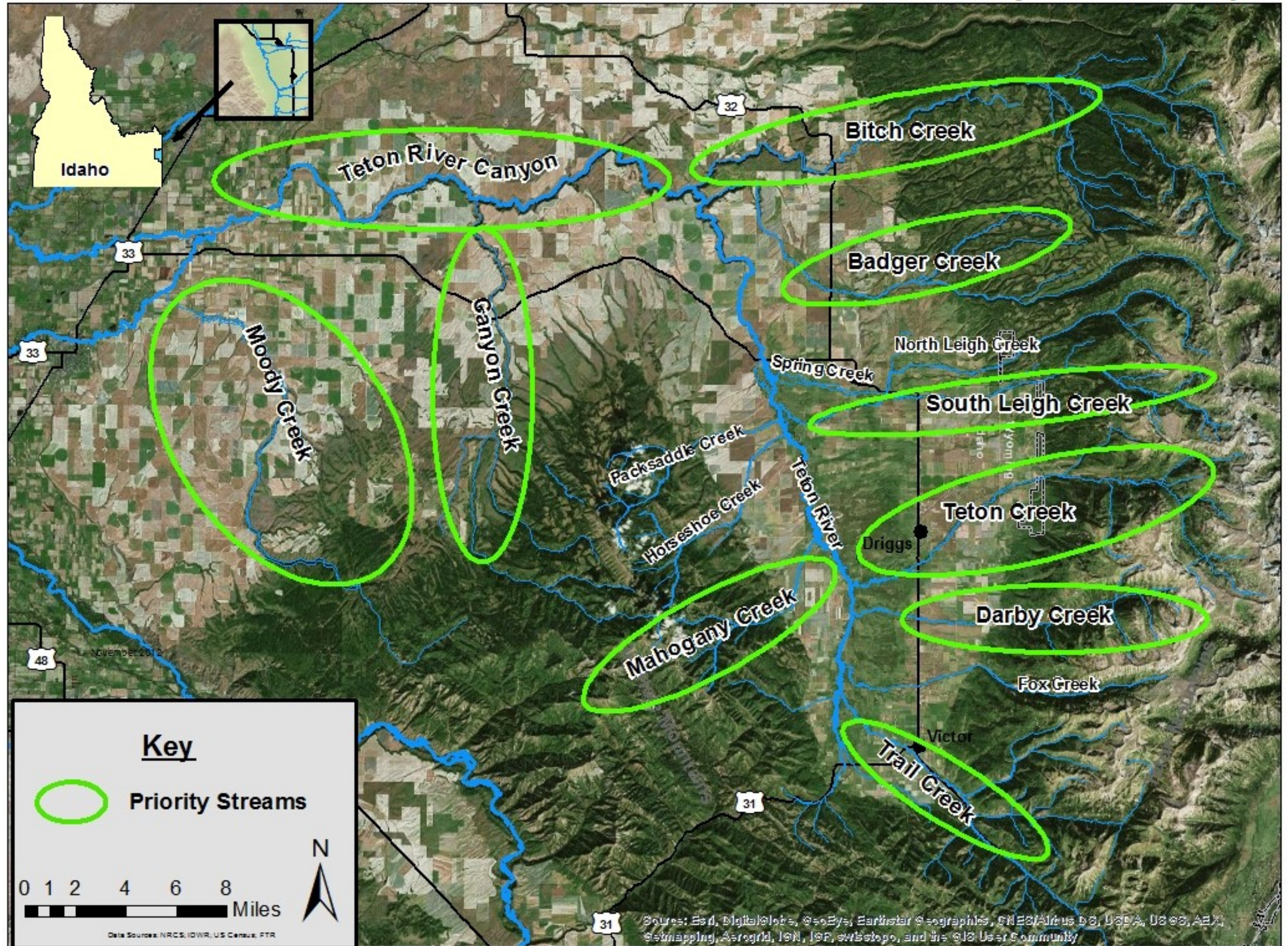
**This document is meant to be iterative in nature and shall be adapted in the future based upon research and data collection efforts, and application of the best scientific and management practices available at the time.**



