

Project Title:

**Reconnecting Canyon Creek:
Addressing Water Supply and Restoring Ecological Resource Function for the
Benefit of Fish, Wildlife, and Agricultural Water Users**

Applicant Information:

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Attachments/Appendices:

Mandatory Financial Forms: SF-424, SF-424A and SF424-B, SF424-D, and SF-LLL

Letters of Support and Partnership (Appendix A)

Plans and Surveys: (Appendix B)

GoldenWest: Schwendiman POD Pump Channel Plans, Schwendiman POD Diagram, Ricks POD, Canyon Creek Lateral POD, CC Lateral: Harris, CC Lateral: Walters

Biota Research and Consulting: Pump Channel Plans

Supporting Documentation: (Appendix C)

Canyon Creek Water Management Plan (*draft 11/1/21*)

2020 Technical Memorandum from Watercourse Engineering Inc.

Canyon Creek Pilot Agreement

D.2.2.4 Technical Proposal and Evaluation Criteria

D.2.2.4.1 Executive Summary:

Date: December 1, 2021

Applicant: Friends of the Teton River

City and State: Driggs, Idaho

County: Teton County

Category B Applicant, Submitting in Partnership with a Category A Partner:

Friends of the Teton River (FTR) is a grassroots, membership-based, non-profit conservation organization incorporated as a 501(c)(3) in December 2000 based in Teton County, Idaho to promote clean water, healthy streams, and a thriving wild fishery in the Teton Watershed. FTR was started 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 trout 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. The organization 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 water 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 nonprofit conservation organization, FTR seeks funding as a Category B applicant that is acting in partnership with, and with the agreement of, the Canyon Creek Canal Company (CCCC), a Category A applicant located in the State of Idaho. FTR and CCCC have worked side-by-side in the planning, scoping, and development of this project through a BOR WaterSMART CWMP Phase 1 planning grant. Both entities will participate in the implementation of the project. *Please see the **letter of partnership from Canyon Creek Canal Company (Appendix A)** confirming the partnership and support for the implementation of the project described in this application.*

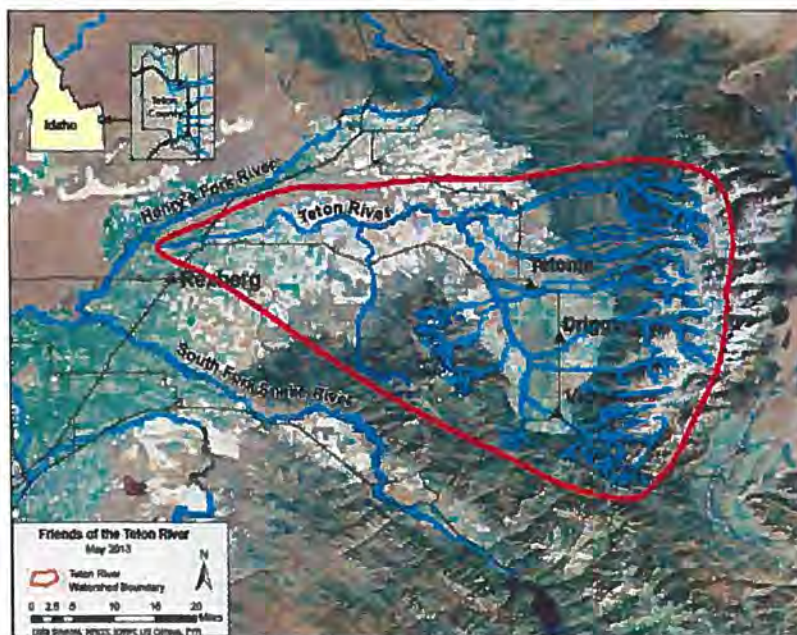
Project Summary:

Friends of the Teton River, in partnership with the Canyon Creek Canal Company, will restore instream flows in Canyon Creek, located east of Newdale, Idaho near the historic Teton Dam site. Canyon Creek supports a core conservation population of Yellowstone Cutthroat Trout (YCT) and is a high-priority for restoration due to its significance as a productive spawning tributary with 35 miles of high-elevation habitat. The lower 10 miles of stream to the confluence

with the Teton River Canyon has been seasonally dewatered at the Canyon Creek Canal, diverting 70 cfs of water to irrigate 10,615 acres of high-value farm ground. In addition to the ecological and water quality issues related to dewatering, the canal poses a severe entrainment hazard for YCT of all age classes, that prevents their migration and spawning success. To discontinue diversion at the Canyon Creek Canal, FTR and the CCCC will make infrastructure improvements and management changes at three irrigation systems, increasing their capacity and ability to deliver water from the Teton River. This will allow CCCC shareholders to divert their water shares from the main stem river, which is *not* flow limited, instead of Canyon Creek, which *is* flow limited. These changes will result in restoring up to 10,680 acre-feet of water annually to Canyon Creek and a water savings of 4.73 cfs, providing greater water supply reliability for the irrigation company as well as downstream water users. Once the project is complete, CCCC will close the canal and, in so doing, fully address fish entrainment, habitat connectivity, and water quality impairment. This project provides a unique opportunity to collaboratively address water supply and ecosystem needs in a comprehensive for an entire sub-watershed. Grant activities will be completed within two years of grant award, from September 1, 2022—August 31, 2024. This project is supported by the Canyon Creek Water Management Plan (developed through a Phase I WaterSMART grant, Agreement #R19AP00152), and is endorsed by a broad range of stakeholders including other irrigation delivery entities, conservation groups, government agencies, and water users.

D.2.2.4.2 Project Location

The Canyon Creek sub-watershed is located in Teton and Madison counties in southeast Idaho; approximately 8 miles E of Newdale (direct distance) and 15 miles W of Teton (direct distance). The United States Geological Survey (USGS) Hydrologic Unit Code for the Teton Basin is HUC 1704020406. The primary project benefits will accrue on Canyon Creek, from the Canyon Creek Canal headgate downstream to the confluence with the Teton River main stem. The coordinates for the Canyon Creek Canal are 43.933303 N latitude, -111.61030 W longitude. The Canyon Creek Hydrologic Unit Code is 1704020406; it drains approximately 83,000 acres or 130 square miles. Project activities will occur on the main stem Teton River, between the mouth of Canyon Creek and the historic Teton Dam site, and on property located in the vicinity of Newdale, Idaho. *Please reference the **Project Map** on page 6.*



For broader context, Canyon Creek, which is a tributary to the Teton River, is located in the Teton Watershed which drains an area of 806 square miles in Idaho and 327 square miles in Wyoming. The Teton 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. Twenty river miles southwest of this point, the Henry's Fork joins the South Fork to form the main stem of the Snake River. The Teton Watershed encompasses approximately 664 square miles of the Greater Yellowstone Ecosystem (GYE), with Grand Teton National Park to the east, and Yellowstone National Park to the north. Approximately 25% of the Teton Watershed is federally or state-owned, and most of this land is managed by the Caribou-Targhee National Forest.

The proposed project will generate benefits primarily located within the Canyon Creek drainage, a wild and remote stream which spans more than 45 miles from its headwaters on the northern flank of the Big Hole Mountains to its confluence with the Teton. Canyon Creek is a spawning stream for large, river-run (or fluvial) Yellowstone Cutthroat Trout (YCT). Historically, each spring, large numbers of native cutthroat made their way to the headwaters of Canyon Creek to spawn. However, as the land was settled and used for agriculture and recreation, spawning runs were heavily impacted by recreation, habitat fragmentation and dewatering. Despite these challenges, fluvial fish still make it up Canyon Creek to reproduce and have shown a positive response to conservation projects implemented in this sub-watershed in the last twelve years. The uppermost reaches of Canyon Creek are within the Caribou-Targhee National Forest Boundary and are used for cattle grazing and hunting and fishing access. The proposed project will focus on the lower 10 miles of Canyon Creek (down to the confluence with the Teton River Canyon). This reach is adjacent to private land and is used to irrigate lands within an irrigation service area spanning over 10,000 acres that produces primarily potatoes, barley, and hay crops. There are also a few private residences, a private hunting and fishing lodge, and a privately-owned hot springs complex and campground located along Canyon Creek.



Canyon Creek, looking upstream, at the step-pools near the Canyon Creek Canal.



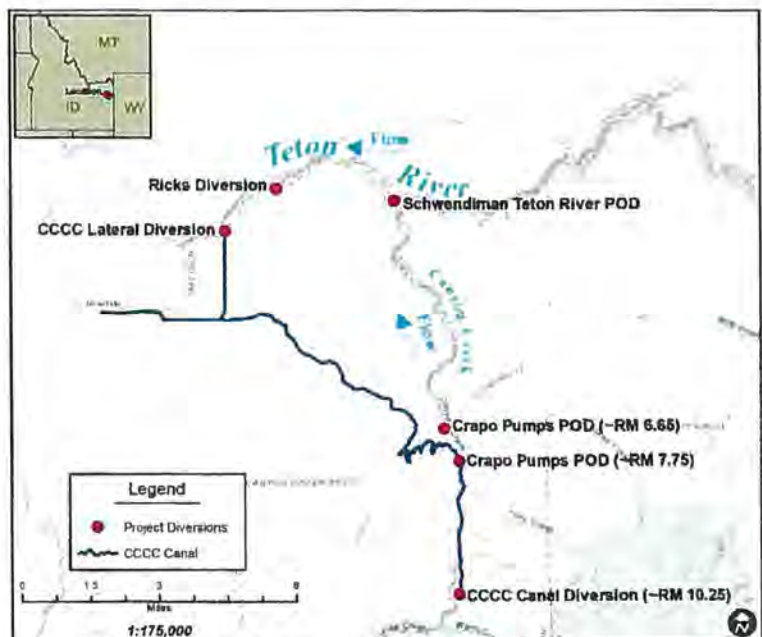
Lower Canyon Creek, looking downstream to the confluence with the Teton River Canyon.

D.2.2.4.3 Technical Project Description

Background: Friends of the Teton River has been working with partners on Canyon Creek since 2008 to develop and implement a suite of strategies to restore flow and improve habitat conditions in this priority tributary. FTR and the Canyon Creek irrigators started by working to remove barriers that prevented fish migration and to restore degraded habitat. With the participation and support of adjacent landowners and irrigators, four major passage projects were completed between 2010 and 2015. The completed projects include: restoring fish passage at two pump stations (2012 and 2013); completing 1,650 feet of stream bank restoration at Lazy Triple Creek Ranch (2014); and replacing the Canyon Creek Canal check-dam with step-pools (2015) to restore fish passage. These projects combined, improved habitat and restored passage, and during times of adequate flow have connected 45 miles of valuable spawning, rearing, and holding habitat located between the confluence and the headwaters. FTR installed an interrogation site (a remote fisheries monitoring site) on Canyon Creek in 2014 to collect data regarding trout movement into Canyon Creek from the Teton River Canyon.

It has been FTR's goal for over a decade to eventually work with the Canyon Creek Canal Company (CCCC), the controlling water right holder on Canyon Creek, to investigate and identify mutually agreed upon strategies that re-water the lower 10 miles of stream during critical periods for native trout, but FTR's collaborative approach relies on the readiness of the stakeholders with whom we work. In 2019, the CCCC expressed its support to engage in a planning and design process, funded in part through a BOR WaterSMART Phase I grant, to seek solutions that provide for more efficient water delivery, improved water reliability, and improved stream function for the benefit of fish and wildlife. Through that process, FTR and CCCC have developed a phased water management plan that will address mutually beneficial water supply and conservation goals. The proposed project under this application is the top priority of the irrigators and detailed in the *Canyon Creek Water Management Plan* (report attached in draft form in *Appendix C*).

CCCC has operated a large unlined canal system located ~10.25 miles upstream from the mouth of Canyon Creek since the early 1900's. Historically, up to 70 cfs of water was diverted into the Canyon Creek Canal ("Canal") to provide water for 10,615 acres of high value farm ground. Since the mid-1970's, in addition to the unlined canal, the water rights owned by CCCC have been diverted at four other locations. Three points of diversion (PODs) are located on Canyon Creek: one is located ~7.75 miles upstream of from the mouth and two are located ~6.25 miles upstream from the mouth (one of which is an augmentation well). The final point of diversion is located on the main stem Teton River. Please reference the *Project Map*, at right.



Due to irrigation diversion at the Canal and the other points of diversion located on the tributary, Canyon Creek experiences critically low flow conditions and is dewatered from June-October each year. Dewatered conditions significantly reduce available habitat, prevent the outmigration of fluvial spawners and juvenile YCT, and prevent YCT from accessing the cold water refugia found in the perennial flowing, headwater portions of Canyon Creek. Additionally, the Canal serves to entrain out-migrating YCT of all age classes, stranding them in irrigation fields.

The CCCC is comprised of 11 shareholders. The distribution of shares, by shareholder, within the CCCC is set forth below. Importantly, each shareholder also diverts other water rights and storage water (as opposed to their CCCC water shares) from points of diversion located on the Teton River – the Schwendiman Teton River POD, Ricks Diversion, and CCCC Lateral Diversion on Project Map – which is not flow limited. Through this project, FTR and the CCCC will make infrastructure changes to these three Teton River diversion systems. The infrastructure changes will address the specific capacity constraints unique to each system which, once addressed, will allow for 8 of the 11 CCCC shareholders to divert their CCCC shares (in addition to their other water rights) at their Teton River points of diversion. Implementation of the project will allow the Canal located on Canyon Creek to be closed, addressing the entrainment issues associated with the Canal and restoring flow to Canyon Creek and portions of the Teton River.

Canyon Creek Canal Company: Pre- and Post-Project Water Analysis, by share

Individual Owners	CCCC shares	Pre-Project		Post-Project	
		GPM	CFS	GPM	Water Savings
Walters	128	6,738.35	5.64	5,930	808.35 GPM ¹ (2.16 CFS)
Layne Harris	50.5		2.22		
Little	136		5.99		
Dwight Little	60		2.64		
Shayne Harris	35		1.54		
David Schwendiman	112.5	8,962.05	4.95	8,000	962.05 GPM ² (2.57 CFS)
Val Schwendiman	432		19.03		
Brent Ricks	37.5	616.65	1.65	616.65	0
Lerwill	3	48.59	0.13	48.59	0
Skyline Farms	318.5	5243.43	14.03	5243.43	0
Norvue Farms	276.5	4552.03	12.18	4552.03	0
TOTAL	1589.5	26161.10	70.00	24,390.70	1,770.40 GPM (4.73 CFS)

¹ Walters, Layne Harris, Little, Dwight Little, and Shane Harris’s Canyon Creek Canal shares will all be diverted at the Canyon Creek Lateral POD, identified as Site 3 on the map below.

