

**FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION***All sections must be addressed, or the application will be considered invalid***I. APPLICANT INFORMATION**A. Applicant Name: Trout UnlimitedMailing Address: 312 N. Higgins Suite 200City: Missoula State: Montana Zip: 59801

Telephone: _____ E-mail: _____

B. Contact Person (if different than applicant): Tess Scanlon

Address: _____

City: _____ State: _____ Zip: _____

Telephone: 406-552-2168 E-mail: tscanlon@tu.orgC. Landowner and/or Lessee Name
(if different than applicant): Dan ConnMailing Address: Conn Land Holdings LLC 158 Conn LaneCity: Hall State: Montana Zip: 59837Telephone: 406-360-6858 E-mail: danjconn@gmail.com**II. PROJECT INFORMATION**A. Project Name: South Fork Lower Willow Creek Fish Passage ProjectRiver, stream, or lake: South Fork Lower Willow CreekLocation: Township: 9N Range: 14W Section: 22Latitude: 46.521610° Longitude: -113.353174° *within project (decimal degrees)*County: Granite County

B. Purpose of Project: _____

To protect a genetically pure westslope cutthroat trout fishery and complete a priority fish passage project identified by Montana Fish, Wildlife, & Parks (FWP) in the 2011 *Prioritization of Areas in the Upper Clark Fork River Basin for Fishery Enhancement* report and located in a Priority 3 Fishery, according to Montana Natural Resource Damage Program.

The purpose of the proposed project is to remove a fish passage barrier and reconnect a total of 25 stream miles of priority fish habitat supporting an isolate westslope cutthroat trout population and other wild fish in South Fork Lower Willow Creek, tributary in the Flint Creek Watershed of Granite County.

C. Brief Project Description (attach additional information to end of application):

The South Fork Lower Willow Creek drainage is located in Granite County township 9 north, range 14 west in the Flint Creek watershed. South Fork Lower Willow Creek and its tributaries flow in an easterly direction, through national forested and private grazing lands and eventually empty into Lower Willow Creek Reservoir. In total, the 40.6-acre drainage encompasses approximately 25 miles of westslope cutthroat trout habitat that are protected from introgression with rainbow trout by the reservoir.

South Fork Lower Willow Creek is identified as a Priority 3 Fishery by Montana Natural Resource Damage Program (*Upper Clark Fork Aquatic and Terrestrial Resources Restoration Plans, updated February 2019*), and it is considered a tier 1 or 2 priority by FWP since it has a large, pure westslope cutthroat trout population (FWP fisheries management biologist, Brad Liermann, communication). Therefore, it can be reasoned that the genetically pure fishery in South Fork Lower Willow Creek outweighs its size in value to native trout conservation. Particularly in light of threats from warming stream temperatures and fragmented landscape connectivity, protecting isolate westslope cutthroat trout populations is necessary for the preservation of genetic diversity and species survival.

The proposed project will to fully reconnect fish passage in South Fork Lower Willow Creek builds upon recently completed conservation efforts in the basin. Significant investments have been made in recent years to conserve water resources and habitat in the South Fork Lower Willow Creek drainage, including a 5,000-acre conservation easement along 3.75 miles of the South Fork and the priority Black Pine Mine Reclamation Project which restored clean water to Lower Willow Creek basin from high levels of mercury and other heavy metal contamination. These projects improve habitat and water quality, and, in addition to improved habitat connectivity from the proposed project, will result in improved fishery health and in turn fishing opportunities for the public benefit.

The South Fork Lower Willow Creek Fish Passage Project was identified by FWP in the *Prioritization of Areas in the Upper Clark Fork River Basin for Fishery Enhancement 2011* report. The project site is located three miles upstream of Lower Willow Creek Reservoir at the only irrigation diversion in the drainage above the reservoir. It is a major water diversion, and the sole source of water used for hay production by the water user. A recent assessment of fish passage by TU staff found that aging infrastructure at the diversion blocks fish passage during periods of low streamflow. In addition, TU completed flow monitoring at the South Fork diversion. Monitoring revealed that up to 80% of streamflow is diverted into the irrigation ditch. FWP completed an assessment of fish entrainment rates at irrigation diversions in the Flint Creek Valley, and the assessment found that the rate of fish entrained into individual irrigation diversions is closely related to the percentage of streamflow diverted ("Simulating Entrainment Rates and Benefits of Fish Screens on Irrigation Diversions on the Mainstem of Flint Creek", Nathan Cook, FWP, 2018). In conclusion, the diversion threatens to entrain up to 80% of fish from the stream into the ditch.