# Teton River Watershed YCT Protection and Restoration Priority Streams Map

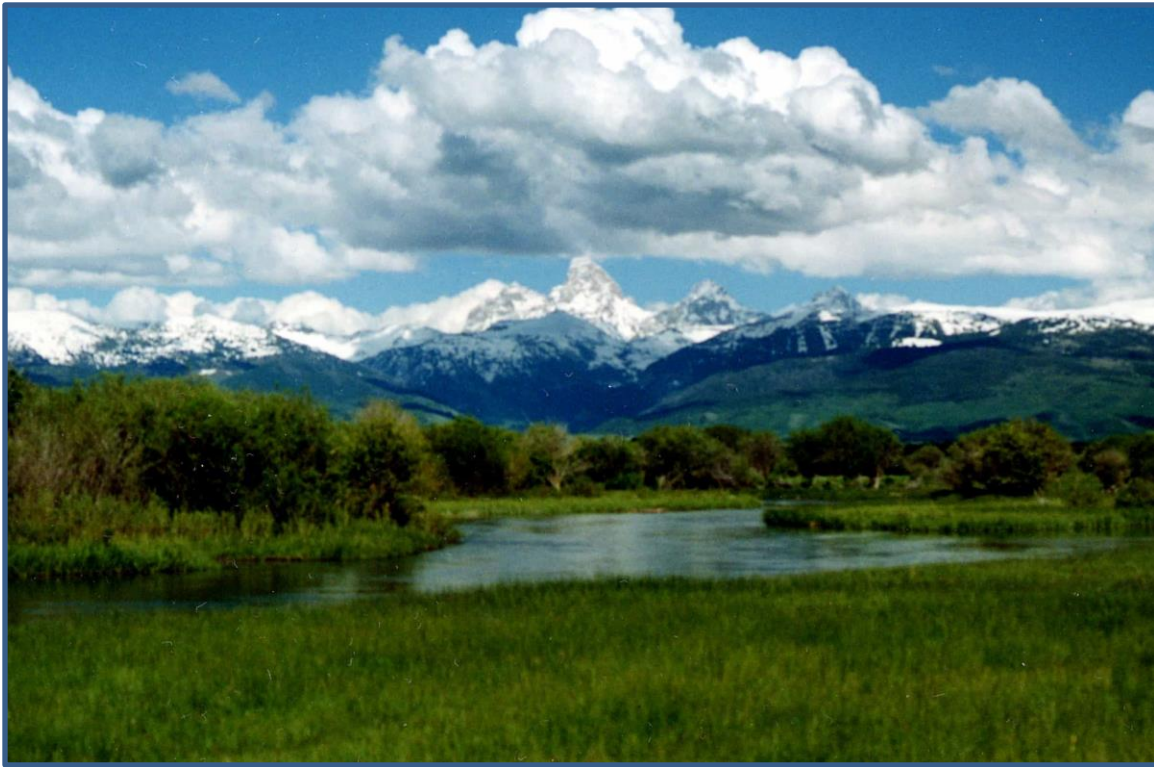
It is important to note that all of the tributaries in the Teton River Watershed, and the Teton River itself, are important to the long-term protection, restoration, and success of YCT in the region. However, the streams and river reaches identified on this map have been characterized as priorities.

In order to be categorized as a priority stream or river reach requires that either: (1) fluvial YCT have been captured and identified in the stream, or (2) there is a stronghold population of YCT that warrants protection.





# Teton River TMDL Addendum Implementation Plan for Agriculture (HUC 17040204)



Prepared by the Idaho Soil and Water Conservation Commission  
in cooperation with the Teton Soil Conservation District and Madison Soil and  
Water Conservation District

2020



SOIL & WATER  
CONSERVATION COMMISSION

*Original Plans: Teton River Subbasin Assessment and TMDL (IDEQ January 2003,) and Supplement to the Teton TMDL-Moody, Fox, and Spring Creeks (June 2003), Teton Subbasin Total Maximum Daily Load Implementation Plan for Agriculture (April 2005; Revised February 2014), Teton River Subbasin 2016 Total Maximum Daily Loads and Five-Year Review (October 2016)*

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## Introduction

### Purpose

The purpose of this implementation plan is to identify and recommend best management practices (BMPs) needed to meet the updated and additional Total Maximum Daily Loads (TMDLs) identified in the Teton River Subbasin 2016 Total Maximum Daily Loads and Five-Year Review (Tables 3-5). The Idaho Soil & Water Conservation Commission (ISWCC) is the agency responsible for preparing the implementation plan for agriculture and grazing, satisfying the requirements described in the Idaho Code 39-3601.

