



Jeff Dunn

*Project Manager, Upper Missouri and Yellowstone
Western Water & Habitat Project*

Michelle McGree
Montana Fish, Wildlife, and Parks
Future Fisheries Improvement Program
PO Box 200701
Helena, MT 59620-0701

Transmitted via email to: mmcgree@mt.gov

May 29, 2019

Dear Ms. McGree,

Attached please find a Future Fisheries Improvement Program application packet for a supplemental grant for the Reese Creek Instream Flow Enhancement Project funded by a previous FFIP grant in 2015. This is an ongoing collaborative project in partnership with the Royal Teton Ranch of the Church Universal and Triumphant, Trout Unlimited (TU), U.S.D.A. Custer-Gallatin National Forest, and Yellowstone National Park. The goal of the project is to maintain minimum instream flows in Reese Creek, a tributary to the Yellowstone River, to benefit spawning and rearing Yellowstone cutthroat trout which recruit to the Yellowstone River.

Since 2015, collaborators have resolved ownership of the water rights, designed a pipeline and new, screened diversion, and are prepared to go to construction in September of 2019. In October 2018, we took the designs out to bid and discovered that our funding is approximately \$123,000 short. Cost increases are due to changes in material costs and design modifications negotiated through site constraints and requirements of project partners.

As specified in an executed water lease, the Ranch will continue to irrigate up to 125 acres with up to 2.0 cfs of its water rights, leaving remaining water rights instream. The pipeline design will conserve between 1.3 and 3.84 cfs currently lost to seepage and a waste ditch. The pipeline will eliminate seepage loss and ensure instream flow targets identified by FWP and the Park are met: 4.3 cfs during spawning and rearing and 1.6 cfs the rest of the year. This project will supplement Yellowstone National Park's instream flow rights, which are often inadequate to protect the fishery. As part of the project, TU has leased the remainder of the Ranch's water rights, up to 10 cfs, for a minimum of 30 years.

For this request, we are seeking \$90,000 of an estimated shortfall of \$123,000. Trout Unlimited has secured \$34,000 in funds and expect to provide \$5,000 in-kind for project coordination and oversight. We anticipate an additional \$15,000 from the Custer-Gallatin National Forest and are pursuing additional funding from Yellowstone National Park and other possible sources to round out the shortfall.

In the initial funding package, we secured a \$55,000 FFIP grant, \$42,000 from Yellowstone National Park and GYCC, \$50,000 from National Fish and Wildlife Foundation, and \$20,000 in grants from the Cinnabar and Cross Charitable Foundations. Approximately \$24,000 has been spent on survey

and design. If this supplemental grant is approved, FFIP funds would be solely dedicated to construction costs.

After nearly seven years in extensive negotiation and multiple iterations of conceptual solutions, we are broaching the last phase in a project that is highly likely to boost recruitment of Yellowstone cutthroat trout. The success of this undertaking will also speak volumes to the ability of agencies, conservation organizations, and private water users to collaborate in meaningful ways. We hope you and the FFIP Citizens Panel will find the project worthy of your continued support. Please feel free to contact me with questions.

Sincerely,



Jeff Dunn



FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

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



I. APPLICANT INFORMATION

A. Applicant Name: Jeff Dunn, Trout Unlimited, Inc.
 Mailing Address: 321 E. Main Street, Suite 411
 City: Bozeman State: MT Zip: 59715
 Telephone: (406) 579-0516 E-mail: jdunn@tu.org

B. Contact Person (if different than applicant): same
 Address: _____
 City: _____ State: _____ Zip: _____
 Telephone: _____ E-mail: _____

C. Landowner and/or Lessee Name (if different than applicant): Alan Shaw, Royal Teton Ranch
 Mailing Address: 63 Summit Way
 City: Gardiner State: MT Zip: 59030
 Telephone: (406) 848-9526 E-mail: ashaw@tsl.org

II. PROJECT INFORMATION

A. Project Name: Reese Creek Instream Flow Enhancement Project
 River, stream, or lake: Reese Creek
 Location: Township: 9 South Range: 7 East Section: 13
 Latitude: 45.060161 Longitude: -110.785471 *within project (decimal degrees)*
 County: Park

B. Purpose of Project:
 Maintain minimum instream flow for resident and fluvial spawning Yellowstone cutthroat trout by increasing conveyance efficiencies in irrigation system.

Reese Creek Instream Flow Supplement

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

This application is a proposed supplement to an FFIP grant approved in June 2015. After several years of planning fits and starts, the project went to bid in October 2018 with construction planned for April 2019. The bid results indicate that our initial estimates of \$180,000 underestimated costs by about \$140,000. We are seeking an additional \$90,000 from FFIP to complete the project, with a target construction time frame of September/October 2019.

Reese Creek is a tributary of the Yellowstone River at the Northern boundary of Yellowstone National Park. It is the only stream within YNP that supports private irrigation. The upper Yellowstone River and its tributaries in Montana and Yellowstone National Park still support interconnected native populations of Yellowstone cutthroat trout and mountain whitefish along with wild, non-native sportfish including rainbow, brown, and brook trout. This ongoing collaboration between Trout Unlimited (TU), the Church Universal and Triumphant (the Church), Montana Fish, Wildlife, and Parks, Yellowstone National Park, and the Custer-Gallatin National Forest recognizes that both resident and migratory populations are critical to the long term survival of the species.

