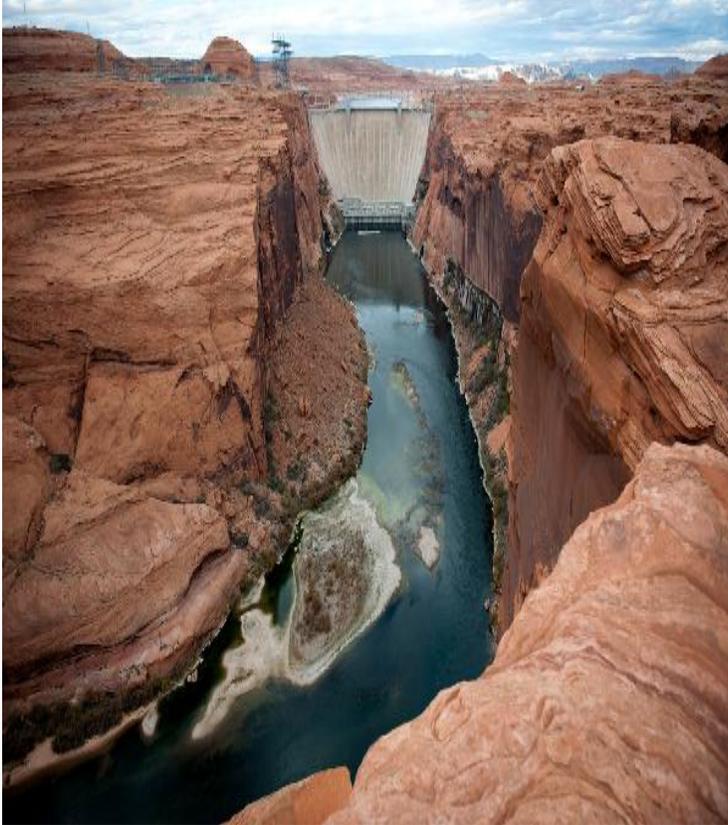


Colorado River Storage Project (CRSP) Update

Steve Johnson, Senior Vice President and CRSP MC Manager
Brian Sadler, Administrative and Technical Services Manager

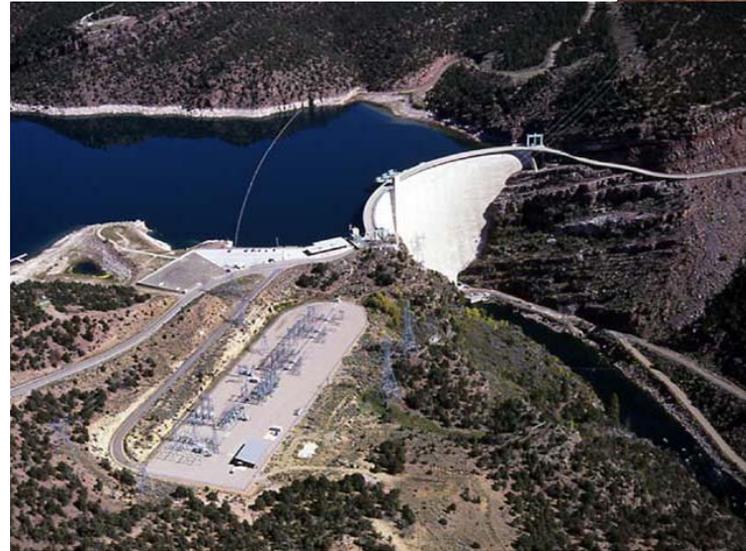
What is WAPA?



- A DOE power marketing administration
- Created in 1977 to separate the generation and transmission functions
- WAPA assumed Reclamation's function of marketing and delivering power generated at Federal hydroelectric powerplants in the west and mid-western U.S.

Colorado River Storage Project

- 12 power plants
- 27 generating units
- 1,827 MW total installed capacity (73% from Glen Canyon)
- 4,225 GWh Net Generation (74% from Glen Canyon)
- 2,325 circuit miles (Arizona, Colorado, New Mexico, Utah, Wyoming)



CRSP MC

- Committed to protecting the delicate balance of the Colorado River and its tributaries. Agencies that manage this river's resources must weigh multiuse needs: irrigation, recreation, hydropower, flood control, cultural resources, and native and non-native species, and endangered species protection.
- Balancing these resources with the needs of water and electrical energy is a chief concern.

