FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

All sections must be addressed, or the application will be considered invalid

I. APPLICANT INFORMATION

A. Applicant Name: Montana Partners for Fish and Wildlife Program

Mailing Address: 420 Barrett Street

City: Dillon State: MT Zip: 59725

Telephone: 406.865.0181 E-mail: james_magee@fws.gov

B. Contact Person (if different than applicant): Jim Magee

Address:

City: Dillon State: MT Zip:

Telephone: E-mail:

C. Landowner and/or Lessee Name (if different than applicant): Silverbow County, Butte Silverbow Water Utility, Jim Keenan

Mailing Address: 124 W Granite St

City: Butte State: MT Zip: 59701

Telephone: 406-490-2377 E-mail: jkeenan@bsb.mt.gov

II. PROJECT INFORMATION

A. Project Name: South Fork North Fork Divide Creek Fish Passage

River, stream, or lake: South Fork North Fork Divide Creek

Location: Township: 1N Range: 9W Section: 8

Latitude: 45.856711 Longitude: -112.751973 *Within project (decimal degrees)*

County: Silverbow

B. Purpose of Project:

The purpose of this project is to provide fish passage from South Fork Reservoir, part of Butte's drinking water supply, to the South Fork North Fork Divide Creek upstream.

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

A dam on the South Fork North Fork Divide Creek forms South Fork Reservoir which is part of the Butte municipal drinking water supply (Figure 1). The water from the creek enters the reservoir by first going through a settling area that is formed by a concrete weir. This concrete weir has a partially submerged splashpad downstream which limits and/or precludes upstream fish passage (Figure 2). The water next flows into a secondary settling pond before discharging through a 2-ft HDPE pipe that is perched roughly 3 ft above the elevation of South Fork Reservoir downstream (Figure 3). This culvert is a fish barrier preventing any fish that enters South Fork Reservoir from migrating back upstream to be able to access spawning habitat.

The South Fork North Fork of Divide Creek is also home to a non-hybridized population of westslope cutthroat trout. The dam forms a fish barrier and from 2013-2017 brook trout were removed from the stream and reservoir using electrofishing and netting. In 2013 a fish passageway was constructed to facilitate fish passage from the reservoir to the creek. The structure was constructed of grouted boulders and functioned for several years. No formal evaluation of fish passage was conducted at this time because colonization of the reservoir by cutthroat trout was limited. Cracks eventually began to form in the grout of the fishway and water began undermining the structure. Eventually the structure collapsed, and Butte Silverbow Water Company decommissioned the structure and began using the old reservoir inlet pipe which precludes fish passage.

Montana Partners for Fish and Wildlife Program is partnering with Butte Silverbow Water Company and FWP to construct a new fish passage channel and remove all other impediments to fish passage from South Fork Reservoir to the creek upstream. The new fish passage channel would be constructed on the south side of the valley and the existing pipe would be removed. The fish passage channel would be roughly 80 ft long and consist of series of 9 steps constructed of imported boulders. The steps will not exceed 1 ft in height and will have a plunge pool downstream. The bed of the stream will be constructed of imported, graded cobble and underlain by geotextile fabric which will prevent under scour. This structure would reconnect the reservoir to the secondary settling pond upstream. A new diversion from the stream into the secondary settling pond would be constructed of concrete. The structure would allow the county to divert water around reservoir when reservoir maintenance is required and would facilitate passage from the settling pond to the stream. From the new diversion to the existing weir upstream is roughly 130 ft. The concrete weir would be removed, and an alternative measuring device would be installed. The stream from the weir to the diversion would be regraded and a spawning channel would be created by importing adequately sized spawning gravels. This design was developed with the input of Silverbow County water personnel and meets their needs for maintaining the function of the system for drinking water delivery. It also will provide unimpeded passage for fish into the South Fork North Fork Divide Creek. Without passage, fish that enter the reservoir could not migrate back upstream to spawn and would essentially be lost from the population. South Fork Reservoir could be an important component to the long-term conservation of cutthroat. There is only about 3-4 miles of suitable habitat upstream of the reservoir and fish densities are relatively low in the stream. The reservoir has the capacity to hold 300-400 fish and the fish would grow to larger size which could the overall population size of cutthroat by 25% in drainage and aid in their long-term conservation.