### Goals and Objectives

The goal of this plan is to restore and protect beneficial uses on the impaired segments by reducing the amount of pollutants from nonpoint agricultural sources and to provide a framework for local stakeholders to use in reaching TMDL goals. The objective of this plan is to provide guidance and recommendations for the Teton Soil Conservation District (TSCD); partnering agencies such as the Natural Resource Conservation Service (NRCS); and agricultural producers for the implementation of Best Management Practices (BMPs) that will reduce sediment and nutrient loads and increase shading along the stream corridors where feasible. This implementation plan will also build upon past conservation accomplishments that have been made and will assist other subbasin efforts in restoring beneficial uses in the Teton River subbasin.

This plan is not intended to identify site specific BMPs for agricultural fields; however, it does recommend BMPs for reducing water quality problems at a subbasin level. Agriculture is considered a nonpoint pollutant source; therefore, implementation efforts are completed on a voluntary basis. This plan recommends that agricultural landowners contact the Teton Soil Conservation District (TSCD), Natural Resources Conservation Service (NRCS), Idaho State Department of Agriculture (ISDA) and/or the Idaho Soil and Water Conservation Commission (ISWCC) for assistance. These agencies will help landowners determine the specific water quality and other natural resource concerns on their property.

## Project Setting

The Teton River subbasin (HUC 17040204) is located in east-central Idaho, with portions in Wyoming. Further information and characterization for the subbasin is found in the *Teton River Subbasin Assessment and TMDL*

([https://www.deq.idaho.gov/media/452220-teton\\_river\\_entire.pdf](https://www.deq.idaho.gov/media/452220-teton_river_entire.pdf)) (DEQ 2003),

*Supplement to the Teton River Total Maximum Daily Load – Moody, Fox, and Spring Creeks* ([https://www.deq.idaho.gov/media/452447-teton\\_river\\_supplement.pdf](https://www.deq.idaho.gov/media/452447-teton_river_supplement.pdf)) (DEQ 2003),

*Teton Subbasin Total Maximum Daily Load Implementation Plan for Agriculture* (<https://www.deq.idaho.gov/media/1117197/teton-river-ag-imp-plan-0214.pdf>) (IASCD 2005),

and the *Teton River Subbasin: 2016 Total Daily Maximum Daily Loads and Five-Year Review* (<https://www.deq.idaho.gov/media/60179183/teton-river-subbasin-2016-tmdl-five-year-review-1016.pdf>) (DEQ 2016)