Trout Unlimited (TU) is assisting the WestSlope Chapter of Trout Unlimited, with technical support to implement the proposed project and fully reconnect fish passage and eliminate entrainment in South Fork Lower Willow Creek. With support from the Future Fisheries Program, TU seeks to upgrade the diversion structure to a rock vane and install a modular Farmers Conservation Alliance water screen. TU staff has completed the site survey and final design for the diversion structure. The final screen design is being completed by TU staff expertise in coordination with a professional consultant. The project will improve habitat connectivity and is expected to improve fish populations throughout the South Fork Lower Willow Creek drainage.

- D. Length of stream or size of lake that will be treated (project extent): 12.5 stream miles
 Length/size of impact, if larger than project extent (e.g. stream miles opened): 25 stream miles

E. Project Budget:

Grant Request (Dollars):	\$	<u>21,914.88</u>
Matching Dollars:	\$	<u>27,880.00</u>
Matching In-Kind Services:*	\$	<u>9,500.00</u>
<i>*salaries of government employees are not considered matching contributions</i>		
Other Contributions (not part of this app)	\$	<u>33,680.00</u>
Total Project Cost:	\$	<u>83,474.88</u>

- F. **Attach** itemized (line item) budget – see *budget template*

- G. **Insert** or **attach** a project location map showing the project area in relation to a major landmark or town. Please indicate if the project location is on public or private property.

See attached “**South Fork Lower Willow Creek Fish Passage Project Map**”

- H. **Attach** specific project plans (e.g. detailed sketches, plan views [showing location and type of channel modifications], example photographs), current condition photographs, and maps. **If project involves water leasing or water salvage complete and attach a supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).*

- I. **Attach** letters or statements of support. This includes landowner consent, community or public support, and fish biologist support.

- J. The project agreement includes a 20-year maintenance commitment. Please indicate (yes or no) that you will ensure project protection for 20 years. Discuss your ability to meet this commitment.

Yes ☒ No ☐

Landowner/water user agreement is the standard for TU. The signed contract outlines management expectations for each party in the project- Trout Unlimited and the Irrigator for 20 years.

- K. **Describe** or **attach** land management & maintenance plans, including changing to grazing regimes, that will ensure protection of the restored area.

Trout Unlimited and the landowner will agree to maintain the fish screen and irrigation diversion for 20 years post-installation. The landowner is responsible for daily screen and diversion maintenance. If the screen stops working, the landowner will inform TU within 24 hours and TU will work to find a solution to restore screen function.

III. PROJECT BENEFITS (attach additional information to end of application):

A. What species of fish will benefit from this project?

Genetically pure westslope cutthroat trout

B. How will the project protect or enhance wild fish habitat?

Existing infrastructure at the irrigation diversion poses an upstream barrier to fish passage during periods of low streamflow. In addition, an assessment and report by FWP in 2018, "*Simulating entrainment rates and benefits of fish screens on irrigation diversions on the mainstem of Flint Creek*" found a significant relationship between entrainment rate at individual diversions and proportion of flow diverted. Two years of flow monitoring at the project site indicate that the water user can and does legally divert up to 80% of streamflow in the ditch. Based on FWP's assessment, this means that nearly 80% of fish moving downstream are at risk from being entrained in the ditch as they swim past the diversion.

The South Fork Lower Willow Creek Fish Passage Project will remove the aging diversion infrastructure which poses a barrier to fish passage and replace it with a rock vane that allows for safe passage of all age class fish past the diversion site. The project will also eliminate fish entrainment in the ditch by installing a modular Farmers Conservation Alliance (FCA) water screen in the ditch that will screen irrigation water and pass fish through a return pipe with bypass water back to the creek. In total, the project eliminates entrainment and reconnects a total of 25 stream miles of habitat for native and wild fish in the South Fork Lower Willow Creek drainage area.