² David Schwendiman’s and Val Schwendiman’s shares will be diverted at the Schwendiman POD, identified as Site 1 on the map below.

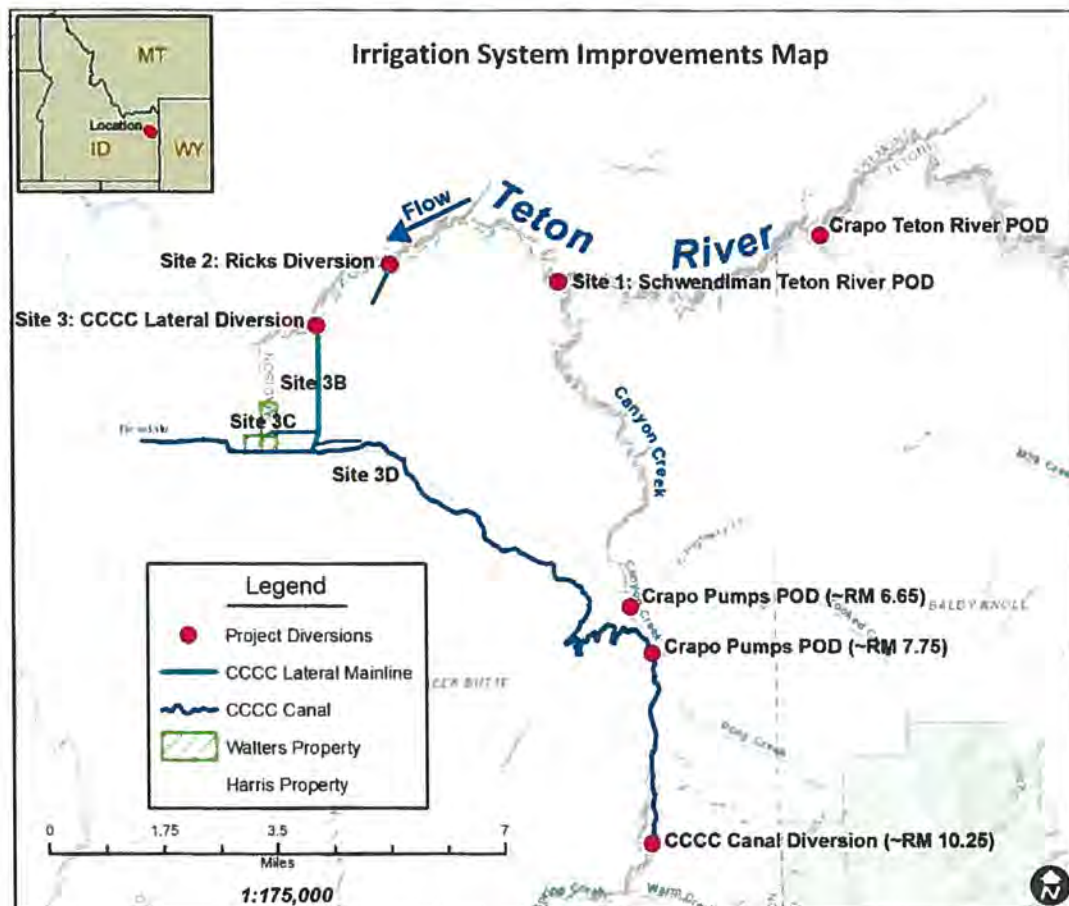
Irrigation System Improvements:

The irrigation system improvements to be completed through this grant are detailed, by location, and depicted in the *Irrigation System Improvements Map* on the following page.

1. Site 1 - Schwendiman Irrigation System:

The Schwendiman pump station is located on the Teton River, just downstream from the mouth of Canyon Creek. The capacity constraint on this irrigation system is pumping capacity at the point of diversion. Once completed, the infrastructure improvements detailed below will allow the 2 shareholders to divert their Canyon Creek Canal water shares at this Teton River point of diversion, in addition to the other water rights historically diverted at this location. This third of the project involves replacing the pumps to increase pump capability, relocating the pump bay, and improving the pump channel, as described in detail below:

- The pump channel will be reconfigured. It will be both lengthened and deepened, as well as reinforced to withstand a 100-year flood event. This will involve the excavation of the pump channel (aka – Feeder Channel), the reclaim and fill of an existing boat ramp, the creation of floodplain through fill toward the west end of the channel, the reinforcement of the rock check structure, and elevation of the existing dike.
- The pump bay will be relocated ~60 feet east of its current location. This will allow the pumps to be located in a deeper portion of the pump channel in order to achieve optimal head pressure and depth. See attached, *Schwendiman POD Pump Channel Plans*.



- A new concrete pump bay will be poured to house the 8 pumps, which will require excavation to prep the site and then backfill once completed. *See attached Schwendiman POD Diagram* for an illustration of the pump bay configuration.
- New rotating screens with high pressure hose flushes will be installed on each pump to prevent the entrainment of fish.
- Eight new HydroFlow pumps will be purchased, and the shareholder's existing pump motors will be maintained, which will increase pumping capability.
- Seven new 700 hp pump panels with breakers, starters, and safeties will be purchased and installed. The shareholder has one existing variable frequency drive that will be re-used.
- 8 new motor runs and power runs for the pump panels, including conduit, transformers, and labor to install the panels, meters, cans and wiring (including trenching) will be purchased.
- The pumps will then be set in the new pump bay and tied into the 30" steel mainline with new 12" high pressure check valves and bypasses.

2. Site 2 - Ricks Irrigation System:

The Ricks irrigation system diverts water from the Teton River, downstream from the mouth of Canyon Creek and the Schwendiman's point of diversion. The capacity constraint on this irrigation system is mainline capacity. Once completed this shareholder will be able to divert its Canyon Creek Canal water shares at this point of diversion, in addition to the other water rights historically diverted there. This portion of the project involves purchasing and installing 7,920 feet of larger mainline, as described in detail below:

- 7,920 feet of existing 8" mainline will be removed.
- 7,920 feet of new 12" 125 PSI PVC, along with air vents and pump outs, will be trenched and installed.
- The newly installed mainline will be tied in at the north and south ends.
- *See attached project plans labeled Ricks POD.*

3. Site 3 - Canyon Creek Lateral System:

The Canyon Creek Lateral irrigation system diverts water from the Teton River, near the old Teton Dam site. Five of the eleven Canyon Creek Canal Company shareholders divert water at this location. The capacity constraints on this irrigation system including pumping capacity at the point of diversion (Site 3A), mainline capacity (Site 3B), and conveyance line capacity at two locations (Site 3C and Site 3D). Once completed, the project will allow for 5 of the Canyon Creek Canal Company shareholders to divert their Canyon Creek Canal water shares at this point of diversion, in addition to the other water rights historically diverted there. This portion of the project involves reconfiguring the pumps to increase pumping capability, creating a new pump bay, installing 10,460 feet of larger mainline, and installing 11,160 feet of larger conveyance line, as described in detail below:

- **Increase pump capacity at point of diversion on Teton River - Site 3A**
 - The existing pump cans, pump panels, and concrete pad will be removed.
 - A new concrete pump bay will be poured to house the 5 pumps, which will require excavation to prep the site and then backfill once completed. Note that the pump bay will be poured in the exact location of the current pump sump.
 - 2 new 600hp pumps will be purchased. One existing 200 hp and one existing 250 hp pump will be used.

- 4 new rotating screens will be installed to prevent the entrainment of fish. One existing rotating screen, which in good condition, will be repurposed.
 - The pumps will be set and tied (i.e. – welded) into existing 36” steel mainline with check valves and bypass valves.
 - A new pump panel pad, for 5 panels will be poured.
 - The transformers and pumps will be relocated, which will require a boom truck.
 - 3 new 600hp pump panels with safeties, a new 200 hp panel and a new 250 hp panel will be purchased.
 - 5 new motor runs and power runs for the pump panels, including conduit, transformers, and labor to install the panels, meters, cans and wiring (including trenching) will be purchased.
- **Increase mainline capacity - Site 3B**
 - 10,460 feet of existing 24” mainline will be removed.
 - 10,460 feet of new 36” cement lined steel pipe, along with air vents and pump outs, will be trenched, welded and installed.
 - The newly installed mainline will be tied in at the north and south ends.
- **Increase conveyance line capacity:**
 - **Walters – Site 3C**
 - 6,540 feet of new 12” 100 PSI PVC will be trenched, installed, and backfilled. This will require both excavation and backfill.
 - A new 25 hp pump, variable frequency drive with harmonic filters, breaker and safeties will be installed and wired, allowing water to be lifted and pressurized from the pond into the line.
 - The new line will be welded into an existing 30” steel pipe, which will require check-valves, gate valves, booster can, and steel.
 - **Harris – Site 3D**
 - 1,700 feet of 16” 160 PSI PVC, 1200 feet of 12” 160 PSI PVC, 720 feet of 12” 125 PSI PVC, and 1,000 Feet of 8” PSI PVC will trenched, installed, and coupled together. This will require both excavation and backfill.
 - A new 100 hp pump and new 75 hp pumps will be purchased, and an existing 250 hp pump will be rebowled. Each will installed and tied into the system, allowing water to be lifted and pressurized from a pond into the line.
 - *See attached project plans in Appendix B: **Canyon Creek Lateral POD, CC Lateral: Harris, and CC Lateral: Walters.***

Water Right Transfer Application:

Currently the CCCC water rights allow for water to be diverted at four locations (the Canal on Canyon Creek, the two pump stations on Canyon Creek – mile 7.75 and mile 6.65, the augmentation well located on Canyon Creek, and the Canyon Creek Lateral point of diversion located near the historic Teton Dam site). Three additional points of diversion will be added to the water rights: the Schwendiman’s point of diversion located on the Teton River near the mouth of Canyon Creek, the Rick’s point of diversion located on the Teton River, and the Crapo point of diversion located on the Teton River. In Idaho, the process for adding legal points to a

water right, requires the submission of a Water Right Transfer Application to the Idaho Department of Water Resources. The CCCC and FTR will work together to submit the application. Given the broad level of support for this project, resulting from the multi-faceted project benefits it will generate, there is an extremely high level of confidence that these points of diversion can be added to the CCCC water rights without issue.

Flow Monitoring Plan Development and Equipment Installation:

FTR and the CCCC will work together throughout the project period to establish an instream flow monitoring and data management plan, as well as install all necessary equipment to facilitate long-term water quantity monitoring in Canyon Creek after the project is complete. CCCC and FTR will develop and establish a Canyon Creek instream flow monitoring and data management plan that achieves two objectives: (1) ensures that water is not diverted into the Canal on Canyon Creek – to ensure that the ecological outcomes associated with this project are achieved over the long-term; and (2) collects data to assist Idaho Department of Water Resources with the long-term administration of the CCCC water rights, now that the Canal will be closed and the water rights diverted at downstream points of diversion. FTR anticipates this will require the following:

- Installation of a real-time flow logger on Canyon Creek below the Canal to quantify the amount of water in Canyon Creek, as well to monitor the temperature of the water. It may be necessary to install more than one logger on Canyon Creek and/or consider the installation of telemetry technology in association with the logger(s). FTR and CCCC will determine the precise monitoring needs and location, working coordination with the Idaho Department of Water Resources - Water District 01 (IDWR – WD01).
- FTR, CCCC, and IDWR – WD01 will develop a plan, memorialized through a contract, that identifies how the monitoring and diversion data will be collected and managed by CCCC once the project is complete. This will involve identifying a method by which CCCC can collect and report the monitoring data to FTR and IDWR – WD01 in a timely manner each year.

D.2.2.4.4 Performance Measures

FTR has established monitoring programs for fisheries, water quality, and quantity (stream flow monitoring) in place to evaluate the short- and long- term ecological efficacy of its project work, and measures successes against the existing baseline data to adaptively manage watershed restoration strategies, further detailed under Evaluation Criteria E—Performance Measures. In addition to established ecological monitoring programs, this project will evaluate the performance of new irrigation system equipment and overall functionality of the system to meet the project goals, as per engineering specifications (e.g. maintaining line pressure, functionality of pump systems), detailed in Evaluation Criteria E.1.5

D.2.2.4.5 Evaluation Criteria

Evaluation Criterion A—Project Benefits

Sub-Criterion A.1—Benefits to Ecological Values

This project generates many ecological outcomes that have a nexus to water resources and water resource management, including the following:

- Restore and improve instream flows on Canyon Creek in both magnitude (discharge) and timing (duration), thus improving instream conditions for native Yellowstone Cutthroat Trout, increasing available cold-water aquatic habitat, fish passage, connectivity, and life history success;
- Improve water quality conditions, specifically maintaining and reducing water temperatures in this coldwater fishery, for YCT and other native aquatic species;
- Address fish entrainment in the Canyon Creek Canal and at the Schwendiman's point of diversion thus reducing YCT mortality and improving life history for YCT in Canyon Creek and the Teton River;
- Protect a core "source" population of YCT for the Teton River and improve YCT populations (trout density and age class distributions) in Canyon Creek and the Teton River;
- Improve irrigation infrastructure and the delivery of irrigation water to support the continuance of the robust farming economy in the region as well as ecosystem values;
- Improve water supply and water reliability for irrigation, reducing reliance on storage water in the Upper Snake system;
- Eliminate water loss to the Canyon Creek Canal and deliver water rights more efficiently to the CCCC, thereby increasing water availability for downstream users.
- Monitor the long-term outcomes associated with the project as well as provide necessary information to IDWR -WD01 to facilitate the legal administration of the CCCC water rights;
- Enhance scientific understanding of Canyon Creek and for similar streams, to analyze the efficacy of flow restoration strategies to inform future work in the Watershed;
- Successfully model collaboration on restoration projects that provide a win-win for stakeholders and conservation of native trout.

FTR and the Canyon Creek Canal Company have worked together to develop a long-term, sustainable and science-based plan that restores flow to Canyon Creek for the benefit of native fish and the aquatic ecosystem and addresses agricultural water supply and reliability needs through the implementation of the Canyon Creek Water Management Plan. This project addresses interrelated water management and ecosystem issues on a landscape scale and is truly a win-win for farmers and fish.

Sub-Criterion A.2—Quantification of Specific Project Benefits by Project Type

The primary benefits realized through this ***water efficiency project will result in quantifiable and sustained water savings and improved water management, which increase water supply reliability for ecological values.*** This project will have multiple benefits for the Canyon Creek irrigators, downstream water users, and fish and wildlife including improved water quality, improved habitat connectivity supporting native trout lifecycles, water availability in times of drought, and water management changes that reduce conflicts over water while restoring ecological function.

