

# WAPA Presentation CRWUA

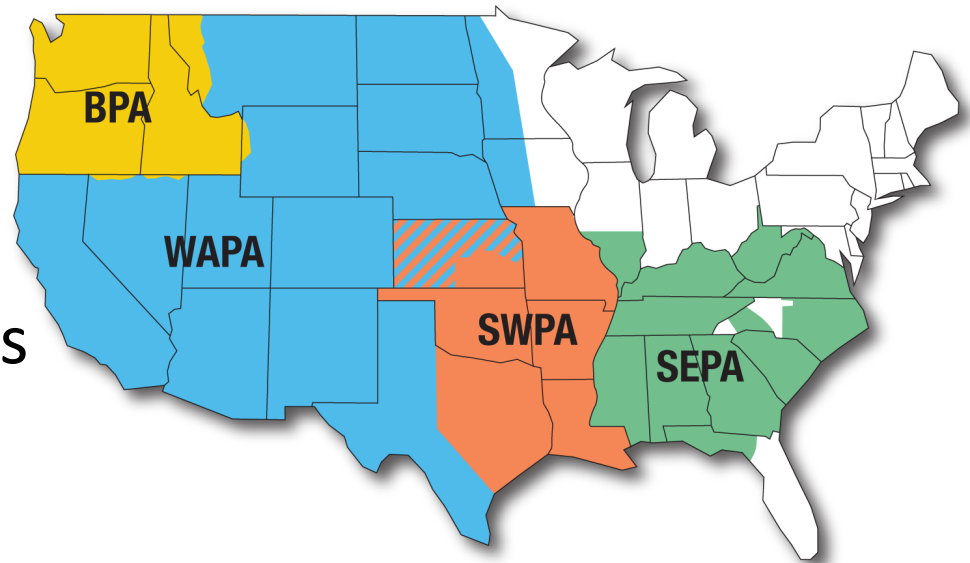
December 14, 2021

Tim Vigil

Senior VP and Colorado River Storage Project Manager

# What is WAPA?

- One of four PMAs under the DOE
- Wholesale electricity supplier
- Around 700 customers
- Customers, in turn, serve 40 million Americans in the West