In the 1980's, fisheries biologists identified a key role that Yellowstone River tributaries play in Yellowstone cutthroat trout conservation. For thousands of years, Yellowstone cutthroat trout have migrated into tributaries during runoff to spawn, reconnecting the mainstem river population with headwaters resident populations and sustaining both life histories over centuries. Young cutthroat trout rear in redds, or gravel nests, until late July and August when they emerge from gravels. This timing historically took advantage of ideal conditions for spawning and rearing, but in modern times coincided with dropping streamflows and high irrigation water demands. Dewatered streams suppressed cutthroat trout reproductive success and mainstem river populations declined. In the 1990's, Montana water laws were amended to allow state agencies and private entities to lease water from willing irrigators to reconnect once-dewatered tributaries and restore healthy spawning runs. Water leasing successfully restored spawning runs and recruitment in Big Creek, Cedar Creek, and Mulherin Creek and elevated cutthroat trout populations in the Yellowstone River. Much of that success was built on cooperation with the Church.

Reese Creek supports both a resident population of Yellowstone cutthroat trout at the headwaters and a fluvial, spawning population which migrate in from the mainstem Yellowstone River. However, a set of three irrigation diversion structures impeded fish migration between the mainstem and headwaters. The uppermost diversion probably acts as a barrier to upstream passage. Water rights in Reese Creek are complex, with shared ownership of certain rights between the Church and the USFS Custer Gallatin National Forest, and instream flow rights owned by Yellowstone National Park and Montana Fish, Wildlife and Parks. In spite of the complexity, this group of water rights lends itself to accomplishing significant instream flow protection to benefit spawning and rearing Yellowstone cutthroat trout in Reese Creek while preserving headwaters populations of resident cutthroat trout from potential competition or genetic introgression by non-native wild trout.

TU has executed a water lease with the Church's for all but 2.1 cfs of its Reese Creek water rights to maintain the minimum recommended flows of 4.3 cfs through the spawning and rearing period and a minimum of 1.6 cfs the remainder of the year while maintaining existing irrigated cropland. Both goals appear to be feasible by making infrastructural improvements that would capture seepage loss and conveyance inefficiencies (1.3 to 3.84 cfs) by putting all Reese Creek water users on the same pipeline system. Our plan entails installing a new screened diversion and pipeline to decrease the necessary diverted flow volume and conserve seepage losses for instream flow.

In summary, by conserving minimum streamflows in Reese Creek, migratory Yellowstone cutthroat trout spawning and rearing in Reese Creek will not be subject to periodic dewatering due to drought and irrigation withdrawals. Emergent cutthroat trout survival will increase and numbers of cutthroat fry recruiting to the Yellowstone River will increase as will returning spawners. The headwaters population of Yellowstone cutthroat trout will be protected by maintaining the upper diversion site as a barrier. Brown trout and rainbow trout will continue to use Reese Creek in fall and spring respectively, although those species don't appear to be as sensitive to dewatering during their spawning and rearing periods.

(LARGER TEXT VERSION AFTER SIGNATURE PAGE)

D. Length of stream or size of lake that will be treated: 4,800 feet (0.90 miles)

E. Project Budget:

Grant Request (Dollars): \$ 90,000

Matching Dollars: \$ 266,733 (including 2015 \$55,000 FFIP grant)

Matching In-Kind Services:* \$ 5,000

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

Total Project Cost: \$ 361,733

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

Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support and fish biologist support, and/or other information

G. necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete a *supplemental questionnaire*. (<http://fwp.mt.gov/fwpDoc.html?id=36110>)

H. **Attach** land management & maintenance plans that will ensure protection of the reclaimed area.

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

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

Yellowstone cutthroat trout, brown trout, rainbow trout

Reese Creek Instream Flow Supplement

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

The project will ensure minimum instream flows are available in Reese Creek year-round, which will increase survival of Yellowstone cutthroat trout fry within almost a mile of spawning habitat and increase recruitment to the Yellowstone River.

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

Yes, the tributaries of the Yellowstone River are critical for recruitment of Yellowstone cutthroat trout. Similar instream flow enhancement projects in Mulherin, Cedar, and Big Creeks have successfully increased cutthroat trout populations and enhanced angler satisfaction. Reese Creek is similar to Cedar Creek, which recruits approximately 14,000 fry per year to the Yellowstone. Since instream flow enhancement projects in Cedar and Mulherin Creeks, cutthroat abundance in the FWP Corwin Springs section has about doubled.

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

By enhancing recruitment of cutthroat trout and brown trout, the fishery will be improved by both abundance and increased resilience to drought, which will enhance public fishing opportunities on the Yellowstone River.

- E. The project agreement includes a 20-year maintenance commitment. Please discuss your ability to meet this commitment.

Trout Unlimited is bound by a 30 year lease of CUT water rights, which statutorily requires annual monitoring of the project. The new diversion structure will enable Yellowstone National Park to install instantaneous flow measuring devices to monitor streamflows and diversions in real time from spring to fall.

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

Instream flows have long been hampered by irrigation diversions on Reese Creek, often leaving cutthroat trout redds dried out, fry unable to migrate, and resident fish survival decreased. Maintaining minimum instream flows will moderate impacts of dry years while boosting spawning and rearing success each year.

Reese Creek Instream Flow Supplement

G. What public benefits will be realized from this project?

Increased recruitment to the Yellowstone River will enhance trout populations and angling opportunities. Additionally, the project will reduce the burdens of monitoring Reese Creek flows that are currently imposed on YNP and other agencies.

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

No. The project will ensure water rights of adjacent landowners are secured and compliant. Availability of water to all neighbors will be ensured.

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

No. The stream is within Yellowstone National Park, subject to federal rules and regulations.

J. 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.

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: _____

5/29/19

Sponsor (if applicable): _____

Trout Unlimited

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: Montana FWP Fish Management Bureau PO Box 200701 Helena, MT 59620-0701	Email: Michelle McGree mmcgree@mt.gov (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.

