

II.

FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION All sections must be addressed, or the application will be considered invalid



APPLICANT INFORMATION I.

Α.	Applicant Name: Tr	out Unlimited					
	Mailing Address: 31	2 N. Higgins Ave, S	Suite 200				
	City: Missoula		State:	MT	Zip:	59802	
	Telephone: 406-540	-2944`	E-mail:	Rob.Robe	rts@tu	ı.org	
В.	Contact Person (if different than applicant	t):Rob Roberts					
	Address:						
	City:		State:		Zip:		
	Telephone:		E-mail:				
C.	Landowner and/or Les (if different than application	see Name ant):	McInnis, Cit	ty of Missoula	l		
	Mailing Address: 13	345 West Broadway					
	City: Missoula		State:	MT	Zip:	59802	
	Telephone: <u>406-552</u>	<u>-6766</u>	E-mail:	<u>mcinnisl@</u>	ci.mis	soula.mt.us	
PR	OJECT INFORMATION						
A.	Project Name: McKir	nley Lake Dam Rem	ioval				
	River, stream, or lake:	Rattlesnake Cree	ek				
	Location: Township: Latitude:	18W 47.018768°	Range: Longitude:	15 -113.920956	S°	Section: Within project	31 (decimal degrees)
	County: Missoula						

B. Purpose of Project:

The City of Missoula acquired ten dams on eight mountain lakes in the Rattlesnake Wilderness Area during the 2017 acquisition of the Mountain Water Company. The dams were originally built in the 1920s as part of the Rattlesnake Creek water supply, which no longer services Missoula. Currently, the dams have not been used for water delivery in more than 30 years, suffer from a lengthy maintenance backlog and are largely inoperational. The City of Missoula, Trout Unlimited and Montana Fish, Wildlife and Parks successfully removed the lower intake dam on Rattlesnake Creek dam in 2020 to improve fish passage in the watershed.

The McKinley Lake Dam is a headwaters storage dam and is considered a significant hazard by the US Forest Service, meaning that failure of the dam for any reason could cause non-recoverable environmental damage. Erosion at the dam spillway has created a severe headcut and, along with significant seepage along the dam toe, the dam has been recommended for monitoring and immediate mitigation. Removing the McKinley Lake Dam will eliminate an imminent threat to downstream native fisheries and eliminate a source of non-native fish in the Rattlesnake Creek watershed – since rainbow trout currently occupy McKinley Lake. Removing the obsolete dam and outlet infrastructure will also result in full stream restoration and will result in 5 acres of wetland, stream and floodplain improvement.

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

Rattlesnake Creek is a tributary to the Clark Fork River located in Missoula, Montana with an 82 square mile drainage that originates in the Rattlesnake Wilderness and meets the Clark Fork River in downtown Missoula, Montana. Rattlesnake Creek has 10 storage dams on 8 lakes in the Rattlesnake Wilderness area. All of the wilderness dams are operated by the City of Missoula under easement or special use permit with the Lolo National Forest.

McKinley Lake is a moderately sized glacial cirque lake at an elevation of 6,609 feet. It was artificially impounded by an earthen embankment originally built at the outlet in 1923, which now has a 16 acre footprint and an estimated lake volume of 211 acre-feet at full pool. McKinley Lake is an easement dam, as construction pre-dates the Federal Land Policy Management Act. The dam is classified as having a "Significant" hazard classification, meaning that failure of the dam for any reason results in no probable human loss of life, but can cause non-recoverable environmental damage. A breach failure could result in erosion and sediment transfer to Lake Creek and ultimately to Rattlesnake Creek where bull trout (a threatened species) are present, which is the basis for the dam's current Significant hazard rating.

The McKinley Lake dam is an earthen dam with a crest width of 12 feet and a height of 15 feet, with a maximum storage of 168 acre feet. The original construction drawings for McKinley Lake Dam indicate no timber crib core structures. The upstream and downstream slopes of the dam are lined with riprap. The spillway channel has eroded much of the hillside on which it flows and there is a severe headcut in the spillway channel that is continuing to advance toward the dam and lake.

The project plan will remove the dam spillway, embankment and adjacent apron for a linear extent of approximately 70 feet along the top of dam, tapering to six feet at the outlet channel. The excavation area of the breach channel would include 510 cubic yards of dirt and rock removal, leaving 2:1 side slopes in the breach channel. All piping, outlet valves and associate control structures would be removed. The rock and dirt from the earthen embankment will be used as fill material along the lake margins and screened to produce gravel, cobble and boulders for the stream reconstruction portions of the project.

The cost estimates and project design plans assume a breach channel capable of passing a 500-year flood with a peak flow of 65 cubic feet per second (cfs). A conceptual design plan and drawing including proposed breach cross section and profile view can be found in the *Attachments*. Designing to this flood event would result in a stable channel during extreme flood events and minimize the potential for backwater impoundment against the dam. The proposed breach channel would lower the dam crest elevation by nearly 15 feet, or near the assumed original outlet elevation of the cirgue lake.

The outlet streamchannel would be realigned at a slope of 4 to 9% for nearly 200 feet to tie into the lake surface and existing outlet channel downstream. Restoration would begin approximately 100 feet upstream of the former dam location and tie in 100 feet downstream of the dam site. The channel would have a five foot bankfull width and the constructed stream channel would be a moderately-entrenched step-pool stream type using large rock to provide grade control and stability at the steps. The constructed channel would meander into the vegetated floodplain located downstream of the dam. The streambanks would be constructed from alluvial materials, logs, brush and live plant material salvaged from the top of dam prior to construction.