# Colorado River Storage Project (CRSP) Management Center

## Projects

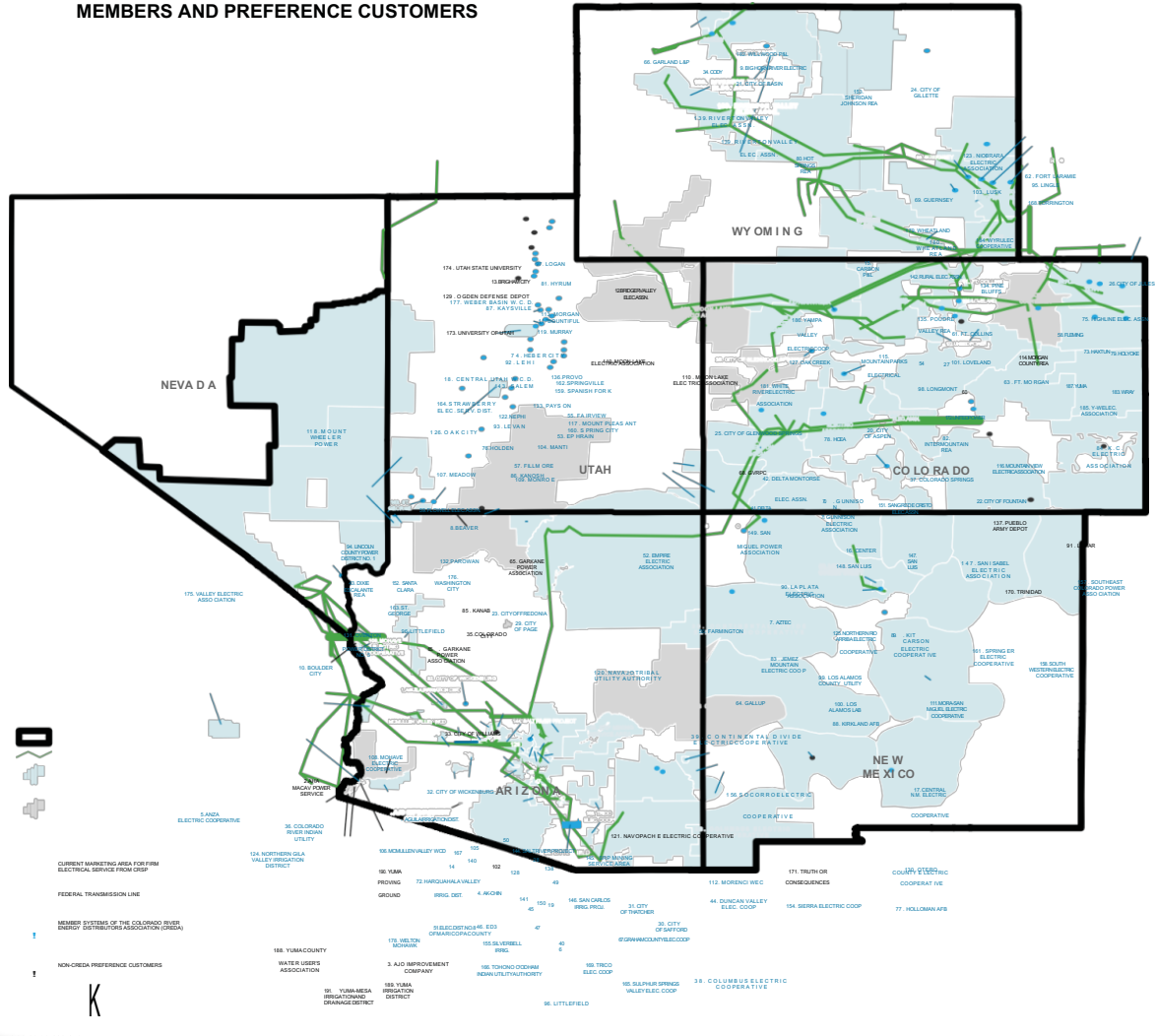
- Salt Lake City Area/  
Integrated Projects (SLCA/IP)
  - Colorado River Storage
  - Collbran
  - Dolores
  - Rio Grande
  - Seedskadee
- Provo River
- Falcon-Amistad
- Olmsted



*Glen Canyon Dam, BOR*

# CRSP Customers in the West

## COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION MEMBERS AND PREFERENCE CUSTOMERS



COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION (CRERA) MEMBER SYSTEMS

NON-CRSP PREFERENCE CUSTOMERS

AGUA IRRIGATION DIST	1	LOVELAND	101
ANA HA CAN POWER SERVICE	2	LIKE AIR FORCE	102
ASO M PROVEN ENT COMPANY	3	LUKE	103
ACQUIC NEHA COMMUNITY	4	SIATI	104
ANNA ELECTRIC COOP	5	MARICOPA COUNTY MUNICIPAL	105
APNA VALLEY IRRIGATION & DRAINAGE DIST	6	MC MALEN VALLEY WATER	106
ATZIC	7	CONSERVATION DISTRICT NO. 2	107