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Reese Creek Instream Flow Supplement
BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Both tables must be completed or the application will be returned

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES**	IN-KIND CASH	TOTAL
Personnel***								
Survey				\$ -				\$ -
Design				\$ -				\$ -
Engineering	1	lump sum		\$ 23,479.00			23,479.00	\$ 23,479.00
Permitting				\$ -				\$ -
Oversight - Contractor	40	hours	\$125.00	\$ 5,000.00			5,000.00	\$ 5,000.00
Oversight - TU	100	hours	\$50.00	\$ 5,000.00		5,000.00		\$ 5,000.00
Soils Testing	1	lump sum		\$ 2,250.00			2,250.00	\$ 2,250.00
			Sub-Total	\$ 35,729.00	\$ -	\$ 5,000.00	\$ 30,729.00	\$ 35,729.00
Travel								
Mileage	1600	miles	\$0.58	\$ 928.00			928.00	\$ 928.00
Per diem				\$ -				\$ -
			Sub-Total	\$ 928.00	\$ -	\$ -	\$ 928.00	\$ 928.00
Construction Materials****								
Intake Structure	1	lump sum		\$ 11,645.00			11,645.00	\$ 11,645.00
Fish Screen	1	lump sum		\$ 4,446.00			4,446.00	\$ 4,446.00
Parshall Flume	1	lump sum		\$ 4,886.29			4,886.29	\$ 4,886.29
Diversion	1	lump sum		\$ 52,830.00	45,000.00		7,830.00	\$ 52,830.00
Pipeline	1	lump sum		\$ 135,124.20	45,000.00		90,124.20	\$ 135,124.20
			Sub-Total	\$ 208,931.49	\$ 90,000.00	\$ -	\$ 118,931.49	\$ 208,931.49
Equipment and Labor								
Clearing and Grubbing	1	lump sum		\$ 3,150.00			3,150.00	\$ 3,150.00
Excavation	1	lump sum		\$ 8,145.00			8,145.00	\$ 8,145.00
Intake Installation	1	lump sum		\$ 18,000.00			18,000.00	\$ 18,000.00
Pipeline Installation	1	lump sum		\$ 48,600.00			48,600.00	\$ 48,600.00
Monitoring System Installation	1	lump sum		\$ 6,750.00			6,750.00	\$ 6,750.00
Regrading Disturbed Areas	1	lump sum		\$ 3,600.00			3,600.00	\$ 3,600.00
			Sub-Total	\$ 88,245.00	\$ -	\$ -	\$ 88,245.00	\$ 88,245.00
Mobilization								
Mobilization / Demobilization	1	lump sum		\$ 22,500.00			22,500.00	\$ 22,500.00

Reese Creek Instream Flow Supplement
BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Site Access and Staging	1	lump sum		\$ 5,400.00			5,400.00	\$ 5,400.00
			Sub-Total	\$ 27,900.00	\$ -	\$ -	\$ 27,900.00	\$ 27,900.00
TOTALS				\$ 361,733.49	\$ 90,000.00	\$ 5,000.00	\$ 266,733.49	\$ 361,733.49

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 for calculations). Describe here or in text.

Reminder: Government salaries cannot be used as in-kind match

***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 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.

MATCHING CONTRIBUTIONS (do not include requested funds)

CONTRIBUTOR	IN-KIND SERVICE	IN-KIND CASH	TOTAL	Secured? (Y/N)
Trout Unlimited, Inc.	\$ 5,000.00	\$ 34,000.00	\$ 39,000.00	y (in hand)
Yellowstone National Park (existing)	\$ -	\$ 33,000.00	\$ 33,000.00	y (in hand)
Yellowstone National Park (proposed)		\$ 22,000.00	\$ 22,000.00	n (applied for)
Greater Yellowstone Coordinating Committee	\$ -	\$ 9,800.00	\$ 9,800.00	y (in hand)
National Fish and Wildlife Foundation	\$ -	\$ 50,000.00	\$ 50,000.00	y (in hand)
Patagonia World Trout	\$ -	\$ 15,000.00	\$ 15,000.00	n (applied for)
Future Fisheries 2015	\$ -	\$ 55,000.00	\$ 55,000.00	y (in hand)
Custer Gallatin National Forest	\$ -	\$ 15,000.00	\$ 15,000.00	n (applied for)
<i>Additional Unsecured Funding Sources</i>	\$ -	\$ 32,933.49	\$ 32,933.49	n (applied for)
TOTALS	\$ 5,000.00	\$ 266,733.49	\$ 271,733.49	

