

RECOVERY PROGRAM
FY 2016-2020 SCOPE OF WORK for:
Operation and Maintenance of Gages

Recovery Program Project Number: 8

Contract: R12PG40019	End date: 9/30/16
Colorado Contract: SEO R12AP40009	End date: 9/30/18
USGS Utah Contract	Being renewed

Note: Recovery Program FY16-17 scopes of work are drafted in May 2015. They often are revised before final Program approval and may subsequently be revised again in response to changing Program needs. Program participants also recognize the need and allow for some flexibility in scopes of work to accommodate new information (especially in nonnative fish management projects) and changing hydrological conditions.

Lead agency: U.S Fish and Wildlife Service

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<u>Category:</u>	<u>Expected Funding Source:</u>
<input checked="" type="checkbox"/> Ongoing project	<input type="checkbox"/> Annual funds
<input type="checkbox"/> Ongoing-revised project	<input type="checkbox"/> Capital funds
<input type="checkbox"/> Requested new project	<input checked="" type="checkbox"/> O&M funds
<input type="checkbox"/> Unsolicited proposal	<input checked="" type="checkbox"/> Other ()

- I. Title of Proposal: Operation and Maintenance of Gages Important to the Recovery Implementation Program.
- II. Relationship to RIPRAP:
- | <u>Task #</u> | <u>Task Description</u> |
|---------------|--|
| | Colorado River Action Plan |
| I.A.5 | Provide and legally protect instream flows pursuant to the Colorado River PBO. |
| | Green River Action Plan |
| I.A.3 | Deliver identified flows |
| | Yampa River Action Plan |
| I.B.2a.(2)(b) | Elkhead Reservoir delivery flows for endangered fish |
| I.A.1.f | Install and/or operate gages |
| | Duchesne River Action Plan |
| I.C. | Legally protect and deliver identified flows. |
| I.D. | Coordinate reservoir operation |

III. Study Background/Rationale and Hypotheses:

Over the years, the Recovery Program has identified a need to expand stream gaging in the basin to support development of flow recommendations, quantify sediment movement, and administer water secured for endangered fish. This scope of work covers the Recovery Program gaging program and identifies the contributions of cooperating agencies. Cooperators are USGS, the Colorado State Engineers Office Gages are funded directly by the Recovery Program by funds administered by the Bureau of Reclamation.

IV. Study Goals, Objectives, End Products:

Provide a basis for refining the flow recommendations for the important stream reaches of the Colorado, Yampa, Price and Duchesne Rivers.

Provide a benchmark for future monitoring by video or aerial photography.

Gages are used to aid scheduling releases from Ruedi, Wolford, Williams Fork, Elkhead and Green Mountain Reservoirs and other water sources which may be acquired by the Recovery Program.

Gaging has been upgraded to provide reliable system for monitoring flows in the lower Duchesne River.

V. Study Area: Colorado, Green, Yampa, and Duchesne Rivers.

VI. Study Methods/Approach:

The Recovery Program will work with cooperators to operate of gages importance.

The USGS Colorado and Utah Water USGS Science Centers independently estimate their program costs for the Recovery Program largely based on local salary structure and logistical factors specific to the networks they each operate; however, their cost-estimate methodology is reasonably consistent. The percentage of operation and maintenance costs for the stream gages and temperature monitors operated by the USGS for the Recovery Program is typically distributed among the following activities:

Labor for field and office:	41%
Administrative support:	25%
Building and Utilities:	10 %
Field Equipment:	10 %
Data Management and Data Delivery:	7 %
Vehicles:	5 %
Travel (lodging and per diem):	2 %