Approximately 5 acres of the former reservoir would be exposed through lowering the crest of the former dam. Excess fill material from the breach excavation would be placed along the lake margins (littoral zone), creating sloping transitions and terrace features that enhance the natural topography. The constructed slopes through the edges of the former reservoir would be a gradually-sloping, terraced feature that supports riparian and wetland vegetation. Disturbed areas including the new floodplain, littoral zone, terraces, and upland features would be revegetated with salvaged plants, sod/topsoil and reseeded. Plants would be protected with either individual browse protectors or fencing exclosures to limit wildlife browse for at least three growing seasons following planting.

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

Rattlesnake Creek was the original water supply for the early settlers in Missoula, providing water for lumber mills and homesteaders. Because the flow on Rattlesnake Creek is variable in the summer - between 1911 and 1923 - ten dams were constructed on eight high mountain lakes in order to augment the water supply. Then in 1980, much of the land in the headwaters of Rattlesnake Creek was designated as the Rattlesnake Wilderness and National Recreation Area. The Rattlesnake Creek portion of the water utility system was discontinued shortly thereafter as a daily water supply source after *Giardia* was discovered in 1983, and the water company transferred all water supply to groundwater wells in the Missoula valley aquifer.

McKinley Lake was artificially impounded by an earthen embankment originally built at the outlet in 1923, which now has a 16 acre footprint and an estimated lake volume of 211 acre-feet at full pool. The lake was stocked sporadically with rainbow trout to support a recreational fishery, until Montana FWP ceased all stocking operations to focus on a wild trout fisheries policy. The lake has a maximum depth of 28 feet. Given the fact that the McKinley Lake supports a wild rainbow trout, which are a non-native species occupying the headwaters of Rattlesnake Creek, lowering the pool elevation to near pre-dam conditions would eliminate this source of non-native fish in the watershed.

Furthermore, the dam is classified as having a "Significant" hazard classification, meaning that failure of the dam for any reason could cause non-recoverable environmental damage. Erosion at the dam spillway has created a severe head cut that is advancing towards the reservoir, threatens imminent failure of the structure and has been recommended for action by Forest Service personnel. The project will remove the aging dam, create a stable breach channel at the outlet, and renaturalize the surrounding lake margins, floodplain and hillslopes.

- E. Length of stream or size of lake that will be treated (project extent): <u>16 acres</u> Length/size of impact, if larger than project extent (e.g., stream miles opened):
- F. Project Budget Summary:

Grant Request (Dollars):	\$	30,000
Matching Dollars:	\$	285,650
Matching In-Kind Services:*	\$	0
*salaries of government employees <u>a</u>	are	not considered matching contributions
Other Contributions (not part of this app)	\$	

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

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

Extent of the project, including context (relation to major landmark or town)

Indication of public and private property

Riparian buffer locations and widths (if applicable) and grazing locations

Total Project Cost: \$ 315,650

I. Attach project plans:

Detailed sketches or plan views with the location and proposed restoration

Pre-project photographs (GPS location strongly recommended)

If water leasing or water salvage is involved, attach a supplemental questionnaire (<u>https://myfwp.mt.gov/getRepositoryFile?objectID=36110</u>)

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

Partners on the project include City of Missoula, Trout Unlimited, Montana Fish, Wildlife and Parks. A Memorandum of Agreement documenting the partnership is attached.

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

es	5	No
x		

TU and the City of Missoula will be responsible for maintenance of the project.

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

No grazing will be part or adjacent to project. The project is surrounded by the Rattlesnake Wilderness Area of the Lolo National Forest. Subsequent to the project, the Lolo National Forest will be the landowner of the surrounding area and the project site will be incorporated in the Rattlesnake Wilderness Area and managed and protected as wilderness.

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?

Montana Fish, Wildlife and Parks is a partner on the projects in the Rattlesnake Wilderness and associated lakes. Data has previously been collected on fisheries populations in the lakes, as well as depth and temperature stratification in the lakes, and longitudinal temperature and flow monitoring in Rattlesnake Creek. The City of Missoula and Trout Unlimited will monitor revegetation effectiveness, weed encroachment and overall project stability. The City and TU will also work with Montana FWP to evaluate whether the non-native rainbow trout have been successfully eradicated from the lake.

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

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

Rattlesnake Creek is a high priority fisheries area for Montana FWP because it is considered a stronghold for native fish like westslope cutthroat, bull trout and mountain whitefish. For more than two decades, Montana FWP, TU and partners have attempted to conserve, protect and improve fisheries in Rattlesnake Creek through research projects, habitat improvement and fish passage projects such as screening irrigation ditches and dam removal at the lower Rattlesnake Dam in 2020. Removing the McKinley Lake Dam will eliminate an imminent threat to downstream native fisheries and eliminate a source of non-native fish in the Rattlesnake Creek watershed.

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

The removal of the McKinley Lake dam will help to conserve the native fish population in by Rattlesnake Creek by eliminating the threat of a catastrophic breach that could impair water quality and affect native fish. There is an isolated population of genetically pure bull trout downstream of the project area and upper Rattlesnake Creek is considered a stronghold for westslope cutthroat. Also, McKinley Lake currently contains a self-sustaining population of non-native rainbow trout. Lowering the pool elevation to pre-dam conditions would likely eliminate this source of non-native fish in the watershed. Removing this source of rainbow trout in the headwaters of Rattlesnake Creek will help protect the genetic stock of westlsope cutthroat in Rattlesnake Creek.