Reese Creek Instream Flow Supplement

REESE CREEK FLOW ENHANCEMENT CONSTRUCTION COSTS

Item Number	Description	Estimated Quantity	Unit Measure	Unit Price	Total Amount
1	Mobilization/Demobilization	1	LS	\$ 25,000.00	\$22,500.00
2	Site Access and Staging	1	LS	\$ 6,000.00	\$5,400.00
3	Clearing and Grubbing	1	LS	\$ 3,500.00	\$3,150.00
4.1	Erosion Control General: Erosion Control Fabric	1000	SY	\$ 6.00	\$5,400.00
4.2	Erosion Control: Straw Wattle	200	LF	\$ 6.00	\$1,080.00
4.3	Erosion Control: Wooden Stakes	250	EA	\$ 1.00	\$225.00
5	Control of Water	1	LS	\$ 7,500.00	\$6,750.00
6.1	Demolition: Headgate	1	LS	\$ 5,000.00	\$4,500.00
6.2	Demolition: Streambed Material	1	LS	\$ 1,000.00	\$900.00
6.3	Demolition Fence	1	LS	\$ 800.00	
7.1	Earthwork: Gross Excavation	600	CY	\$ 15.00	\$8,100.00
7.2	Earthwork: Excess Gross Excavation	1	CY	\$ 50.00	\$45.00
8.2	New Intake Structure: Installation	1	LS	\$ 20,000.00	\$18,000.00
8.3	New Intake Structure: Bedding	4	Ton	\$ 100.00	\$360.00
8.4	New Intake Structure: 18-inch Waterman Gate	1	EA	\$ 2,500.00	\$2,250.00
8.5	New Intake Structure: "Coanda Effect" Screen	1	LS	\$ 2,000.00	\$1,800.00
8.6	New Intake Structure: L-channel Brackets for Check Boards and Check Boards	1	LS	\$ 2,000.00	\$1,800.00
9.1	Flow Monitoring System: Concrete Channel and Connection to Intake	1	LS	\$ 19,950.00	\$17,955.00
9.2	Flow Monitoring System: Bedding	5	Ton	\$ 100.00	\$450.00
9.3	Flow Monitoring System: Stilling Well	2	EA	\$ 1,800.00	\$3,240.00
9.4	Flow Monitoring System: Removable Cover	1	LS	\$ 1,200.00	\$1,080.00
9.5	Flow Monitoring System: L-channels	1	LS	\$ 1,000.00	\$900.00
10.1	New Pipeline: Main Pipe	1530	LF	\$ 18.00	\$24,786.00
10.2	New Pipeline: Return Pipe (18-inch)	30	LF	\$ 30.00	\$810.00
10.3	New Pipeline: Return Pipe (12-inch)	30	LF	\$ 25.00	\$675.00
10.4.1	New Pipeline: Tee (18-inch)	3	EA	\$ 550.00	\$1,485.00

Reese Creek Instream Flow Supplement

10.4.2	New Pipeline: 30 degree elbow (18-inch)	3	EA	\$ 500.00	\$1,350.00
10.4.3	New Pipeline: 45 degree elbow (18-inch)	5	EA	\$ 500.00	\$2,250.00
10.4.4	New Pipeline: 30 degree elbow (12-inch)	1	EA	\$ 300.00	\$270.00
10.4.5	New Pipeline: Reducer (18-inch to 4-inch)	1	EA	\$ 400.00	\$360.00
10.4.6	New Pipeline: End Cap	1	EA	\$ 200.00	\$180.00
10.5	New Pipeline: Labor to Install all Parts	1	LS	\$ 38,000.00	\$34,200.00
10.6	New Pipeline: Bedding	160	Ton	\$ 50.00	\$7,200.00
10.7.1	Pipe Inlet Box: Concrete Box	1	LS	\$ 19,950.00	\$17,955.00
10.7.2	Pipe Inlet Box: 18-inch Waterman Gate	1	EA	\$ 2,500.00	\$2,250.00
10.7.3	Pipe Inlet Box: Bedding	1	Ton	\$ 150.00	\$135.00
10.7.4	Pipe Inlet Box: Removable Cover and L-channels	1	LS	\$ 2,000.00	\$1,800.00
10.8.1	Pipe System Accessories: Outlet screens	2	LS	\$ 200.00	\$360.00
10.8.2	Pipe System Accessories: Pipe Tracer Wire	1530	LF	\$ 0.60	\$826.20
10.8.3	Pipe System Accessories: Air Vent	1	LS	\$ 400.00	\$360.00
10.8.4	Pipe System Accessories: Trash Rack	1	LS	\$ 300.00	\$270.00
11.1.1	CGNF: 4 ft Diameter CMP	1	EA	\$ 1,000.00	\$900.00
11.1.2	CGNF: Well Cover Lid	1	EA	\$ 1,000.00	\$900.00
11.1.3	CGNF: 4-inch Butterfly Valve (Enbee, No. 3085 or Equivalent)	1	EA	\$ 750.00	\$675.00
11.1.4	CGNF: 4-inch Pipe Union	1	EA	\$ 75.00	\$67.50
11.1.5	CGNF: 2-inch Air/Vacuum Relief Valve (Fresno, series 3000 or Equivalent)	1	EA	\$ 350.00	\$315.00
11.1.6	CGNF: 4-inch Tee with Reducer	2	EA	\$ 200.00	\$360.00
11.1.7	CGNF: 4-inch End Cap	1	EA	\$ 30.00	\$27.00
11.1.8	CGNF: 3-inch Pressure relief valve (Fresno, series 3100, model 600, or Equivalent)	1	EA	\$ 400.00	\$360.00
11.1.9	CGNF: Bedding	1	Ton	\$ 150.00	\$135.00
11.1.10	CGNF: Labor	1	LS	\$ 7,500.00	\$6,750.00
11.2.1	Main Pipeline Valve Box: Concrete Valve Box	2	EA	\$ 6,500.00	\$11,700.00
11.2.2	Main Pipeline Valve Box: Box Covers	2	LS	\$ 1,500.00	\$2,700.00