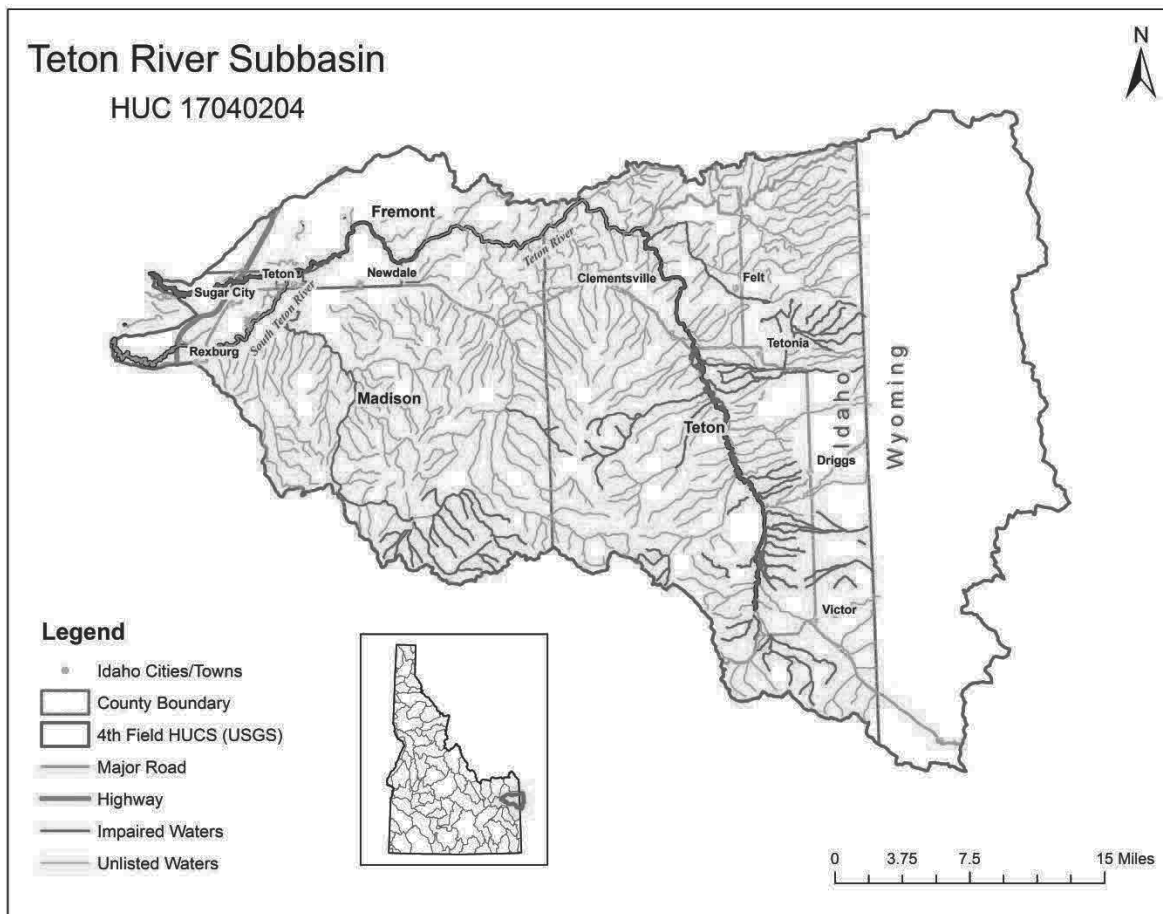


Figure A. Teton River Subbasin (TMDL and 5-Year Review, IDEQ 2016).



## Land Use and Land Ownership

Land use in the Teton River watershed is primarily agriculture. The majority of the watershed is privately owned (74%), followed by US Forest Service accounting for 20%. For a detailed description of land use, refer to the original TMDL Implementation Plan and Five-Year Review as referenced on the front page of this document.

Table 1. Current landownership in the Teton River subbasin-Idaho portion only (IDEQ, 2016a)

<b>Owner/Land Manager</b>	<b>Acreage</b>	<b>Percent of Basin</b>
Bureau of Land Management	10,443	1.98%
Bureau of Reclamation	2,858	.54%
Private	389,835	73.81%
State	18,416	3.49%
US Forest Service	106,581	20.18%
<b>Total</b>	<b>528,134</b>	<b>100%</b>

## Accomplishments

The Teton Subbasin TMDL Implementation Plan for Agriculture documents implementation efforts in the watershed up through the time of its publication in 2005. Projects installed were primarily funded with SAWQP and EQIP funds.

The 2016 TMDL and Five-Year Review also discusses implementation efforts up through the date of its publication in 2016 by various agencies, including the USFS, Idaho Fish and Game, and Idaho DEQ. There were several DEQ 319 grants dispersed and Idaho State Revolving Funds.

The Friends of the Teton River (FTR) has also been working diligently to improve water quality and restore and protect critical areas in the watershed. FTR was founded in 2001 and is comprised of local stakeholders. According to their website, FTR has worked for over a decade and invested \$3 million to research, restore and protect the Teton River Corridor. Some of their past and current projects are outlined below.

The Teton Valley Soil Health Initiative, which began with a request by the Teton Soil Conservation District to help purchase a no till drill, is focused on the implementation of no till methods, planting cover crops, using strategic crop rotations and implementing adaptive grazing practices. Through other partnerships, they were awarded \$750,000 in NRCS grant funding that will provide financial incentives to local producers to implement conservation farming practices.

The Teton Valley Aquifer Recharge Program works with willing agricultural and livestock producers to manage water on farms and ranches early in the irrigation season, so sustain water supplies for humans, fish, and wildlife into the late summer months.

By providing participants with the financial support to plan, implement, and monitor innovative methods, they reduce the financial risk associated with trying a new farming or ranching practice while also providing support for education through workshops and peer-to-peer learning.

For more information on FTR projects please refer to their website at <https://www.tetonwater.org/>.

The Fox Creek Mitigation Project with Teton County and the Teton Soil Conservation District. This project restored a section of Fox Creek to its original channel with vegetation and willow plantings, improving fish habitat, reducing erosion, stabilizing streambanks, and providing potential stream shade and stream temperature reduction.