BEAVER	8	MEADOW	108
BIG HORN RIVER ELECTRIC	9	MOUNTAIN VIEW ELECTRIC ASSN	109
BLEAVER	10	MURRAY	110
BONAVILLE	11	MURRAY	111
BROOK R VALLEY ELECTRIC ASSN	12	MORENO WATER & ELECTRIC COOP	112
BROOKMOUNTY	13	MORGAN COUNTY VREA	113
BUCKETE WATER & ELECTRIC COOP	14	MOUNTAIN PARK ELECTRICAL	114
CARON PALM CENTER	15	MOUNTAIN VIEW ELECTRIC ASSN	115
CENTRAL N.M. ELECTRIC COOP	16	MOUNT PLEASANT	116
CENTRAL UTAH W.C.D.	17	MOUNT WHEELE RIVER	117
CHANDLER RE LIGHT & CTR IRRIGATION DIST	18	MURRAY	118
CITY OF ALDEN	19	MURRAY	119
CITY OF BASSIN	20	MURRAY	120
CITY OF BOSTON	21	MURRAY	121
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 THIS MAP: THE CONTENTS OF THIS MAP ARE DERIVED FROM A VARIETY OF SOURCES INCLUDING PAST CREDA MAPS MADE AT A VARIETY OF SCALES. K.R. BAUNE & ASSOCIATES P.L.C. DOES NOT WARRANT THE ACCURACY OR LOCATION OF THE FACILITIES SHOWN.