Responsibilities

WAPA

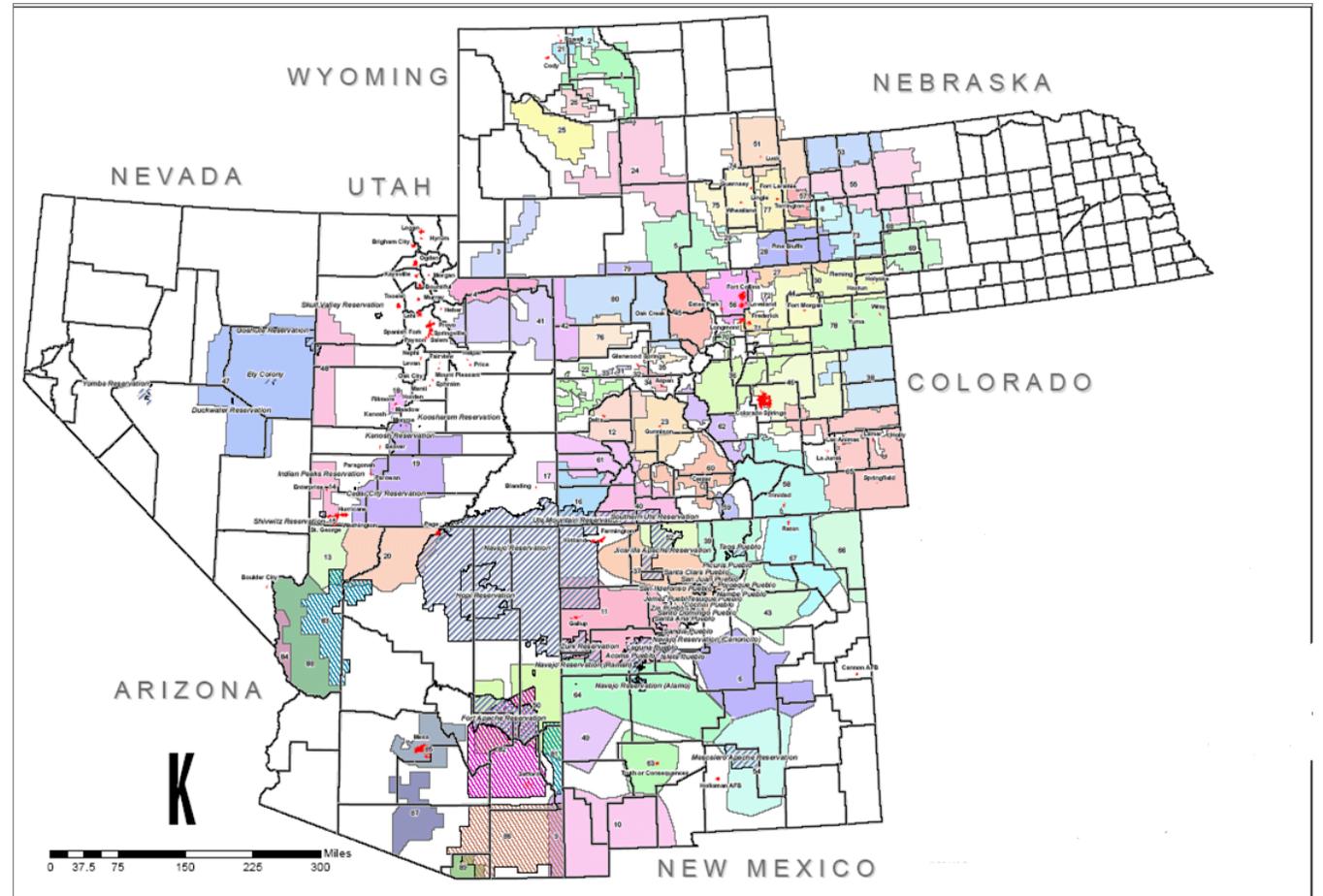
- Owns and operates the transmission system infrastructure
- Markets, schedules and delivers energy to long term firm electric service customers
- Dispatches generation from the powerplants at the dams for electrical regulation and emergencies
- Rate setting and repayment of project debt to U.S. Treasury from revenue

Reclamation

- Owns, operates, and maintains dams and power plants
- Water management (reservoir management, irrigation, flood control, and water compact deliveries)
- Generates power which is delivered to WAPA at the plant transformers

CRSP Customers

- 135 long-term customers
 - 54 Native American tribes
 - 64 Municipalities, cooperatives, irrigation districts
 - 17 Other



