



# Water Resources Update

Glendale Water Services – September 27, 2022





# Outline

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For information and discussion:

- Activities since May 2022 Workshop
- 2021 Glendale Water Use
- Overview of Conditions for the Salt River Project System
- Overview of Colorado River Conditions
- Water Resource Plans for Shortage
- Next Steps



# Water Resources Activities Since May 2022

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## ➤ Completed

- Evaluated feasibility of hydrant flushing recirculating truck
- Provided a Green Living class on gray water on 9/10

## ➤ Ongoing

- Monitoring ADEQ's direct potable reuse rulemaking process

## ➤ Future Workshop(s)

- Researching potential water policies and ordinances, such as for new business/industry, building codes and gray water use



# Conservation Activities since May 2022

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## ➤ Later In Today's Workshop

- Updates to existing rebate program, including artificial turf
- New incentives, such as leak detection technology for cooling towers

## ➤ Ongoing

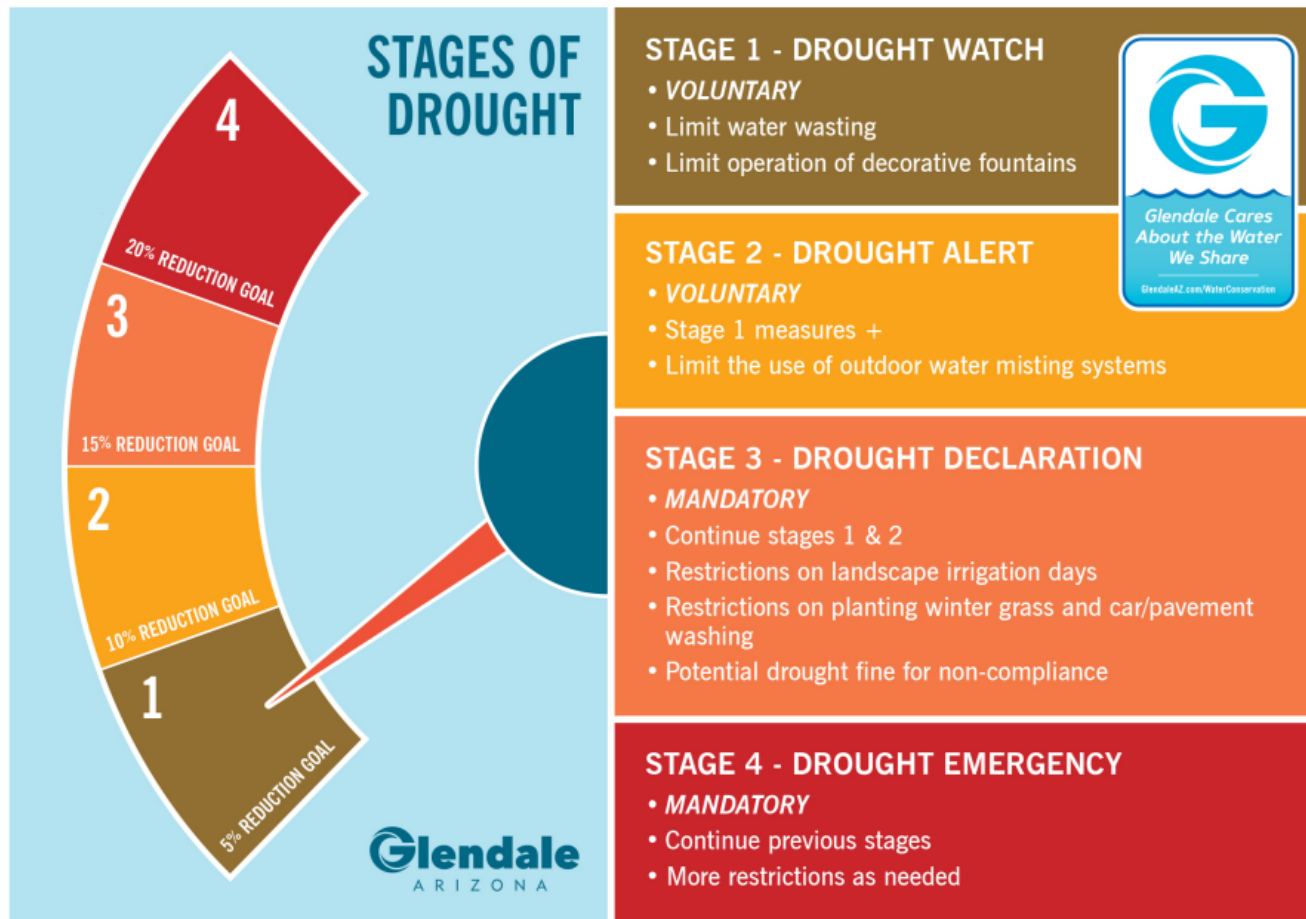
- Improving water efficiency of City facilities/operations
- Promoting the Glendale Water Efficiency Program for businesses
- Continuing to evaluate costs and revenues