D. What was the cause of habitat degradation and how will the project correct the cause?

South Fork Reservoir and much of its infrastructure was constructed in the early 1900's. How the water enters the reservoir has been modified several times through the years. It is unclear when the HDPE pipe was installed but it has been in place for at least 15 years.

E. Length of stream or size of lake that will be treated (project extent): 220 ft, 3 acre reservoir, 0.63 acre settling pond.

Length/size of impact, if larger than project extent (e.g., stream miles opened): Will open 3-4 miles of stream

F. Project Budget Summary:

Grant Request (Dollars):	**$**	**35,000**
Matching Dollars:	**$**	**70,000**
Matching In-Kind Services:*	**$**	**10,000**

**salaries of government employees are not considered matching contributions*

Other Contributions (not part of this app)	**$**	
Total Project Cost:	**$**	**115,000**

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

H. Attach project location map(s) that include:

- [x] Extent of the project, including context (relation to major landmark or town)
- [X] Indication of public and private property
- [ ] Riparian buffer locations and widths (if applicable) and grazing locations

I. Attach project plans:

- [x] Detailed sketches or plan views with the location and proposed restoration
- [x] Pre-project photographs (GPS location strongly recommended)
- [ ] If water leasing or water salvage is involved, attach a supplemental questionnaire (*https://myfwp.mt.gov/getRepositoryFile?objectID=36110*)

J. Attach letters or statements of support (e.g., landowner consent, community or public support, and fish biologist support). List any other project partners:

Montana Fish, Wildlife & Parks, Butte Silverbow County, Big Hole Watershed Committee

III. MAINTENANCE AND MONITORING (attach additional information to end of application):

A. A 20-year maintenance commitment is required*. Please confirm that you will ensure this protection and describe your approach. Attach any relevant maintenance plans. Yes [X] No [ ]

**If it is a water leasing project, describe the length of the agreement.*

Butte Silverbow county will own and maintain the structure for the duration of this time commitment.

B. Will grazing be part of or adjacent to the project? If so, describe or attach land management plans, including short term and long-term grazing regimes. If the landowner is not the applicant, please describe their involvement in the project. *If you want assistance with grazing plan development, note your need.*

No, the reservoir and creek upstream for approximately 1 mile are excluded from grazing.

C. Will the project be monitored to determine if goals were met? If so, what are the short-term and long-term plans to assess benefits and lessons learned? Were pre-project data collected? Will monitoring information be shared with FWP?

Monitoring will be conducted by trapping and tagging of cutthroat trout that enter the reservoir and then electrofishing the creek upstream to determine if those fish moved upstream. Additionally, redd counts will be conducted in the constructed spawning channel. This work would all be performed by FWP and US Forest Service personnel.

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

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

Westslope cutthroat trout

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

This project will provide access to wild fish habitat upstream of the reservoir. It will also create over 100 ft of spawning habitat which is lacking in the South Fork North Fork Divide Creek.

C. What is the expected improvement to fish populations, both short term and long term? How might the project translate to angler success?

We anticipate that the cutthroat trout numbers in the South Fork of Divide Creek will increase by as much as 25% as a result of this project.

D. Will the project increase public fishing opportunity for wild fish and, if so, how? Is public fishing allowed onsite? If not, describe how the public would access the project benefits.

South Fork Reservoir and the settling ponds upstream are closed to public access to protect the drinking water supply of the county so there will be no increase in angler opportunities. The stream upstream of the reservoir is open to the public but it is small and likely receives little if any angling use.