Setting CRSP Power Rates

Cost-based rates

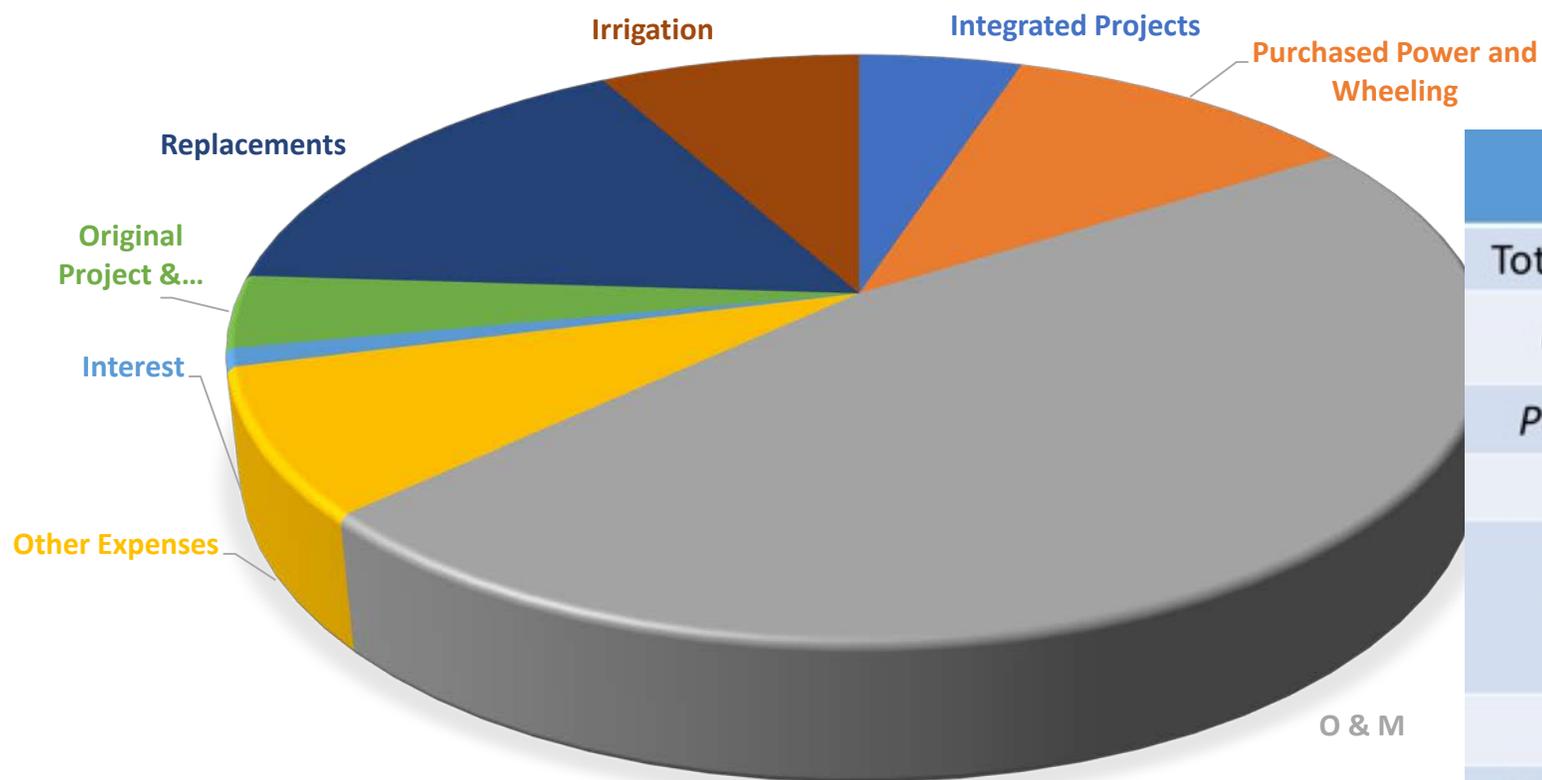
- Operations & maintenance
- Required principal & interest payments
- Amortized capital replacements (WAPA & BOR)
- Purchase power to “firm” contractual commitments
- Repayment of CRSP and participating irrigation projects
- Salinity Control Program – reduce salt in Colorado River water
- Repayment of Loan to fund Capitalized UCRIP expenses

Revenue requirement

- Rate = revenue requirement/projected energy sales
- Simplified Example:
 - \$200 required revenue to cover costs
 - Contracts = 200 KWh of energy delivery
 - Rate = \$1.00/KWh
- Rate change is done only if projected revenue is insufficient to meet future projected expenses

Basin Fund cash balance is not a component of the rate

What's in the SLCA/IP Rate



	FY2018
Total Revenue	<u>\$225</u>
<i>Operations & Maintenance</i>	\$96.8
<i>Purchase Power & Wheeling</i>	\$43.4
<i>States' MOA Funds</i>	\$11.5
<i>Repayment of Investment</i>	\$61.3
<i>Interest on Investment</i>	\$12.7
Total Costs	\$225



Electrical System Regulation and Emergencies

- NERC and WECC requirement of electrical utility
- The CRSP MC is a member of the Rocky Mountain Reserve Group and responds to electrical emergencies in the region (not just CRSP system).
- Regulation signal
 - Comes from WAPA dispatch office to GCD, every few seconds.
 - Purpose is to maintain system frequency while managing transmission line loading and providing voltage support
 - Changes caused by changes in demand

Basin Fund Obligations

- Manage the financial requirements of the CRSP Act
 - Glen Canyon, Aspinall, Flaming Gorge
 - Several additional units that include dams, reservoirs, powerplants, transmission facilities and other related works
- Reclamation operations are funded by periodic transfers from the CRSP Basin Fund to a Reclamation subaccount
 - Allows Reclamation to maintain programmatic oversight of their facilities
 - Funds are transferred approximately on a monthly basis and only the amount they need to operate for the fiscal year

CRSP Basin Fund Status



- Current FY 2019 Balance...\$141M
 - As of 4/16/2019
 - Final FYE 2018 Balance...\$126.9M
- Projected FYE 2019 Balance.....\$112M*

* Projection based on actual revenue and expense data through February 28, 2019, and anticipated cash return to Treasury of \$21M, but could change.