C. Will the project improve fish populations and/or fishing? To what extent?

Yes, the project will likely improve fish populations and fishing potential. It will improve access to additional spawning and rearing habitat in South Fork Lower Willow Creek and upstream tributaries, thus improving recruitment of fish to and fishing in the mainstem South Fork Lower Willow Creek. Reconnecting fish passage to South Fork Lower Willow Creek from Lower Willow Creek Reservoir will also improve the fishing potential in the reservoir.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?

The project has the potential to increase fishing opportunities as well as improve fish populations in Lower Willow Creek Reservoir and South Fork Lower Willow Creek. There is public fishing access to Lower Willow Creek from public roads, and South Fork Lower Willow Creek has public access provided through a conservation easement.

- E. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?

Habitat degradation in the project area is caused by an instream diversion dam and unscreened irrigation diversion that has been in operation since 1867. Over a century of instream infrastructure has blocked seasonal fish passage in South Fork Lower Willow Creek. Unscreened irrigation water diverted from the stream over that time has caused entrainment of fish in the ditch.

The South Fork Lower Willow Creek Fish Passage Reconnection Project will remove the fish passage barrier and replace it with a rock vane that allows for year-round safe passage of all age fish past the diversion. The installed screen will screen irrigation water and safely pass fish through a 70-foot return pipe with bypass water back to the stream.

- F. What public benefits will be realized from this project?

The project has the potential to improve the recreational fishery in Lower Willow Creek Reservoir. This project is also the first of its kind in the watershed and will serve as a demonstration to nearby landowners how Trout Unlimited works with state agencies and private landowners to bring resources to the table for the benefit of the fishery and the ranching community. The completion of a successful project with a key community leader in the Flint Creek Watershed will pave the way for TU to complete similar restoration projects in the future and improve aquatic resources and fish populations throughout the Flint Creek Watershed. Improved fish populations in Flint Creek will improve public fishing opportunities.

- G. Will the project interfere with water or property rights of adjacent landowners? (explain):

No; water diverted from the site is associated with a legal water right claim.

- H. Will the project result in the development of commercial recreational use on the site? (explain):

No

- I. Is this project associated with the reclamation of past mining activity?

Not directly, but it is downstream of a recent Montana Department of Environmental Clean-Up site of the Black Pine Mine. The project is considered a priority by Montana Fish, Wildlife, & Parks due to the South Fork maintaining a protected Westslope Cutthroat Trout isolate population.

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: _____



Date: 11/23/2020

Sponsor (if applicable): _____

Submittal: **Applications must be *signed and received before December 1 and June 1 of each year to be considered for the subsequent funding period.*** Late or incomplete applications will be rejected.

Mail to: FWP Future Fisheries Fish Management Bureau PO Box 200701 Helena, MT 59620-0701	Email: Future Fisheries Coordinator (electronic submissions must be signed) For files over 10MB, use https://transfer.mt.gov
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Applications may be rejected if this form is modified.