E. Aside from angling, what local or large-scale public benefits will be realized from this project?

The main public benefit of this project is the long-term conservation of one of the few remaining populations of non-hybridized westslope cutthroat in the Big Hole drainage. Such projects keep westslope cutthroat trout from warranting listing under the Endangered Species Act which has significant public benefits. While not accessible to anglers, fish from South Fork North Fork Divide Creek will be used to repopulate other streams that would have more angler access.

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

No

G. Will the project result in the development of commercial recreational use on the site (including paid access)? Explain:

No

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

No

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.

V. 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: James P Magee Date: May 15, 2023

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

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				$ -				$ -
Design				$ -				$ -
Engineering				$ -				$ -
Permitting				$ -				$ -
Oversight				$ -				$ -
Maintenance				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Travel								
Mileage	1	travel to site		$ -	-			$ -
Per diem				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Construction Materials****								
600 cy imported cobble				$ -	15,000.00			$ 15,000.00
250 cy riprap				$ -		10,000.00		$ 10,000.00
geotex fabric				$ -				$ -
concrete diversion with steel stops				$ -				$ -
	1	above items	$62,000.00	$ 62,000.00		37,000.00		$ 37,000.00
				$ -				$ -
				$ -				$ -
				$ -				$ -
			Sub-Total	$ 62,000.00	$ 15,000.00	$ 47,000.00	$ -	$ 62,000.00
Equipment, Labor, and Mobilization								
Mobilization	1	mob to site	$9,000.00	$ 9,000.00		9,000.00		$ 9,000.00
Excavator				$ -	15,000.00			$ 15,000.00
Loader				$ -	5,000.00			$ 5,000.00
Roller				$ -				$ -
6x6 truck				$ -				$ -
Labor				$ -				$ -
	1	Items above excluding mobilization	$44,000.00	$ 44,000.00		24,000.00		$ 24,000.00
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
			Sub-Total	$ 53,000.00	$ 20,000.00	$ 33,000.00	$ -	$ 53,000.00
			TOTALS	$ 115,000.00	$ 35,000.00	$ 80,000.00	$ -	$ 115,000.00

OTHER REQUIREMENTS:

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

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 may require a justification or minimum of two competitive bids for the cost of undertaking the project. For projects that include a maintenance request, it must not exceed 10% of the total project cost.

****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)
State Wildife Grants	$ -	$ 50,000.00	$ 50,000.00	Y
USFWS Parnters Program	$ -	$ 10,000.00	$ 10,000.00	Y
George Grant Chapter Trout Unlimited	$ -	$ 10,000.00	$ 10,000.00	N
Butte Silverbow County (Rock)	$ 10,000.00	$ -	$ 10,000.00	Y
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ 10,000.00	$ 70,000.00	$ 80,000.00	115,000

OTHER CONTRIBUTIONS

(contributions not associated with the application)

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
		$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ -	$ -	$ -	