Reese Creek Instream Flow Supplement

11.2.3	Main Pipeline Valve Box: 18-inch Line Gate Valve (Fresno, series 4000 or Equivalent)	2	EA	\$ 4,250.00	\$7,650.00
11.2.4	Main Pipeline Valve Box: 4-inch Air/Vacuum Relief Valve (Fresno, series 3000 or Equivalent)	2	EA	\$ 250.00	\$450.00
11.2.5	Main Pipeline Valve Box: 4-inch Pressure Relief Valve (Fresno, series 3100, Model 600 or Equivalent)	2	EA	\$ 400.00	\$720.00
11.2.6	Main Pipeline Valve Box: 18 to 4 inch Reducer Tee	2	EA	\$ 250.00	\$450.00
11.2.7	Main Pipeline Valve Box: 4-inch Tee	2	EA	\$ 50.00	\$90.00
11.2.8	Main Pipeline Valve Box: 4-inch Stem Pipe	2	EA	\$ 100.00	\$180.00
11.2.9	Main Pipeline Valve Box: 4-inch Threaded Couple	2	EA	\$ 75.00	\$135.00
11.2.10	Main Pipeline Valve Box: Bedding	4	Ton	\$ 100.00	\$360.00
11.2.11	Main Pipeline Valve Box: Labor	1	LS	\$ 9,000.00	\$8,100.00
11.2.12	Main Pipeline Valve Box: Isolation Valves	2	EA	\$ 350.00	\$630.00
12.1	Pipe Outlet: Rock for Apron	20	CY	\$ 85.00	\$1,530.00
12.2	Pipe Outlet: Geofabric for Apron	500	SY	\$ 4.00	\$1,800.00
12.3	Pipe Outlet: Labor	1	LS	\$ 6,000.00	\$5,400.00
13	Erosion Protection at Return Pipe Outlets	1	LS	\$ 500.00	\$450.00
14	Regrading of Disturbed Areas Post Construction	1	LS	\$ 4,000.00	\$3,600.00
16.1	Accessories: Staff Plates (USGS Type A)	4	EA	\$ 400.00	\$1,440.00
16.2	Accessories: Man Hole Steps	1	LS	\$ 1,200.00	\$1,080.00
16.3	Accessories: Wood Deck on Top of Intake Structure	1	LS	\$ 1,800.00	\$1,620.00
16.4	Accessories: Carsonite Signs to Identify Pipe Location	1	LS	\$ 1,200.00	\$1,080.00
17.1	Pipe Cleanouts: 4-inch Air/Vacuum Relief Valve (Fresno, Series 3000 or Equivalent)	3	EA	\$ 300.00	\$810.00
17.2	Pipe Cleanouts: 4-inch Pressure Relief Valve (Fresno, series 3100, Model 600 or Equivalent)	3	EA	\$ 350.00	\$945.00
17.3	Pipe Cleanouts: 18 to 4 inch Reducer Tee	3	EA	\$ 250.00	\$675.00
17.4	Pipe Cleanouts: 4-inch Tee	3	EA	\$ 100.00	\$270.00
17.5	Pipe Cleanouts: 4-inch Stem Pipe	3	EA	\$ 75.00	\$202.50
17.6	Pipe Cleanouts: 4-inch Threaded Couple	3	EA	\$ 50.00	\$135.00
17.7	Pipe Cleanout: Flow through Tee (18-inch)	3	EA	\$ 500.00	\$1,350.00

Reese Creek Instream Flow Supplement

17.8	Pipe Cleanout: 4 ft Diameter CMP	6	EA	\$ 1,000.00	\$5,400.00
17.9	Pipe Cleanout: Well Cover Lid	6	EA	\$ 1,000.00	\$5,400.00
17.10	Pipe Cleanout: 80 PSI 18-inch Restrained Joint Cap with Handle	3	EA	\$ 2,500.00	\$6,750.00
17.11	Pipe Cleanout: Bedding	6	Ton	\$ 100.00	\$540.00
17.12	Pipe Cleanout: Labor	1	LS	\$ 10,000.00	\$9,000.00
17.13	Pipe Cleanout: Isolation Ball Valves	3	EA	\$ 400.00	\$1,080.00
18	Thrust Blocks	12	EA	\$ 600.00	\$6,480.00
20	Soils Testing	1	LS	\$ 2,500.00	\$2,250.00

Total Cost

\$306,349.20

Notes:

See Addendum 1 10_10_18 for a description of additional soils testing required at the cost of the contractor.



1354 Highway 10 West, Livingston, MT 59047

November 29, 2018

Michelle McGree
Future Fisheries Coordinator
Montana Fish, Wildlife & Parks
1420 East Sixth Avenue
Helena, MT 59620

Dear Ms. McGree,

I am writing to offer my enthusiastic support for the grant application submitted by Pat Byorth for water leases to maintain in-stream flow in Reese Creek. This project is consistent with conservation goals and priorities for fluvial Yellowstone cutthroat trout and is a proven approach to increase recruitment of Yellowstone cutthroat trout fry to the Yellowstone River.

The fluvial Yellowstone cutthroat trout in the Yellowstone River have tremendous conservation value. The Yellowstone River is rare in that it supports nonhybridized Yellowstone cutthroat trout in sympatry with nonnative rainbow trout. Rainbow trout are the primary cause of decline of Yellowstone cutthroat trout throughout their range (Kruse et al. 2000). According to the conservation agreement for cutthroat trout in Montana (MCTSC 2007), preservation of diverse life-history strategies and nonhybridized populations are among the highest priorities. Maintaining in-stream flow in Reese Creek would protect a population with fluvial, migratory life history strategies, and nonhybridized fish. Furthermore, this project is in line with recommended conservation practices for the conservation of Yellowstone cutthroat trout in Montana (Endicott et al. 2013).

Maintaining in-stream flows in Reese Creek would build on ongoing efforts to conserve the fluvial Yellowstone cutthroat trout in the upper Yellowstone River. This area is a conservation priority because of its importance to fluvial Yellowstone cutthroat trout and its potential to remain cool in face of our warming climate. Dewatering and passage barriers limit Yellowstone cutthroat trout recruitment, and climate change is further diminishing water supply during summer months. Maintaining in-stream flows will contribute to the resilience of our native trout within an area identified as a climate shield.

Best regards,



A handwritten signature in blue ink, reading "Carol Endicott", is positioned above the printed name.

Carol Endicott
Yellowstone Cutthroat Trout Conservation Biologist

Literature Cited

Endicott, C.E. and 12 other authors. 2013. Yellowstone cutthroat trout conservation strategy for Montana. Montana Fish, Wildlife & Parks. Livingston, Montana.