## ➤ Future Workshop(s)

- Researching potential conservation policies and ordinances

# Drought Management

For residents and businesses in Glendale water service area:



- June 17, 2022 - Implemented Stage 1 Drought Watch of the City's Drought Management Plan
- Mandatory water reduction measures for City facilities/operations with a 5% reduction goal
- Voluntary water reduction measures for residents and businesses



# Status of City's Efforts

- Monthly meetings
  - Drought Implementation Team
  - Drought Executive Team
  
- For July 2022, the estimated water reductions for City facilities/operations was 4.8% or almost 4.3 million gallons

For City Facilities and Operations:

	Water Reduction Goal	Annual Water Savings
Stage 1	5%	32,259,000
Stage 2	10%	64,518,000
Stage 3	15%	96,777,000
Stage 4	20%	129,035,000



# Water Resources





# 2021 Glendale Water Use

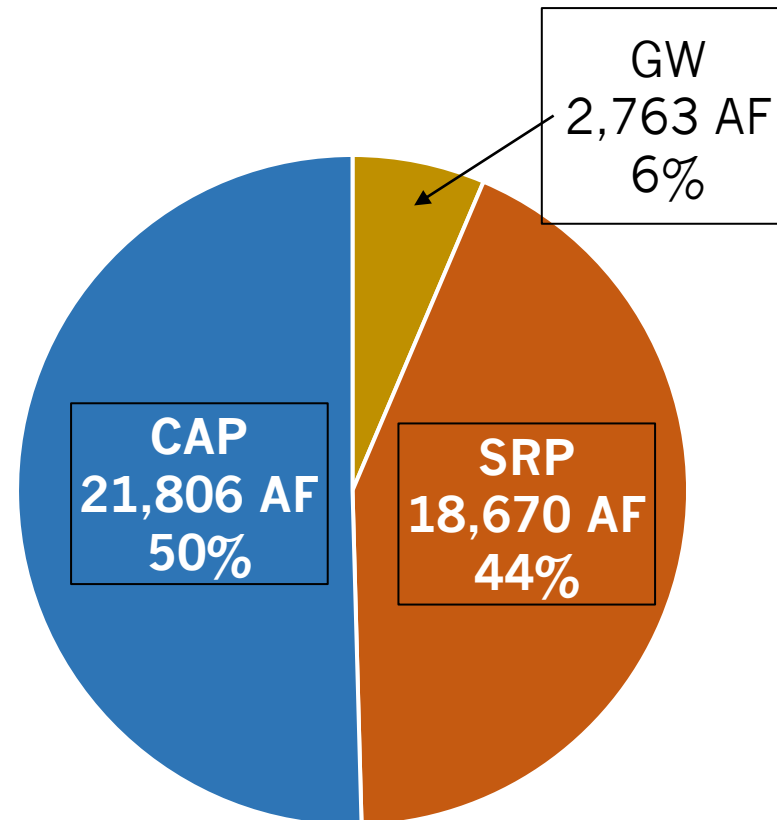
## 2021 Water Use (acre-feet)