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

Rattlesnake Creek is a key spawning tributary for wild and native trout, including endangered bull trout and native cutthroat trout, and is a popular recreational fishery that supports more than 1,000 angler days a year. Currently, the headwaters lake in the Rattlesnake support non-native species of trout, which impact the genetic composition of native fish. McKinley Lake currently supports a small population of non-native rainbow trout. Montana FWP has reported that introduced rainbow, brown and brook trout likely compete with native trout when these species occur in the same water body. Rainbow trout and brook trout also hybridize readily with westslope cutthroat trout and bull trout, respectively. These compromises were not heavily considered when non-native trout introductions were encouraged or completed by fisheries management agencies in the early and mid 1900s. Today, managers are faced with the difficult task of recovering threatened native stocks despite the presence and importance of introduced trout species. Removing the dam at McKinley Lake will remove one population of rainbow trout.

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.

The Rattlesnake Creek drainage offers a range of fishing opportunities from wilderness lake and stream fisheries to urban angling in downtown Missoula. Voluntary catch-and-release angling is prevalent in all stream reaches. Upper reaches of the stream offer a popular westslope cutthroat fishery that is not accessible by motorized vehicles. Public fishing is allowed in the Rattlesnake National Recreation Area and Wilderness upstream of Beeskove Creek, which is approximately 6 miles from the main trailhead for the area. Public fishing opportunities will remain unimpacted as a result of the project.

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

The Rattlesnake NRA and Wilderness Area supports a large variety of high-use recreational activity, like fishing, biking, hiking, hunting, and horseback riding. The McKinley Lake Dam lies within this area and currently recreational use is allowed on site, but is impacted by the use of vehicles and helicopters (permitted by Forest Service) to inspect and maintain the dam and associated infrastructure. The decommissioning project will renaturalize the site and eliminate the need for these operations and maintenance activities – effectively improving the recreational user experience in the wilderness setting.

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

No. The Rattlesnake Creek water rights acquired by the City include Statements of Claim for surface water from Rattlesnake Creek, eight Statements of Claim to store water in the lakes near the headwaters of Rattlesnake Creek, and seven Statements of Claim for water directly diverted from the creek without storage. The storage and direct- flow water rights, combined in their use, provided a reliable year-round source of supply for several decades as the city of Missoula grew in population and water demands. All Rattlesnake water rights have a period of use from January 1 to December 31.

In 1983, the water system moved to groundwater wells due to contamination concerns (giardia) in the Rattlesnake Creek surface water. In an effort to protect the senior water rights from non-use and potential abandonment concerns, the seven direct-flow rights were changed in 1998 to add eight wells (3A, 3B, 21, 30, 31, 32, 33, and 24) as additional points of diversion that are hydrologically connected to surface water. The eight lake storage rights were not changed to allow diversion from the hydrologically connected wells, but it remains an option to do so. No other water rights are held in the upper Rattlesnake Creek watershed.

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

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

No.

Applicant Signature:

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.

Date: 10/25/2022

Submittal: Applications must be signed and received on or before November 15 and May 15 to be considered for the subsequent funding period. Late or incomplete applications will be rejected.

Mail to:	FWP Future Fisheries	Email:	Future Fisheries Coordinator
	Fish Habitat Bureau		FWPFFIP@mt.gov
	PO Box 200701		(electronic submissions must be signed)
	Helena, MT 59620-0701		For files over 10MB, use https://transfer.mt.gov and send
			to mmcgree@mt.gov

McKinley Lake Dam Removal BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Both tables must be completed or the application will be returned