- Direction to return cash?
 - Last cash return was \$25M to the General Fund of the U.S. Treasury in 2012
 - No cash return was made in 2013-2018.
 - Annual Constructive Returns (non-cash) around \$18-23M per year (2013-2018)
 - FY19 will be significantly lower due to OMB direction to not transfer funds to Reclamation

Basin Fund Balance

Reserve Strategy

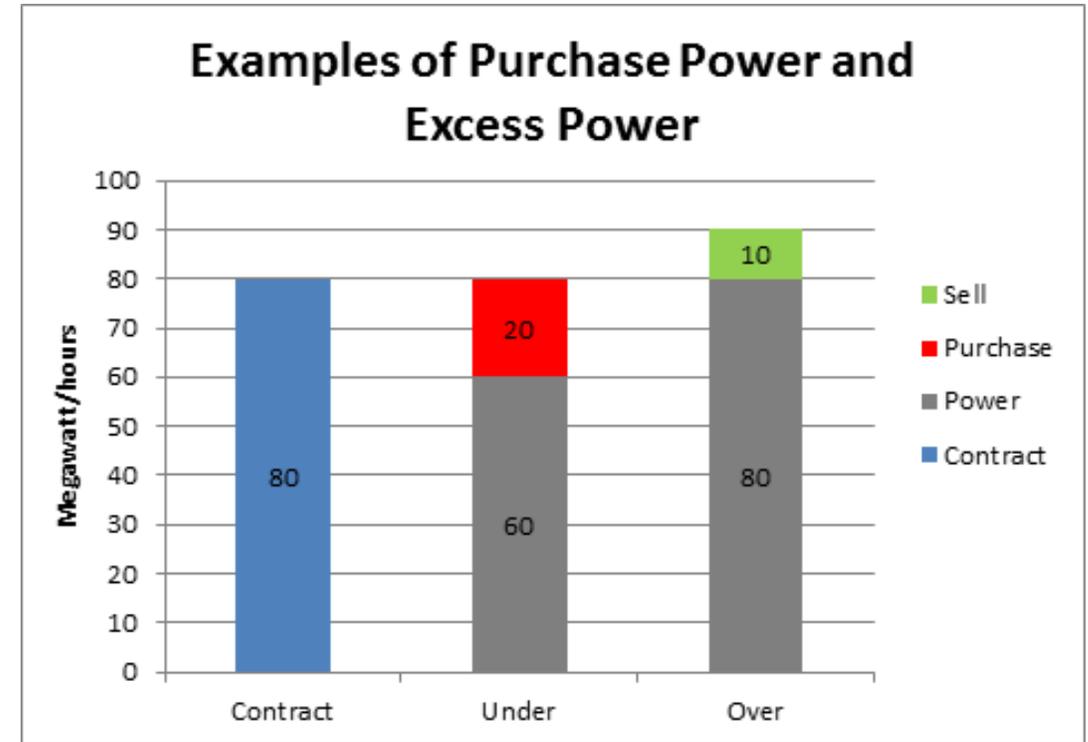
- WAPA-wide strategy for maintaining fund balances
- CRSP target is ~\$180M
- Projected end of fiscal year balance is \$112M

Risk Factors

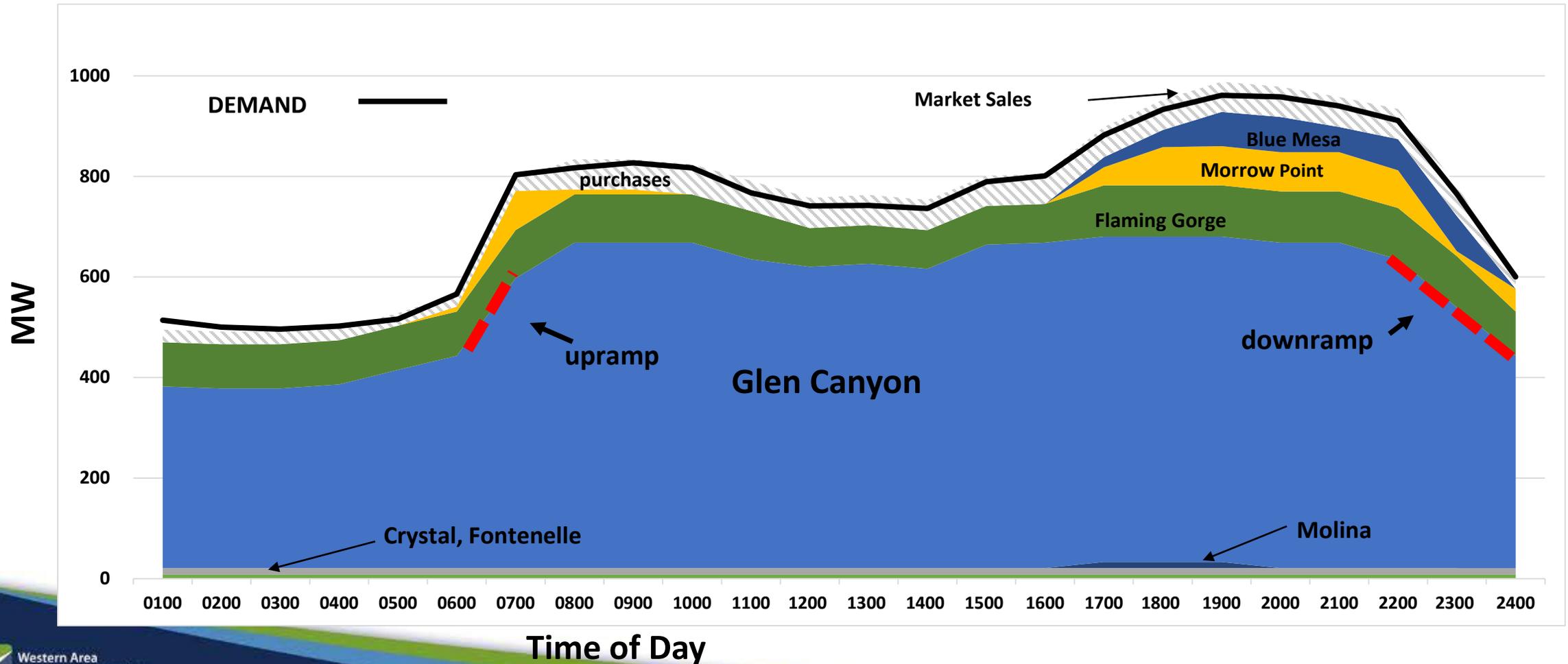
- Replacements (Reclamation & WAPA)
- Environmental Programs
- Bypass (including Spring Flows out of FG and Aspinall)
- Market Price for Purchase Power
- Hydrology/Releases/Pool Elevation