Historically, the Canyon Creek Canal Company diverted up to 70 cfs of water from Canyon Creek into the Canyon Creek Canal ("Canal"), serving to dewater the stream on an annual basis. As a result of this project the Canal, located ~10.25 miles upstream from the mouth of Canyon Creek, will be closed and water will no longer be diverted at this location. Instead, the CCCC water rights will be diverted at downstream PODs, thereby restoring 10,680 acre-feet instream, to the lower ~10 miles of Canyon Creek, each year. The pre- and post-project flow conditions are described in detail and visually illustrated in the diagrams on page 15.

The Canal, ~13.8 miles in length, is a true marvel. It was cut by hand, and with stock, in the late 1800's by the early homesteaders and settlers. It was cut into the edge of the Canyon Creek drainage which, in some sections, is comprised of solid stone; by any account the Canal is the result of hard and grueling work. However, the Canal is not an efficient water conveyance system. Loss rate studies evidence loss rates ranging from 40-60%, depending on the specific reach. As a result, approximately 50% of all water diverted into the Canal is lost to conveyance before reaching the fields. Therefore, as water availability in Canyon Creek declines, many of the shareholders located near the end of the Canal struggle to receive water. The shareholders have tackled this issue by working together, as neighbors, often going on turns to ensure that those at the end of the Canal receive any water at all. But, the impacts to production, particularly in a drought year, like the one we just experienced, are undeniable.

Canyon Creek, on the other hand, efficiently delivers water from its headwaters to the Highway 33 bridge, located at mile ~6.65. From the Highway 33 bridge downstream to the confluence with the Teton River, Canyon Creek is a gaining reach. By closing the Canal and instead diverting the CCCC water rights from downstream points of diversion located on Canyon Creek and the Teton River, the shareholders avoid the Canal's dramatic conveyance losses. The result is that the CCCC water rights are physically available to the shareholders 2 weeks longer, on average, than when historically delivered through the Canal. This allows the shareholders to decrease reliance on available storage water, and "save" any storage water they may have been allocated for use later in the season, thereby increasing water reliability and long-term water security. This is particularly valuable, and a significant part of this project for the CCCC shareholders, who are concerned about long-term water reliability as much of the West trends towards drought and climate change impacts take hold.

This project will restore, on average, 10,680 acre-feet of water annually to Canyon Creek. The quantified water savings are calculated as follows:

- April 1st – April 30th: Project restores 50cfs instream per day (pre-project 0.0 cfs reached the mouth, post-project ~50 cfs reaches the mouth). 30 days X 50cfs X 1.98 AF/CFS = **2,970 AF**
 - May 1st – June 14th: Project restores 72cfs instream per day (pre-project ~50 cfs reached the mouth, post-project ~122 cfs reaches the mouth). 45 days x 72cfs x 1.98 AF/cfs = **6,415.20 AF**
 - June 15th – June 30th: Project restores 22 cfs instream per day (pre-project 0.0 cfs reached the mouth, post-project ~22cfs reaches the mouth). 16 days x 22 cfs x 1.98 AF/cfs = **696.96 AF**
 - July 1 – July 7th: Project restores 10 cfs instream per day (pre-project 0.0 cfs reached the mouth, post-project 10 cfs reaches the mouth). 7 days x 10 cfs x 1.98 AF/cfs = **138.6 AF**
 - July 8th – October 31st: Project restores ~2 cfs instream per day (pre-project 0.0 cfs reached the mouth, post project 2 cfs reaches the mouth). 116 days x 2 cfs x 1.98 AF/cfs = **459.36 AF**
- TOTAL ANNUAL AVERAGE SAVINGS: 10,680 AF**

The estimated water savings of 10,680 acre-feet/year is based on actual streamflow gaging data collected at the Canyon Creek Canal POD over the past two years (2020 and 2021) as FTR and the CCCC have piloted a flow restoration transaction that will mimic the outcomes of this project. Under the terms of this 2-year pilot agreement, CCCC shut down the Canal and, instead, diverted water at the other points of diversion associated with the CCCC water rights. This is not a long-term solution for two reasons: (1) the payment provided to CCCC was not sufficient to make them whole (their increased cost of pumping far exceeded the annual payment); and (2) the strategy deprived them of valuable water because, while the water was physically and legally

available for them to divert at downstream points of diversion, their diversion systems are currently undersized, precluding most of the shareholders from making use of their CCCC water shares. Throughout the project period, FTR was able to collect stream and water use data which is being used to develop the long-term, flow restoration strategy detailed in the *Canyon Creek Water Management Plan*. The pilot project allowed FTR to quantify exactly how much water this project will yield instream annually under real, instead of hypothetical or modeled conditions. See attached *2020 Technical Memorandum from Watercourse Engineering Inc.* for a thorough analysis of flow response observations in 2020 (note that 2021 reporting will occur during the winter of 2021/2022). It is also important to note that the calculations outlined above only represent the water savings that make it all the way from the Canal (located ~10.25 miles upstream of the confluence) to the main stem Teton River. The project will restore an even greater quantity of water, often the entirety of the natural hydrograph, in the 3.5 mile stretch of Canyon Creek located between the Canal and the two pump stations located on Canyon Creek near the Highway 33 bridge, ~7.75 miles upstream of the confluence and ~6.65 miles upstream of the confluence, respectively.

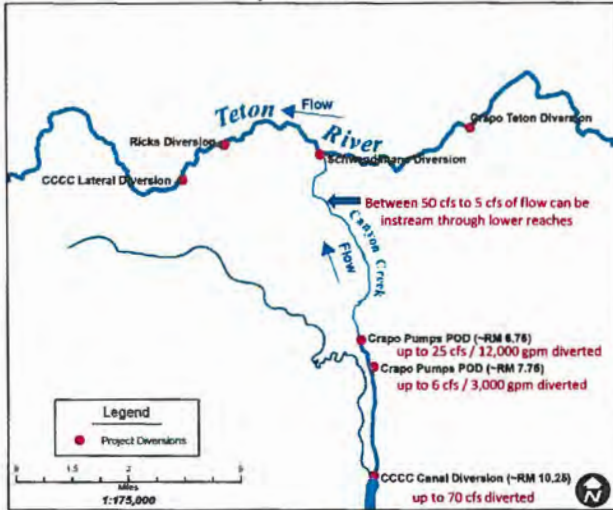
While the irrigation system changes outlined above increase diversion capacity, enabling the CCCC shareholders to divert their CCCC shares at the Teton River points of diversion, the infrastructure changes will be sized such that the shareholders will not divert the entirety of all of their CCCC shares; resulting in an additional water savings of 4.73 cfs overall, as set forth in the Table on page 7.

The water conserved through this project was historically diverted by the CCCC into the Canal, which was estimated to have ditch seepage losses between 40-60%. By closing the Canal, the CCCC water rights (and the loss to ditch seepage), which would have historically been diverted at that location, will remain in Canyon Creek until diverted at the CCCC's shareholder's downstream points of diversion which are being added or expanded through this project and agreement. Please reference *Pre- and Post Project Streamflow Diagrams* on the following page for a visual representation of how this project will change historic water management on the stream.

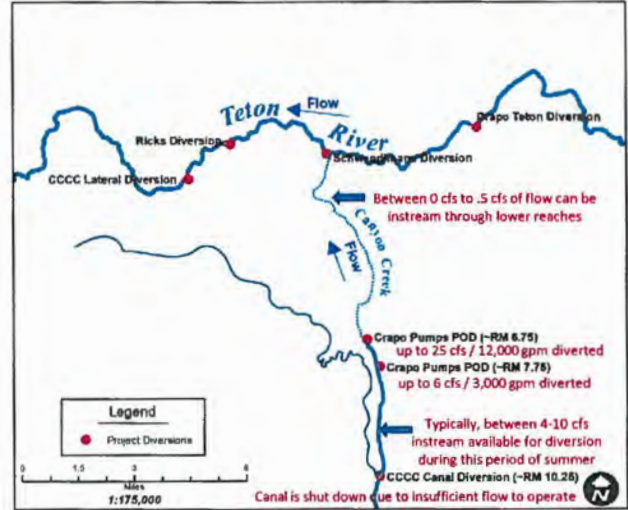
Both FTR and the CCCC were concerned that closing the Canal may significantly impact return flows to Canyon Creek, with particular impact manifesting in the lower reach. However, even without water being diverted in the Canal, the lower reach of Canyon Creek which extends from the HWY 33 bridge at mile 6.65 to the mouth, remained a gaining reach. It seems to be charged by springs and seeps, likely the result of irrigation. This project does not retire acres or reduce irrigation of lands in agricultural production, it simply changes where the irrigators divert their water through a more "on demand" pressurized system which will add water rates and volumes instream in Canyon Creek as well as the Teton River. The geology of the Canyon Creek area is complex, often characterized by the Huckleberry Ridge Tuff, through which water flows in unexpected and unique ways (as it was discovered with the construction of the Teton Dam). As such, it is reasonable to assume that while some of the Canal seepage may have returned to Canyon Creek, the majority of the seepage loss accrues to different area, particularly because the length of the Canal (~13.8 miles long) dispersed water so far from Canyon Creek itself.

Canyon Creek Pre-Project Streamflow

April-June

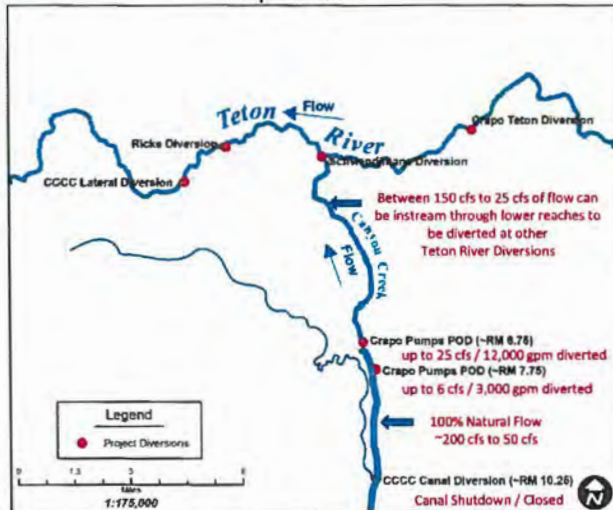


July-September

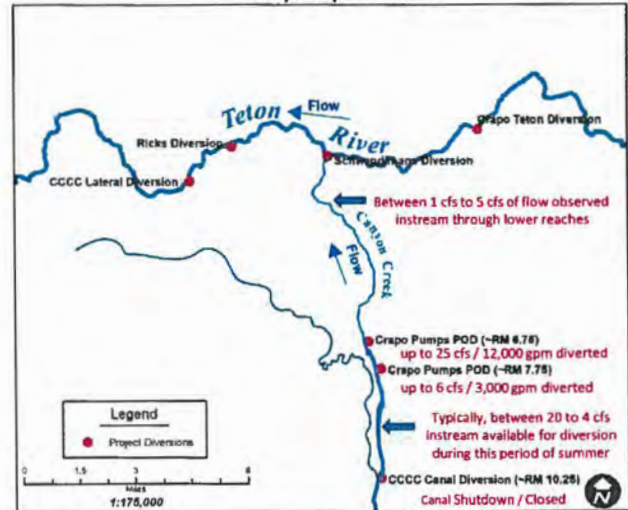


Canyon Creek Post-Project Streamflow

April-June



July-September



The conserved water will have significant ecological benefits for a variety of fish and wildlife species with primary benefits for Canyon Creek's native Yellowstone Cutthroat Trout fishery, a source population for the Teton River Canyon. These benefits include:

- Water conserved through ceasing use of the CCCC Canal will enhance instream flows throughout Canyon Creek in magnitude (discharge) and timing (duration of flows) the entire irrigation season.
- Conserved water secured instream will address connectivity issues by increasing passage/migration flows during the springtime cutthroat spawning period and will also improve over-summering flows the entire length of Canyon Creek.
- Additionally, the project will fully restore the natural hydrograph in a 3.5 mile stretch of Canyon Creek throughout the entire irrigation season (from river mile 10.25 at the Canal point of diversion to the pump stations on Canyon Creek located at river miles 7.75 and 6.65).
- Conserved water would provide enhanced flows from these Canyon Creek pump stations located at miles 7.75 and 6.65 to the confluence with the Teton River, particularly during key spawning periods for Yellowstone Cutthroat Trout, a priority species in Idaho, and also improved over-summering conditions through this historic dewatered stream reach.
- Lastly, the majority of the Canyon Creek water (consumptive-use water) would be diverted and pumped from the Teton River diversions, with these infrastructure systems being built at reduced water right capacity, leaving CCCC shares instream (historic ditch service water), thus more water will remain throughout these stream reaches.

The instream flow outcomes associated with the project will be secured for at least 25 years through an agreement between FTR and CCCC, with water right administration provided by Idaho Department of Water Resources (IDWR). The contract between CCCC and FTR will require CCCC to commit to keeping the Canal closed for no less than 25 years, starting from the date of project completion; However, the CCCC water-users have proposed retiring the Canal permanently due to its inefficiency, thus current owners do not foresee ever re-opening the canal, as they can get more of their water right to their fields under new management and infrastructure. Through the agreement CCCC will be contractually obligated to divert the CCCC water rights at designated downstream points of diversion. The agreement will look substantially similar to the agreement used during the 2-year pilot transaction. *See attached Canyon Creek Pilot Agreement* for reference. IDWR, who is vested by State law to conduct water rights administration, will monitor the delivery and regulation of the water rights to the various points of diversion. The data collected by IDWR is quantified over the irrigation season every year to ensure there is no increase of water diversion and use by irrigators. The water right administration conducted by IDWR will also confirm that water is not being diverted at the Canal and is instead being diverted at downstream points of diversion.

The project benefits are expected to assist in reducing basin-wide water supply and demand imbalances by extending the period of time that the CCCC shareholders can utilize their canal shares, thus delaying their use of storage water. By closing the Canal and instead diverting the CCCC water rights from downstream points of diversion located on Canyon Creek and the Teton River, the shareholders avoid the Canal's dramatic conveyance losses. This is particularly valuable, and significant in a drought, such as 2021, which raises concerns about the ability to re-fill of the storage water facilities if drought conditions continue.

Further, the Director of the Idaho Department of Water Resources has issued an order designating the Eastern Snake Plain Aquifer a Ground Water Management Area. The Order clarifies that the Eastern Snake Plain Aquifer is hydrologically connected to the Teton River, via the Snake River, and thus efforts to stabilize the Eastern Snake Plain Aquifer will impact water use in the Teton River Watershed. This project will increase the quantity of water available in the Teton River, thereby improving water availability in the Teton River, making more water available to address downstream water supply issues such as stabilization of the Eastern Snake Plain Aquifer.