Kruse, C. G., W. A. Hubert, and F. J. Rahel. 2000. Status of Yellowstone cutthroat trout in Wyoming waters. North American Journal of Fisheries Management 20: 693-705.

Montana Cutthroat Trout Steering Committee (MCTSC). 2007. Memorandum of understanding and conservation agreement for westslope cutthroat trout and Yellowstone cutthroat trout in Montana.



1354 Highway 10 West, Livingston MT 59047

November 29, 2018

To Whom It May Concern:

I am submitting this letter of support for the grant application being submitted by Patrick Byorth, Trout Unlimited, Inc. for the Reese Creek Project.

Reese Creek provides important spawning for Yellowstone cutthroat trout in the upper Yellowstone River. Dewatering of the lower end of this stream reduces the survival and out migration of Yellowstone cutthroat trout fry back the Yellowstone River. FWP's instream flow reservations were designed to protect minimum flows necessary to maintain healthy fisheries. Unfortunately, these minimum flow levels are not typically available in late summer because of drought and irrigation diversions. This project will ensure that the instream reservations are met and that flows necessary to benefit the fisheries are available through the entire irrigation season in this important tributary of the Yellowstone River.

Similar projects have been successfully completed on Big and Cedar Creeks and have led to increases in fry production as well as increased numbers of adult fish in the Yellowstone River.

In addition to providing sufficient water for fish it will also protect a resident population of Yellowstone cutthroat trout from the risk of hybridization with rainbow trout, one of leading causes for the decline of Yellowstone cutthroat trout across their range.

The project is unique in that it will bring together Trout Unlimited, Church Universal and Triumphant, USFS, YNP, and FWP to ensure that water needs are met for both fish and water users.

I commend Patrick Byorth and Trout Unlimited for undertaking this important project to help conserve Yellowstone cutthroat in the upper Yellowstone River and I strongly encourage you to provide your valued support.

If I can provide more information or answer any questions please feel free to contact me.

Sincerely,

Scott Opitz
Fisheries Management Biologist
406-223-3951
sopitz@mt.gov

cc: Marc Deleray, R3 Regional Supervisor
Travis Horton, R3 Fisheries Manager

FUTURE FISHERIES IMPROVEMENT PROGRAM

SUPPLEMENTAL INFORMATION SHEET FOR WATER LEASING OR WATER SALVAGE PROJECTS

The following additional information is requested to supplement the Future Fisheries Application for projects associated with water leasing or water salvage. Please complete this supplemental form and submit it as part of the Future Fisheries Grant Application.

- Please complete the following table describing the water right(s) associated with the proposed project.** Note: Much of this information can be obtained either from your own water rights records or online at <http://www.dnrc.state.mt.us/wrd/home.htm> (choose “water rights” and then select an index to look up applicable claims)

Water Right Number, Water Source	Point of Diversion	Quantified Flow(cfs) / Volume (acft), Irrigated Acres	Priority Date, Period of Use	Relative Priority on Water Source	Purpose of Water Right	Flow Claimed on Stream Senior to Your Listed Claims
43B 191009, Reese Creek	SESWSE Sec. 7; T9S; R8E	1.38 cfs/25 acft	18830601; Jan 1 - Dec 31	1 of 13	Domestic	0.0
43B 196087, Reese Creek	SESWSE Sec. 7; T9S; R8E	2.5 cfs, 412 acres	18830601; Jan 1 - Dec 31	1 of 13	Irrigation	0.0
43B 196084, Reese Creek	SESWSE Sec. 7; T9S; R8E	5.75 cfs, 412acres	18840524; Apr 15 - Oct 19	5 of 13	Irrigation	6.88
43B 196083, Reese Creek	SESWSE Sec. 7; T9S; R8E	3.0 cfs, 412 acres	18840525; Apr 15 - Oct 19	6 of 13	Irrigation	9.88
43B 193321, Reese Creek	SESWSE Sec. 7; T9S; R8E	12.5 cfs, 412 acres	18870602; Jan 1 - Dec 31	10 of 13	Irrigation	12.63
43B 196080, Reese Creek	SESWSE Sec. 7; T9S; R8E	1.38 cfs, 412 acres	18970614; Apr 15 - Oct 19	12 of 13	Irrigation	25.13

- In the last 10 years, has your full water right amount regularly been available at your point of diversion throughout your period of use?**

Yes No (Please circle one)

Have you ever made “a call” on junior water users to obtain the water you needed (through a water commissioner or otherwise)?

Yes No (Please circle one)

- Please describe or include a summary of any measurements of the amount of water you have regularly diverted and how much typically flows by your diversion during different time periods.**

Reese Creek flows are managed cooperatively between the Royal Teton Ranch and Yellowstone National Park (YNP), according to a stipulation filed with the Montana Water Court on July 13, 1990. YNP annually monitors stream flows above and below the diversion. In 2014, TU measured discharge in Reese Creek and the ditch to determine seepage losses and waste. The designed pipeline intake structure includes a parshall

Reese Creek Instream Flow Supplement

flume, to which a real-time telemetered gage will be affixed to enable instantaneous diverted flow to be monitored.

Reese Creek Ditch Synoptic Flows Summary

Site	Date	Q (cfs)	Difference*	Note
Reese @ Parshall Flume	9-May-14	6.38		available
Ditch below Headgate	9-May-14	2.14	4.24	left instream
Ditch above Impoundment	9-May-14	1.64	0.50	seepage loss
Ditch below Impoundment	9-May-14	0.81	0.83	into pipeline
Reese @ Parshall Flume	9-Jun-14	14.54		available
Ditch below Headgate	9-Jun-14	4.35	10.19	left instream
Ditch above Impoundment	9-Jun-14	3.78	0.57	seepage loss
Ditch below Impoundment	9-Jun-14	0.92	2.86	into pipeline
Reese @ Parshall Flume	24-Jul-14	6.21		available
Ditch below Headgate	24-Jul-14	6.85	-0.64	left instream
Ditch above Impoundment	24-Jul-14	5.45	1.40	seepage loss
Ditch below Impoundment	24-Jul-14	2.44	3.01	into pipeline

*Results indicate a pipeline would save between 0.5 and 1.4 cfs in seepage loss, and between 0.8 cfs and 2.44 cfs in waste ditch: total loss conserved = 1.3 to 3.84 cfs.