Purchase Power

- GCD Releases
- Releases at other CRSP facilities
- Hydrology
- Pool Elevation/Efficiency
- Market Prices

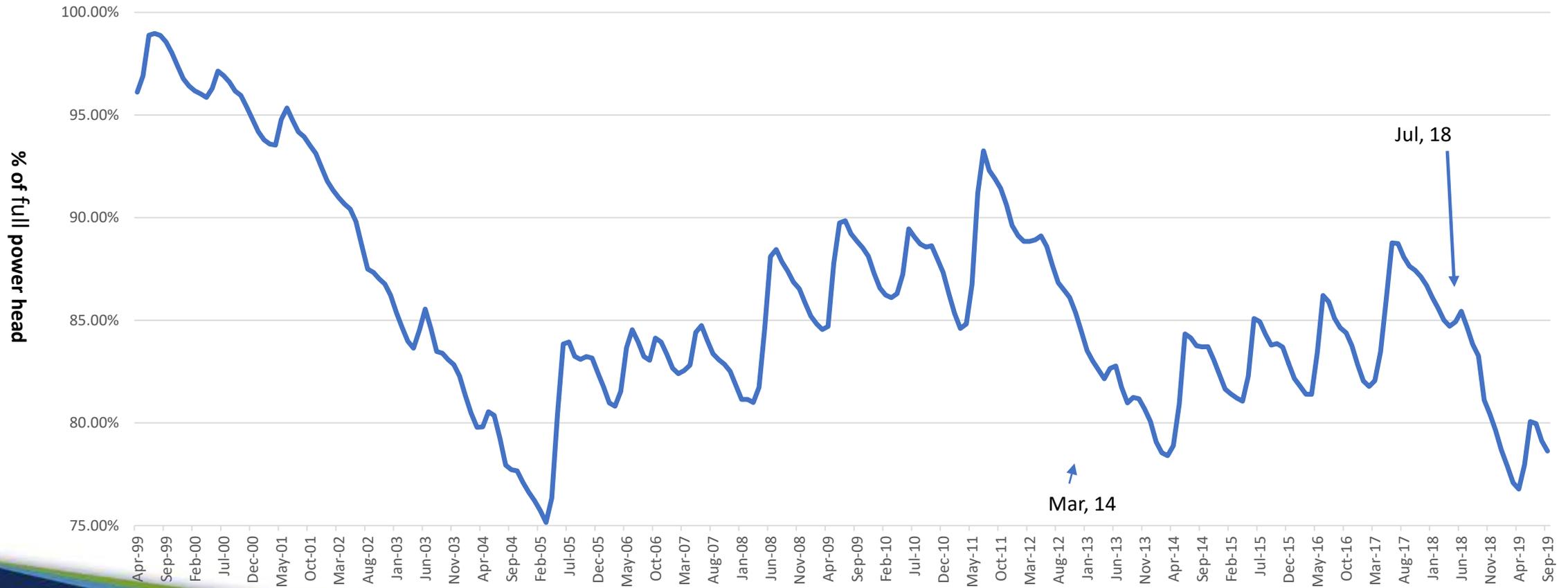


CRSP Generation vs Demand (data from Jan. 15 preschedule)