Additionally, the project is expected to result in benefits for fish and wildlife by increasing available usable aquatic habitat the entire 10.25 river miles of Canyon Creek throughout the entire irrigation season. The project will improve over-summering flow quantity and quality issues, address stream connectivity issues during the summer period. Passage and migration flows will also be greatly enhanced during the spring and early summer period with most water going to the Teton River for diversion at those pump sites, while also removing historic entrainment issues at two points of diversion (CCCC and Schwendimans PODs). Ultimately, the entire 10.25 river miles of Canyon Creek will see enhanced water quantity and quality conditions (improved water temperature) throughout the entire irrigation season. Each of these benefits is discussed in greater detail above.

Project Benefits for Drought Resiliency Projects Related to Fish and Wildlife

In the western U.S., all aquatic species and aquatic habitats are impacted by droughts and water diversion for out-of-stream uses. This project directly addresses both impacts upon Canyon Creek, while simultaneously improving agricultural production with improved irrigation. Adding enhanced, available, and accessible riverine habitat on Canyon Creek will directly assist the fishery and other aquatic species present in this system.

Between 1999 and 2003, population surveys performed by Idaho Department of Fish and Game (IDFG) on the mainstem Teton River showed a precipitous 95% decline in native Yellowstone cutthroat trout populations, and a 319% increase in non-native Rainbow/hybrid Trout and Eastern Brook Trout in the Teton River. Following this precipitous decline, FTR began a series of investigations to better understand the causes and identify possible recovery strategies. Between 2004-2007 FTR partnered with IDFG, Utah State University, and Idaho State University to sponsor graduate research by Martin Koenig to investigate habitat and biotic factors influencing the distribution and recruitment of juvenile Yellowstone cutthroat trout in the Teton River. This study concluded that although the factors (including habitat degradation, nonnative competition, and hybridization) responsible for the decline of native fish species are numerous and interrelated; it is clear that *loss of stream flows* (due to irrigation diversions) in tributaries that feed the Teton River plays a major role in YCT decline. "Most importantly, water diversion modifies the hydrologic regime and changes stream habitat conditions to favor invasive trout" (Koenig 2006).

In 2005, FTR partnered with the USFS, IDFG, and the National Fish and Wildlife Foundation on an extensive baseline assessment of trout populations in 15 major tributaries of the Teton River. This assessment showed that in the upper Teton River sections (historically inhabited by resident and fluvial Yellowstone cutthroat trout) of all but four tributaries have been invaded by and are now dominated by non-native brook trout, and resident YCT have declined in all headwater

tributaries except one (Colyer 2006). These studies suggest that the upper Teton Watershed has lost much of the fluvial life history and resident tributary populations are in decline.

Due to a range-wide decline in YCT abundance and distribution, it is possible that YCT will be petitioned for listing under the ESA in the future unless significant progress is made towards stabilizing and increasing populations throughout the region. Given the reality of a potential listing, and the far-reaching impact that would have on the local agricultural and recreational economies, the work proposed through this project is timelier than ever, as it takes a tangible step towards implementing sub-watershed scale flow restoration activities that create more favorable conditions for native cutthroat.

Canyon Creek has range-wide importance for YCT, so prioritizing work in this tributary is particularly valuable. It is one of the few YCT strongholds with an intact fluvial spawning run in the entirety of the Teton River Watershed (Schrader 2002; Mabey 2009) and within the Greater Yellowstone Ecosystem. FTR, state and federal agencies, and conservation partners have made Canyon Creek a high-priority stream for watershed restoration, due to its valuable high-elevation habitat on the National Forest, historic productivity, importance as a YCT spawning tributary, lack of hybridization, and the ability to comprehensively address limiting factors for this drainage.

Further, the Teton River Canyon contains one of the largest remaining populations of YCT anywhere in their range, with intact spawning runs into Bitch, Badger and Canyon Creeks. The results of the 2020 Teton River electrofishing data near the mouth of Canyon Creek evidences an increase in YCT densities from ~350/km (in 2015) to 1,200/km. FTR and agency partners attribute these astonishing numbers to the connectivity projects implemented to date on Canyon Creek, and anticipate an equally significant response to the long-term flow restoration work contemplated as part of this project.

Relevant climate science indicates that as a result of climate change, the GYE 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. However, high-elevation headwaters in the Upper Snake and Teton Basin, including Canyon Creek, will provide important habitat refugia and offer opportunities to harness ecosystem benefits that will increase resilience to changing climatic conditions. Therefore, investments in Canyon Creek, as opposed to investments in lower elevation geographies, will create ecological conditions necessary to the long-term persistency and resiliency of YCT in the region.

Finally, even though both native YCT and non-native Eastern Brook Trout (EBT) are present in Canyon Creek, EBT have not dominated the system. Generally, the presence of non-native fish in a tributary system such as Canyon Creek leads to a slow, but inevitable, decline in native trout populations. However, FTR's Tributary Trout Assessment (conducted every 5 years in 2005, 2010, 2015, 2020) indicates that the species composition in Canyon Creek, specifically the composition of YCT and EBT have been statistically stable over time. IDFG and FTR hypothesize that this is due to a number of factors: EBT are a resident fish population only (last stocked in 1953); Canyon Creek and the Teton Canyon's flashy snowmelt hydrology and habitat doesn't support EBT spawning and rearing, and they have not been found in the main stem Teton River Canyon. Canyon Creek still has a fluvial YCT spawning run coming up out of the Teton River Canyon in to reproduce, and thus and YCT are able to compete against the brook trout and

keep their numbers down. In comparison, in all other Teton River tributaries where brook trout co-exist with YCT, there are few (if any) fluvial YCT, the brook trout comprise at least 85% of the population, and YCT numbers continue to decline while brook trout numbers increase. FTR and its agency partners are interested in continuing to monitor this trend for the long-term, particularly as the large-scale flow restoration efforts resulting from this project occur. There is potential for this project to be a case study of native YCT population's response to large-scale flow restoration, and demonstrate that the restoration of tributary streams that support spawning YCT is of critical importance to the long-term health and stability of the population.

Project Benefits for Watershed Management Projects and "Other" benefits

Address Entrainment Issues at the Canyon Creek Canal and Schwendiman Irrigation System
Currently, the Canyon Creek Canal ("Canal"), which is located approximately 10.25 miles upstream from the Canyon Creek and Teton River confluence, creates an entrainment hazard that has reduced YCT spawning and reproductive success in the tributary for over a century. As the largest and only unscreened irrigation diversion on Canyon Creek, out-migrating YCT of all age classes are entrained in the Canal. During the summer, many YCT perish in ponds fed by the Canal when the ponds dry-up. Later, in the fall, numerous out-migrating YCT juveniles and adult YCT are stranded in the canal when the headgates are closed. Assessments indicate that ~5% of the Canyon Creek YCT population are entrained annually. As a result, addressing Canal entrainment has ranked as a high priority for agency partners, including the Idaho Department of Fish and Game (IDFG) and the US Forest Service (USFS) since 2009. As a part of this project, the Canal will be closed. Water will no longer be diverted into the structure, thereby fully resolving the entrainment hazards.

The Schwendiman's current point of diversion, located on the Teton River near the mouth of Canyon Creek, is not properly screened to prevent the entrainment of fish. The Schwendimans have reported having to "clean out" their pivots weekly due to debris, including a significant number of fish. This issue will be addressed through this project. As described in detail above, in the Technical Project Description, new rotating drum screens with high pressure hose flushes will be installed on each of the 8 pump to prevent the entrainment of fish.

Reduce Water Conflicts and Redefine Approach to Water Management Project Development

FTR's success over the past twenty years is attributable, in large part, to our collaborative partnerships and stakeholder-driven project development. This approach seeks to implement projects that have landscape scale conservation impact while supporting the needs of our diverse partners. This project typifies and demonstrates the power of developing projects in that manner. FTR, CCCC, and relevant stakeholders, developed this project, providing a local solution addressing the specific water management needs in this particular tributary of the Teton River. By bringing together representatives from all interest groups within this sub-watershed a robust project was developed that satisfies the needs and water demands of multiple stakeholders. And as a result, this project will generate multi-decade outcomes: (1) serving to secure over 10,680 AF of water instream annually to address ecological and native fisheries needs; and (2) improving water supply and increasing water reliability for the robust agricultural operations forged from the water supplied by Canyon Creek. This is important to highlight because investment in this work, due to the way that the project was developed, is not temporary or short-

term. The multiple ecological, fisheries, and agricultural benefits associated with this project, previously articulated in detail above, will stand the test of time and will serve to shape a new water management paradigm in this critically valuable sub-watershed.

In fact, in the span of the two years that FTR and CCCC have restored water in Canyon Creek through the implementation of the short-term water transaction, ecological response has been astounding. Beaver have returned to the system, occupying habitat directly below the Canal. Native YCT populations assessments on the Teton River have shown astounding response to the fish passage/barrier work conducted from 2010-2015, and improved flow conditions over the past two years. This demonstrates Canyon Creek's resiliency, and the value of investing to restore its functionality. This project builds on that work, and FTR and its partners look forward to witnessing the long-term response associated with: (1) restoring flow; (2) improving water quality by decreasing stream temperature, due to increased flow; (3) increasing available habitat for aquatically dependent fish and wildlife; and (4) improving ecosystem function including greater resiliency of the watershed in the face of climate change impacts.

E.1.2. Evaluation Criterion B—Collaborative Project Planning

The proposed project was developed as part of a collaborative process, funded largely through a BOR WaterSMART CWMP Phase I Planning Grant (R19AP00152). The stakeholders involved in the development of the *Canyon Creek Water Management Plan* ('Plan') represent the diversity of interests in the Canyon Creek sub-watershed including residents, landowners and water right holders, farmers, and business owners (Green Canyon Hot Springs, Lazy Triple Creek Ranch) that live or make a living within the drainage. Most of the subwatershed lies within and is managed by the US Forest Service (Caribou-Targhee National Forest); which permits a number of uses, affecting stakeholders such as cattle ranchers, hunters and anglers, and recreationists. In addition to these entities, Canyon Creek provides water supply to the Teton River (Canyon), thus stakeholders also include downstream water users, the Fremont-Madison Irrigation District, Fall River Rural Electric Co-op, the Idaho Department of Water Resources, Idaho Department of Environmental Quality, the Idaho Department of Fish and Game, the Bureau of Reclamation, and the Bureau of Land Management. Affected stakeholders also include conservation organizations, like the Henry's Fork Foundation, fishing guides, and recreational river users. Each of these entities has been involved, in some capacity, in the development of the *Canyon Creek Water Management Plan*, of which this project is a part.

FTR is a watershed group, as defined in section 6001 of the Cooperative Watershed Management Act. FTR is a 501(c)(3) nonprofit that was founded in 2000 by a diverse group of stakeholders, including farmers, anglers, scientists, agency personnel and environmentalists concerned by declines in the health and quality of the Teton River fishery, and the quality and quantity of the watershed's valuable water resources. Since the inception of the organization, a large component of FTR's work has centered on building bridges and cultivating effective communication between these various interests. Our Board of Directors and membership continue to reflect this diversity. Additionally, over the past decade, FTR has cultivated tributary-specific stakeholder groups (e.g. the Trail Creek Irrigators or the Teton Creek Stakeholders Group) that meet regularly to discuss issues related to their tributary, such as water conservation, flooding or stream restoration. FTR helps facilitate the Teton Water Users Association, representing a diverse group of irrigation and conservation interests. FTR also works closely with the City of

Driggs, City of Victor, Teton County, Teton Regional Land Trust, Trout Unlimited, Idaho Department of Fish and Game, US Forest Service, US Fish and Wildlife Service, Natural Resources Conservation Service, National Fish and Wildlife Foundation, among others. These working groups, and FTR's monthly participation in the Henry's Fork Watershed Council ensure that our projects and activities integrate with various interests throughout the region. FTR actively participates in many interagency and regional meetings, coalitions, and committees; including the YCT Interstate Working Group, the Teton Canyon Recreation Coalition, and the Columbia Basin Water Transactions Program, to name a few.

The *Canyon Creek Water Management Plan* was prepared for the purpose of identifying irrigation infrastructure improvements and water management projects in the Canyon Creek sub-watershed that maximize a limited water supply and improve water reliability to meet irrigator needs, while improving instream flows and habitat connectivity for fish and wildlife. The plan was developed over the course of two years, extending from 2020-2022. A copy of the *Canyon Creek Water Management Plan* has been attached for review. The report is currently in draft form, and will be finalized prior to the end of the CWMP I grant period (June 30, 2022).

The plan speaks to the following issues:

- Irrigation water needs and assessment of current use;
- Desired conservation outcomes, including an analysis of biological metrics (water quantity and quality) needed to benefit Yellowstone cutthroat trout; and
- Analysis of current water availability.

The Plan was developed for the purpose of assessing existing conditions, as well as identifying and prioritizing irrigation infrastructure improvements and water management projects in the Canyon Creek sub-watershed that will maximize a limited water supply and improve water reliability to meet irrigator needs, while improving instream flows and habitat connectivity for fish and wildlife. The plan was developed through a robust process which included conducting a watershed analysis – including an assessment of hydrologic and biological conditions – which served to inform the plan's strategies for improving ecological water resiliency.

This project is a direct outgrowth of the Bureau of Reclamation's Henry's Fork Basin Study, and a subsequent WaterSMART Phase I Planning grant. The Bureau of Reclamation, in partnership with the Idaho Water Resource Board, engaged in an \$800,000 Basin Study geared at identifying potential water supply solutions to address water supply needs in the Henry's Fork Basin and beyond. The Study endeavored to "identify opportunities for development of water supplies (i.e., above-ground storage, aquifer storage) and improvement of water management (i.e., conservation measures, optimization of resources) while sustaining environmental quality." In that vein, the Study examined potential new dam sites, expansion of existing storage facilities, groundwater recharge, municipal conservation, piping and lining, demand reduction, and water marketing strategies. However, the Bureau and State experienced problems addressing the water supply shortages specific to Teton Valley and, further, found it challenging to demonstrate that environmental quality will be sustained if certain water supply strategies are pursued. Following the conclusion of the Basin Study, the Bureau of Reclamation has supported FTR's efforts to identify community-based solutions to address water supply issues in the Teton River through

two Phase I Cooperative Watershed Management Program grants, thereby directly connecting and implementing water supply strategies identified in the Basin Study to the region.

This project directly addresses two of the goals outlined in the Plan. The Plan aims to identify and prioritize irrigation infrastructure improvements and water management projects in the Canyon Creek sub-watershed that will: (1) maximize a limited water supply and improve water reliability to meet irrigator needs, while (2) improving instream flows and habitat connectivity for fish and wildlife. The implementation of infrastructure water management changes outlined in this proposal are of highest priority in the Plan, which will address the irrigation system constraints which will allow 8 of the 11 CCCC shareholders to divert their canal shares from the Teton River (which is NOT flow limited) as opposed to Canyon Creek (which IS flow limited). Implementation of Phase I is the catalyst or “cornerstone” for addressing the future water supply goals of the Plan.