South Fork Lower Willow Creek fish passage

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

007-2021

Both tables must be completed or the application will be returned

PROJECT COSTS					CONTRIBUTIONS			
WORK ITEMS (Itemize by Category)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	FUTURE FISHERIES REQUEST	MATCH (Cash or Services)**	OTHER (Not part of this application)	TOTAL
Personnel***								
Survey	12	hours	\$50.00	\$ 600.00		600.00		\$ 600.00
Design	60	hours	\$150.00	\$ 9,000.00		1,500.00	7,500.00	\$ 9,000.00
Engineering	8	hours	\$150.00	\$ 1,200.00			1,200.00	\$ 1,200.00
Permitting	20	hours	\$50.00	\$ 1,000.00			1,000.00	\$ 1,000.00
Oversight	60	hours	\$50.00	\$ 3,000.00			3,000.00	\$ 3,000.00
				\$ -				\$ -
			Sub-Total	\$ 14,800.00	\$ -	\$ 2,100.00	\$ 12,700.00	\$ 14,800.00
Travel								
Mileage	1765	miles	\$0.575	\$ 1,014.88	1,014.88			\$ 1,014.88
Per diem	8	days	\$25.00	\$ 200.00		200.00		\$ 200.00
			Sub-Total	\$ 1,214.88	\$ 1,014.88	\$ 200.00	\$ -	\$ 1,214.88
Construction Materials****								
Riprap	80	Cubic Yard	\$50.00	\$ 4,000.00			4,000.00	\$ 4,000.00
Boulders	1	Lump Sum	\$7,500.00	\$ 7,500.00	4,400.00	3,100.00		\$ 7,500.00
Fabric	1	Roll	\$300.00	\$ 300.00		300.00		\$ 300.00
12" dia. sluice gate	1	Lump Sum	\$1,300.00	\$ 1,300.00		1,300.00		\$ 1,300.00
FCA 8.75-cfs modular screen	1	Lump Sum	\$33,000.00	\$ 33,000.00	16,500.00		16,500.00	\$ 33,000.00
8" HDPE fish return pipe	70	Linear Feet	\$4.00	\$ 280.00		280.00		\$ 280.00
8" slide gate	1	Lump Sum	\$500.00	\$ 500.00		500.00		\$ 500.00
12" culvert	60	Linear Feet	\$8.00	\$ 480.00			480.00	\$ 480.00
18" HDPE Dewatering Pipe	80	Linear Feet	\$20.00	\$ 1,600.00		1,600.00		\$ 1,600.00
			Sub-Total	\$ 48,960.00	\$ 20,900.00	\$ 7,080.00	\$ 20,980.00	\$ 48,960.00
Equipment, Labor, and Mobilization								
Trash Pump	5	days	\$100.00	\$ 500.00		500.00		\$ 500.00
Excavator	80	Hours	\$150.00	\$ 12,000.00		12,000.00	\	\$ 12,000.00
Dump Truck	60	Hours	\$100.00	\$ 6,000.00		6,000.00		\$ 6,000.00
				\$ -				\$ -
			Sub-Total	\$ 18,500.00	\$ -	\$ 18,500.00	\$ -	\$ 18,500.00
TOTALS					\$ 21,914.88	\$ 27,880.00	\$ 33,680.00	\$ 83,474.88

OTHER REQUIREMENTS:

All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for additional clarification.

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

**Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used). Do not use government salaries as match. Describe here or in text.

***The Review Panel suggests that design and oversight costs associated with a proposed project not exceed 15% of the total project budget. If design and oversight costs are in excess of 15%, applications must include a justification or minimum of two competitive bids for the cost of undertaking the project.

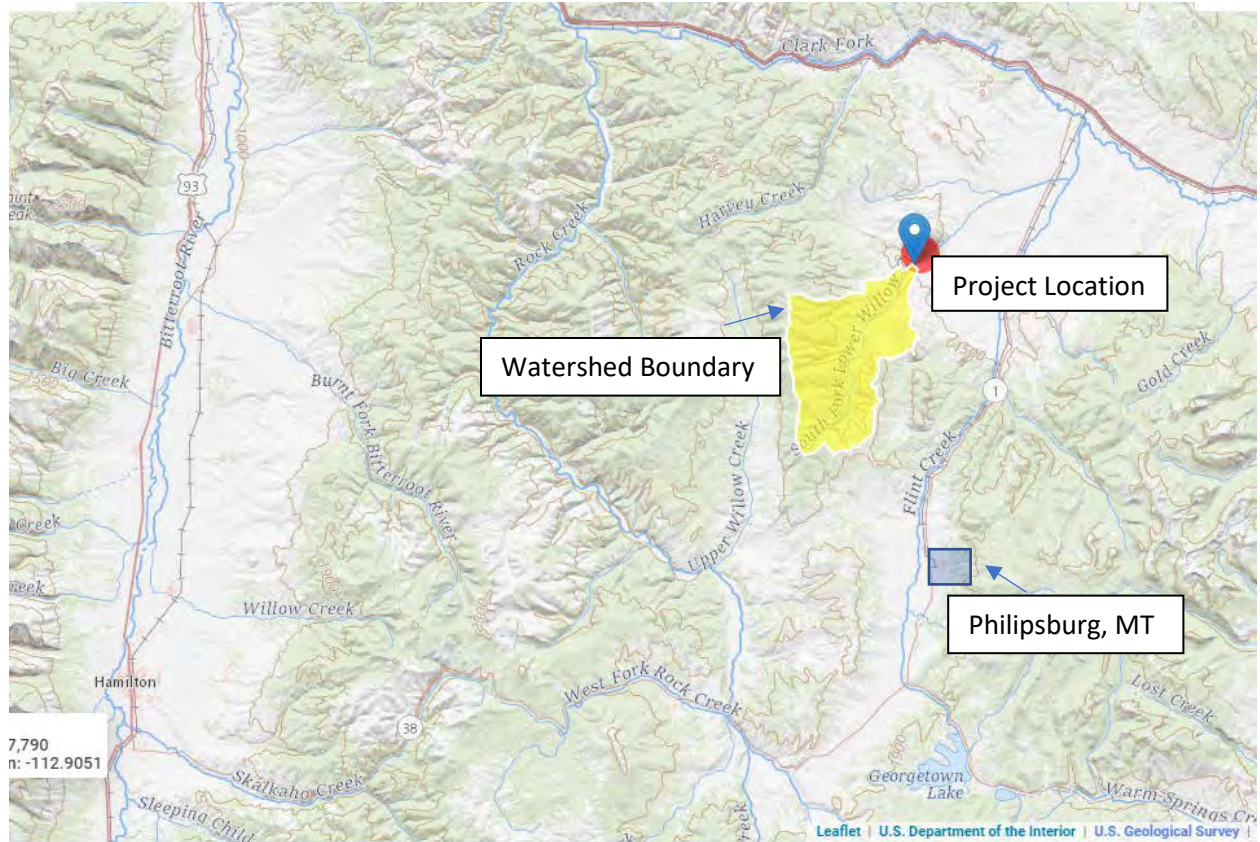
****The Review Panel recommends a maximum fencing cost of \$1.50 per foot. Additional costs may be the responsibility of the applicant and/or partners.