Total 2021 Potable Water Use:  
43,239 acre-feet

Central Arizona Project (CAP) - 50%

Salt River Project (SRP) - 44%

Groundwater (GW) - 6%

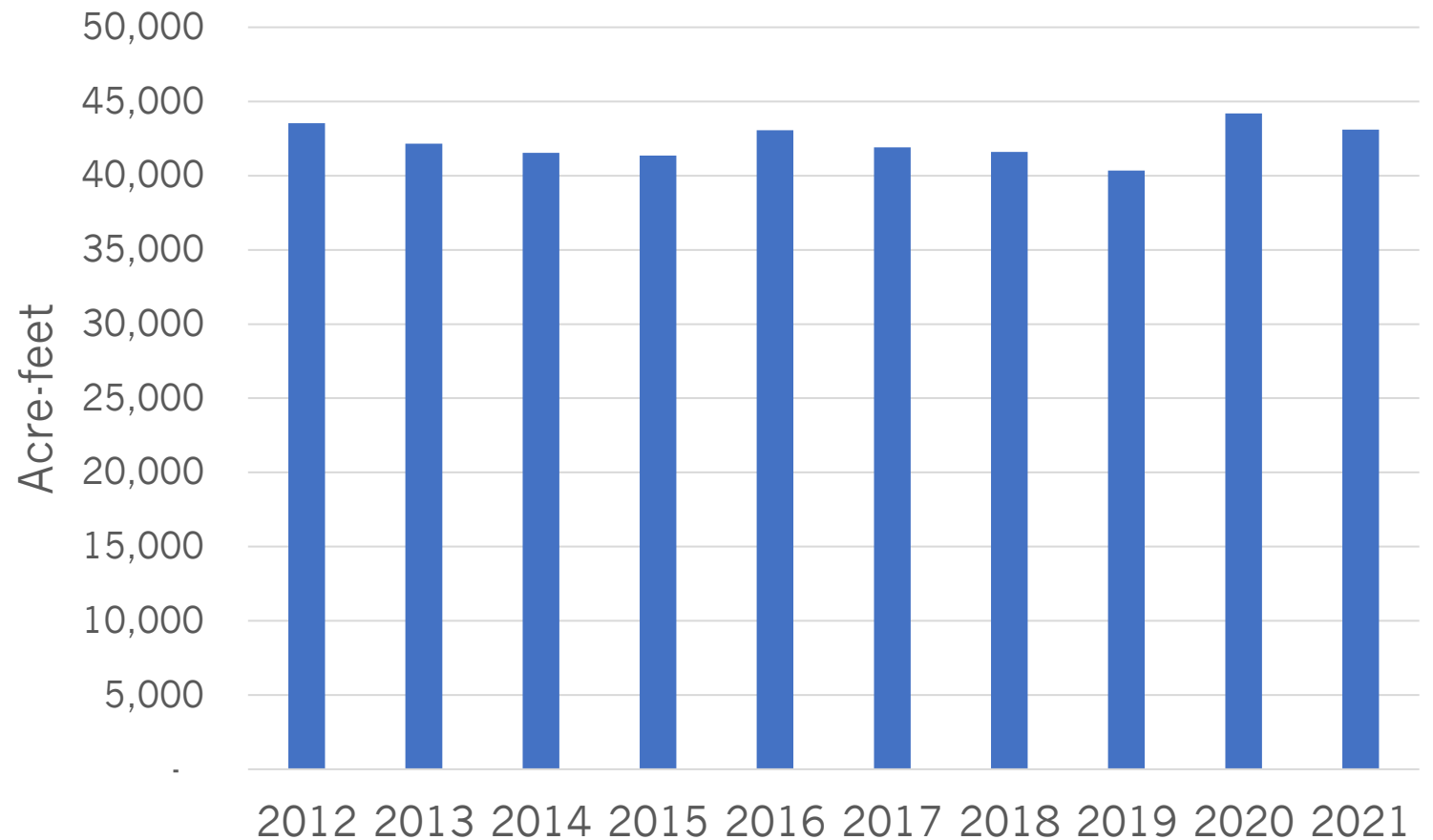




# 2012 to 2021 Potable Water Use

- Water use has remained stable and averages about 43,000 acre-feet/year.
- We expect the water demand to decrease with conservation and enacting the Drought Management Plan.

Total Potable Water Use 2012 - 2021





# Salt River Project (SRP) Reservoirs

- Salt River reservoirs are currently 68% full.
- Verde River reservoirs are currently 30% full.
- Total system is 63% full. Last year, at this time, the total system was 67% full.
- 2022 monsoon season has been good.
- For 2023, more SRP groundwater is anticipated to be used for delivery.
- We will continue to monitor winter precipitation and reservoir.





# Overview of Colorado River Conditions

- Reservoir conditions have quickly deteriorated.



- Both Lake Mead and Lake Powell water levels are expected to continue to decline in 2023.
- Declines due to dry conditions in the watershed combined with demands exceeding supplies.
- The Bureau of Reclamation has the authority to intervene and help stabilize reservoir levels and power production.