## Resource Concerns

A detailed discussion of nonpoint sources is provided in the 2003 TMDL (DEQ 2003a). The nonpoint source pollutants addressed in this plan include sediment, bacteria and temperature. Sediment sources include streambank erosion, erosion from roads, and surface irrigated cropland. A large portion of streambank erosion occurs during spring snowmelt and runoff. Other causes of streambank erosion can include unmanaged livestock grazing in riparian areas and degradation of streambanks from high use by recreationalists.

Bacteria sources can also be attributed to unmanaged livestock grazing in riparian areas, concentrated livestock feeding and watering areas, waterfowl and wildlife, as well as failing septic systems

Altered stream segments and destabilized streambanks contribute to reduced riparian vegetation that would provide shade, which leads to excess solar load and increased instream water temperatures. The failure of the Teton Dam is also thought to increase the summer river temperatures.

## Sediment

The Teton River Subbasin 2016 TMDL and Five-Year Review identified 6 assessment units (AUs) requiring sediment load reductions (Table 2). Three AUs are updated TMDLs from 2003 and Three AUs have newly developed TMDLs.

Table 2. Current sediment loads and necessary reductions.

<b>AU (ID17040204)</b>	<b>Segment</b>	<b>Current Load (tons/year)</b>	<b>Load Alloc. (tons/year)</b>	<b>Load Red. (tons/year)</b>	<b>% Red.</b>	<b>TMDL Status</b>
SK006_02	South Fork Moody Creek	137	130	7	5%	New
	Fish Creek	1582	77	1505	95%	
	State Creek	178	13	165	93%	
SK017_04	Teton River	1222	405	817	64%	Updated
SK020_04	Teton River	934	361	573	59%	Updated
SK026_04	Teton River	166	57	109	63%	Updated
SK028_03	Teton River	137	46	91	64%	New
SK035_03	Trail Creek	854	114	740	87%	New

Three AU's (main stem Teton River, AU's listed in Table 2) received updated sediment TMDLs based on new in-channel load estimates. According to the Five-Year Review, monitoring in 2013 found a need to add streambank and substrate load within the main stem as a loading source. Idaho DEQ acknowledges that including the substrate as a loading source may lead to allocating loads and reductions twice because the actual source may have been accounted for as an upland source or upstream bank erosion. The recommendations set forth in the original agriculture implementation plan (IASCD 2005) for these AU's remain relevant as the treatment plan to reduce sediment and help to achieve necessary load reductions.

Three AUs require newly developed load reductions.

**SK 006\_02 – South Fork Moody Creek**

AU also includes Fish Creek State Creek.

**SK 028-03 - Teton River Warm and Drake Creeks Confluence to Trail Creek**

This segment was found to be a source to downstream AUs.

Excessive bank erosion and silt deposits on substrate were identified in-channel.

**SK 035-03 - Trail Creek pipeline diversion to mouth**

When water is present, this stream becomes a source of sediment to the Teton River.

## Bacteria

Water quality monitoring conducted by IDEQ since the 2003 Teton River subbasin TMDL was approved indicated that three additional stream segments required bacteria TMDLs because they did not meet water quality standards for *E. coli*. Idaho water quality standards (IDAPA 58.01.02.251.01) stipulate that *E. coli* is not to exceed 126 colony forming units (cfu) per 100 mL water sample, based on a geometric mean of several samples collected according to a specific protocol. The data collection and analyses are described in detail in the 2016 TMDL Five-Year Review (IDEQ, 2016).

For the Driggs Spring Complex and Woods Creek, a 2006 report by the FTR found that the primary source of *E. coli* was wildlife, particularly avian and/or waterfowl. According to the Five-Year Review, the discharges of these streams are minor compared to the Teton River and thought to be adequately diluted within a reasonable distance with no adverse impacts on primary contact recreation. North Fork Moody Creek is thought to be impacted by late summer grazing and wildlife.