VII. Task Description and Schedule:

A. Operate and maintain the Palisade (15-Mile Reach) gage installed in FY-90 by the Recovery Program.

- B. Operate and maintain the two gages installed on the Yampa River installed in FY-97 by the Recovery Program. Recent funding shortfalls have resulted in the Recovery Program funding 1/4 of the cost of the Craig gage on the Yampa River. The gage on the Yampa River above Elkhead Creek and the gage on Williams Fork are needed to administer releases from the enlarged Elkhead Reservoir.
 - C. Operate and maintain the gages installed on the Duchesne and Uinta Rivers installed in FY-97 by the Central Utah Water Conservancy District. The Recovery Program will cost-share in the operation of this gage.
 - D. Operate and maintain the temperature equipment installed on the Duchesne and Uinta Rivers installed in FY-97 by the Central Utah Water Conservancy District. The Recovery Program will cost-share in the operation of this gage.
 - E. Operate and maintain the temperature equipment installed on the Jensen Utah gage installed in FY-98 for the Recovery Program. The Recovery Program will cost-share in the operation of this gage.
 - F. Operate and maintain the gage installed on the Price River during the summer of 2000. The gage was requested by the Biology Committee. River stage/flow and temperature will be collected. The Recovery Program will cost-share in the operation of this gage.
- VIII. Study Schedule: gages are operated on an October to September Water/Fiscal year. Provisional data is available at: <http://waterdata.usgs.gov/nwis/rt> The data is finalized in March of each year. Historic data is also available on the web but usually lags a year because of quality assurance procedures and the volume of data which must be processed by USGS. Temperature for Lodore, Jensen and Deerlodge is available at: http://waterdata.usgs.gov/nwis/uv?multiple_site_no=404417108524900%0D%0A09260050%0D%0A09261000&search_site_no_match_type=exact&index_pmcode_00010=5&index_pmcode_82292

Contact Information

Colorado Gages

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Utah Gages

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USBR contact that coordinates contracts

UCREFRP Stream Gages FY 2016 \$

UCREFRP Stream Gages FY 2017 \$

UCREFRP Stream Gages FY 2018 \$

UCREFRP Stream Gages FY 2019

UCREFRP Stream Gages FY 2020

XI. Reviewers: Recovery Program Staff. Angela Kantola

Budget for FY17, Project 8, Recovery Program Gages

		Funding source		Breakdown of USBR & Wyoming costs						
	COLORADO	USBR	CWCB	Labor	Admin	Facility	Equipment	Data Delivery	Vehicles	Travel
Gage #	Funds go to Colorado State Engineers Office Steamboat Springs			41%	25%	10%	10%	7%	5%	2%
	Williams Fork Creek near Craig	\$8,944	\$2,981	\$3,667	\$2,236	\$894	\$894	\$626	\$447	\$179
	Funds go to USGS Grand Junction*									
9260050	Yampa @ Deerlodge (Temps)	\$5,059		\$2,074	\$1,265	\$506	\$506	\$354	\$253	\$101
4.04417E+14	Green River above Gates of Lodore	\$5,059		\$2,074	\$1,265	\$506	\$506	\$354	\$253	\$101
9247600	Yampa River near Craig ¼ of O/M (Flow)	\$4,648		\$1,906	\$1,162	\$465	\$465	\$325	\$232	\$93
9106150	Colorado River near Palisade (Flow)	\$18,593		\$7,623	\$4,648	\$1,859	\$1,859	\$1,301	\$930	\$372
9244490	Yampa River above Elkhead Creek (Flow)	\$18,593		\$7,623	\$4,648	\$1,859	\$1,859	\$1,301	\$930	\$372
9260050	Yampa River at Deerlodge (Flow)	\$18,593		\$7,623	\$4,648	\$1,859	\$1,859	\$1,301	\$930	\$372
	Colorado Total	\$79,489	\$2,981							
	UTAH									
	Funds go to Utah USGS	USBR								
9314500	Price R.nr Woodside (Flow,Temp& Cond)	\$27,250		\$11,172	\$6,812	\$2,725	\$2,725	\$1,907	\$1,362	\$545
9302000	Duchesne R. Randlett (Flow, Temp & Cond)	\$21,372		\$8,763	\$5,343	\$2,137	\$2,137	\$1,496	\$1,069	\$427
9295100	Duchesne Rvier above Uinta (Flow &Temp)	\$18,339		\$7,519	\$4,585	\$1,834	\$1,834	\$1,284	\$917	\$367
9272400	Green River at Ouray (Flow)	\$18,339		\$7,519	\$4,585	\$1,834	\$1,834	\$1,284	\$917	\$367
9261000	Green River nr Jensen (Temp only)	\$6,067		\$2,487	\$1,517	\$607	\$607	\$425	\$303	\$121
9301500	Uinta River nr Randlett (Flow)	\$18,339		\$7,519	\$4,585	\$1,834	\$1,834	\$1,284	\$917	\$367
9295000	Duchesne River at Myton (Flow)	\$18,339		\$7,519	\$4,585	\$1,834	\$1,834	\$1,284	\$917	\$367
	Utah Total	\$128,043								
	Total USBR FY2017	\$207,532		minus Wyoming's contribution to Colorado USGS						