GCD Hydropower Head

From the beginning of current drought 1999 - 2019

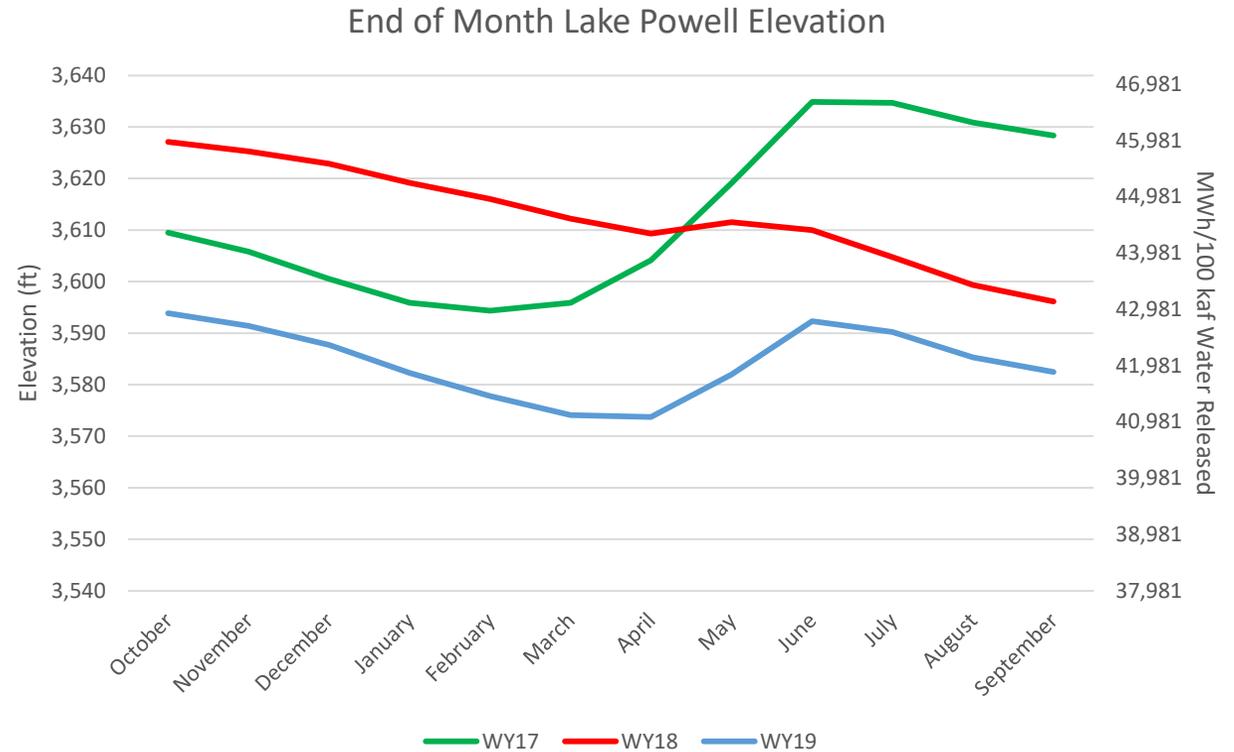


Purchase Power and Hydrology

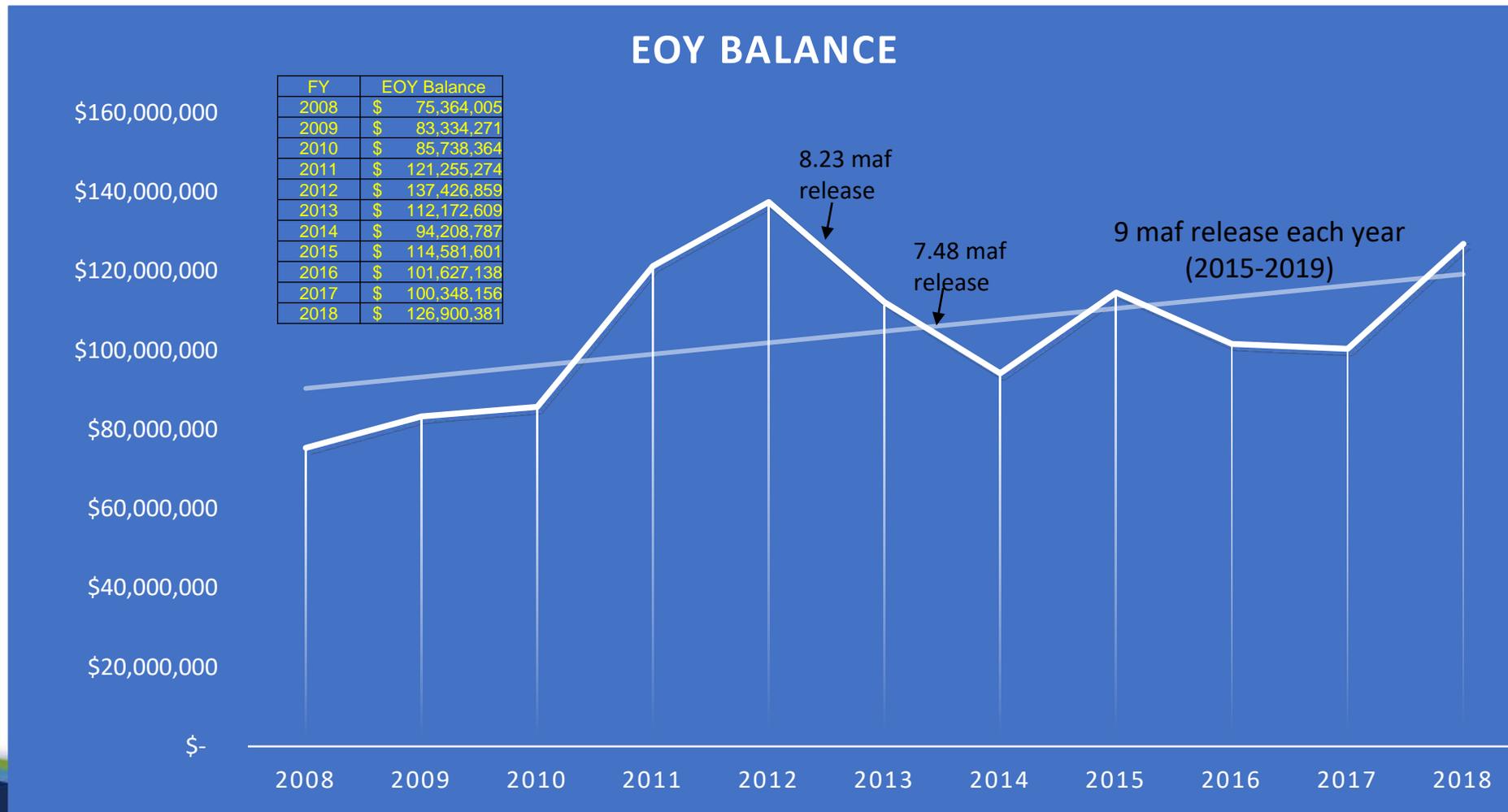
Water Year	Average Elevation	Generation (GWh)		Purchase Power	
	Glen Canyon	Glen Canyon	All CRSP Units	GWh	Cost
2017 ^a	3,612.8	3,652	5,174	116	\$2.9M
2018 ^b	3,612.8	3,730	5,101	104	\$3M
2019 ^c	3,584.4	3,485	4,570	618	\$18.4M