# Drought in the Upper Colorado River Basin

- Extreme drought affecting multiple projects across WAPA.
- In some areas, causing pressure on rates and purchase power and wheeling reserves.
- Collaborating with customers and generating agencies on solutions and mitigation.



*Lake Powell  
Photo courtesy of AP*

# Latest Hydrology Report

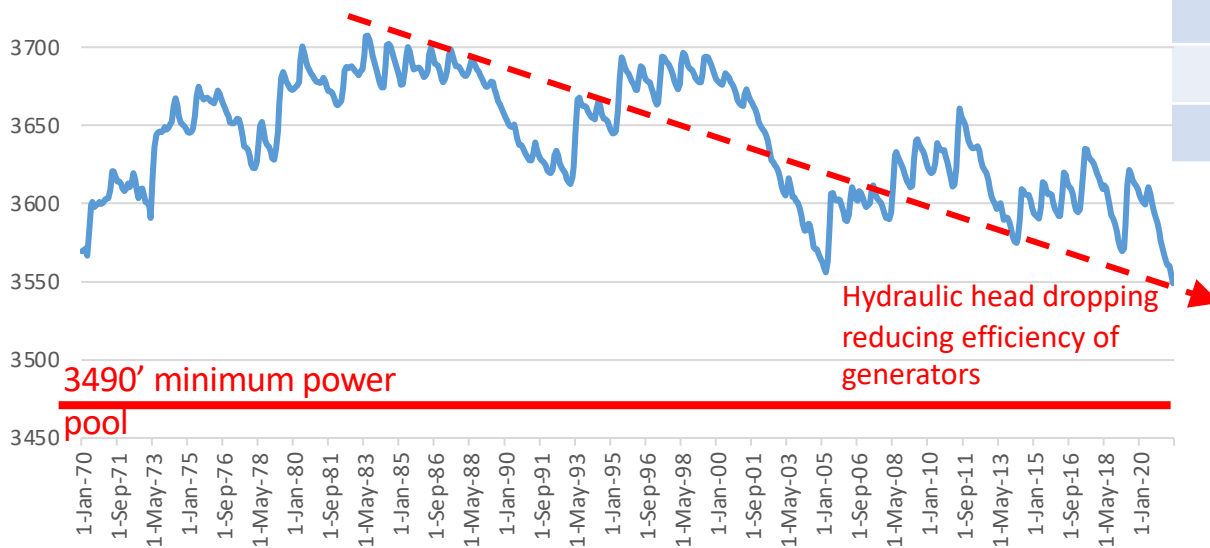
- 20+ years of prolonged drought in Colorado River and exceptional bad water year in 2021.
- Lake Powell inflow 26% of average; storage for SLCA/IP at 39% of capacity (down from 49% one year ago).
- Emergency water shortage declared in August, which will limit releases from Lake Mead and reduce water deliveries.
- WAPA's [Monthly Hydropower Conditions report](#).

## What this means for hydropower

- 1-in-3 chance Glen Canyon Dam may be at minimum power pool in 2023 without drought response operations.
- Reduced output at Hoover Dam. Less effect at Parker & Davis dams.

