

GCMRC FY 2018 Budget Update and FY 2019 Proposed Budget

Technical Work Group Meeting April 23-24, 2018

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U.S. Department of the Interior U.S. Geological Survey

FY2018 Budget Summary from FY18-20 TWP

	Project	Project Description	FY2018 Summary	ATT IS
	Α	Streamflow, Water Quality, and Sediment Transport and Budgeting in the Colorado River Ecosystem	\$1,230,000	
1	В	Sandbar and Sediment Storage Monitoring and Research	\$1,039,000	State-
	С	Riparian Vegetation Monitoring and Research	\$585,000	
	D	Geomorphic Effects of Dam Operations and Vegetation Management for Archaeological Sites	\$262,000	
	Е	Nutrients and Temperature as Ecosystem Drivers: Understanding Patterns, Establishing Links and Developing Predictive Tools for an Uncertain Future	\$343,000	
	F	Aquatic Invertebrate Ecology	\$771,000	
	G	Humpback Chub Population Dynamics throughout the Colorado River Ecosystem	\$1,506,000	-1
	н	Salmonid Research and Monitoring	\$683,000	
ALL DO	I	Warm-Water Native and Non-Native Fish Research and Monitoring	\$557,000	
	J	Socioeconomic Research in the Colorado River Ecosystem	\$281,000	
	К	Geospatial Science and Technology	\$302,000	A DESCRIPTION OF
THAN IT	L	Remote Sensing Overflight in Support of Long-term Monitoring and LTEMP	\$75,000	(TWP = Triennial
	Μ	Administration	\$1,375,000	Plan)
TAV ALL	N	Hydropower Monitoring & Research	\$12,000	(Amounts
	SGS	Grand Canyon Monitoring and Research Center (GCMRC) Total Budget	\$9,021,000	to nearest

FY2018 Budget Summary from FY18-20 TWP

Total Budget for FY2018	\$9,021,000	
Anticipated Glen Canyon Dam Adaptive Management Program (GCDAMP) Funds (80%)	\$8,820,000	
Over/Under Budget	(\$200,000)	
Additional Funding:		
Native Fish Conservation Contingency Fund	\$43,000	
Anticipated Carryover (From Previous FY)	\$332,000	
Total Additional Funding	\$375,000	
Total Planned to Carryover to FY2019	\$175,000	

Lake Powell: \$150,000 (Not Funded by the GCDAMP).

(Amounts rounded to nearest \$1,000)

FY2018 Budget Overview

Anticipated GCDAMP Funding to GCMRC	\$8,925,000
Carryover from previous FY	\$512,000
Experimental fund: bug flows monitoring, brown trout report, sand routing model calibration	*\$150,000
Total GCMRC Funding	\$9,587,000
FY2018 Budgeted costs	(\$9,021,000)
Planned carryover to FY2019 identified in TWP	(\$175,000)
Unanticipated salary changes	*(\$72,000)
Unanticipated project costs	*(\$51,000)
Proposed working capital fund/carryover – vehicles, boats, staffing	*(\$60,000)
Experimental fund: bug flows, brown trout, sand routing model	*(\$150,000)
Total GCMRC Spending	*(\$9,529,000)
Anticipated GCMRC Total Over/Under Budget	*\$58,000

* Preliminary, subject to revision

Lake Powell: \$150,000 (Not Funded by GCDAMP). Waiting for funding obligation.

> (Amounts rounded to nearest \$1,000)

A. Streamflow, Water Quality, and Sediment Transport and Budgeting in the Colorado River Ecosystem

Project Elements

- 1. Stream gaging
- 2. Water quality
- 3. Sediment transport and budgeting

B. Sandbar and Sediment Storage Monitoring and Research

- 1. Sandbar monitoring using topographic surveys and remote cameras
- 2. Bathymetric and topographic mapping for monitoring long-term trends in sediment storage
- 3. Control network and survey support

C. Riparian Vegetation Monitoring and Research

Project Elements

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- 1. Ground-based riparian vegetation monitoring
- 2. Imagery-based riparian vegetation monitoring at the landscape scale
- 3. Vegetation responses to Long-Term Experimental and Management Plan (LTEMP) flow scenarios
- 4. Vegetation management decision support

D. Geomorphic Effects of Dam Operations and Vegetation Management for Archaeological Sites

- 1. Geomorphic effects of dam operations and vegetation management
- 2. Cultural resources synthesis to inform Historic Preservation Plan

E. Nutrients and temperature as ecosystem drivers: understanding patterns, establishing links and developing predictive tools for an uncertain future

Project Elements

- Temperature and nutrients in the Colorado River ecosystem – patterns, drivers, and improved predictions
- 2. Linking temperature and nutrients to metabolism and higher trophic levels

F. Aquatic Invertebrate Ecology (Food Base)

- 1. Influence of dam operations on the food base
- 2. Aquatic food base status at humpback chub monitoring locations
- 3. Terrestrial-aquatic linkages
- 4. Glen Canyon food base monitoring and research
- 5. Are undesirable shifts in the Glen Canyon prey base facilitating expansion of brown trout? ≥