a-Observed data
b-Observed data through June, forecasted for remaining months
c-Forecasted generation using July 24-month study

All 9maf release years
If WY19 is 8.23maf, ~\$27.7M cost



Basin Fund Balance FY 2008 - 2018



Environment and Cultural Resources

Historically funded by CRSP electric power revenues

- Upper Colorado Recovery Program - \$5.5M
- San Juan Recovery Program - \$2.7M
- Glen Canyon Dam Adaptive Management Program - \$10.8M
- Quality of Water & Consumptive Use Studies - \$1M
- High Flow Experiments and related WAPA Expenses - \$2.5M
- Salinity Control Program – reduce salt in Colorado River water - \$2M

Note: In 2019, CRSP power revenues are not funding the non-reimbursable environmental programs

2015 Budget Request

COLORADO RIVER BASINS POWER MARKETING FUND, WESTERN AREA POWER ADMINISTRATION

Program and Financing (in millions of dollars)

Identification code 89-4452-0-3-271		2013 actual	2014 est.	2015 est.
Obligations by program activity:				
0801	Program direction	53	58	61
0802	Equipment, Contracts and Related Expenses	167	137	167
0900	Total new obligations	220	195	228
Budgetary Resources:				
Unobligated balance:				
1000	Unobligated balance brought forward, Oct 1	180	161	147
Budget authority:				
Spending authority from offsetting collections, discretionary:				
1700	Collected	200	204	251
1701	Change in uncollected payments, Federal sources	1		
1720	Capital transfer of spending authority from offsetting collections to general fund		-23	-23
1750	Spending auth from offsetting collections, disc (total)	201	181	228
1930	Total budgetary resources available	381	342	375
Memorandum (non-add) entries:				
1941	Unexpired unobligated balance, end of year	161	147	147

CRSP Environmental Team

Shane Capron – Fish Biologist & Team Lead

New Hire Selected – Fish Biologist

Craig Ellsworth – Fish Biologist, aquatic ecology

Clayton Palmer – Economics and NEPA

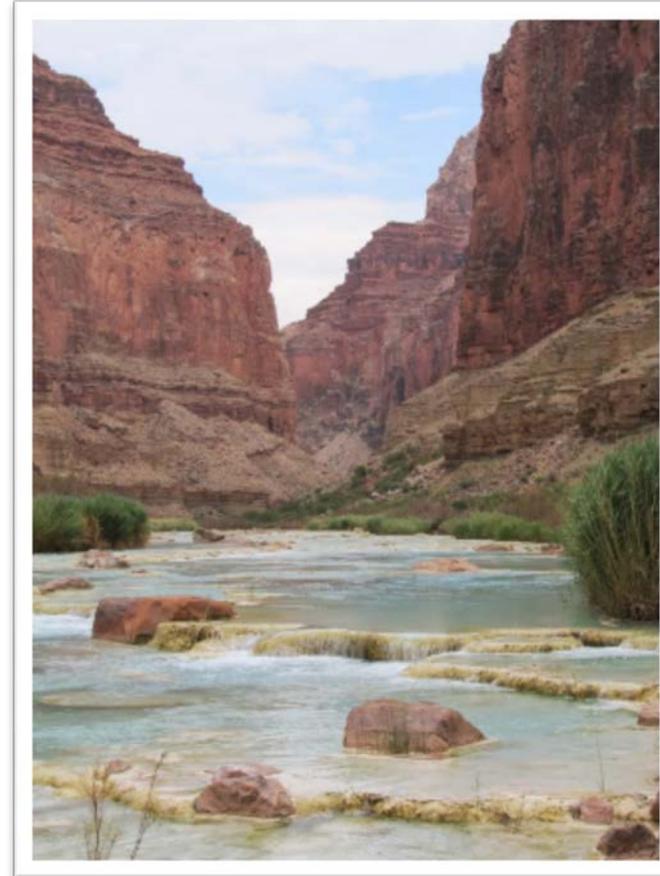
Jerry Wilhite – Modeling and Data Analysis