E.1.3. Evaluation Criterion C—Stakeholder Support

Stakeholder support for the project is extremely high. Letters of support from the following stakeholders are attached in *Appendix A*:

- Canyon Creek Canal Company (CCCC) – CCCC is also providing project support through cost-share contribution as further described in the Budget Narrative.
- Canyon Creek Lateral Ditch Association
- Fremont Madison Irrigation District
- Idaho Water Resource Board (IWRB) – IWRB is providing project support through cost-share contribution as further described in the budget narrative, below.
- Idaho Department of Fish and Game
- US Forest Service

The diverse set of stakeholders engaged in the planning process are also supportive of project implementation, including the complete support of the entire Canyon Creek Canal Company. The way this project has come together with buy-in from diverse interests is unprecedented in the State and the rural West. The project is broadly supported by entities responsible for the management of land, water, fish and wildlife, and recreation within the project area. The project meets the management goals and policies of the following entities, as summarized below.

Idaho Department of Water Resources, Water District 01 Watermaster – The WD01 Watermaster is legally deputized by the State of Idaho to administer and deliver water in Teton and Madison Counties and has expressed a great deal of support for the project. The delivery of water contemplated by this project will be done in compliance with Idaho water law and will serve to benefit water users by increasing available water supply in the Teton Watershed.

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

- Increase predictability for water users by managing for a reliable supply.
- Reduced water-related conflict in the Snake River Basin.

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

- Conserve our public lands and natural resources (air, water, wildlife, fisheries, climate, trail systems, wetlands, dark skies, view sheds, soundscape, soils, open space, native vegetation)
- Balance private property rights and protection of our natural resources
- Respect sensitive habitat and migration areas for wildlife
- Recognize that tourism is a fundamental component of our economy and is dependent on healthy natural resources
- Regularly update all natural and scenic resource inventories, to assess the incremental impacts of development on the resource and as a basis for regulatory amendments, as necessary.
- Work with municipalities and public water systems to ensure safe and adequate drinking water.
- Encourage the conservation of high-water quality in rivers and streams.

Madison County, Idaho – The Madison County, Idaho Comprehensive Plan serves as the vision for the future direction of Madison County, Idaho. The Comprehensive Plan specifically seeks to preserve its time-honored community values, which include: “recreation, environmental quality and the protection of agriculture in the County,” and sets forth the following objectives to ensure community values are protected now and into the future:

- Maintain and support the agricultural industry as a key component of the County economy.
- Establish and maintain wildlife corridors.
- Ensure continued public access to river corridors and public lands.
- Preserve natural and agricultural open spaces and minimize potential negative impacts of development.
- Protect sensitive lands (wetlands, riparian corridors, wildlife habitat, water bodies and rivers, and other unique natural features) from the impacts of development.
- Minimize conflicts between agricultural activities and recreational uses.

IDF&G Management Plan for Conservation of Yellowstone Cutthroat Trout in Idaho – Idaho Department of Fish and Game’s Management Plan for Conservation of Yellowstone Cutthroat Trout in Idaho seeks to ensure the long-term persistence of the subspecies within its current range and to do so at levels capable of providing angling opportunities. The goals of the Management Plan are as follows:

- Ensure the long-term persistence of the subspecies within its current range in Idaho;
- Manage YCT populations at levels capable of providing angling opportunities; and
- Restore YCT to those parts of its historical range in Idaho where practical.

Relevant Watershed Efforts and Partnerships

The proposed project on Canyon Creek represents a culmination of twenty years of complimentary and coordinated efforts between FTR, local, state and federal agency partners, as well as partner NGO's working on the highest priority watershed restoration and improvement projects in the Teton Basin. In coordination with the aforementioned agencies and entities, 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 when appropriate and sharing expertise and resources to avoid replication of effort. There are numerous relevant efforts taking place in the watershed that support the proposed project, outlined below:

Formation and Coordination with the Teton Water Users Association – To proactively addressing several emerging water-related issues (changing water and land management, climatic conditions, and natural resource concerns), FTR brought together a diverse working group, called the Teton Water Users Association (TWUA) in 2015 under a Reclamation Phase I 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 vision of the TWUA is to:

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

The TWUA 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. Projects under this Plan have been prioritized for implementation under the “Farms and Fish Initiative.”

Farms and Fish Initiative -This program is a direct outgrowth of the watershed planning process and partnership with the TWUA. Over the past three years, FTR has been working with TWUA, landowners, water users, and agency personnel to secure significant federal, state, and foundation funding for projects that implement win-win solutions that benefit farms and fish. This Initiative includes implementation of conservation farming methods, managed grazing, 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 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. In response to identified hazards, 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 irrigators from 2010-2015 to improve fish passage at three locations, which helped build stakeholder trust while meeting irrigation needs and conservation objectives, as described under the Technical Description (background information) at the top of page 6.

Watershed Monitoring and Research – Friends of the Teton River (FTR) has collaborated with agency partners to collect comprehensive and nationally recognized fisheries and hydrological data in the Teton River Watershed since 2005. In 2005, FTR conducted the first watershed-wide analysis of trout populations in 15 Teton River tributaries. From 2005-2010, FTR expanded the assessment to include Canyon Creek and the lower reaches of Fox, Teton, Badger and Bitch Creeks. FTR has since repeated the Tributary Trout Assessment every five years to monitor trout population trends; has established interrogation sites to study and track the movement of trout in key tributaries; conducted redd surveys to determine the location of fluvial Yellowstone Cutthroat Trout (YCT) and Hybrid (HYB) spawning reaches in the watershed; investigated outmigration timing of juvenile trout; started a stream temperature monitoring program; installed flow gages on key tributaries; and began tracking HYB invasions in YCT stronghold streams. To date, the data generated by this research has been used to develop watershed models (for water quantity, quality, and impacts to fisheries), inform agency management decisions, to prioritize projects, and evaluate the efficacy of conservation and restoration work. FTR's extensive data collection and analysis (2005-current) has provided the foundation for FTR and its agency partners to make sound management decisions based on scientific evidence.

All of these ongoing efforts speak to the depth and magnitude of work being conducted in the Teton Watershed – it is remarkable. The Canyon Creek project is a product of this community-based work, but is unique in that it brings together such unlikely partners to restore significant quantities of water to a critically important YCT stronghold while also creating significant benefit to agricultural water users.

The project is partially located on Bureau of Reclamation land. Specifically, the Canyon Creek Lateral point of diversion and the Schwendiman points of diversion, located on the Teton River, are located on land owned by Reclamation. This Reclamation property is located in the Teton River Canyon, a result of property acquired for the failed Teton Dam. The property is currently managed for wildlife and recreational values and is particularly valuable stream habitat for native Yellowstone Cutthroat Trout. Reclamation has invested in Teton Canyon restoration and rehabilitation since failure of the dam and is currently seeking appropriations for a more robust restoration project. While Reclamation may have interest in working with the relevant irrigation interests, improvements to irrigation points of diversion must be driven by the irrigators themselves. That said, the proposed project supports Reclamation's current values and management goals associated with the property. BOR Upper Snake Field Staff toured the proposed project with the project partners on 9/1/21 to discuss the project goals and identify requirements for implementation. SF-299 Applications will be submitted, for new permits for the points of diversion located on Reclamation property, to the area field office for review in January of 2022.

This project has not been met with any opposition. Downstream irrigators have raised questions about how this project may change or negatively influence water availability in the Teton River but review of the project quickly addresses those concerns, because the project will actually improve water availability in the Teton River. It is worth noting that this project, more than any other flow restoration project spearheaded by FTR in the past, has garnered positive support. FTR attributes that to two factors: (1) the process by which the project was developed, which secured all relevant stakeholders at seat at the table and opportunity to influence the developed of the project; and (2) the true win-win outcomes associated with the project.

E.1.4. Evaluation Criterion D—Readiness to Proceed

Implementation Plan:

An Implementation Plan for the proposed project is outlined in the Tables below, including a project schedule by Site (Tables 1-3) and coordination of project implementation and monitoring (Table 4). The table below outlines the major tasks, milestones, a timeline for implementation and cost estimate by task area. *Please see* the Project Budget and Narrative for more detail on cost estimates. This project has had substantial pre-project monitoring and planning completed, with significant matching funds secured for implementation. The Technical Project Description details implementation plans for these projects.

Table 1: Site 1 – Schwendiman Irrigation System			
Task Description	Timeline	Milestone	Cost Estimate
<p>Final Project Design</p> <ul style="list-style-type: none"> GoldenWest Irrigation completed a final design for the project. Biota Research and Consulting complete a design plan for the pump channel reconstruction 	<p><i>Completed</i> September 2021</p> <p><i>Completed</i> September 2021</p>	Project design and budget secured	
<p>Permitting/environmental compliance Finalize compliance (NEPA, SHPO) and permitting (ACOE, IDWR)</p> <p>SF299 submitted to Reclamations Upper Snake Field office for review.</p> <p>Note: The BOR provided an estimate for environmental compliance at a total of \$52,000, which has been split between estimates for the Sites 1 and 3.</p>	Completed by 9/1/2022	<p>Environmental compliance and permitting for the project are complete.</p> <p>Permit received from BOR.</p>	
<p>Materials procurement and contracting GoldenWest Irrigation will oversee the procurement and contracting of: materials and construction of new pump bay (e.g. concrete, motors, and fish screens); and materials & labor to run</p>	Completed by 9/1/2022	Materials for the project are secured and/or staged at the project site.	

power (e.g. – pump panels, breakers, starters, safeties, motor runs, & wiring). FTR will oversee contracting and procurement of supplies for reconstruction of the pump channel (e.g. fill and rock).		Final contracting is in place.	
Project implementation Reconstruction of the pump channel and construction of the new pump bay (in river work) will occur in the fall when natural stream flows are lowest. Installation of pumps in the bay, installation of power, and tie-in of pumps to the mainline will occur in the fall of '22 or spring of '23 depending upon weather conditions.	9/1/2022-8/31/2024	Pump channel reconstruction complete. New pump bay, power, and tie-in to mainline complete and system operational.	
Site Clean Up Site will be cleaned – any old equipment or infrastructure will be removed and properly disposed	5/31/2023-8/31/2024	Site cleaned.	

Table 2: Site 2 – Ricks Irrigation System			
Task Description	Timeline	Milestone	Cost
Final Project Design <ul style="list-style-type: none"> GoldenWest Irrigation completed a final design for the project. 	<i>Completed</i> September 2021	Project design and budget secured	
Materials procurement and contracting GoldenWest Irrigation will oversee the procurement of materials and contracting for the removal and installation of the pipeline.	Completed by 9/1/2022	Materials for the project are secured and/or staged at the project site. Final contracting is in place.	
Project implementation Removal of the old pipeline, installation and tie-in of the new pipeline and all dirt work.	9/1/2022-8/31/2024	New pipeline operational.	
Site Clean Up Site will be cleaned – any old equipment or infrastructure will be removed and properly disposed	5/31/2023-8/31/2024	Site cleaned.	

Table 3: Site 3 – Canyon Creek Lateral Irrigation System

Task Description	Timeline	Milestone	Cost
<p>Final Project Design</p> <ul style="list-style-type: none"> GoldenWest Irrigation completed a final design for each aspect of the Canyon Creek Lateral portion of the project. 	<p><i>Completed</i> September 2021</p>	<p>Project design and budget secured</p>	
<p>Permitting/environmental compliance Finalize compliance (NEPA, SHPO).</p> <p>SF299 submitted to Reclamations Upper Snake Field office for review.</p> <p>Note: Because the stream channel components of the project will take place on and adjacent to the existing point of diversion, FTR anticipates that the project will be exempt from stream channel alteration permitting and outside approvals.</p>	<p>Completed by 9/1/2022</p>	<p>Environmental compliance for the project is complete.</p> <p>Permit/license received from BOR.</p>	
<p>Materials procurement and contracting:</p> <p>Site 3A - GoldenWest Irrigation will oversee the procurement and contracting of: materials and construction of new pump bay (e.g. concrete, motors, and fish screens); materials & labor to run power (e.g. – pump panels, breakers, starters, safeties, motor runs, & wiring); materials and installation of the pipelines; and removal and disposal of old infrastructure.</p> <p>Site 3B – Canyon Creek Canal Company will oversee the procurement and contracting of the installation of the new mainline, including all associated dirt work, welding, and removal & disposal of old infrastructure.</p> <p>Site 3C – GoldenWest Irrigation will oversee the procurement of materials and contracting for the removal and installation of the pipeline and pump.</p> <p>Site 3D - GoldenWest Irrigation will oversee the procurement of materials and contracting for the removal and installation of the pipeline and pumps.</p>	<p>Completed by 9/1/2022</p>	<p>Materials for the project are secured and/or staged at the project site.</p> <p>Final contracting is in place.</p>	

<p>Project implementation – Site 3A Construction of the new pump bay (any in river work) will occur in the fall when natural stream flows are lowest. Installation of pumps in the bay, installation of power, and tie-in of pumps to the mainline will occur in the fall of '22 or spring of '23 depending upon weather conditions.</p>	9/1/2022-8/31/2024	<p>Pump channel reconstruction complete.</p> <p>New pump bay, power, and tie-in to mainline complete and system operational.</p>	
<p>Project Implementation – Site 3B Removal of the old pipeline, and installation and tie-in of the new pipeline will occur in the fall of '22 and spring of '23 depending on weather conditions.</p>	9/1/2022-8/31/2024	New pipeline operational.	
<p>Project Implementation – Site 3C Installation and tie-in of the new pipeline and pump will occur in the fall of '22 and spring of '23 depending on weather conditions.</p>	9/1/2022-8/31/2024	New pipeline and pump operational.	
<p>Installation and tie-in of the new pipeline and pumps will occur in the fall of 2022 and spring of 2023 depending on weather conditions.</p>	9/1/2022-8/31/2024	New pipeline and pumps operational.	
<p>Site Clean Up All sites will be cleaned and any old equipment or infrastructure will be removed and properly disposed.</p>	5/31/2023-8/31/2024	Site cleaned.	