# Lake Powell Elevation Continues to Drop

Lake Powell Elevation (feet)

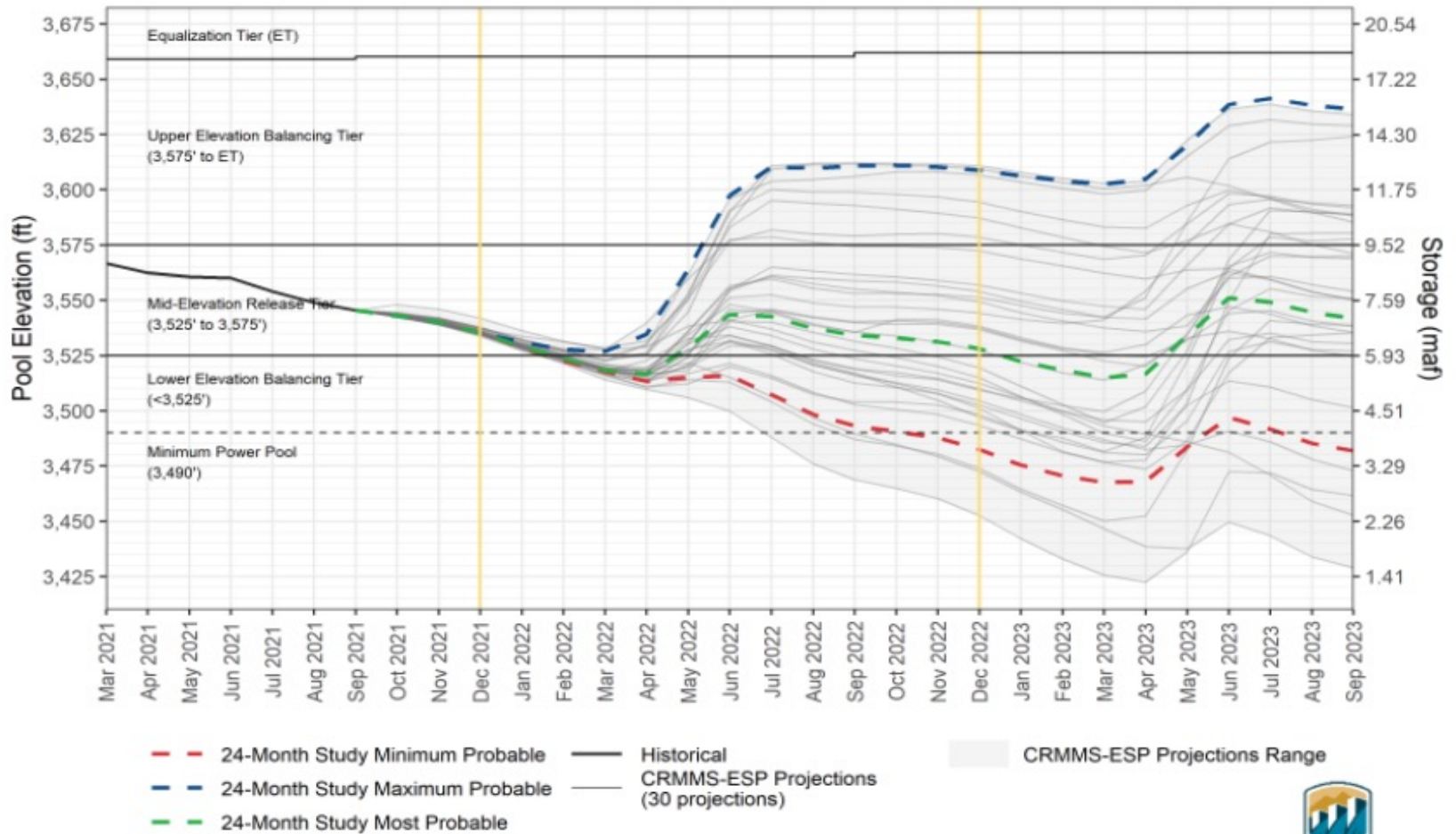


Elevation (feet)	Efficiency
3700	100%
3600	82.6%
3530	70.4%
3500	65.2%
Below 3490	0%