4. **Has your local FWP fish biologist confirmed that your leasing/salvage project addresses a stream flow problem that significantly limits the fishery?**

Yes No (Please circle one)

5. **How much actual water (often different than just the remainder of your water rights) will be added to the stream through completion of your project?**

1.3 to 3.84 minimum Please fill in and circle one cfs / gpm / miners inches

What length of stream will benefit from this additional flow? (Note: Under certain circumstances, senior water can be protected legally from diversion by downstream junior users.)

0.9 miles (Distance from upper diversion to Yellowstone River)

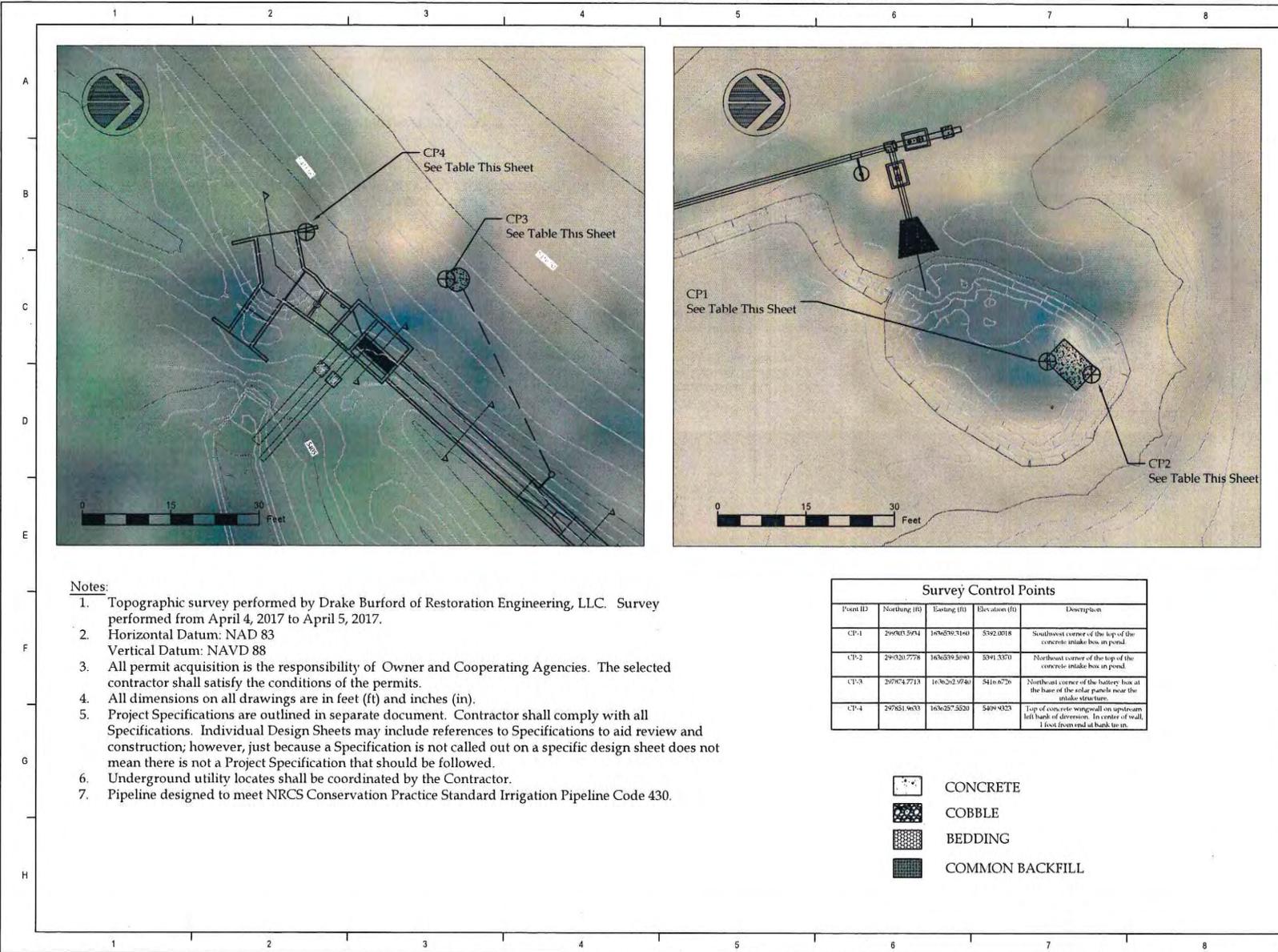
6. **Is there a water commissioner on your stream?** Yes No (Please circle one)

Are you willing to actively assist in monitoring and/or protecting the conserved water instream? Yes / No (Please circle one and describe)

DNRC typically requires annual monitoring of instream flow leases, so TU would assume some obligations to monitor streamflow in collaboration with YNP. YNP has conducted annual streamflow monitoring and reported results. TU and YNP will work together to ensure conserved water remains instream. The new diversion works will facilitate more precise, real-time monitoring of diversions into the pipeline.