PROJECT COSTS						CONTRIBUTIONS						
WORK ITEMS									OTHER			
(Itemize by	NUMBER OF	UNIT				FUTURE FISHERIES	MATCH (Cash		(Not part of this			
Category)	UNITS	DESCRIPTION*	COST/UNIT		TOTAL COST	REQUEST	or Services)**		application)		TOTAL	
Personnel			# 1.000.00	•	1 000 00		1 0 0 0	<u>.</u>		•	4 000 00	
Survey	1	Each	\$4,000.00	\$	4,000.00		4,000.00)		\$	4,000.00	
Design				\$	-					\$	-	
Engineering				\$	-					\$	-	
Permitting				\$	-					\$	-	
Oversight				\$	-					\$	-	
				\$	-					\$	-	
			Sub-Total	\$	4,000.00	\$-	\$ 4,000.00) \$	- 6	\$	4,000.00	
<u>Travel</u>												
Mileage				\$	-					\$	-	
Per diem				\$	-					\$	-	
			Sub-Total	\$	-	\$-	\$-	\$	-	\$	-	
Construction Ma	terials****											
				\$	-					\$	-	
Geotextile	180	SY	\$15.00	\$	2,700.00		2,700.00)		\$	2,700.00	
				\$	-					\$	-	
				\$	-					\$	-	
			Sub-Total	\$	2,700.00	\$-	\$ 2,700.00) §	- 6	\$	2,700.00	
Equipment, Lab	or, and Mobiliz	ation			,		II. ,			<u> </u>	,	
				\$	-					\$	-	
Mobilization	1	Lump Sum	\$40.000.00	\$	40.000.00		40.000.00)		\$	40.000.00	
Helicopter	-		+,	Ŧ	,		,	-		-	,	
Support	30	Trip	\$3,000.00	\$	90,000.00		90,000.00)		\$	90,000.00	
Clearing												
/Grubbing	0.1	Acre	\$9,000.00	\$	900.00		900.00)		\$	900.00	
Dewatering	56	Day	\$700.00	\$	39,200.00		39,200.00)		\$	39,200.00	
Sediiment												
Control	1	Lump Sum	\$6,000.00	\$	6,000.00		6,000.00)		\$	6,000.00	
Excavation and	540	Cubie Vard	¢75.00	¢	20.250.00		20.250.00			¢	20.250.00	
Structure	510	Cubic Yard	\$75.00	\$	38,250.00		38,250.00)		\$	38,250.00	
Removal	1		\$9,000,00	¢	0,000,00		9 000 0	h		¢	0,000,00	
Rinran Removal	120	Cubic Vard	\$3,000.00 \$120.00	ψ Φ	15 600 00		15 600.00))		φ	9,000.00	
Site Restoration	120	Acro		φ Φ	15,000.00	15 000 00	10,000.00			¢	15,000.00	
Streamchannel	5	AUE	φ3,000.00	φ	15,000.00	15,000.00		_		φ	15,000.00	
Restoration	1	Lump Sum	\$15,000.00	\$	15 000 00	15 000 00				\$	15 000 00	
Labor	1		\$40,000,00	\$	40 000 00	10,000.00	40 000 00	h		\$	40 000 00	
	I		φ+0,000.00	Ψ ¢	-0,000.00		-0,000.00	-		Ψ ¢		
				φ Φ	-			_		¢	-	
I				φ	-					Φ	-	

006-2023

McKinley Lake Dam Removal

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Sub-Total \$	308,950.00	\$ 30,000.00	\$ 278,950.00	\$-	\$ 308,950.00
TOTALS \$	315,650.00	\$ 30,000.00	\$ 285,650.00	\$-	\$ 315,650.00

OTHER REQUIREMENTS:

<u>All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid.</u> 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	APPLICATION MATCHING CONTRIBUTIONS							
(do not include requested fund	(do not include requested funds or contributions not associated with the application)							
CONTRIBUTOR		IN-KIND		CASH		TOTAL	Secured? (Y/N)	
City of Missoula	\$	-	\$	50,000.00	\$	50,000.00	Yes	
Trout Unlimited	\$	-	\$	30,650.00	\$	30,650.00	Yes	
Open Rivers Fund - Hewlett Foundation	\$	-	\$	100,000.00	\$	100,000.00	Yes	
Montana DNRC Renewable Resource Grant	\$	-	\$	105,000.00	\$	105,000.00	Yes	
	\$	-	\$	-	\$	-		
	\$	-	\$	-	\$	-		
	\$	-	\$	-	\$	-		
	\$	-	\$	-	\$	-		
TOTALS	\$	-	\$	285,650.00	\$	285,650.00		

OTHER CONTRIBUTIONS (contributions not associated with the application)							
CONTRIBUTOR		N-KIND	C	ASH	Т	OTAL	Secured? (Y/N)
	\$	-	\$	-	\$	-	
	\$	-	\$	-	\$	-	
	\$	-	\$	-	\$	-	
	\$	-	\$	-	\$	-	
	\$	-	\$	-	\$	-	
	\$	-	\$	-	\$	-	
	\$	-	\$	-	\$	-	
	\$	-	\$	-	\$	-	
	TOTALS \$	-	\$	-	\$	-	





McKinley Lake - Photos



Spillway Headcut (on left) and Dam (on right)



Back Side of Dam at Low Pool

006-2023

McKinley Lake – Site Photos



Back Side of Dam

Front Wall of Dam



Contract Drawings For

Trout Unlimited Rattlesnake Wilderness Dams Project McKinley Lake Improvements - 30% Design

HDR Project No. 10299859

Missoula, MT April 2022

INDEX OF DRAWINGS

GENERAL

- 1. G-01 TITLE, LOCATION MAP AND INDEX
- 2. G-02 ABBREVIATIONS 3. G-03 SYMBOLOGY AND LEGEND

CIVIL

- C-01 OVERALL SITE PLAN
 C-02 EXISTING CONDITIONS MAP
 C-03 PROPOSED GRADING
 C-04 PROPOSED PROFILE AND CHANNEL CROSS SECTIONS
- C-05 DETAILS
 C-06 PROPOSED REVEGETATION



006-2023





ISSUE	DATE	DESCRIPTION	PROJECT NUMBER	10299859
-	-	-		
			DRAWN BY	J WRIGHT
			 DESIGNED BY	D. MARCH
			 PROJECT MANAGER	D. MARCH

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

TROUT UNLIMITED RATTLESNAKE WILDERNESS DAMS PROJECT

30% SUBMITTAL

McKINLEY LAKE IMPROVEMENTS







GENERAL NOTES:

- 1. THE AERIAL IMAGERY IS FOR REFERENCE ONLY AND CANNOT BE RELIED UPON FOR THE LOCATIONS OF ANY PROPOSED OR EXISTING UTILITIES, STRUCTURES, OR FOR SCALE.
- 2. FOR PROPOSED REVEGETATION, SEE SHEET C-06.