Table 3. Bacteria loads and necessary reductions

<b>AU (ID17040204)</b>	<b>Segment</b>	<b>Current Load (cfu/day)</b>	<b>Load Alloc. (cfu/day)</b>	<b>Load Red. (cfu/day)</b>	<b>% Red.</b>
SK007_02	North Fork Moody Creek	$3.36 \times 10^{10}$	$4.66 \times 10^9$	$2.89 \times 10^{10}$	86%
SK049_02	Driggs Springs Complex	$4.25 \times 10^9$	$2.52 \times 10^9$	$1.73 \times 10^9$	41%
SK050_02	Woods Creek	$1.07 \times 10^{10}$	$6.33 \times 10^9$	$4.32 \times 10^9$	40%

## Temperature

The Teton River Subbasin 2016 TMDL and Five-Year Review updated 6 AU's (Table 4) for temperature using the potential natural vegetation (PNV) temperature TMDL methodology. PNV represents the "system potential" in a broad scale view. Shade targets are derived from shade curves of similar vegetation types and aerial photo interpretation. Aerial photo interpretations were partially field verified with Solar Pathfinder data. The recommendations in the original agriculture implementation plan (IASCD 2005) for these AU's remains relevant as the treatment plan to reduce temperature and help to achieve necessary load reductions.

The Teton River Subbasin 2016 TMDL and Five-Year Review addresses temperature TMDLs for 4 new AU's (Table 4) where monitoring determined exceedances of the salmonid spawning standard. Again, the effective target shade levels were established using the PNV methodology. Most of the excess heat loads result from lack of shade, rehabilitation is needed to achieve shade targets.

Table 4. Solar loads and necessary reductions

<b>AU (ID17040204)</b>	<b>Segment</b>	<b>Current Load (kWh/day)</b>	<b>Target Load</b>	<b>Load Red.</b>	<b>% Red.</b>	<b>TMDL Status</b>
SK026_02	Teton River	1,000,000	820,000	220,000	22%	Updated
SK041_02	Fox Creek	520,000	340,000	180,000	35%	Updated
SK042_02	Fox Creek	23,000	31,000	0	0	Updated
SK054_03	Spring Creek	520,000	470,000	57,000	11%	Updated
SK056_02	Spring Creek	420,000	240,000	180,000	35%	Updated
SK056_03	Spring Creek	68,000	58,000	10,000	15%	Updated
SK017_04	Teton River	2,500,000	2,100,000	340,000	20%	New
SK020_04	Teton River	3,700,000	2,700,000	1,000,000	27%	New
SK026_04	Teton River	2,300,000	870,000	1,500,000	65%	New
SK028_03	Teton River	310,000	220,000	89,000	29%	New

According to the Five-Year Review (DEQ 2016) all assessment units, with the exception of Fox Creek, lacked shade. Heat loads from the lack of shade contribute to impairments to beneficial uses. It was also noted that the main stem Teton River at its headwaters at the confluence of Drake and Warm Creeks has significant ground water inputs that may be an additional temperature source, but it is not deemed as the causal factor leading to exceedances of the salmonid spawning temperature standard. Multiple springs and wetlands also exist within the basin and it is unknown if they have a positive or negative effect on heat loads.

## **Treatment/Priority**

### **Treatment**

Individual conservation planning will determine the most appropriate BMP and quantity needed. Some of the voluntary BMPs that may be implemented for all assessment units would include fence, offsite watering, prescribed grazing, riparian herbaceous cover and tree and shrub establishment. Riparian planting and restoration techniques will stabilize the streambanks and make them resistant to water flow. Fencing off portions of these creeks would improve bank stability and allow for vegetation re-growth and new growth establishment. The riparian fencing could be installed to temporarily

exclude livestock during recovery and then allow the area to be part of a managed grazing system controlling the timing, frequency, duration and intensity of grazing. Offsite watering facilities, where feasible, would help to remove animal traffic and reduce erosion on the streambanks. Recommended BMPs are listed below in Table 5 and 6. These lists were drawn from information contained in the Conservation Practices Physical Effects section of the NRCS Field Office Technical Guide.

Table 5. BMPs recommended to decrease *E. coli* levels (NRCS Field Office Technical Guide)

<b>Practice Name</b>	<b>NRCS Practice Code</b>
Animal Trails and Walkways	575
Channel Stabilization	584
Channel Bank Vegetation	322
Conservation Cover	327
Constructed Wetland	656
Critical Area Planting	342
Grazing Land Mechanical Treatment	548
Prescribed Grazing	528
Range Planting	550
Riparian Forest Buffer	391
Riparian Herbaceous Cover	390
Spring Development	574
Tree/Shrub Establishment	612
Use Exclusion	472
Watering Facility	614