Table 4: Project Management and Monitoring			
Task Description	Timeline	Milestone	Cost
<p>Project Coordination FTR Water Resources Director and WaterCourse Engineering will:</p> <ul style="list-style-type: none"> • Coordinate and communicate with stakeholders during the grant period • Document project activities & project completion via written reports and photos. • Work with CCCC and IDWR to develop monitoring and data management plan, install all necessary equipment, and train CCCC irrigators, if necessary, such that it 	<p>Throughout the grant period</p> <p>Completed by 8/31/2024</p>	<p>Coordinate project activities, maintain communication with all relevant stakeholders, and ensure that grant activities remain on schedule.</p>	

<p>can implement the plan upon project completion.</p> <ul style="list-style-type: none"> ▪ Draft, finalize and execute long term instream flow agreement & acceptance/maintenance of infrastructure agreement. 			
<p>Project Results Communications & Information Sharing</p> <p>FTR Water Resources Director will provide communication on the progress of the project with the relevant public.</p>	<p>Throughout the grant period</p> <p>Completed by 8/31/2024</p>	<p>Share progress and updates with the public via presentations and written publications, provide updates to Science Review Committee.</p>	
<p>Collect Fisheries and Flow Data</p> <p>The following ecological information will be collected throughout the grant period:</p> <ul style="list-style-type: none"> • Collect instream flow data on Canyon Creek for evaluation and reporting purposes (April – October annually) • Take photos of Canyon Creek • Collect fisheries data/monitor fisheries response throughout project period – monitor Canyon Creek interrogation site 	<p>During the grant period: 9/1/2022-8/31/2024</p>	<p>Provide information to IDWR and Science Review Committee, use data to Update Decision Support Model to prioritize future work in the Watershed</p>	
<p>Interim and Final Project Reporting</p> <p>Report on work performed through the grant – project coordination, outreach/communications, and ecological data.</p>	<p>1/1/2023—8/31/2024</p>	<p>Submit Interim Reports and Final Report</p>	<p>Total Cost: \$177,508</p>

Permits and Approvals

FTR has submitted SF-299 Applications to Reclamation’s Upper Snake Regional Office to begin the permitting/licensing of the Schwendiman and Canyon Creek Lateral points of diversion and associated activities located on Reclamation property. FTR anticipates that the permits will be secured prior to September 2022.

Idaho Department of Water Resources will be notified before work occurs, but per Idaho Code §42-3806, a stream alteration permit is not needed for the project work associated with this grant application.

FTR has the required permission to proceed and access the project sites, which is a standard practice for FTR before project work begins. *Please see letters of support* from Canyon Creek Canal Company and Canyon Creek Lateral Company as documentation.

Engineering and Design

As of the submission of this application, FTR has, in hand, engineering and design plans, and associated budgets, for all aspects of the project. Project plans from GoldenWest are attached in Appendix B. The Schwendiman's hired the stream restoration firm Biota Research and Consulting to assess hydrology and function of the pump channel, also attached in Appendix B.

Environmental Compliance

FTR contacted the Reclamation's Upper Snake Field Office as was referred to the Boise office for help in estimating environmental compliance costs associated with this project. FTR emailed a copy of this application for review on 11/5/21. Based upon archaeological and environmental resource review, Reclamation has initially estimated compliance costs at \$52,000. This amount is included as a line item in the budget and will be completed by Reclamation. Environmental Compliance considerations are further detailed in D.2.2.6

E.1.5. Evaluation Criterion E—Performance Measures

Once the project is 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 remote fisheries monitoring sites ("interrogation sites") on spawning tributaries throughout the watershed, including one on Canyon Creek. 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.

Through the current BOR WaterSMART CWMP I, FTR is developing a water temperature model for Canyon Creek which will be completed in December 2021 to better understand how instream flows are impacting water temperature on Canyon Creek, and how the lower reaches of this system will respond to current and future planned water conservation projects. This model will provide insights that water management practices are having on Yellowstone Cutthroat Trout and other targeted aquatic species.

Canyon Creek Flow Monitoring:

Throughout the project period, FTR and the CCCC will work together in partnership with IDWR-WD01, to develop a monitoring and data management plan which will: (1) provide data substantiating that the CCCC Canal has remained closed on an annual basis; and (2) provide IDWR-WD01 with water diversion data and Canyon Creek instream flow data necessary to legally administer the CCCC water rights. All equipment will be installed and CCCC irrigators will be trained such that they are positioned to implement the monitoring and data management plan upon project completion. The data from the monitoring and data management plan will be reported to

FTR and IDWR-WD01 annually, thereby ensuring the project objectives are attained year-to-year (for the duration of the contract; at least 25 years following completion of the project).

The following performance measures will be used to quantify the effectiveness of each aspect of the project:

- a. Schwendiman Irrigation System** —Upon completion of the Schwendiman irrigation system portion of the project, the new pump bay, new fish screens, and restructured pump channel are expected to be fully functional in supplying the irrigators with their water rights, while also ensuring that YCT are not entrained in the irrigation infrastructure.

Infrastructure Performance Measures:

- The new pump bay and restructured pump channel facilitate the diversion of the necessary irrigation water rights.
- The screens function per design expectations, resolving fish entrainment issues.

Methods:

FTR, the engineer, GoldenWest, and the irrigators will assess the effectiveness of the system. These partners will assess the functionality of the screen, bays, and pump channel to ensure proper flow of water and velocities to facilitate the diversion of water. It will be the responsibility of the irrigators to maintain the new pump bay and associated fish screens, once the project is complete, and routinely check their functionality.

- b. Ricks Irrigation System** —Upon completion of the Ricks irrigation system portion of the project, the new mainline is expected to be fully functional in supplying the irrigators with their Canyon Creek water rights at this diversion

Infrastructure Performance Measures:

- The new mainline is properly installed to facilitate the diversion of the necessary irrigation water rights.

Methods:

FTR, GoldenWest, and the irrigators will assess the effectiveness of the system. These partners will assess the functionality of the mainline to facilitate the delivery of water. It will be the responsibility of the irrigators to maintain the new mainline, once the project is complete, and routinely check its functionality.

- c. Canyon Creek Lateral Irrigation System** —Upon completion of the Canyon Creek Lateral irrigation system portion of the project, the new pump bay, mainline and conveyance lines are expected to be fully functional in supplying the irrigators with their water rights.

Infrastructure Performance Measures:

- The new pump bay, mainline, and conveyance lines facilitate the diversion of the necessary irrigation water rights.

Methods:

FTR, GoldenWest, and the irrigators will assess the effectiveness of the system. These partners will assess the functionality of the pump bays, mainline, and conveyance lines to ensure proper flow of water and velocities to facilitate the diversion of water. It will be the responsibility of the irrigators to maintain the new pump bay, mainline, and conveyance lines, once the project is complete, and routinely check their functionality.

- d. **Closure of Canyon Creek Canal:** This project will eliminate entrainment (entrapment) for spawning or out-migrating Yellowstone Cutthroat Trout and mortality in the canal. It will also generate significant water quality improvements through the increase in flow and
- e. **Decrease in stream temperature.** The effectiveness of the project will be measured through the following performance measures and methods:
 1. **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 Canyon Creek once flow is restored. This project will be the first large-scale flow restoration project in the Watershed and it will provide valuable data to fisheries managers about the effectiveness of flow restoration.

Fisheries Performance Measures:

- Fish habitat will be restored and improved throughout the lower 10 miles of Canyon Creek.
- Native trout populations and habitat utilization will increase in the project reach (a statistically significant increase in population densities or trout/mile).

Methods:

Conduct an electro-fishing survey (mark/recapture) using raft-mounted e-fishing gear in the Teton River Canyon once every five years (next survey planned for 2025) 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.

2. **Water Quality**—The flow restoration efforts on Canyon Creek are expected to restore flow, thereby increasing the quantity of available water, decreasing stream temperatures, and providing more desirable habitat conditions for YCT. Improvements will also have demonstrable benefits for native trout.

Water Quality Performance Measures:

- Water quality will be improved by reducing temperature and increasing water availability.
- Stream temperatures will be reduced due to shading from planted vegetation and conveyance of water in the stream channel.

Methods: Conduct post-project water quality monitoring, specifically looking at water quantity and stream temperature. During the grant period, FTR will place a logging

device just downstream from the Canyon Creek Canal to gather temperature and stream flow data (often linked). Baseline flow and temperature data is already established to compare post-project data, during and after the grant period. Data loggers will be established as part of FTR's permanent monitoring network.

3. **Canyon Creek Canal Closure**— This project will eliminate entrainment (entrapment) for spawning and out-migrating Yellowstone Cutthroat Trout, thus entirely eliminating mortality in the Canal.

Canal Closure Performance Measures:

- YCT entrainment (entrapment) in the Canyon Creek Canal will be eliminated.
- After project completion, YCT will have access to every stream mile of Canyon Creek without entrainment hazards.

Methods: FTR will assess connectivity through visual observation and survey of the creek. FTR will continue to conduct electro-fishing surveys for presence of YCT in Canyon Creek through its tributary trout assessment (next occurring in 2025) to continue to assess population densities and abundance. Baseline fisheries data is already established to compare post-project data, during and after the grant period.

f. Other Performance Measures:

- **Completion of Water Right Transfer** - CCCC water rights will be changed through and IDWR water right transfer process, allowing the diversion of water at three additional points of diversion on the Teton River.
- **Acceptance of Irrigation System** - Upon completion of the project the CCCC irrigators will conduct a final inspection of the irrigation systems and assume long-term responsibility for maintenance of the system.
- **Water Management Agreement** - Upon completion of the project the CCCC and FTR will enter into a 25-year water user agreement, memorializing the closure of the Canyon Creek Canal.
- **Monitoring, Data Management, and Reporting** - Upon completion of the project, the CCCC will be prepared to implement its ongoing monitoring and data management plan which will serve to ensure that instream flow objectives are being accomplished over the long-term and provide information to IDWR-WD01 to facilitate the legal administration of the CCCC water rights.
- **Project Commutations and Dissemination of Results** - Share progress and updates with the public via presentations and written publications, provide updates to FTR's Science Review Committee.

E.1.6. Evaluation Criterion F—Presidential and Department of the Interior Priorities

1. **Climate Change:** E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.

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

This proposal provides great detail about how the project will build long-term (25 years or more) resilience to drought for agricultural water users and ecosystem benefits. See the Evaluation Subcriteria A.2 and *Project Benefits for Drought Resiliency Projects Related to Fish and Wildlife* on page 17.

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

This proposal also details the ways in which the proposed project directly contributes to increasing resiliency of the Canyon Creek subwatershed in response to changing conditions and water supplies under climate change scenarios. These include water conserving management strategies more water available for farmers to grow crops later in the season, and creating a functional and connected high elevation refugia for fish and wildlife. Taken together, these contributions create a greater likelihood of maintaining a native fish populations, and avoiding the social, economic and environmental impacts of an ESA listing.

2. Disadvantaged or Underserved Communities: E.O. 14008 and E.O. 13985 affirm the advancement of environmental justice and equity for all through the development and funding of programs to invest in disadvantaged or underserved communities.

• *Will the proposed project serve or benefit a disadvantaged or historically underserved community?*

The Canyon Creek drainage itself spans both Teton and Madison Counties in southeast Idaho, with the project primarily benefitting Madison County residents (downstream of the project area). Madison County, along with the surrounding counties is characterized as a rural, agricultural community, with a median household income of \$39,160. This meets the Section 1015 definition for a “disadvantaged community” with an annual median household income less than the State of Idaho at \$55,785 (according to the U.S. Census Bureau 2015-2019 data). Furthermore, the underserved farming operations and water users in and downstream of the project area will benefit due to improvements in water availability later in the season, promoting greater economic sustainability and less reliance on paying for “storage” water.

--End of the Technical Proposal--

D.2.2.5.2 Project Budget

Funding Plan:

Table 1.—Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$2,000,000
Costs to be paid by the applicant	\$969,902
Value of third-party contributions	\$301,400
TOTAL PROJECT COST	\$3,271,302

Table 2.—Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT	TYPE	STATUS
Non-federal Entities:			
1. Canyon Creek Canal Company	\$301,400	In-kind	secured
2. Idaho Water Resource Board	\$285,000	Cash	awarded
3. Friends of the Teton River	\$159,385	Cash	received
4. Schwendiman	\$525,517	Cash	pledged
Non-federal subtotal	\$1,271,302		
REQUESTED RECLAMATION FUNDING	\$2,000,000		

The listed non-federal cash share (\$969,902) has been secured/received as of the date of this application, including funding from the Idaho Water Resource Board, donors to Friends of the Teton River, and the Schwendiman family. Additionally, the Canyon Creek Canal Company is providing in-kind support of \$301,400. Please see the detail about these funding sources (below) and letters of match commitment (on the next page).

1. The Canyon Creek Canal Company has paid for and acquired the pipe for the project (\$300,000 for pipe and trucking), as well as survey work by Biota research and consulting for reconfiguration of the pump channel (\$1,400).
2. The Idaho Water Resource Board has committed \$285,000 (\$95,000 each year between 2022-2024) to implement the project. While grant activities will take place over 24 months, these funds will be available during that time period.
3. FTR (the applicant) is contributing a total of \$159,385 for the project. \$150,000 has already been received via a fundraising campaign for implementation of this project, and FTR will contribute \$9,385 for monitoring and travel costs associated with the project.
4. The Schwendiman family has pledged to commit the balance of the budget to complete this project (\$525,517) on behalf of the CCCC shareholders.

CANYON CREEK CANAL COMPANY, INC.

Matching Funds Commitment Letter

November 16, 2021

Bureau of Reclamation
Attn: Josh German and/or Robin Graber
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Mr. German and Ms. Graber:

This letter represents a commitment by Canyon Creek Canal Company, Inc. to provide matching support to accomplish the project objectives outlined in the grant application made in response to the Notice of Funding Opportunity No. R22AS00026 – WaterSMART Environmental Water Resources Projects for Fiscal Year 2022. Specifically, Canyon Creek Canal Company, Inc. will commit \$ 300,000.00 in cash, construction materials, and/or construction services toward the project. Canyon Creek Canal Company, Inc. reserves the right to return any grant proceeds and rescind this matching funds commitment letter in the event the company determines, in its sole discretion, that construction costs have escalated to the point that the project is no longer feasible as of the anticipated project commencement of construction date. Other than this contingency, there are no other constraints or contingencies associated with the funding commitment outlined herein.

Sincerely,

David Schwendiman Pres.

David Schwendiman, President
Canyon Creek Canal Company, Inc.



IDAHO WATER RESOURCE BOARD

Brad Little
Governor

November 9, 2021

Jeff Raybould
Chairman
St. Anthony
At Large

Bureau of Reclamation
Attn: Josh German and/or Robin Graber
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Roger W. Chase
Vice-Chairman
Pocatello
District 4

Dear Mr. German and Ms. Graber:

Jo Ann Cole-Hansen
Secretary
Lewiston
At Large

On behalf of the Idaho Water Resource Board (IWRB), I am pleased to provide this letter expressing IWRB's commitment to support the Canyon Creek Canal Company, Inc. and Friends of the Teton River achieve the objectives outlined in the grant application made in response to the Notice of Funding Opportunity No. R22AS00026 – WaterSMART Environmental Water Resources Projects for Fiscal Year 2022. This grant is very valuable to the continuing efforts of the IWRB to improve agricultural water resiliency and water reliability in Idaho, while improving and sustaining ecological conditions for the benefit of fish and wildlife.