Budget for FY18, Project 8, Recovery Program Gages

		Funding source		Breakdown of USBR & Wyoming costs						
	COLORADO	USBR	CWCB	Labor	Admin	Facility	Equipment	Data Delivery	Vehicles	Travel
Gage #	Funds go to Colorado State Engineers Office Steamboat Springs			41%	25%	10%	10%	7%	5%	2%
	Williams Fork Creek near Craig	\$9,212	\$3,071	\$3,777	\$2,303	\$921	\$921	\$645	\$461	\$184
	Funds go to USGS Grand Junction*									
9260050	Yampa @ Deerlodge & Lodore (Temps)	\$5,211		\$2,137	\$1,303	\$521	\$521	\$365	\$261	\$104
4.04417E+14	Green River above Gates of Lodore	\$5,211		\$2,137	\$1,303	\$521	\$521	\$365	\$261	\$104
9247600	Yampa River near Craig ¼ of O/M (Flow)	\$4,788		\$1,963	\$1,197	\$479	\$479	\$335	\$239	\$96
9106150	Colorado River near Palisade (Flow)	\$19,151		\$7,852	\$4,788	\$1,915	\$1,915	\$1,341	\$958	\$383
9244490	Yampa River above Elkhead Creek (Flow)	\$19,151		\$7,852	\$4,788	\$1,915	\$1,915	\$1,341	\$958	\$383
9260050	Yampa River at Deerlodge (Flow)	\$19,151		\$7,852	\$4,788	\$1,915	\$1,915	\$1,341	\$958	\$383
	Colorado Total	\$81,873	\$3,071							
	UTAH									
	Funds go to Utah USGS									
		USBR								
9314500	Price R.nr Woodside (Flow,Temp & Cond)	\$27,931		\$11,452	\$6,983	\$2,793	\$2,793	\$1,955	\$1,397	\$559
9302000	Duchesne R. Randlett (Flow, Temp & Cond)	\$21,906		\$8,982	\$5,477	\$2,191	\$2,191	\$1,533	\$1,095	\$438
9295100	Duchesne Rvier above Uinta (Flow &Temp)	\$18,797		\$7,707	\$4,699	\$1,880	\$1,880	\$1,316	\$940	\$376
9272400	Green River at Ouray (Flow)	\$18,797		\$7,707	\$4,699	\$1,880	\$1,880	\$1,316	\$940	\$376
9261000	Green River nr Jensen (Temp only)	\$6,218		\$2,549	\$1,555	\$622	\$622	\$435	\$311	\$124
9301500	Uinta River nr Randlett (Flow)	\$18,797		\$7,707	\$4,699	\$1,880	\$1,880	\$1,316	\$940	\$376
9295000	Duchesne River at Myton (Flow)	\$18,797		\$7,707	\$4,699	\$1,880	\$1,880	\$1,316	\$940	\$376
	Utah Total	\$131,244								

Total USBR FY2018 = \$213,118 minus Wyoming's contribution to Colorado USGS

Budget for FY19, Project 8, Recovery Program Gages

		Funding source		Breakdown of USBR & Wyoming costs						
	COLORADO	UCREFR	CWCB	Labor	Admin	Facility	Equipment	Data Delivery	Vehicles	Travel
Gage #	Funds go to Colorado State Engineers Office Steamboat Springs			41%	25%	10%	10%	7%	5%	2%
	Williams Fork Creek near Craig	\$9,385	\$3,128	\$3,848	\$2,346	\$938	\$938	\$657	\$469	\$188
	Funds go to USGS Grand Junction*									
9260050	Yampa @ Deerlodge (Temps)	\$5,367		\$2,201	\$1,342	\$537	\$537	\$376	\$268	\$107
4.04417E+14	Green River above Gates of Lodore	\$5,367		\$2,201	\$1,342	\$537	\$537	\$376	\$268	\$107
9247600	Yampa River near Craig ¼ of O/M (Flow)	\$4,931		\$2,022	\$1,233	\$493	\$493	\$345	\$247	\$99
9106150	Colorado River near Palisade (Flow)	\$19,725		\$8,087	\$4,931	\$1,973	\$1,973	\$1,381	\$986	\$395
9244490	Yampa River above Elkhead Creek (Flow)	\$19,725		\$8,087	\$4,931	\$1,973	\$1,973	\$1,381	\$986	\$395
9260050	Yampa River at Deerlodge (Flow)	\$19,725		\$8,087	\$4,931	\$1,973	\$1,973	\$1,381	\$986	\$395
	Colorado Total	\$84,226	\$3,128							
	UTAH									
	Funds go to Utah USGS	UCREFR								
9314500	Price R.nr Woodside (Flow,Temp & Cond)	\$28,490		\$11,681	\$1,987	\$2,849	\$2,849	\$1,994	\$1,424	\$570
9302000	Duchesne R. nr Randlett (Flow, Temp & Cond)	\$22,344		\$9,161	\$1,987	\$2,234	\$2,234	\$1,564	\$1,117	\$447
9295100	Duchesne R. above Uinta (Flow &Temp)	\$19,173		\$7,861	\$1,987	\$1,917	\$1,917	\$1,342	\$959	\$383
9272400	Green River at Ouray (Flow)	\$19,173		\$7,861	\$1,987	\$1,917	\$1,917	\$1,342	\$959	\$383
9261000	Green River nr Jensen (Temp only)	\$6,343		\$2,600	\$1,987	\$634	\$634	\$444	\$317	\$127
9301500	Uinta River nr Randlett (Flow)	\$19,173		\$7,861	\$1,987	\$1,917	\$1,917	\$1,342	\$959	\$383
9295000	Duchesne River at Myton (Flow)	\$19,173		\$7,861	\$1,987	\$1,917	\$1,917	\$1,342	\$959	\$383
	Utah Total	\$133,869								