Table 6. BMPs recommended to increase shade and decrease stream temperature (NRCS Field Office Technical Guide)

<b>Practice Name</b>	<b>NRCS Practice Code</b>
Channel Stabilization	584
Channel Bank Vegetation	322
Critical Area Planting	342
Grade Stabilization Structure	410
Grassed Waterway	412
Grazing Land Mechanical Treatment	548
Prescribed Grazing	528
Range Planting	550
Riparian Forest Buffer	391
Riparian Herbaceous Cover	390
Spring Development	574
Streambank and Shoreline Protection	580
Stream Habitat Improvement and Manage	395
Tree/Shrub Establishment	612
Upland Wildlife Habitat Management	645
Use Exclusion	472
Watering Facility	614

The lists of potentially beneficial BMPs are to serve as a starting point for implementation activities in the subbasin. IDEQ recognizes that implementation strategies for TMDLs may need to be modified if monitoring shows that TMDL goals are not being met or significant progress is not being made toward achieving the goals.



The implementation strategies for addressing temperature TMDLs that are discussed in the 2005 Teton River subbasin TMDL implementation remain appropriate treatment recommendations. The change from a numeric temperature criterion to the PNV approach did not change implementation strategies for achieving the TMDL targets.

### Priority

Agricultural lands that contribute excessive pollutants to waterbodies were defined as critical areas for BMP implementation. Critical areas are prioritized based on proximity to the waterbody; potential for transport and delivery of pollutant to the waterbody; and water quality impact. Critical areas are those areas where treatment is considered necessary to address the resource concerns affecting water quality.

Site specific BMPs will be chosen based on a variety of factors, but typically reflect the landowner's objectives in conjunction with the resource concerns identified by the assisting agency. Implementation priority should focus on the critical areas that have the greatest potential for pollutant transport. However, implementation priority will likely be based on landowner interest and available funding.

### Funding

Financial and technical assistance for installation of BMPs may be needed to ensure success of this implementation plan. The Teton Soil Conservation District can assist interested landowners in actively pursuing potential funding sources to implement water quality improvements on private agricultural and grazing lands. The ISWCC and NRCS can provide technical assistance when needed. Many of these programs can be used in combination with each other to implement BMPs. These sources include (but are not limited to):

**CWA 319** –These are Environmental Protection Agency funds allocated to Tribal entities and the State of Idaho. The Idaho Department of Environmental Quality (IDEQ) administers the Clean Water Act §319 Non-point Source Management Program for areas outside the Tribal Reservations. Funds focus on projects to improve water quality and are usually related to the TMDL process.

[http://www.deq.idaho.gov/water/prog\\_issues/surface\\_water/nonpoint.cfm#management](http://www.deq.idaho.gov/water/prog_issues/surface_water/nonpoint.cfm#management)

**Resource Conservation and Rangeland Development Program (RCRDP)** –The RCRDP is a loan program administered by the ISWCC for implementation of agricultural and rangeland best management practices or loans to purchase equipment to increase conservation. <http://www.scc.state.id.us/programs.htm>

**Environmental Quality Incentives Program (EQIP):** EQIP provides financial and technical assistance to agricultural producers in order to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, reduced soil erosion and sedimentation or improved or created wildlife habitat. <http://www.nrcs.usda.gov/programs/eqip/>

**Regional Conservation Partnership Program (RCPP)** - RCPP promotes coordination between NRCS and its partners to deliver conservation assistance to producers and landowners. NRCS provides assistance to producers through partnership agreements and through program contracts or easement agreements.

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/rcpp/>

**The Agricultural Conservation Easement Program (ACEP)** – ACEP provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits. Under the Agricultural Land Easements component, NRCS helps Indian tribes, state and local governments and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements component, NRCS helps to restore, protect and enhance enrolled wetlands.

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/acep/>

**Conservation Technical Assistance (CTA)** –The CTA provides free technical assistance to help farmers and ranchers identify and solve natural resource problems on their farms and ranches. This might come as advice and counsel, through the design and implementation of a practice or treatment, or as part of an active conservation plan.

<http://www.nrcs.usda.gov/programs/cta/>

**National Grazing Lands Coalition (NatGLC)** –The National Grazing Lands Coalition’ promotes ecologically and economically sound management of grazing lands. Grants are available that facilitate the following: (1) demonstration of how improved soil health affects grazing lands sustainability (2) establishment of conservation partnerships, leadership and outreach, (3) education of grazing land managers, professionals, youth and the public (4) enhancement of technical capabilities, and (5) improvement in the understanding of the values and multiple services that grazing lands provide.