Dale Van Stone
Hope
District 1

IWRB will commit to the project ninety-five thousand dollars (\$95,000) per year for three years (2022-2024), totaling two hundred eighty-five thousand dollars (\$285,000). This funding commitment is contingent upon the IWRB receiving these funds from Bonneville Power Administration's Columbia Basin Water Transaction Program (CBWTP). These funds were approved by the CBWTP in September 2021 and will be formally dedicated to the Canyon Creek project through a funding resolution approved by the IWRB.

Albert Barker
Boise
District 2

Dean Stevenson
Paul
District 3

Peter Van Der Meulen
Hailey
At Large

Sincerely,

Brian Olmstead
Twin Falls
At Large

Amy Cassel
Project Manager, Idaho Water Transactions Program

SCHWENDIMAN

Matching Funds Commitment Letter

November 17, 2021

Bureau of Reclamation
Attn: Josh German and/or Robin Graber
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Mr. German and Ms. Graber:

This letter represents a commitment by Val and David Schwendiman, shareholders in the Canyon Creek Canal Company, to provide matching support to accomplish the project objectives outlined in the grant application made in response to the Notice of Funding Opportunity No. R22AS00026 – WaterSMART Environmental Water Resources Projects for Fiscal Year 2022. Specifically, we commit to providing cash toward the project in the amount of \$525,517.20, or that amount necessary to complete the work at the Schwendiman diversion, whichever is less.

Sincerely,

Val Schwendiman



David Schwendiman



Reconnecting Canyon Creek Budget Table

BUDGET ITEM DESCRIPTION	COMPUTATION		QUANTITY TYPE	TOTAL COST	MTDC Base
	\$/Unit	Quantity			
SALARIES/WAGES				\$78,130.28	\$78,130.28
Water Resources Director (Year 1)	\$37.08	1040	hour	\$38,563.81	
Water Resources Director (Year 2)	\$38.04	1040	hour	\$39,566.47	
FRINGE BENEFITS				\$10,527.72	\$10,527.72
Water Resources Director (Year 1)	\$4.97	1040	hour	\$5,173.82	
Water Resources Director (Year 2)	\$5.15	1040	hour	\$5,353.91	
TRAVEL				\$1,314.00	\$1,314.00
Mileage to project site (FTR staff)	\$0.56	1600	miles	\$896.00	
Milage to Boise (RT for Water Board meeting)	\$0.56	300	miles	\$168.00	
Hotel in Boise	\$125.00	2	nights	\$250.00	
EQUIPMENT				\$7,490.49	\$749.05
Xlink 100 Data Logger (telemetry station)	\$7,490.49	see quote	each	\$7,490.49	
SUPPLIES AND MATERIALS				\$1,528.55	\$1,528.55
Soloist Levelogger	\$408.50	3	each	\$1,225.50	
Soloist Barologger	\$303.05	1	each	\$303.05	
CONTRACTUAL				\$57,772.00	\$25,000.00
Watercourse Engineering	\$57,772.00	see estimate and scope of work	years	\$57,772.00	
CONSTRUCTION				\$2,740,394.00	
GoldenWest Construction Estimates					\$25,000.00
Canyon Creek Lateral	\$1,125,300.00	see estimate	N/A	\$1,125,300.00	
Harris	\$228,425.00	see estimate	N/A	\$228,425.00	
Walters	\$163,000.00	see estimate	N/A	\$163,000.00	
Ricks	\$194,650.00	see estimate	N/A	\$194,650.00	
Schwendiman	\$934,760.00	see estimate	N/A	\$934,760.00	
MD Nursery	\$94,259.00	see estimate	N/A	\$94,259.00	\$25,000.00
IN-KIND CONTRIBUTIONS				\$301,200.00	
Purchase of Pipe	\$200,000.00	see paid invoice	N/A	\$200,000.00	
Transport of Pipe	\$100,000.00	see estimate	N/A	\$100,000.00	
Biota Survey of Pump Channel	\$1,200.00	see paid invoice	N/A	\$1,400.00	
OTHER				\$56,020.00	
Environmental and Regulatory Compliance Costs	\$52,000.00	see email correspondance	N/A	\$52,000.00	
Water Rights Transfer Fees	\$4,020.00	see rate table		\$4,020.00	
TOTAL DIRECT COSTS				\$3,254,577.04	
INDIRECT COSTS				\$16,724.96	\$167,249.60
De minimis	10%	\$167,249.60		\$16,724.96	
TOTAL ESTIMATED PROJECT COSTS				\$3,271,302.00	

Budget Narrative

Salaries and Wages:

The Project Manager will be Sarah Lien, FTR’s Water Resource Director. It is estimated that Sarah will spend 50% of her time (1040 hours annually) on the project in Year 1 and Year 2. Sarah will oversee the development and completion of the project including: coordinate and communicate with stakeholders including the Canal Company, IWRB and Reclamation, administer the Canyon Creek stream flow contract, oversee permitting and POD changes, oversee data collection and monitoring, and complete reporting requirements.

Compensation calculations and rates are shown in the table below, and reflect the total cost of employment per year. These wages reflect FTR’s actual costs and rates of pay, which is the same for all contracts, federal or non-federal. A “Cost of Living Adjustment” for Year 2 was calculated using a 5-year average of 2.6%. FICA, Workers’ Comp and Idaho State Unemployment Costs were calculated using standard rates for Idaho.

Salaries Year 1

Employee	Base Salary	FICA Taxes	Workers Comp	State Unemployment	Total Cost of Employment	Employee Hourly Cost
Program Manager	\$70,787.86	\$5,415.27	\$353.94	\$570.55	\$77,127.62	\$37.08

Salaries Year 2

Employee	Base Salary +2.6%	FICA Taxes	Workers Comp	State Unemployment	Total Cost of Employment	Employee Hourly Cost
Program Manager	\$72,628.34	\$5,556.07	\$363.14	\$585.38	\$79,132.94	\$38.04

Fringe Benefits:

Fringe benefits are calculated using the current 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. A 4% increase in health insurance was estimated in Year 2, according to average rate increases in Idaho. Employee benefits were broken down into hourly rates to calculate benefits proportionally. Please see the table below for rates/calculations.

Fringe Benefits Yr. 1

Employee	Health Insurance	FSA contribution	Retirement 3% match	Cellular Phone Plan	Total Cost of Benefits	Hourly Benefits Cost
Program Manager	\$7,624.00	\$600.00	\$2,123.64	\$360	\$10,347.64	\$4.97

Fringe Benefits Yr. 2

Employee	Health Insurance +5%	FSA contribution	Retirement 3% match	Cellular Phone Plan	Total Cost of Benefits	Hourly Benefits Cost
Program Manager	\$7,928.96	\$600.00	\$2,178.85	\$360	\$10,707.81	\$5.15

Travel:

The anticipated travel expenses include local travel from the FTR office located in Driggs, Idaho to Canyon Creek, which is 40 miles RT. It is budgeted that the Project Manager will make 40 trips to Canyon Creek (20 trips each over two years) in a personal vehicle, reimbursed at the current federal mileage rate of \$.56/mile.

Additionally, the Project Manager will travel to Boise to meet with the Idaho Water Board during the grant period. This travel includes RT mileage to Boise at 300 miles and a two-night hotel stay, estimated at \$125/night. FTR will incur travel costs associated with this meeting.

Equipment:

FTR will purchase a remote data logging system (see quote for Xlink 100 Data Logger provided by OTT Hydromet) to log surface water flows and water quality data; and has the capability to be programmed for various other meteorological and hydrologic parameters. This system can be monitored remotely via a phone app and includes a telemetry plan (subscription is \$200/year for 2 years). WaterCourse Engineering has experience using this system and will install it as a part of their scope of work. The system will continue to be used after the project period by the irrigators and FTR to meet annual data reporting requirements to IDWR and others. The lifespan of the equipment is 10+ years. The irrigators will continue to pay the \$200 annual subscription fee after the grant period.

Materials and Supplies:

FTR will purchase 3 Soloist level loggers measuring stream flow and temperature (\$408.50/each) and 1 Solist Barologger (\$303.05), as requested by the contractor Watercourse Engineering, for their scope of work. The contractor provided FTR with the attached Soloist cost estimate for these items and FTR will purchase them for installation by the contractor.

Contractual:

FTR will contract with Rankin Holmes of Watercourse Engineering, who has an established relationship with the Canyon Creek irrigators and familiarity with the system and stream flow monitoring objectives. A scope of work, detailed hours, and a cost estimate are attached. Rankin's travel expenses are included as a part of his estimate.

Construction:

Construction estimates have been developed over the last six months in conjunction with the Canyon Creek Canal Company Shareholders and Watercourse Engineering, who is currently contracted under the current WaterSMART CWMP Planning Grant. These estimates have been provided by GoldenWest, an agricultural irrigation supplier and system designer based in Idaho Falls, Idaho; and MD Nursery and Landscaping, specializing in stream restoration and instream channel work. The CCCC has verified costs associated with irrigation construction estimates and FTR has worked extensively with MD Nursery on previous projects, including multi-million dollar stream restoration efforts. Please see contractor bids, attached.

In-Kind Third-Party Contributions:

As detailed under matching contributions, the Canyon Creek Canal Company irrigators have purchased pipe and trucking for the pipe to be used specifically for project implementation, in

the amount of \$300,000. This contribution includes 36" concrete lined steel irrigation pipe (\$150,000), 30" steel irrigation pipe (\$50,000), and the trucking costs for delivery (\$100,000). The pipe was purchased in 2021 by the canal company as their in-kind matching contribution to the project.

The Schwendiman family is donating the cost of the survey work completed by Biota for reconstruction of the pump channel. This survey, as well as Biota's invoice and payment for \$1,400 are attached.

Other:

Water rights transfer fees were calculated using the attached fee table. These fees are assessed when exchanging/transferring water rights from the current POD's to the new POD on the Teton River. The fee is based on the # of cfs: \$2,020 for the first 20 cfs, then \$40 for each additional cfs after the first 20cfs. The application will involve 70 cfs, so the fee is calculated as follows:
 $\$2,020 + (50 \text{ cfs} \times \$40) = \$4,020$

Environmental and Regulatory Compliance Costs:

FTR contacted the Regional Reclamation Office and submitted a copy of this application for review to get an estimate for environmental compliance costs. These costs were estimated at \$52,000, as per the attached email correspondence.

Indirect Costs:

FTR does not have a federally approved cost rate agreement in place, so has opted to apply the 10% de minimis applied to salaries/wages, fringe benefits, materials/supplies, and travel; as well as to the first \$25,000 of three contracts (WaterCourse, GoldenWest, and MD Nursery). This calculation is provided in the Budget Table.

Total Estimated Project Costs:

The total cost of the project is **\$3,271,302**. Of this, FTR is requesting \$2 million from Reclamation (61% of the total project cost), on behalf of the Canyon Creek Canal Company partners to implement this project, with the remaining 39% coming from non-federal sources.

Environmental and Cultural Resources Compliance D.2.2.6

- ***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.***

This project will primarily impact soils, water, and aquatic habitat through earth disturbing activities that will improve irrigation infrastructure at the Schwendiman POD. All other infrastructure and water management improvements will occur without earth disturbance on private land, including the installation of pipe (above ground). Soil disturbance will be limited to the removal, and relocation/replacement of a concrete pad for the Schwendiman pump station, which will be located between the two existing points of diversion (Schwendiman's and Parkinson's POD's, which are permitted for irrigation use and located on Reclamation property). Improvement will also be made to the pump channel, but no stream alteration permit is required under Idaho Code §42-3806. FTR will use a Hazard Analysis for Critical Control Points to assess specific potential impacts to the surrounding environment (soil, water, and aquatic habitat) so that proper mitigative measures and protocols can be put in place for construction activities. All monitoring activities associated with the project will have been deemed exempt under prior cooperative agreements with Reclamation, including stream flow, fisheries and water quality monitoring.

- ***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 endangered species are in the project area. Grizzly bears are listed as "threatened" and may be found within the Canyon Creek and Teton River Canyon drainages, however, none of the activities associated with the project will negatively impact their habitat.
- ***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, Canyon Creek and the Teton River are within the project boundaries. Both fall under the CWA jurisdiction as a "Waters of the United States." The impacts of the proposed project are described and quantified throughout this proposal.
- ***When was the water delivery system constructed?*** The earliest water right on this system is June 1, 1900. The original water delivery system was likely completed shortly thereafter.
- ***Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes?)*** This is an irrigation infrastructure project resulting in multiple modifications that have been specifically developed to benefit ecological values (See Evaluation Section E.1.1.2). Please also see response to bullet, below.
- ***Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?*** No known buildings within the irrigation district are listed for the National Register of Historic Places, although the Canyon

Creek Canal itself is likely eligible, as per Reclamation Environmental Compliance review. The headgate on the canal is currently closed and will remain closed after this project is completed. No changes will be made to the cement structure itself, nor will any buildings be impacted by the proposed work.

- ***Are there any known archeological sites in the proposed project area?*** See above. The cement canal may qualify, but it is not a part of this project, nor will it be impacted by this project.
- ***Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*** No, the project will benefit rural, low-income populations.
- ***Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on tribal lands?*** As project activities will take place on previously disturbed sites, there is no impact to tribal lands in the project area, nor would it limit access to or use of tribal lands.
- ***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 follows protocols for inspection and cleaning of all equipment entering project areas and streams, including but not limited to: machinery, monitoring and research equipment, materials/supplies, wading boots, etc. In addition, the project will take place in a Seed Potato Crop Management Area which has strict regulations for ensuring contaminants are not introduced. This includes rigorous inspection and cleaning protocols as per the Idaho State Department of Agriculture.

D.2.2.7 Required Permits or Approvals

As previously stated in the Implementation Plan (E.1.4), FTR will submit SF-299 Applications to Reclamation's Upper Snake Regional Office to begin the permitting/licensing of the Schwendiman and Canyon Creek Lateral points of diversion and associated activities located on Reclamation property. FTR anticipates that the permits will be secured prior to September 2022. Idaho Department of Water Resources will be notified before work occurs, but per Idaho Code §42-3806, a stream alteration permit is not needed for the project work associated with this grant application.

Scientific data collection permits are required, and are applied for each January/February, for electrofishing and fish sampling through the Idaho Department of Fish and Game. FTR will be obtaining permits for data collection in conjunction with the 2020 Tributary Trout Assessment. FTR also has the permission of the Canyon Creek irrigators to collect stream flow data and data in the canal system, which does not require a permit.

D.2.2.8 Letters of Support and Letters of Partnership

Please see the letter of Partnership from the Canyon Creek Canal Company, as well as letters of support for the proposed project in Appendix A.