Additional details:

APPLICATION MATCHING CONTRIBUTIONS				
(do not include requested funds or contributions not associated with the application)				
CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
Montana Trout Unlimited	\$ -	\$ 2,500.00	\$ 2,500.00	Y
Montana Watershed Coordination Council Watershed Fund	\$ -	\$ 25,380.00	\$ 25,380.00	N
Trout Unlimited	\$ 5,000.00	\$ -	\$ 5,000.00	Y
Landowner	\$ 4,500.00	\$ -	\$ 4,500.00	Y
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
TOTALS	\$ 9,500.00	\$ 27,880.00	\$ 37,380.00	

OTHER CONTRIBUTIONS				
(contributions not associated with the application)				
CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
BOR WaterSmart	\$ -	\$ 9,100.00	\$ 9,100.00	N
WestSlope Chapter Trout Unlimited	\$ -	\$ 14,100.00	\$ 14,100.00	Y
Trout Unlimited	\$ 10,000.00	\$ -	\$ 10,000.00	Y
Landowner	\$ 480.00	\$ -	\$ 480.00	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
TOTALS	\$ 10,480.00	\$ 23,200.00	\$ 33,680.00	

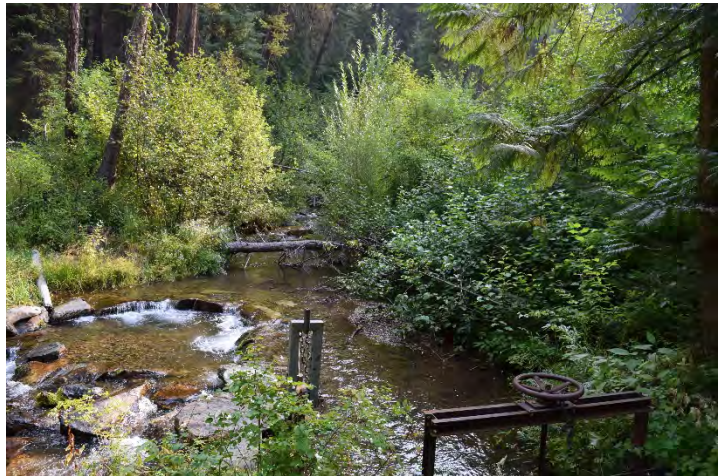
South Fork Lower Willow Creek Fish Passage Project Map



South Fork Lower Willow Creek

Irrigatoin Diversion Rock Vane Design

Example structures in the Clark Fork River basin from similar projects



CONFIDENTIAL

ALL DRAWINGS AND WRITTEN MATERIAL
APPEARING HEREIN ARE PROPERTY OF FARMERS
CONSERVATION ALLIANCE (FCA) AND MAY NOT
BE DUPLICATED, USED, OR DISCLOSED WITHOUT
WRITTEN CONSENT OF FCA