Chrystal Dean – Resources

Aligned with leadership:

Steve Johnson (CRSP Manager)

Brian Sadler (Admin and Tech Services Manager)

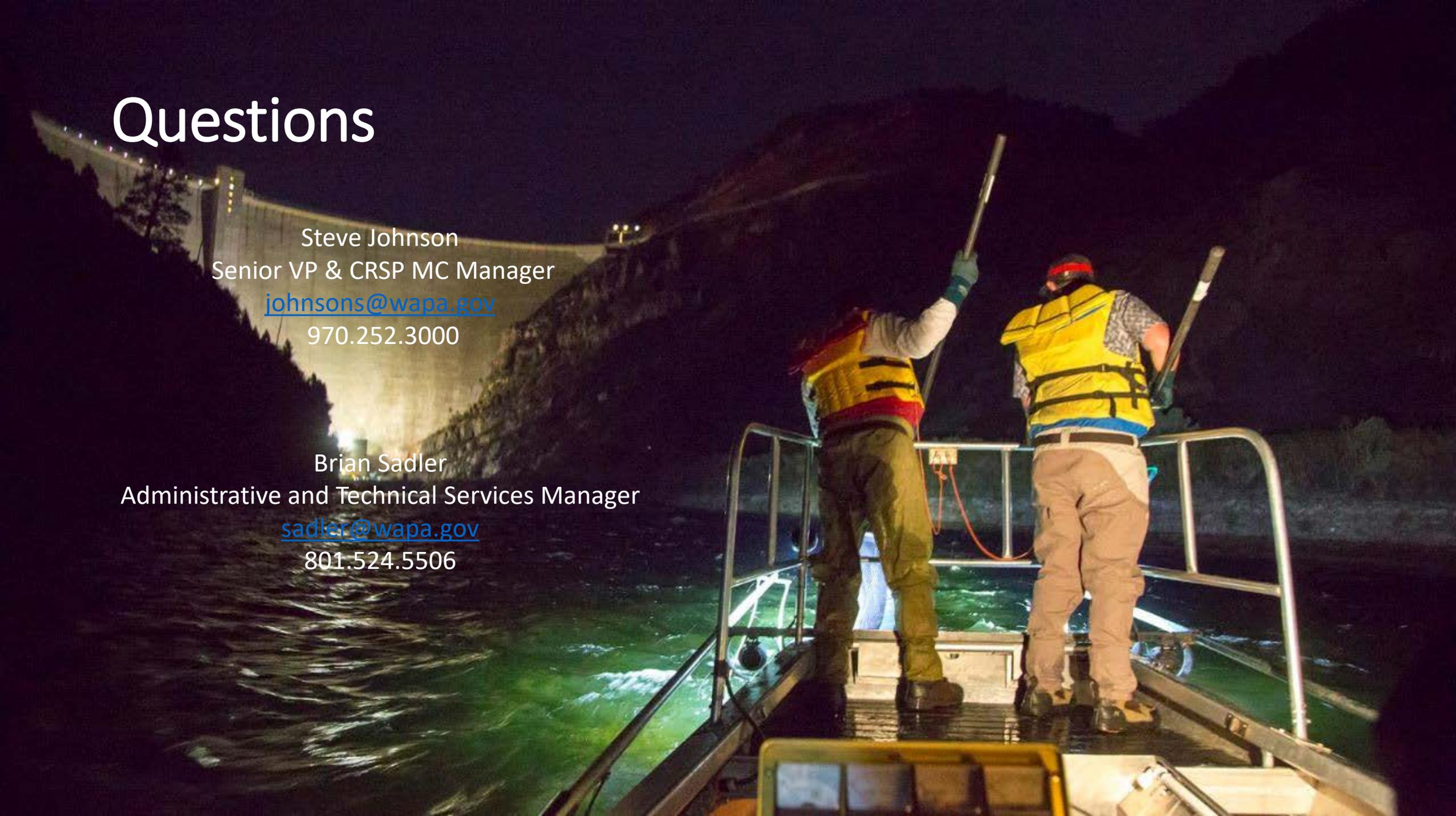


Little Colorado River, Grand Canyon

CRSP Upcoming Challenges

- Drought
- State Apportionment/MOA
- Basin Fund and Returns to Treasury
- Markets

Questions

A night-time photograph showing two workers in yellow safety vests and hard hats standing on the deck of a boat. They are looking towards a large dam in the distance, which is illuminated by lights. The water is dark, and the sky is black. The boat has a metal railing and a yellow seat in the foreground.

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