D.2.2.9 Official Resolution

Please see the official resolution adopted by the Friends of the Teton River Board of Directors, below:

Friends of the Teton River
Board of Directors Resolution 2021-1103

TO: Bureau of Reclamation

This is a certified copy of resolution that was passed by the Friends of the Teton River Board of Directors by vote and endorsed by a quorum of members on 11/03/2021.

RESOLVED that this Board of Directors hereby authorizes and directs Amy Verbeten, Executive Director, on behalf of Friends of the Teton River, to enter into a WaterSMART Environmental Water Resources Projects agreement with the Bureau of Relamation for the application "Reconnecting Canyon Creek: Addressing Water Supply and Restoring Ecological Resource Function for the Benefit of Fish, Wildlife, and Agricultural Water Users."

ATTESTS that the Board of Directors has reviewed and supports the application and that Friends of the Teton River has the capability to provide the contributions specified in the funding plan for the purposes of implementing this project.

RESOLVED that the applicant, Friends of the Teton River, will work with Reclamation to meet established deadlines for entering into a cooperative agreement on behalf of the project partners.



Nov. 18, 2021

Gini Van Sicken, Board Chair

Date

D.3 Unique Entity Identifier and System for Award Management

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

CANYON CREEK CANAL COMPANY, INC.

Letter of Partnership

Canyon Creek Canal Company, Inc.
13289 E HWY 33
Newdale, ID 834436

November 16, 2021

Bureau of Reclamation
Attn: Josh German and/or Robin Graber
P.O. Box 25007, MS 86-69200
Denver, CO 80225

RE: Letter of Partnership

Dear Mr. German and Ms. Graber:

Canyon Creek Canal Company, Inc. is an entity with water delivery authority located in Idaho, and as such qualifies as a Category A applicant within the context of the Bureau of Reclamation Notice of Funding Opportunity No. R22AS00026 – WaterSMART Environmental Water Resources Projects for Fiscal Year 2022.

Canyon Creek Canal Company, Inc. hereby submits this letter to demonstrate that it is acting in partnership with Friends of the Teton River, that it agrees to the content and submission of the application, and that it intends to participate in the project. Canyon Creek Canal Company, Inc. provided input and feedback regarding this project and the development of this application to ensure that it addresses the agricultural water supply needs of Canyon Creek Canal Company, Inc.'s shareholders. Further, Canyon Creek Canal Company, Inc. will contribute financial support to the project as identified in the application budget and letter of financial commitment.

David Schwendiman Pres. 11-16-21

David Schwendiman, President
Canyon Creek Canal Company, Inc.

Date

CANYON CREEK CANAL COMPANY, INC.

Letter of Support

November 16, 2021

Bureau of Reclamation
Attn: Josh German and/or Robin Graber
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Mr. German and Ms. Graber:

Friends of the Teton River (FTR), in partnership with Canyon Creek Canal Company, Inc., has applied for grant funds through Bureau of Reclamation's Notice of Funding Opportunity No. R22AS00026 – WaterSMART Environmental Water Resources Projects for Fiscal Year 2022. The grant activities aim to restore flow to Canyon Creek, address fish entrainment issues present on Canyon Creek and the Teton River, and improve agricultural water reliability and sustainability.

Canyon Creek Canal Company, Inc. hereby submits this letter expressing support for the activities outlined in the grant application. FTR and the Canyon Creek Canal Company, Inc. have been working together since 2019 to develop a strategy to improve flow in Canyon Creek and improve agricultural water reliability. This grant application is the outgrowth of the work that the two have done over the past several years and represents a true win-win, an opportunity to demonstrate how farms and fish can succeed together. The project activities outlined in the grant are important to the long-term sustainability of native trout and agricultural operations in the Teton River Watershed.

Canyon Creek Canal Company, Inc. offers its full support for the proposed grant activities and we look forward to continued partnership in this critically important work.

Sincerely,



President

David Schwendiman, President
Canyon Creek Canal Company, Inc.

CANYON CREEK LATERAL DITCH WATER USERS' ASSOCIATION

Letter of Support

November 16, 2021

Bureau of Reclamation
Attn: Josh German and/or Robin Graber
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Mr. German and Ms. Graber:


Friends of the Teton River (FTR), in partnership with Canyon Creek Canal Company, Inc., has applied for grant funds through Bureau of Reclamation's Notice of Funding Opportunity No. R22AS00026 – WaterSMART Environmental Water Resources Projects for Fiscal Year 2022. The grant activities aim to restore flow to Canyon Creek, address fish entrainment issues present on Canyon Creek and the Teton River, and improve agricultural water reliability and sustainability.

Many of the Canyon Creek Canal Company, Inc. shareholders are also members of the Canyon Creek Lateral Ditch Water Users' Association, and the activities set forth in this grant will create additional capacity at the Canyon Creek Lateral Ditch Water Users' Association's point of diversion located near the historic Teton Dam site. This will enable a portion of the Canyon Creek Canal Company, Inc.'s shareholders to divert water allocated to their Canyon Creek Canal Company, Inc. shares out of the Teton River, as opposed to Canyon Creek (a tributary to the Teton River). As a result, this project will increase flow in Canyon Creek for the benefit of native Yellowstone cutthroat trout and, importantly, it will also increase irrigation water supply and reliability for Canyon Creek Canal Company, Inc.

This grant application is the outgrowth of the work that the parties have done over the past several years and represents a true win-win, an opportunity to demonstrate how farms and fish can succeed together. The project activities outlined in the grant are important to the long-term sustainability of native trout and agricultural operations in the Teton River Watershed.

Canyon Creek Lateral Ditch Water Users' Association offers its full support for the proposed grant activities.

Sincerely,


Stan Schwendiman, Secretary
Ryan Crapo, President
Canyon Creek Lateral Ditch Water Users' Association



Officers of the Board

Jeff Raybould-Chairman
Scott Neville-Vice Chairman
George Crapo-Treasurer
Aaron Dalling-Executive Director

Fremont-Madison Irrigation District

350 North 6th West

PO Box 15

St. Anthony, Idaho 83445

Phone: (208) 624-3381 Fax: (208)624-3990

Email: fmid@myidahomail.com



Board Members

Douglas Hillam
Mark Ricks
Dennis Fransen
Cleve Bagley

November 3, 2021

Dear Grant Review Committee,

Fremont-Madison Irrigation District (FMID) holds the contract with the Bureau of Reclamation (Reclamation) for the storage water in Island Park and Grassy Lake Reservoirs. FMID is charged with delivering this supplemental storage water to over 160 river diversions within the Henry's Fork Watershed including Canyon Creek Canal Company (CCCC).

FMID strongly supports the proposed project that Friends of the Teton River (FTR) and CCCC are collaborating on. We believe this project will not only benefit the fishery and CCCC shareholders, but that it will also benefit all irrigators on the Teton River.

CCCC has suffered significant seepage loss since it came into operation. We believe by closing the canal and transferring the associated water to pumps on the lower portion of Canyon Creek and the Teton River these seepage losses will be eliminated and there will be a reduction in overall diversion. This will result in more water being available to lower Teton River irrigators.

Additionally, conflicts among Teton River irrigators have been identified in several planning efforts conducted by FMID as one of the most significant issues within our irrigation District. Most notably, this was identified as an issue in a Conservation Plan completed in 2009 with the assistance of Reclamation.

We believe this project helps address this issue and will result in reduced conflict in future years between irrigators in the Teton Canyon area and irrigators on the lower Teton River.

There are many other benefits to this project that we see but are difficult to explain in a letter of recommendation. Suffice it to say, we strongly encourage Reclamation fund this project based on its merits.

Sincerely,

Aaron Dalling

Aaron Dalling



IDAHO WATER RESOURCE BOARD

November 4, 2021

Brad Little
Governor

Bureau of Reclamation
Attn: Josh German and/or Robin Graber
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Jeff Raybould
Chairman
St. Anthony
At Large

Dear Mr. German and Ms. Graber:

Roger W. Chase
Vice-Chairman
Pocatello
District 4

Friends of the Teton River (FTR), in partnership with the Canyon Creek Canal Company, Inc., has applied for grant funds through Bureau of Reclamation's WaterSMART Environmental Water Resources Projects funding opportunity for Fiscal Year 2022. The grant activities aim to restore flow to Canyon Creek, address fish entrainment issues present on Canyon Creek and the Teton River and improve agricultural water reliability and sustainability.

Jo Ann Cole-Hansen
Secretary
Lewiston
At Large

Through this letter, the Idaho Water Resource Board (IWRB) expresses support for FTR and Canyon Creek Canal Company, Inc.'s efforts on this endeavor. IWRB has worked closely with FTR since 2015 to develop flow restoration projects in the Teton River Watershed that:

Dale Van Stone
Hope
District 1

- Improve fish and wildlife habitat
- Respect private property rights;
- Respect the values of irrigated agriculture;
- Work locally using market-based strategies; and
- Take a balanced approach.

Albert Barker
Boise
District 2

This project aligns with the goals and specific approach that the IWRB has developed to promote flow restoration activities in the State of Idaho while supporting the local economic base.

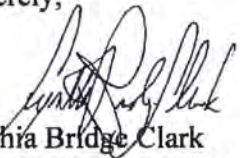
Dean Stevenson
Paul
District 3

Peter Van Der Meulen
Hailey
At Large

IWRB supports the work that FTR and the Canyon Creek Canal Company, Inc. seek to accomplish through the grant application. This grant will complement IWRB efforts to improve agricultural water resiliency and water reliability in Idaho, while improving and sustaining ecological conditions for the benefit of fish and wildlife.

Brian Olmstead
Twin Falls
At Large

Sincerely,


Cynthia Bridge Clark
Water Projects Section Manager



IDAHO DEPARTMENT OF FISH AND GAME
UPPER SNAKE REGION
4279 Commerce Circle
Idaho Falls, Idaho 83401

Brad Little / Governor
Ed Schriever / Director

November 17, 2021

Bureau of Reclamation
Attn: Josh German and/or Robin Graber
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Josh and Robin:

This letter pertains to the project proposed by Friends of the Teton River titled "Reconnecting Canyon Creek: Addressing water supply and restoring ecological resource function for the benefit of fish, wildlife, and agricultural water users" that is submitted for your funding consideration. The main fish species this project would benefit is Yellowstone Cutthroat Trout, the native trout to the Teton River. Cutthroat Trout are the focus of fisheries management efforts in the Teton River drainage for the Idaho Department of Fish and Game (IDFG).

Canyon Creek is one of two important spawning tributaries for Cutthroat Trout in the canyon section of the Teton River. However, Canyon Creek is underperforming as a spawning and rearing stream due to the lack of connectivity to the main stem Teton River, entrainment problems at irrigation diversions, and elevated water temperatures. The proposed project has the potential to address all of these issues by improving connectivity with increased stream flows, eliminating entrainment at the Canyon Creek Canal diversion by moving the point of diversion, and decreasing water temperatures in lower Canyon Creek with increased summer flows. These actions will likely benefit all migratory Yellowstone Cutthroat Trout which would benefit populations in Canyon Creek and the Teton River and help accomplish IDFG's top fisheries priority outlined in the F2019-2024 Fisheries Management Plan. That priority is preserving the genetic integrity and population viability of Cutthroat Trout in the Teton River drainage.

We believe the proposed project will help advance our management efforts, and appreciate your consideration regarding funding this important work.

Sincerely,

A handwritten signature in blue ink that reads "James E. White".

James E White
Regional Supervisor

bh/jew/jmh

Keeping Idaho's Wildlife Heritage



File Code: 2600
Date: November 22, 2021

Bureau of Reclamation
Attn: Josh German and/or Robin Graber
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear, Josh German or Robin Graber

I am writing to provide some background on potential fisheries benefits related to Friends of the Teton River's application entitled: "*Reconnecting Canyon Creek: Addressing Water Supply and Restoring Ecological Resource Function for the Benefit of Fish, Wildlife, and Agricultural Water Users*" submitted under the WaterSMART Environmental Water Resources Projects FY 2022 funding opportunity.

I cannot speak to the feasibility of this project from an engineering or water delivery aspect, but I can speak to the potential benefits to fisheries conditions. While this project occurs on lands outside the Forest the restoration of stream flows to the natural channel of Canyon Creek has the potential to improve Yellowstone cutthroat trout (YCT) populations both on and off Forest.

Other than the South Fork of the Snake River, which is under threat of hybridization, the Teton River Canyon and associated tributaries provide the best fluvial life history expression for native YCT in the state. Health of this fluvial population is tied to the health of the resident population on the Forest.

Forest wide sampling efforts and monitoring overtime of YCT populations that are in sympatry with brook trout where there is not a fluvial connection have shown a gradual total replacement of YCT by brook trout. While there is a known run of fluvial Teton River YCT that use the Canyon Creek drainage for spawning their numbers are certainly lower than historically. I am aware of a fluvial run of fish that spawn in Calamity Creek on private lands 1.5 miles above the confluence with Canyon Creek. In addition, Carlton Creek another small tributary also supports trout. There are also more spawning areas likely in Canyon Creek itself.

Historically the diversions and dewatering of this system due to irrigation practices has complicated the survival of fluvial runs of fish in multiple ways. Irrigation diversions have been barriers to upstream migration. Diversion have entrained both out migrating spawners and young of year making it difficult to sustain large runs of fish due to losses and losses of life history traits tied to this drainage. Dewatering has created less than ideal habitat and temperature conditions for the fish that remain.

By increasing the survival rate of YCT spawned in Canyon Creek I believe we can increase the number of spawning fish overtime and change the trends in this drainage. This change should also lead to improving trends in the Teton River as well.



Reestablishing connectivity on Canyon Creek will provide an important migratory route for fluvial fish from Teton River to spawn within the National Forest. This project is key to giving YCT a competitive edge over brook trout in this drainage. Essentially these large spawning fish refound the resident population of YCT every year and with enough spawners we might be able to increase the percentage of YCT vs. brook trout in the drainage. This project is an essential element to maintain the persistence of YCT in this drainage and in the Teton River.

The Forest Service has collaborated with FTR since their inception, and finds their work is based on scientific rigor and community involvement. FTR fills an important niche in the Teton Watershed. Without their efforts, much would be left undone in the valley as the agencies do not have the time and resources to focus efforts on the Teton Watershed to the extent FTR does. FTR's fisheries monitoring work has further defined the life history patterns of YCT, which helps to focus our priorities based on real data. With limited resources for conservation, working together as partners gives cutthroat and our agricultural region the best chance for success.

If you have any questions regarding the Forest's support of this project, please call me at (208) 557-5784.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lee W. Mabey".

Lee W. Mabey
Forest Fisheries Biologist
Caribou-Targhee National Forest