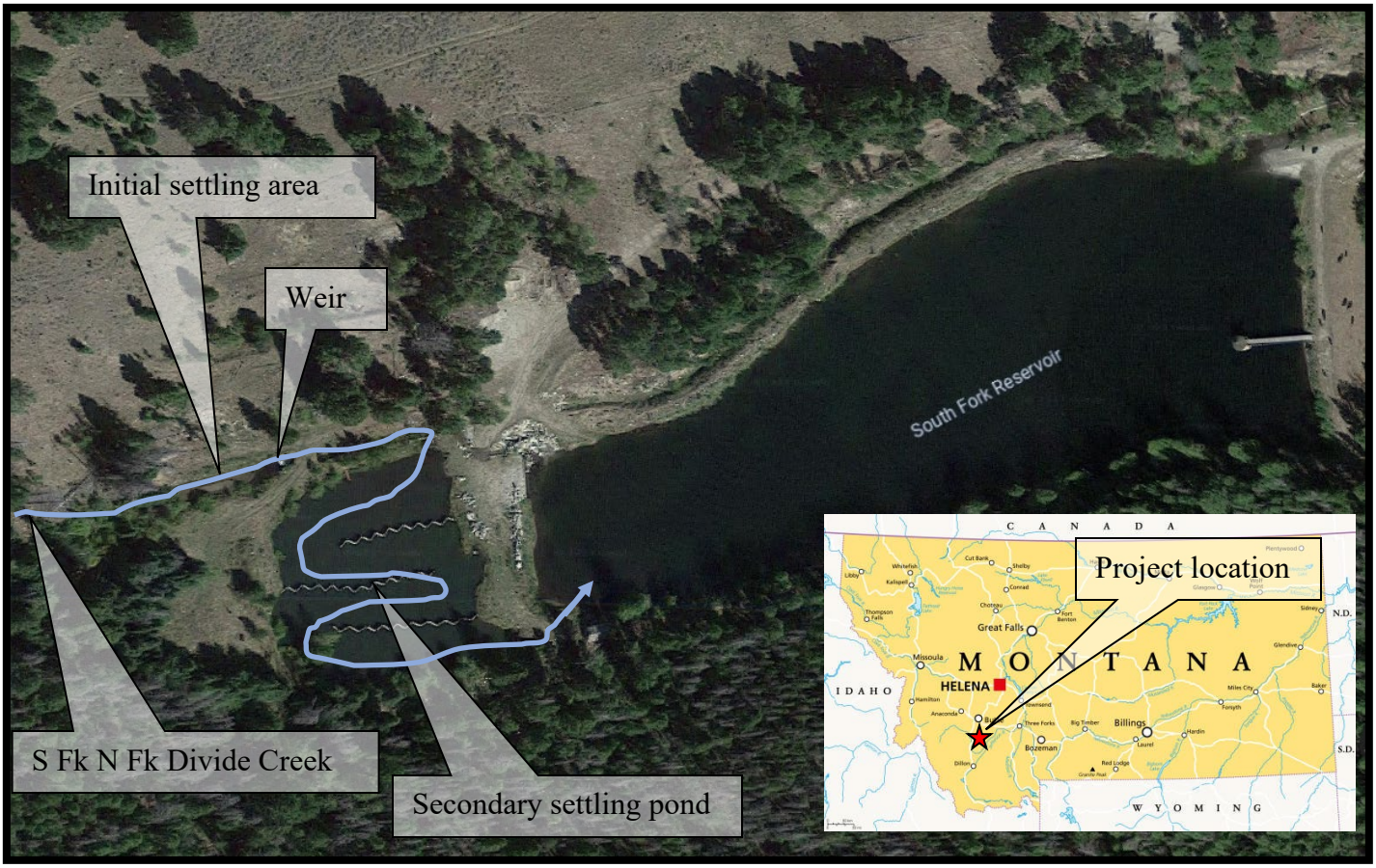

Figure 1. South Fork Reservoir and associated existing infrastructure.