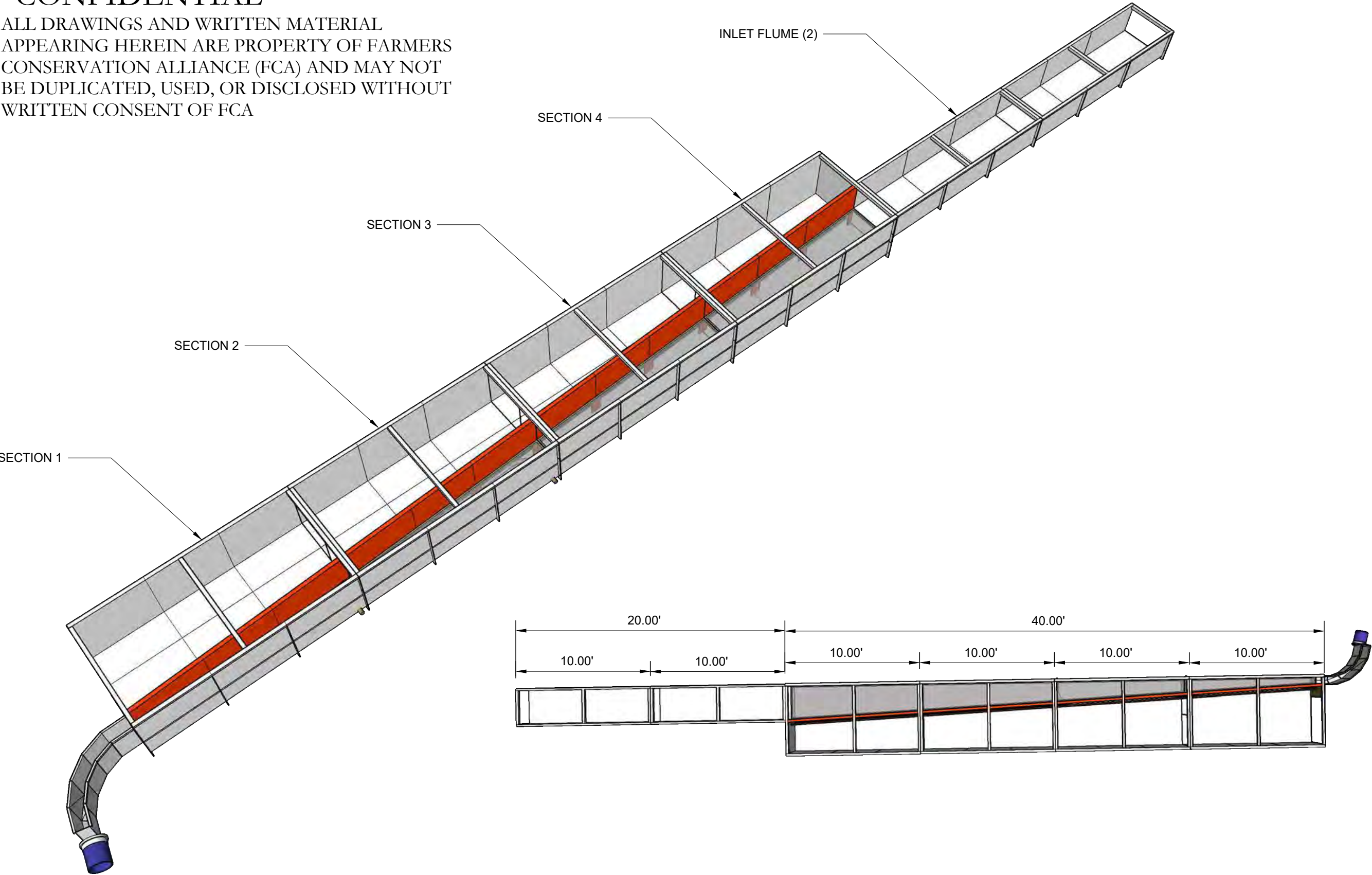
FARMERS CONSERVATION ALLIANCE
102 STATE STREET
HOOD RIVER, OR, 97031

CLIENT
TROUT UNLIMITED

PROJECT
SOUTH FORK LOWER
WILLOW CREEK

ISSUE
2020.11.23
DRAWN BY
DLK

PRELIMINARY 4-
SECTION MODULAR
FARMERS SCREEN



4-10.5 CFS FARMERS SCREEN ASSEMBLY

Dan Conn
Conn Land Holdings LLC
158 Conn Lane
Hall MT 59837
406-360-6858

South Fork Lower Willow Creek fish passage

007-2021

November 28, 2020

Montana Fish, Wildlife, & Parks

Attn: Michelle McGree 1420 East 6th Ave.