At 3500 ft we generate about 35% less energy than we would releasing the same volume of water at 3700 ft



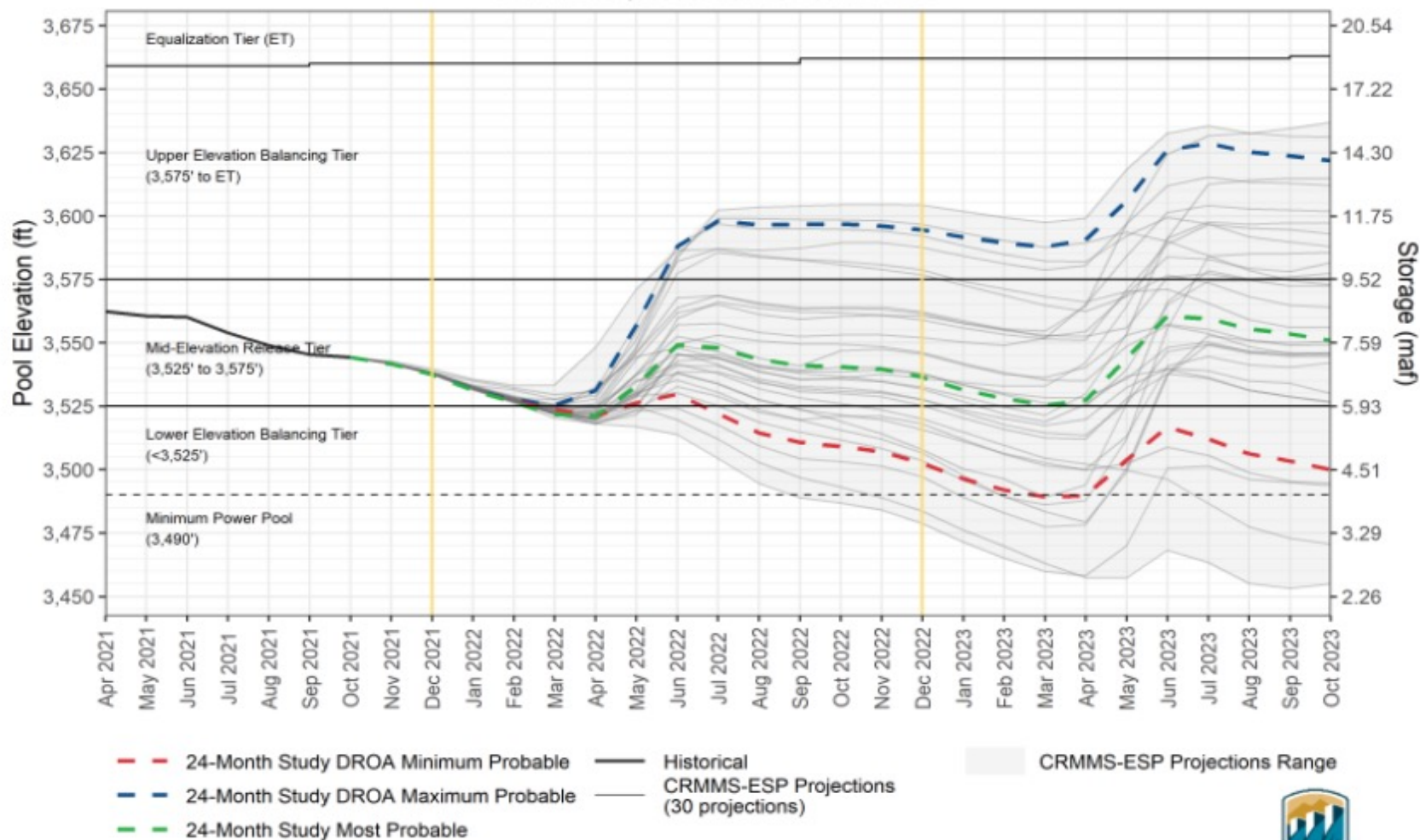
## Lake Powell End-of-Month Elevations CRMMS Projections from October 2021



Projected Lake Powell end-of-month elevations from the latest CRMMS-ESP and 24-Month Study inflow scenarios.