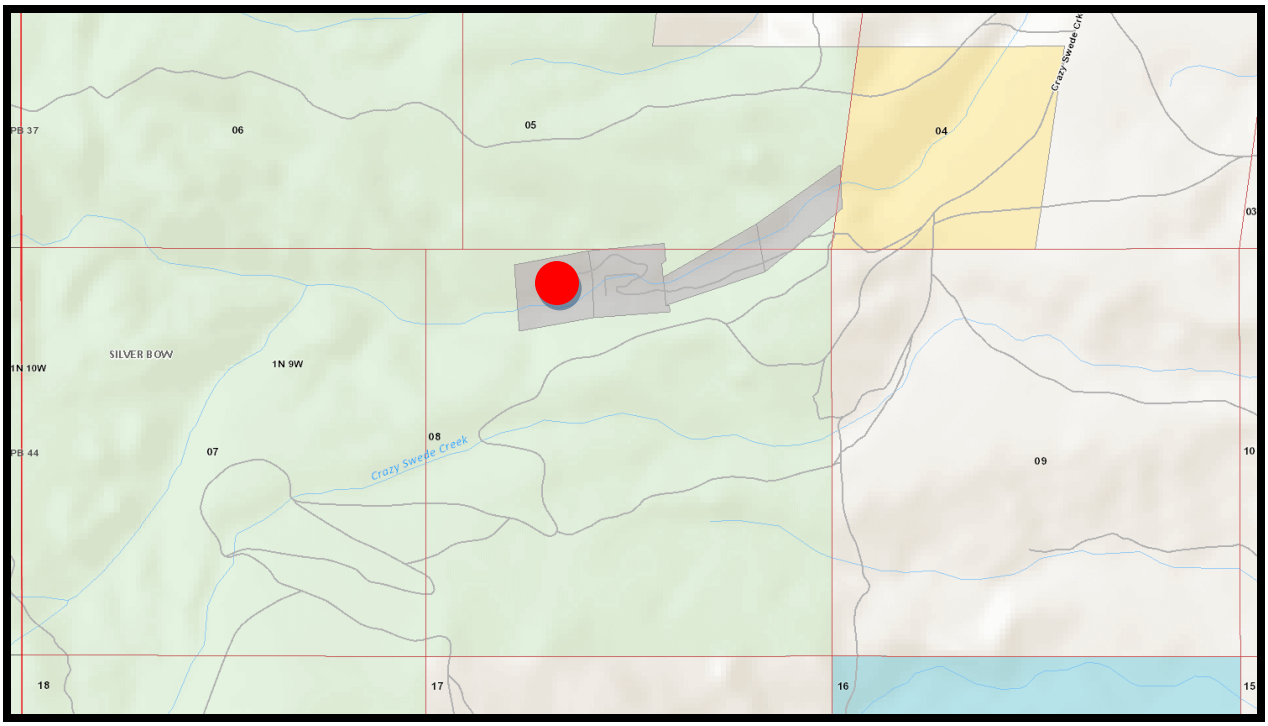

Figure 2. landownership fpr the South Fork North Fork Divide Creek Fish Passage Project. Project is located on Silverbow County property in T1N, R9W Section 8 at 45.856711, -112.751973.

Figure 3. Weir and initial settling area upstream in South Fork North Fork Divide Creek.

Figure 4. Discharge of S Fk N Fk Divide Creek into South Fork Reservoir from upstream settling pond.