FILENAME C-01.DWG SCALE 1" = 60'

SHEET C-01 D



3

1

2



6

SITE CONTROL TABLE					
NORTHING	EASTING	ELEVATION	DESCRIPTION	SET BY	
1040386.68	867077.32	6874.90	5/8" REBAR, 1.25" PLASTIC CAP	IMEG (TLI)	
1040488.33	867005.09	6874.50	5/8" REBAR, 1.25" PLASTIC CAP	IMEG (TLI)	
1040550.24	866994.16	6875.60	60D NAIL	IMEG (TLI)	
1040603.84	867020.82	6875.21	1/2" REBAR, 1" PLASTIC CAP	DJ&A	
1040605.55	866918.14	6873.96	1/2" REBAR, 1" PLASTIC CAP	DJ&A	
	Interpretation Interpretation NORTHING 1040386.68 1040488.33 1040550.24 1040603.84 1040605.55	Interpretation Reserved NORTHING EASTING 1040336.68 867007.32 104048.33 867005.09 104055.24 866994.16 104063.84 867020.82 104065.55 866918.14	International content Karting ELEVATION 1040386.68 667077.32 6874.50 1040488.33 867005.09 6874.50 1040505.024 866994.16 6875.60 104063.84 867020.82 6873.96 1040605.55 866918.14 6873.96	IROL TABLE NORTHING EASTING ELEVATION DESCRIPTION 1040386.68 8670.77.32 6874.90 5/8" REBAR, 1.25" PLASTIC CAP 1040488.33 867005.09 6874.50 5/8" REBAR, 1.25" PLASTIC CAP 1040505.24 866994.16 6875.60 600 NAIL 1040603.84 867020.82 6875.21 1/2" REBAR, 1" PLASTIC CAP 1040605.55 866918.14 6873.96 1/2" REBAR, 1" PLASTIC CAP	

SURVEYOR'S NOTES

- 1. HORIZONTAL INFORMATION: COORDINATE VALUES AND DISTANCES ARE STATE PLANE (GRID) VALUES AND ARE IN REFERENCE TO U.S. STATE PLANE COORDINATE SYSTEM, MONTANA STATE PLANE ZONE 2500, NORTH AMERICAN DATUM 1983 (NAD83) IN WHICH THE COORDINATE VALUES WERE ESTABLISHED BY IMEG (FORMERLY TERRITORIAL LANDWORKS) PREVIOUSLY AND UTILIZED AFTER VERIFYING MONUMENT EXISTENCE AND STABILITY.
- VERTICAL INFORMATION: GNSS DERIVED ELEVATIONS WERE UTILIZED FOR ALL MAPPING POINTS ON THIS PROJECT AND IS IN REFERENCE TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) UTILIZING GEOID 128. UTILIZING CP-2 WHICH WAS HELD FIXED USING THE ELEVATION PROVIDED BY IMEG (FORMERLY TERRITORIAL LANDWORKS), SAID VALUE BEING 6874.50 FEET.
- 3. EXISTING IMEG (FORMERLY TERRITORIAL LANDWORKS) CONTROL POINTS CP-4 AND CP-5 WERE NOT RECOVERED DURING THIS SURVEY. 4. THE BASIS OF BEARING FOR THIS PROJECT IS GRID NORTH OF MONTANA STATE PLANE ZONE (2500)
- 5. HORIZONTAL UNITS ARE LISTED AS INTERNATIONAL FEET, VERTICAL UNITS ARE LISTED AS U.S. SURVEY FEET.
- 6. ELEVATIONS SHOWN AT STUMP LOCATIONS WERE TAKEN AT THE APPROXIMATE LOWEST ADJACENT STUMP FACE ELEVATION.
- 7. BATHYMETRIC ELEVATIONS FOR MCKINLEY LAKE ARE A COMPILATION OF A 2007 BATHYMETRIC SURVEY BY MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS, AND FIELD LOCATIONS PERFORMED BY THIS CONSULTANT ON JULY 7, 2021.

	PROJECT MANAGER D. MARCH			
	DESIGNED BY D. MARCH			
 	DRAWN BY J. WRIGHT	PRELIMINARY	TROUT UNLIMITED	
		NOT FOR CONSTRUCTION	RATTLESNAKE WILDERNESS DAI	
			FROJECT	
• • • •		30% SUBMITTAL	McKINI EY I AKE IMPROVEMENT	
ISSUE DATE DESCRIPTION	PROJECT NUMBER 10299859			

7



А

MS

CIVIL EXISTING CONDITIONS MAP

FILENAME C-02.DWG SCALE AS SHOWN SHEET C-02

С

D

в

ſS



McKINLEY LAKE IMPROVEMENTS

PROJECT NUMBER 10299859

ISSUE DATE DESCRIPTION



- 1. FOR PROPOSED CHANNEL PROFILE VIEW, SEE SHEET C-04.
- 2. FOR SURVEY CONTROL, SEE SHEET C-02.