Total USBR FY 2019 = \$218,095 minus Wyoming's contribution to Colorado USGS

Budget for FY20, Project 8, Recovery Program Gages

		Funding source		Breakdown of USBR & Wyoming costs						
Gage #		USBR	CWCB	Labor	Admin	Facility	Equipment	Data Delivery	Vehicles	Travel
	COLORADO	USBR	CWCB							
	Funds go to Colorado State Engineers Office Steamboat Springs			41%	25%	10%	10%	7%	5%	2%
	Williams Fork Creek near Craig	\$9,666	\$3,222	\$3,963	\$2,417	\$967	\$967	\$677	\$483	\$193
	Funds go to USGS Grand Junction*									
9260050	Yampa @ Deerlodge (Temps)	\$6,205		\$2,544	\$1,551	\$621	\$621	\$434	\$310	\$124
4.04417E+14	Green River above Gates of Lodore	\$6,025		\$2,470	\$1,506	\$602	\$602	\$422	\$301	\$120
9247600	Yampa River near Craig ¼ of O/M (Flow)	\$5,495		\$2,253	\$1,374	\$550	\$550	\$385	\$275	\$110
9106150	Colorado River near Palisade (Flow)	\$20,289		\$8,318	\$5,072	\$2,029	\$2,029	\$1,420	\$1,014	\$406
9244490	Yampa River above Elkhead Creek (Flow)	\$19,912		\$8,164	\$4,978	\$1,991	\$1,991	\$1,394	\$996	\$398
9260050	Yampa River at Deerlodge (Flow)	\$20,289		\$8,318	\$5,072	\$2,029	\$2,029	\$1,420	\$1,014	\$406
	Colorado Total	\$87,881	\$3222							
	UTAH									
	Funds go to Utah USGS	USBR								
9314500	Price R.nr Woodside (Flow,Temp & Cond)	\$29,059		\$11,914	\$7,265	\$2,906	\$2,906	\$2,034	\$1,453	\$581
9302000	Duchesne R. Randlett (Flow, Temp & Cond)	\$22,791		\$9,344	\$5,698	\$2,279	\$2,279	\$1,595	\$1,140	\$456
9295100	Duchesne Rvier above Uinta (Flow &Temp)	\$19,557		\$8,018	\$4,889	\$1,956	\$1,956	\$1,369	\$978	\$391
9272400	Green River at Ouray (Flow)	\$19,557		\$8,018	\$4,889	\$1,956	\$1,956	\$1,369	\$978	\$391
9261000	Green River nr Jensen (Temp only)	\$6,469		\$2,652	\$1,617	\$647	\$647	\$453	\$323	\$129
9301500	Uinta River nr Randlett (Flow)	\$19,557		\$8,018	\$4,889	\$1,956	\$1,956	\$1,369	\$978	\$391
9295000	Duchesne River at Myton (Flow)	\$19,557		\$8,018	\$4,889	\$1,956	\$1,956	\$1,369	\$978	\$391
	Utah Total	\$136,547								

minus
 Wyoming's
 contribution
 to Colorado
 USGS
 (~30K?)

Total USBR FY2020 = \$224,428