Helena, MT 59620

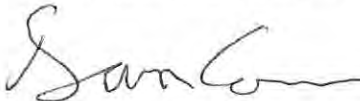
Future Fisheries Panel:

This letter represents my support for Trout Unlimited's South Fork Lower Willow Creek Fish Passage Project as a Flint Creek Valley landowner and irrigator with water rights on the South Fork diversion. Trout Unlimited's MWCC Watershed Fund proposal to improve fish passage and water use efficiencies while protecting water use in the South Fork Lower Willow Creek is a great collaborative project opportunity with multiple benefits.

The South Fork Lower Willow Creek Fish Passage Project would preserve our agricultural operations, which rely on water delivered from the South Fork Lower Willow Creek, while simultaneously protecting fisheries. Aging diversion infrastructure has made it increasingly difficult to maintain delivery of South Fork water to our property. The diversion also captures many fish, and every year our family finds many fish trapped at the end of the ditch. Working with Trout Unlimited (TU) to replace the diversion and install a fish screen on the ditch will significantly improve our water management, especially during periods of low streamflows, and also keep trout in the creek where they belong.

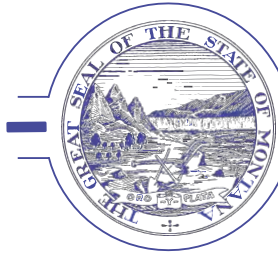
We want to maintain our legal right to delivery of irrigation water while doing our part to protect the fishery and be good stewards of the land. TU has shown a willingness to assist and help us find long-term solutions to address our water management challenges. In addition, their expertise will help ensure the fishery benefits from the project as well. We are hopeful that this Watershed Fund project proposal is successful so that we can achieve these common goals together.

Thank you for your consideration,



Dan Conn

DEPARTMENT OF JUSTICE
NATURAL RESOURCE DAMAGE PROGRAM



TIM FOX
ATTORNEY GENERAL

1720 9TH AVENUE

STATE OF MONTANA

(406) 444-0205 (OFFICE)
(406) 444-0236 (FAX)

PO BOX 201425
HELENA, MONTANA 59620-1425

November 24th, 2020

Trout Unlimited
312 N. Higgins, Suite 200
Missoula, MT 59801
Attention: Tess Scanlon

RE: NRDP's Letter of Support for South Fork Lower Willow Creek Fish Passage Reconnection Future Fisheries Project Proposal

Dear Ms. Scanlon,

The Montana Natural Resource Damage Program (NRDP) supports Trout Unlimited's (TU) Future Fisheries Project Proposal for a diversion replacement and fish screen installation on South Fork of Lower Willow Creek. The goals to restore fish passage and reduce entrainment to improve fisheries as identified in this Project Proposal complement the aquatic restoration work NRDP implements throughout the Upper Clark Fork River Basin (UCFRB), including numerous projects in Lower Flint Creek of Granite County.

NRDP, as outlined in the *Upper Clark Fork Aquatic and Terrestrial Resources Restoration Plans* (updated February 2019) (*Restoration Plans*), works to restore the terrestrial and aquatic resources of the UCFRB. NRDP's goals in the UCFRB and in the Flint Creek drainage include efforts to:

1. Restore the mainstem trout fishery by improving recruitment of fish from tributaries.
2. Replace lost trout angling in mainstem by improving trout populations in tributaries, and
3. Maintain or improve native trout populations in the UCFRB to preserve rare and diverse gene pools and improve the diversity and resiliency of the trout fishery.

According to the *Restoration Plans* and the *Prioritization of Areas in the Upper Clark for River Basin for Fishery Enhancement* (January 2018) (*Prioritization Plan*), Flint Creek is a Priority 1 Tributary and South Fork Lower Willow Creek is a Priority 4 Tributary. While Priority 1 and 2 streams are currently funded for restoration work in the *Restoration Plans*, the *Prioritization Plan* recognizes the benefit of all identified priority streams for restoration.