SHEET C-03 С



			-		
			-		
- ISSUE	- DATE	- DESCRIPTION	PROJECT NUMBER	10299859	30% SUBMITTAL

PROJECT

McKINLEY LAKE IMPROVEMENTS

FILENAME C-04.DWG SCALE AS SHOWN SHEET C-04 в

А



		DRAWN BY J. WRI	RIGHT	PRELIMINARY	TROUT UNLIMI
				NOT FOR CONSTRUCTION	RATTLESNAKE WILDER
				OR RECORDING	PROJECT
*	· · · ·			30% SUBMITTAL	
	ISSUE DATE DESCRIPTION	PROJECT NUMBER 102998	9859	JU /8 SUDWITTAL	
	ISSUE DATE DESCRIPTION	PROJECT NUMBER 102998	0859	30% SUBMITTAL	MCKINLEY LAKE IMF

AKE IMPROVEMENTS

7

D

С

В

А



FX

	PROJECT MANAGER	D. MARCH	
	DESIGNED BY	D. MARCH	l I
ľ	DRAWN BY	J. WRIGHT	l I
			N
·			
			i i
-			i i
· · · ·			i i
ISSUE DATE DESCRIPTION	PROJECT NUMBER	10299859	i i

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

30% SUBMITTAL

TROUT UNLIMITED RATTLESNAKE WILDERNESS DAMS PROJECT

McKINLEY LAKE IMPROVEMENTS







GENERAL NOTES:

THE AERIAL IMAGERY IS FOR REFERENCE ONLY AND CANNOT BE RELIED UPON FOR THE LOCATIONS OF ANY PROPOSED OR EXISTING UTILITIES, STRUCTURES, OR FOR SCALE.



CIVIL PROPOSED REVEGETATION

FILENAME C-06.DWG

SCALE 1" = 60'

SHEET C-06

р

С

2021

MEMORANDUM OF AGREEMENT Between THE CITY OF MISSOULA, MONTANA FISH WILDLIFE AND PARKS, And TROUT UNLIMITED

This Memorandum of Agreement (hereinafter referred to as "Agreement") is entered into this <u>11th</u> day of <u>February</u>, 2020, by and between the City of Missoula (hereinafter referred to as "City"), a municipal corporation, located at 435 Ryman Street, Missoula, Montana 59802, Montana Fish, Wildlife and Parks, located at 3201 Spurgin Road, Missoula, Montana, 59804 (hereinafter referred to as "MFWP") and Trout Unlimited (hereinafter referred to as "TU"), a nonprofit whose mailing address is 312 N. Higgins Ave., Suite 200, Missoula, Montana 59802, collectively referred to as the "Parties." City is the owner of the former lower Rattlesnake dam site, 10 dams on mountain lakes and associated improvements on Rattlesnake. TU is the Project manager for the Project described herein.

The purpose of this agreement is to outline the Parties' individual and collective objectives, roles and responsibilities associated with Project implementation for evaluating options for removing or rehabilitating the dams on the mountain lakes and restoring Rattlesnake Creek (hereinafter referred to as the "Project.")

Background:

The September 25, 2017 Memorandum of Agreement among the Parties for Project planning on the lower intake dam is substantially complete, and the dam was removed in 2020. The parties are prepared to build upon the lower intake dam project by working on planning and design efforts for the the 10 dams on the high mountain lakes in the Rattlesnake Wilderness Area and to work toward implementation.

WHEREAS, the Montana Power Company constructed the lower Rattlesnake dam in 1905, along with nine other additional dams in the present day Rattlesnake Wilderness Area, to augment the water supply for the City of Missoula. In 1979, Montana Power Company sold the dams and water rights to Mountain Water Company. Mountain Water Company maintained the dams until 2017;

WHEREAS, in 2017 the City acquired the approximately 45 acre lower Rattlesnake dam property and associated infrastructure and water rights, along with the additional Rattlesnake Wilderness dams, through purchase of the former Mountain Water Company;

WHEREAS, Mountain Water Company is now known as Missoula Water, and is a publicly-owned utility, owned and operated for the benefit of Missoula and its residents. The City of Missoula is invested in the Missoula community and its stewardship of Missoula Water, and committed to the protection of Missoula's high water quality;

WHEREAS, the water storage rights associated with the Rattlesnake Wilderness Area dams remain a valuable asset of the Missoula Water utility;

WHEREAS, these high elevation water storage facilities represent a unique opportunity to augment critical late summer stream flows and moderate high summer water temperatures in the Rattlesnake Creek drainage;

WHEREAS, the City anticipates rebuilding some dams and decommissioning the other dams in coordination with the USFS;

WHEREAS, the 2017 Mitigation Strategy of the Missoula County and City of Missoula 2017 Update to Pre-Disaster Mitigation Plan articulates as a priority "decommission or modify non-essential dams" including prioritizing and decommissioning non-essential dams in the Rattlesnake Wilderness;

Second Memorandum of Agreement_City of Missoula_Trout Unlimited_Montana Fish, Wildlife and Parks

WHEREAS, the 15 miles of main stem Rattlesnake Creek above the intake dam support resident and migratory populations of native Bull Trout, a species listed as threatened under the federal Endangered Species Act, and native Westslope Cutthroat Trout, a Montana species of concern, and the creek is considered a priority by the US Fish and Wildlife Service, Montana Fish Wildlife and Parks, and the Lolo National Forest;

WHEREAS, the importance of clean water and healthy riparian zones is articulated in numerous Missoula land use plans, including the 2015 Our Missoula City Growth Policy, 2010 Conservation Lands Management Plan, and the Missoula Urban Area Open Space Plan 2006 Update, as well as state and federal conservation priorities;

WHEREAS, streams, rivers, and riparian corridors are identified as Community Types of Greatest Conservation Need by Montana Fish, Wildlife and Parks, which prioritizes their conservation;

WHEREAS, TU has experience developing and implementing large-scale ecological restoration projects in western Montana, working with local governments to execute such projects and securing grant and other funding to support such projects;

WHEREAS, MFWP is responsible for managing the state's fishery and aquatic resources and this project's goals include improving those resources.