G. Humpback chub population dynamics throughout the Colorado River Ecosystem

- 1. Humpback chub population modelling
- 2. Annual spring/fall humpback chub abundance estimates in the lower 13.6 km of the Little Colorado River (LCR)
- 3. Juvenile chub monitoring near the LCR confluence
- 4. Remote PIT array monitoring in the LCR
- 5. Monitoring humpback chub aggregation relative abundance and distribution
- 6. Juvenile chub monitoring West
- 7. Chute Falls translocations
- 8. Havasupai translocation feasibility (FY2020)
- 9. Backwater seining



H. Salmonid Research and Monitoring

Project Elements

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- 1. Experimental flow assessment of trout recruitment
- 2. Rainbow trout and brown trout recruitment and outmigration model
- 3. Using early life history and physiological growth data from otoliths to inform management of rainbow trout and brown trout populations in Glen Canyon
- 4. Rainbow trout monitoring in Glen Canyon

I. Warm-Water Native and Non-Native Fish Research and Monitoring

- 1. System-wide native and invasive aquatic species monitoring
- 2. Improved early detection of warmwater invasive fish
- 3. Assess the risks warm-water nonnative fish pose to native fish

J. Socioeconomic Monitoring and Research in the Colorado River Ecosystem

Project Elements

 Tribal perspectives for, and values of, resources downstream of Glen Canyon Dam: tribal member population survey

2. Applied decision and scenario analysis

K. Geospatial Science and Technology

Project Elements

Chuar Butte

- 1. Geospatial data management, processing and documentation
- 2. Access to geospatial data holdings
- 3. Remote monitoring systems and technological engineering

L. Remote Sensing Overflight in Support of Long Term Monitoring and LTEMP

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Project Elements

1. Remote sensing overflight in support of long term monitoring and LTEMP

M. Administration

Project Elements

- 1. Administration
- 2. Logistics
- 3. 17

N. Hydropower Monitoring and Research

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Project Elements

1. Hydropower monitoring and research

FY2019 Budget Summary from FY18-20 TWP

Project	ct Project Description	
Α	Streamflow, Water Quality, and Sediment Transport and Budgeting in the Colorado River Ecosystem	\$1,251,000
В	Sandbar and Sediment Storage Monitoring and Research	\$1,111,000
С	Riparian Vegetation Monitoring and Research	\$485,000
D	Geomorphic Effects of Dam Operations and Vegetation Management for Archaeological Sites	\$294,000
Е	Nutrients and Temperature as Ecosystem Drivers: Understanding Patterns, Establishing Links and Developing Predictive Tools for an Uncertain Future	\$233,000
F	Aquatic Invertebrate Ecology	\$811,000
G	Humpback Chub Population Dynamics throughout the Colorado River Ecosystem	\$1,674,000
н	Salmonid Research and Monitoring	\$726,000
I.	Warm-Water Native and Non-Native Fish Research and Monitoring	\$581,000
J	Socioeconomic Research in the Colorado River Ecosystem	\$252,000
К	Geospatial Science and Technology	\$231,000
L	Remote Sensing Overflight in Support of Long-term Monitoring and LTEMP	\$75,000
Μ	Administration	\$1,478,000
Ν	Hydropower Monitoring & Research	\$13,000
S	GCMRC Total Budget	\$9,215,000

(Amounts rounded to nearest \$1,000)

FY2019 Budget Summary						
	From FY 18-20TWP	**Current Estimate				
GCMRC Total Budget	\$9,215,000	\$9,215,000				
	Planned CPI	*Actual CPI				
Anticipated GCMRC AMP Funds (80%)	\$8,909,000	\$9,014,000	Par a			
Over/Under Budget	(\$307,000)	(\$201,000)				
Additional Funding: Native Fish Conservation Contingency Fund	\$294 000	\$294.000	-			
Anticipated Carryover (From Previous FY)	\$175,000	\$175,000	Lake Powell:			
Total Additional Funding	\$469,000	\$469,000	\$71,000 (Not Funded by			
Total Planned to Carryover to FY2020	\$162,000	\$162,000	GCDAMP). Waiting for funding obligation.			
Remainder	\$0	**\$106,000				
*Consumer Price Index (CPI) FY18 = 2	(Amounts rounded					
USGS ** Preliminary, subject t	to nearest \$1,000)					

Overhead Uncertainties

FY 2018 overhead on GCDMAP funds:

- Center-level overhead: 7.5%
- Facilities overhead: 8.1%
- Total overhead = 15.6%
- Pass-through rate = 3.0%

FY 2019 overhead on GCDMAP funds:

- Total overhead = TBD initial estimate in July
- Pass-through rate = 3.0%



New Flagstaff Science Building

Estimated timeline:

 New GSA contract with City of Flagstaff by end of FY 2018, but as early as May
 includes design and building

Building design expected to be completed within six months of contract signing

 New building expected to be completed within 18 months of contract signing



New Overhead Rate

- New Flagstaff science building will increase facilities overhead ~ 19%
- Overhead with new building will be ~ 26%
 Pass-through rate = 3.0%
- Overhead will not increased until the new building is occupied
- Uncertainty as to building costs right now rent, and thus facilities overhead, could vary from the estimates



Questions?