<http://www.glci.org/>

**Conservation Reserve Program (CRP)** –The CRP is a land retirement program for blocks of land or strips of land that protect the soil and water resources, such as buffers and grassed waterways <http://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/index>

**Conservation Innovation Grants (CIG)** –CIG is a voluntary program to stimulate the development and adoption of innovative conservation approaches and technologies for agricultural production.

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/cig/>

**State Revolving Loan Funds (SRF)** –These funds are administered through the IDEQ.

<https://www.deq.idaho.gov/water-quality/grants-loans/water-system-construction-loans.aspx>

**Conservation Security Program (CSP)** –CSP is a voluntary program that rewards the Nation’s premier farm and ranch land conservationists who meet the highest standards of conservation environmental management.

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/alphabetical/csp/>

**Habitat Improvement Program (HIP)** – This is an Idaho Department of Fish and Game program to provide technical and financial assistance to private landowners and public land managers who want to enhance upland game bird and waterfowl habitat. Funds are available for cost sharing on habitat projects in partnership with private landowners, non-profit organizations, and state and federal agencies.

<http://fishandgame.idaho.gov/cms/wildlife/hip/default.cfm>

**Partners for Fish and Wildlife Program in Idaho** – This is a U.S. Fish and Wildlife program providing funds for the restoration of degraded riparian areas along streams, and shallow wetland restoration. <http://www.fws.gov/partners/pdfs/ID-needs.pdf>

## Monitoring and Evaluation

### Field Level

As projects are implemented the existing shade levels should be documented before implementation of practices to verify the PNV aerial photo interpretation of the site. These before values should be compared to shade levels after implementation to determine actual shade increases of each project. This process will help evaluate the approach that was used in developing the temperature TMDL.

During the conservation planning process with individual participants, planned BMPs will be evaluated for effectiveness in addressing water quality. Erosion is predicted using the *Revised Universal Soil Loss Equation (RUSLE)* to estimate sheet and rill erosion and the *Surface Irrigation Soil Loss (SISL)* model to estimate irrigation-induced erosion. The *Water Quality Indicators Guide* is utilized to assess nitrogen, phosphorus, sediment, and bacteria contamination from agricultural land.

Participants who install BMPs in conjunction with a state or federal cost-share incentive program will be responsible for following NRCS standards and specifications and for maintaining the installed BMPs for the practice life span. The contract and/or conservation plan will outline the responsibility of the participant regarding operation and maintenance (O&M) for each BMP. Annual status reviews of contracts will be conducted to ensure the contract is on schedule and BMPs are being installed as planned.

BMP effectiveness monitoring will be conducted following installation to determine the relative effectiveness of implemented BMPs in reducing water quality impacts. These BMP effectiveness evaluations will be conducted according to the protocols outlined in the *Agriculture Pollution Abatement Plan* and the *ISWCC Field Guide for Evaluating BMP Effectiveness*.

Idaho's *OnePlan CAFO/AFO Assessment Worksheet* can be used by participants to evaluate and manage livestock waste, feeding, storage, and application areas.

#### Watershed Level

At the watershed level, there are governmental agencies such as the ISDA and IDEQ involved with water quality monitoring. Water quality monitoring is a key component in determining the results of implementation efforts and tracking progress towards achieving water quality standards. Trends are an important factor in determining whether or not standards are achievable given the level of effort expended.

IDEQ uses the Beneficial Use Reconnaissance Protocol (BURP) to collect and measure key water quality variables that aid in determining the beneficial use support status of Idaho's water bodies. Their determination reports if a water body is in compliance with water quality standards and criteria. In addition, IDEQ conducts five-year TMDL reviews to update implementation and monitoring efforts.

## References

IDEQ (January 2003). Teton River Subbasin Assessment and Total Maximum Daily Load.

IDEQ (June 2003). Supplement to the Teton River Total Maximum Daily Load – Moody, Fox, and Spring Creeks.

IDEQ. (April 2005; Revised February 2014). Teton Subbasin Total Maximum Daily Load Implementation Plan for Agriculture.

IDEQ (October 2016). Teton River Subbasin: 2016 Total Daily Maximum Daily Loads and Five-Year Review.