WHEREAS, MFWP has experience implementing fish-passage mitigation projects at the Rattlesnake Dam and other dam sites and continues to monitor fisheries populations in Rattlesnake Creek;

WHEREAS, the City, MFWP and TU desire to continue to work collaboratively to plan and now implement a strategy for improving conditions at the Wilderness dams, preserving valuable water rights when economically feasible, to address site restoration, fisheries, public recreation, public safety and liability;

WHEREAS, the Parties entered into a Memorandum of Agreement on September 25, 2017 to govern the research and planning phase of the Project. The planning and implementation phases of the Project are substantially complete, and now Parties wish to; evaluate options for removing or rehabilitating the dams on the mountain lakes

WHEREAS, this third Agreement is intended to govern the Project from design development through the full implementation of the Project.

- I. DEFINITIONS. For the purposes of this Agreement, the following definitions apply.
 - a. "Coordinating Work Group" consists of lead staff from each of the Parties. These staff will be available to make minor decisions and guide implementation of the Project, between meetings of the larger group. The coordinating committee consists of Logan McInnis and Ross Mollenhauer of Missoula Water, Morgan Valiant of Missoula Parks and Recreation, Ladd Knotek of MFWP, and Rob Roberts of Trout Unlimited.
 - b. "Project Leadership Team" consists of the directors, managers, supervisors from Missoula Water, Missoula Parks and Recreation, plus the City CAO and Attorneys, along with similar positions from Trout Unlimited and MFWP.
 - c. "Project Manager" is Trout Unlimited
 - d. "Landowner" is the City of Missoula
 - e. "Partner or Partles" includes Montana Fish Wildlife and Parks, along with Trout Unlimited and the City of Missoula
 - f. "Project"includes evaluating options for removing or rehabilitating the 10 wilderness dams on the mountain lakes and restoring Rattlesnake Creek (hereinafter referred to as the "Project.")

Second Memorandum of Agreement_City of Missoula_Trout Unlimited_Montana Fish, Wildlife and Parks

II. SCOPE OF AGREEMENT

NOW, THEREFORE the Parties mutually agree to the following:

- Parties will work cooperatively to research and develop a shared vision and implementation plan for mitigation and restoration of the wilderness dams and preservation of water rights where economically feasible.
- 2. Parties will work collaboratively to apply for grant funding and secure other funds to support the Project.
- Parties will work collaboratively to outline critical steps and design of the planning process. Specifically, Parties will create a written project plan for conducting the Project:
- Parties will identify and mutually agree in writing to share costs for data collection, design and other professional services that the project may require.
- 5. Parties will follow all required public procurement policies and regulations.

The City agrees to the following:

- City has the authority to enter into this agreement, and will maintain for the duration of the project the institutional, managerial and financial capability to ensure completion of the project.
- City will allow MFWP, TU and their contractors to access the project site for the purposes of data collection, design and fundralsing, after receiving prior notice.
- City will oversee and coordinate the public process of obtaining public input into the mitigation planning project and future land use.

MFWP agrees to the following:

- MFWP has the legal authority to enter into this agreement, and the Institutional, managerial and financial capability to ensure completion of the project.
- MFWP will provide information related to dam mitigation and its potential impacts to Rattlesnake Creek water quality, riparian land and fisheries, relevant to the project planning and design.
- 3. MFWP will develop a plan for monitoring the fisheries' response to the mitigation project.
- 4. MFWP will work directly with City and TU to obtain necessary permitting.
- 5. MFWP will provide guidance on meeting fishery goals and objectives through project implementation.

TU agrees to the following:

 TU has the legal authority to enter into this agreement, and the institutional, managerial, and financial capability to ensure proper planning, management, and completion of the project.

Second Mantorandum of Agreement_City of Missoula_Trout Unlimited_Montanu Fish, Wildlife and Parks

- 2. TU will act as the project manager for the project, which includes:
 - a. TU will meet all Federal, State, and Local requirements related to project management, reporting, procurements and related tasks.
 - b. TU will perform project management services, including consultant/contractor procurement and oversight for the project.
 - c. TU will provide grant accounting and reporting services for any grants received and administered by the City or MFWP for the project.
 - d. TU will document matching funds in accordance with all grants received and administered by either the City or MFWP for the project.
 - e. TU will provide a report at the end of the Project that will present recommendations for proceeding with mitigation and restoration activities that will address public safety, preserve water rights where economically feasible, fisheries habitat, wildlife mitigation, and open space recreation opportunities.