TU's proposed project to reconnect fish passage and improve fisheries in South Fork Lower Willow Creek fulfills, in part, NRDP's goal to improve trout populations and maintain native trout populations. NRDP supports this project and recognizes that providing fish passage and reduced entrainment on South Fork of Lower Willow Creek complements fisheries restoration work that NRDP is completing in the area.

Sincerely,

Beau Downing

Beau Downing
NRDP Restoration Project Manager



72 Rock Creek Rd
Clinton, MT 59825
Nov. 3, 2020

Montana Fish, Wildlife and Parks
Attn: Michelle McGree 1420 East
6th Ave.
Helena, MT 59620

Future Fisheries Panel:

This memo represents a letter of support for the South Fork Lower Willow Creek Fish Passage Project. South Fork Lower Willow Creek flows into the Lower Willow Creek Reservoir and supports a healthy native westslope cutthroat trout population. South Fork Lower Willow Creek is an important tributary because it supports an isolate cutthroat population due to Lower Willow Dam which creates a barrier between the South Fork and Lower Willow Creek. The South Fork Lower Willow Creek and North Fork Lower Willow Creek drainages are also unique in that they provide an extensive number of stream miles of protected/isolated habitat for westslope cutthroat trout.

This project could provide significant benefits to the native fisheries in the South Fork Lower Willow Creek. As evidenced by the photos included in this application, the current state of this diversion is problematic. Trout Unlimited collected data on the diversion structure and analyzed it for fish passage. The results indicate that it is a seasonal barrier to fish passage. The diversion also negatively impacts the fishery by entraining fish in the irrigation ditch. Improving the irrigation diversion structure and screening the ditch to allow for seasonal migration in the South Fork Lower Willow Creek will benefit this important fishery.

Thank you for considering funding this project and please do not hesitate to contact me regarding any questions you have on this project.

A handwritten signature in blue ink, reading "Brad Liermann". The signature is fluid and cursive, with the first name "Brad" and last name "Liermann" clearly visible.

Brad Liermann, Fisheries Biologist

Trout Unlimited's South Fork Lower Willow Creek Fish Passage Project
Existing Conditions



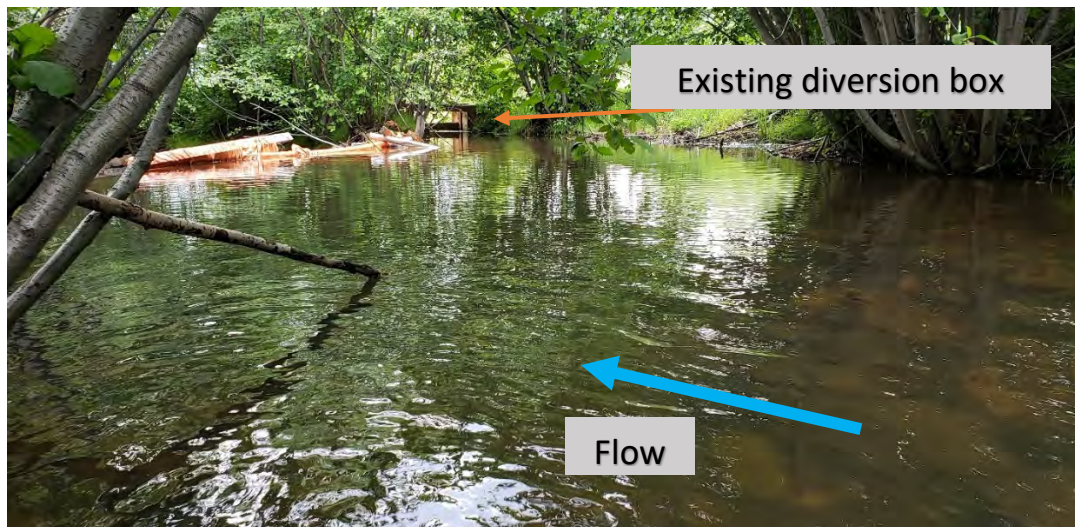
Looking across diversion dam. Photo taken late July 2019.



Looking upstream at diversion.



Looking downstream at the tarp and pole diversion in the stream. Ditch begins on right bank.



Looking downstream at diversion and timber headbox on right bank. Existing timber box to control flow of water into the stream will not be replaced.



Looking down ditch from start of the ditch