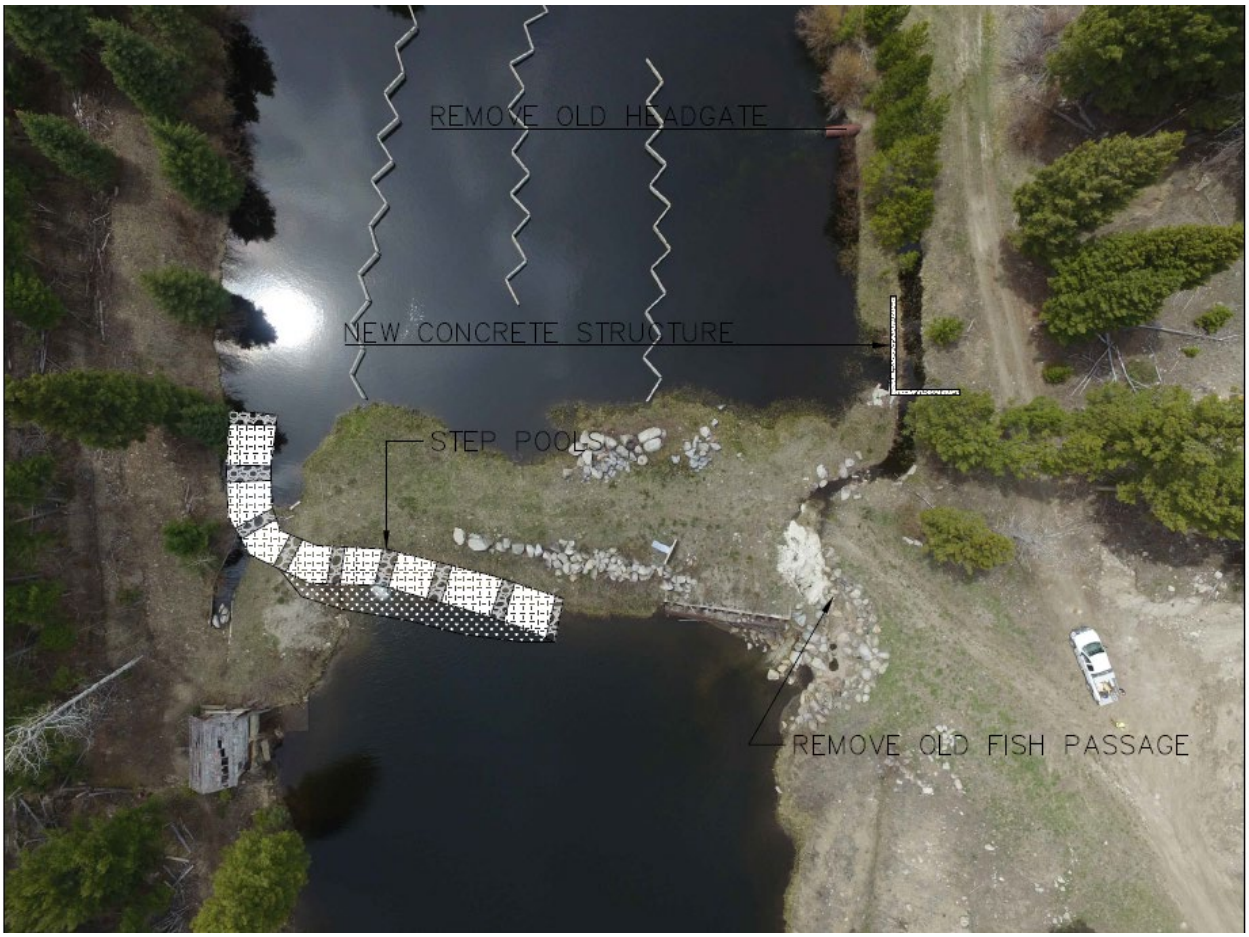

Figure 5. Design drawings of new fish passage channel that will connect South Fork Reservoir to the creek upstream.

FWP.MT.GOV

THE **OUTSIDE** IS IN US ALL.

MT Fish, Wildlife & Parks
Region 3 Headquarters
1400 S 19th Avenue
Bozeman, MT 59718

May 9, 2023

Future Fisheries Review Panel
Montana Fish Wildlife and Parks
P.O. Box 200701
Helena, MT 59620

Dear Review Panel,

Montana Fish, Wildlife & Parks (FWP) supports the Big Hole Watershed Committee's FFIP application for the fish passage project at South Fork Reservoir. South Fork Reservoir is piped over the continental divide as part of Butte's drinking water supply. The South Fork North Fork Divide Creek, which feeds the reservoir, is home to a native, non-hybridized population of westslope cutthroat trout. As one of only 21 non-hybridized populations of cutthroat remaining in the Big Hole drainage, FWP has made significant efforts to conserve this cutthroat population including the removal of brook trout, which were threatening the persistence of cutthroat. Brook trout were removed from the stream and South Fork Reservoir following four years of intensive electrofishing and gill netting. The dam forms the fish barrier that prevents brook trout from moving upstream.