III. GENERAL PROVISIONS

- Modification and Amendment. This Agreement may be modified or amended only in writing by the mutual agreement of all
 parties. Specifically, the Agreement may be amended by mutual written agreement of the Parties to include other costs
 directly relating to the implementation of the wilderness dam evaluation Project.
- Termination. The City reserves the right to terminate this agreement at any time and for any reason, with 30 days written
 notice to TU and MFWP. TU and MFWP each reserves the right to terminate this agreement at any time and for any reason,
 with 30 days written notice to City.
- 3. Indemnification. TU and MFWP agree to indemnify and hold harmless City from all suits, demands, loss or liability, on account of or in connection with any injury, loss or damage to any person or property resulting or claiming to have resulted from use of the wilderness dam sites (including access routes on the ground or through the air) by TU or MFWP, their agents or employees, or resulting or claimed to have resulted from TU's or MFWP's negligent acts or omissions. City agrees to indemnify and hold harmless TU and MFWP from all suits, demands, loss or liability, on account of or in connection with any injury, loss or damage to any person or property resulting or claimed to have resulted from TU's negligent acts or omissions. City agrees to indemnify and hold harmless TU and MFWP from all suits, demands, loss or liability, on account of or in connection with any injury, loss or damage to any person or property resulting or claimed to have resulted from use of the wilderness dam site by City, its agents or employees or resulting or claimed to have resulted from City's negligent acts or omissions.
- Liability Insurance. TU and MFWP will each maintain sufficient liability insurance coverage for personal injury and property
 damage associated with their participation in this Project and provide City with proof of such liability insurance coverage.
- <u>Governing Law</u>. This Agreement shall be governed by the laws of the State of Montana. Venue for any litigation will be in Missoula County, State of Montana.
- <u>Binding Effect</u>. The obligations set forth in this Agreement shall be binding upon, and the benefit of this Agreement shall inure to the benefit of the Parties and their respective successors and assigns.

Second Memorandum of Agreement_City of Missoula_Trout Unlimited_Montana Fish, Wildlife and Parks

<u>Relationship of the Parties</u>. Nothing contained in this Agreement shall be deemed or construed, either by the parties hereto
or by any third party, to create the relationship of principal and agent or create any joint venture or other association between
TU, MFWP, and the City other than the collaborative work described in this Agreement.

<u>Commencement Period</u>. This Agreement is executed as of the date of the last signature and is effective through completion
of the final Project, as evidenced by mutual written agreement by the parties, or December 31, 2021 at which time it will
expire unless otherwise extended. This Agreement expressly supersedes the previous Memorandum of Agreement among
the Parties for the planning Project, signed September 25, 2017.

9. The Parties agree and shall comply with the following Non-Discrimination and Affirmative Action policies:

<u>Non-Discrimination</u>. All hiring shall be on the basis of merit and qualification and there shall be no discrimination in employment on the basis race, ancestry, color, physical or mental disability, religion, national origin, sex, age, marital or familial status, creed, ex-offender status, physical condition, political belief, public assistance status or sexual orientation, gender identity or expression, except where these criteria are reasonable bona fide occupational qualifications.

Affirmative Action Policy. Contractors, subcontractors, sub grantees, and other firms doing business with the City of Missoula must be in compliance with the City of Missoula's Affirmative Action Plan, and Title 49 Montana Codes Annotated, entitled "Human Rights" or forfeit the right to continue such business dealings.

The City's Affirmative Action Policy Statement is:

The Mayor of the City of Missoula or the Mayor's designee may adopt an affirmative action plan to provide all persons equal opportunity for employment without regard to race, ancestry, color, handicap, religion, creed, national origin, sex, age, marital status. In keeping with this commitment, we are assigning to all department heads and their staff the responsibility to actively facilitate equal employment opportunity for all present employees, applicants, and trainees. This responsibility shall include assurance that employment decisions are based on furthering the principle of equal employment opportunity by imposing only valid requirements for employment and assuring that all human resource actions are administered on the basis of job necessity. Specific responsibility for developing, implementing, monitoring and reporting are assigned to the City Personnel staff under the supervision and direction of the Chief Administrative Officer and the Mayor.

It is the policy of the City of Missoula to eliminate any practice or procedure that discriminates illegally or has an adverse impact on an "affected" class. Equal opportunity shall be provided for all City employees during their terms of employment. All applicants for City employment shall be employed on the basis of their qualifications and abilities.

The City of Missoula, where practical, shall utilize minority owned enterprises and shall ensure that subcontractors and vendors comply with this policy. Failure of subcontractors and vendors to comply with this policy statement shall jeopardize initial, continued, or renewed funds.

Our commitment is intended to promote equal opportunity in all employment practices and provide a positive program of affirmative action for the City of Missoula, its employees, program participants, trainees and applicants.

IV. PRINCIPAL CONTACTS.

The principal contacts for this Agreement are:

City of Missoula Morgan Valliant, Logan McInnis 435 Ryman St Missoula, MT 59802

Montana FWP Ladd Knotek 3201 Spurgin Rd Missoula, MT 59804 (406) 542-5500 Iknotek@mt.gov

Trout Unlimited Rob Roberts 312 N. Higgins Ave, # 200 Missoula, MT 59802 (406) 540-2944 rroberts@tu.org

Second Memorandum of Agreement_City of Missoula_Trout Unlimited_Montana Fish, Wildlife and Parks

6

	The authorit In witness w below.	ry and format of this Agreement has been reviewed and approved for signature. hereof, the parties hereto have executed this agreement as of the date written
SIGNED this <u>11th</u> da	ay ofFebruary	2021 , 2019
	RebP	
Trout Unlimited		_

MONTANA FISH, WILDLIFE AND PARKS

aul 10

Montana Fish, Wildlife and Parks

CITY OF MISSOULA

ATTEST:

Contrad CAR Marth 11:57 MST1

Martha L. Rehbein City Clerk

(SEAL)

APPROVAL:

A Engen (Feb 18, 2021 14:NB MST)

John Engen Mayor