## Lake Powell End-of-Month Elevations CRMMS Projections from November 2021



Projected Lake Powell end-of-month elevations from the latest CRMMS-ESP and 24-Month Study inflow scenarios.

## Chance of Reaching Critical Reservoir Elevations, Stress Test Hydrology

	Run	2022	2023	2024	2025	2026
<b>Lake Mead less than 1,025 feet</b>	June 2021	0%	17%	44%	58%	63%
	August 2021 Corrected	0%	25%	44%	59%	63%
	Difference	0%	+8%	0%	+1%	0%
<b>Lake Mead less than 1,000 feet</b>	June 2021	0%	0%	9%	21%	23%
	August 2021 Corrected	0%	0%	13%	19%	22%
	Difference	0%	0%	+4%	-2%	1%
<b>Lake Powell less than 3,525 feet</b>	June 2021	79%	30%	25%	30%	34%
	August 2021 Corrected	88%	53%	41%	44%	41%
	Difference	+9%	+23%	+16%	+6%	+7%
<b>Lake Powell less than 3,490 feet</b>	June 2021	0%	5%	17%	16%	22%
	August 2021 Corrected	3%	34%	25%	28%	34%
	Difference	+3%	+29%	+8%	+12%	+12%

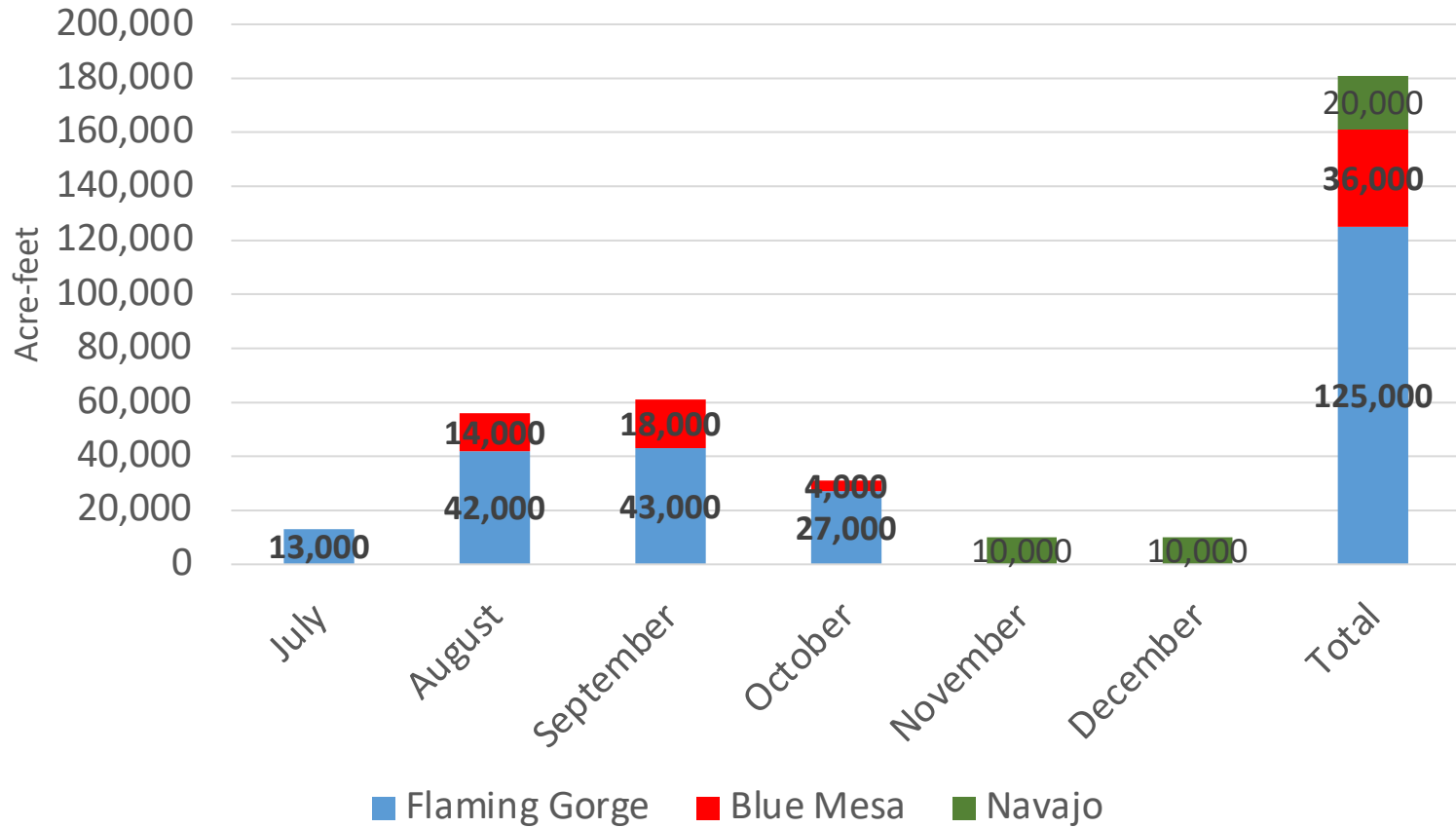
All results computed as the chance of falling below the threshold in any month in the calendar (water) year for Lake Mead (Lake Powell).