The South Fork North Fork Divide Creek enters the reservoir through a 2-ft poly pipe perched several feet above the reservoir. The jump required to enter the pipe and the water velocities inside the pipe preclude upstream fish passage. Therefore, cutthroat trout that enter the reservoir cannot return to the stream to access spawning habitats. A grouted fish passage channel connecting the reservoir to the stream was constructed in 2016. However, the channel collapsed after the grout cracked and the stream undercut the boulders in the channel. Working collaboratively with Butte-Silverbow County, FWP and our partners developed a new proposal that moves the fish passage channel to the south and allows the County to continue using the settling pond upstream of the reservoir. The new fish passage structure will be constructed of a graded, gravel/cobble bed with boulder drop structures that do not exceed 1 ft, which will facilitate fish passage and prevent scour. Additionally, a control device will be installed allowing the County to control flows into the reservoir and an additional fish barrier will be removed upstream of the settling pond. The contractor will regrade and add spawning gravels to the stream channel entering the settling pond to improve spawning habitat for fish inhabiting the reservoir.

The reconnection of South Fork Reservoir to the South Fork North Fork Divide Creek will greatly aid in the long-term conservation of cutthroat in the stream. Only four miles of habitat exists upstream of the

reservoir and the population of cutthroat in the stream likely does not exceed 1,000 fish. The reservoir has the capacity to support 300-500 fish, which could increase the population by 50%. Furthermore, the fish in the reservoir will likely reach greater sizes than fish in the creek, which will increase reproductive potential of the population and improve its long-term viability. I hope that you will support the Big Hole Watershed Committee in their grant application for this project.

Thank you for considering this request for funding.

For questions or concerns, please reach out to the following FWP personnel:

Jim Olsen, Fisheries Biologist (406-533-8451, jimolsen@mt.gov)
Jen Smitham, R3 Public Comment Coordinator (406-495-3262, jsmitham@mt.gov)

Sincerely,

Marina Yoshioka
Region 3 Supervisor

THE CITY-COUNTY OF
Butte-Silver Bow
Water Treatment
Jim Keenan, Water Plant Superintendent
Ph: 406-475-4541 E-Mail: jkeenan@bsb.mt.gov

May 10, 2023

Future Fisheries Review Panel
Montana Fish Wildlife and Parks
P.O. Box 200701
Helena, MT 59620

Dear Review Panel,

I fully support the USFWS Partners for Fish and Wildlife Program in their application for FFIP funding for the fish passage project at South Fork Reservoir. The South Fork of Divide Creek is home to a native, non-hybridized population of westslope cutthroat trout. As one of only 21 non-hybridized populations of cutthroat left in the Big Hole, significant efforts have been made to conserve this cutthroat population including the removal of brook trout from the stream and South Fork Reservoir which were threatening the persistence of cutthroat. South Fork Reservoir water is piped over the Continental Divide as part of Butte's drinking water supply. South Fork Dam forms the fish barrier keeping brook trout from migrating upstream.

The South Fork of Divide Creek enters the reservoir through a 2-foot pipe perched approximately 2-feet above the reservoir. Both the jump required to enter the pipe and the velocity of water inside the pipe preclude any upstream fish passage. Therefore, any cutthroat trout that enters the reservoir from the stream cannot get back to the stream to access spawning areas and cannot complete its life cycle. An attempt was made in 2016 to create a grouted fish passage channel connecting the reservoir to the stream. This channel eventually failed as the grout cracked and the stream undercut the grouted boulders in the channel and the structure collapsed. Through a collaborative effort, a new concept has been developed that will allow fish passage and continued use of the settling pond structure above the main reservoir. The new configuration will prevent scouring and provide much better fish passage than the previous structure. Additionally, a control device will be installed that will allow control of water flow into the reservoir and an additional fish barrier will be removed upstream of the settling pond. The stream channel entering the settling pond will be regraded and gravels added to create a spawning channel that will provide additional spawning habitat for fish that migrate up from the reservoir.

I hope that you can support the USFWS Partners for Fish and Wildlife Program in their grant application to construct this project.

Sincerely,

Jim Keenan
Water Plant Superintendent