Reese Creek Instream Flow Supplement

Reese Creek Instream Flow Supplement



Notes:

1. Topographic survey performed by Drake Burford of Restoration Engineering, LLC. Survey performed from April 4, 2017 to April 5, 2017.
2. Horizontal Datum: NAD 83
Vertical Datum: NAVD 88
3. All permit acquisition is the responsibility of Owner and Cooperating Agencies. The selected contractor shall satisfy the conditions of the permits.
4. All dimensions on all drawings are in feet (ft) and inches (in).
5. Project Specifications are outlined in separate document. Contractor shall comply with all Specifications. Individual Design Sheets may include references to Specifications to aid review and construction; however, just because a Specification is not called out on a specific design sheet does not mean there is not a Project Specification that should be followed.
6. Underground utility locates shall be coordinated by the Contractor.
7. Pipeline designed to meet NRCS Conservation Practice Standard Irrigation Pipeline Code 430.

Survey Control Points				
Point ID	Northing (ft)	Eastng (ft)	Elevation (ft)	Description
CP-1	29903.9934	168626.7160	5392.0018	Southwest corner of the top of the concrete intake box in pond.
CP-2	299020.7778	168639.3080	5391.3370	Northeast corner of the top of the concrete intake box in pond.
CP-3	299074.7713	1686252.9946	5416.6726	Northeast corner of the battery box at the base of the solar panels near the intake structure.
CP-4	297851.9633	1686257.3520	5409.0025	Top of concrete wingwall on upstream left bank of diversion. In center of wall, 1 foot from end at bank to in.

-  CONCRETE
-  COBBLE
-  BEDDING
-  COMMON BACKFILL



Survey Control and General Notes
Final Design
REESE CREEK
GARDINER, MONTANA

NO.	DATE	DESCRIPTION
PROJECT NO. 0417-2		
DESIGNED BY: CHRYSED MB TC		
PROJECT NO. 07/03/18		
SHEET NO. 2		

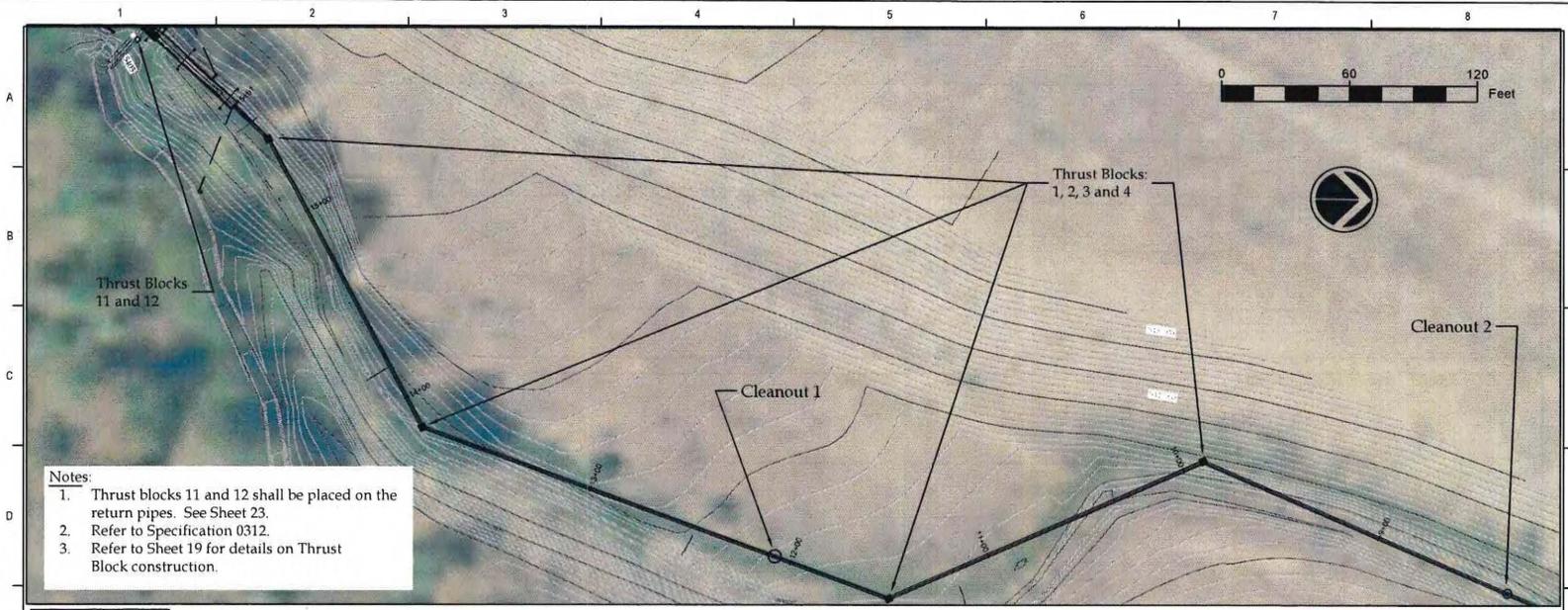
Reese Creek Instream Flow Supplement

Reese Creek Instream Flow Supplement



**Thrust Block and Cleanout
Locations**
Final Design
 REESE CREEK
 GARDINER, MONTANA

NO.	DATE	DESCRIPTION
PROJECT NO: 0417-2		
DESIGNED BY: CHUCKED		
MB TC		
PROJECT NO:		
DATE: 07/03/18		
SHEET NO: 18		



Notes:

1. Thrust blocks 11 and 12 shall be placed on the return pipes. See Sheet 23.
2. Refer to Specification 0312.
3. Refer to Sheet 19 for details on Thrust Block construction.

Thrust Block #	Station (ft)
1	15+40
2	13+90
3	11+50
4	9+90
5	6+95
6	6+00
7	5+40
8	3+65
9	0+30
10	0+20
Cleanout #	Station (ft)
1	12+10
2	8+40
3	4+40