# Drought Response Operations Agreement (DROA)

- Intent is to prevent Lake Powell from dropping below 3,525 ft of elevation.
- Reclamation and the Basin States began drafting a plan after the June 24-month study forecasted Lake Powell dropping below 3,525 ft. CRSP
  - Reclamation also consulting with WAPA and other Federal partners
- A public webinar will be held to brief interested parties on the draft plan.
- Plan will be finalized by April.
- Reclamation made emergency releases from Flaming Gorge, Aspinall, and Navajo in July – December 2021.

## Additional DROA Emergency Releases WY 2021



# Mitigation

- Cost Reduction/Deferment
  - O&M
  - Capital
- New Rate Effective Dec 1
  - One year after last rate
- Non-Reimbursable Expenses
  - Anticipating no transfer to Reclamation (\$21.4M) for environmental programs (Constructive Return) in FY2022
- Experiments

## Considerations:

- Safety
- Reliability
- Incremental future costs

# Purchase Power and Wheeling

- Source of funds to purchase power when hydropower cannot meet contractual power commitments.
- Use varies each year based on multiple factors.
- Receipts can be used for reserves up to amount specified by Congress in budget process.
- Constrained due to budget process decisions, high PPW costs and other reasons.
- Exploring short- and long-term alternatives.

# Responsibilities

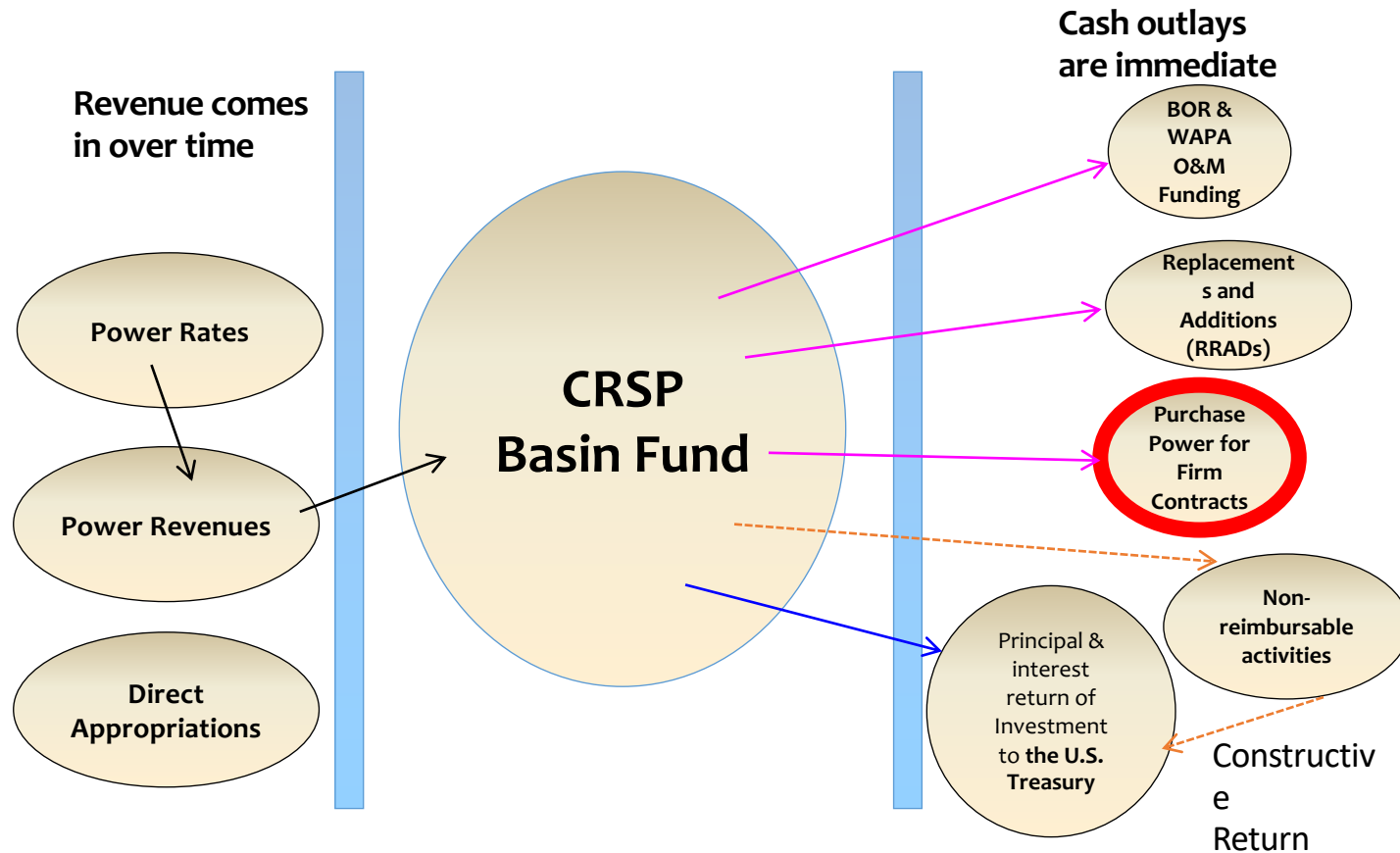


- Owns and operates the transmission system infrastructure
- Markets, schedules and delivers energy to long term firm electric service customers
- Dispatches generation from the powerplants at the dams for electrical regulation and emergencies
- Rate setting and repayment of project debt to U.S. Treasury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



- 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

# Basin Fund cash flow





# 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

# What We Are Doing

- Internal meetings discussing PPW, rates and contract challenges due to adverse conditions.
- Rate process adjusts how we will manage purchase power costs.
  - Removes purchase power and wheeling expenses from rate to allow customers more flexibility.
  - Can still purchase power through WAPA on a monthly pass-through-cost basis.
  - WAPA and BOR are deferring O&M where prudent.
  - Rate was approved and will be in effect for 2 years starting December 1, 2021.

# CRSP Upcoming Challenges

- Drought conditions
- Costs/Rates
- Basin Fund Cashflow
- Markets

# Contact/Follow Us

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