# Timeline of Activities in the Basin

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- Actions by the Federal Government and Basin States:
  - *June 2019* - Drought Contingency Plan
  - *January 2022* - 500 Plus Plan
  - *March 2022* - Conservation in Lake Powell of 500,000 acre-feet
  - *June 2022* - Announcement of possible 2 to 4 million acre-feet of conservation in Lake Mead for 2023
  - *August 16, 2022* - Deadline for Basin States Plan for reduction of 2 to 4 million acre-feet
  - *August 16, 2022* - Release of August 24-month study
  - *Uncertain Future Date* - Actions by Federal Government to obtain needed conservation



# August 24-Month Study

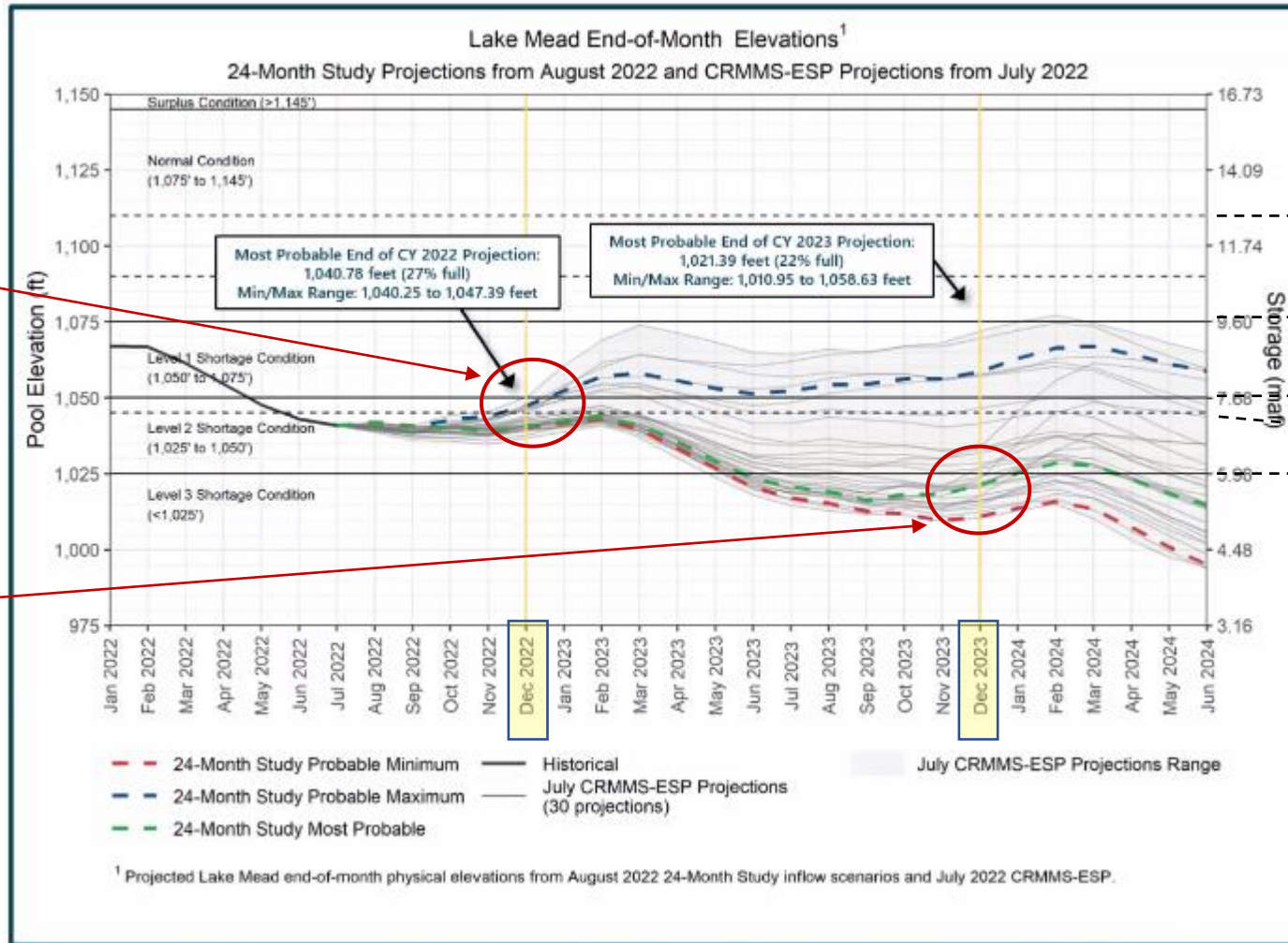
- On August 16, 2022, Bureau of Reclamation released the August 24-month study:
  - Lake Mead will be in Tier 2a shortage starting on January 1, 2023
  - Water levels will be between elevation 1045 feet to 1050 feet
  
- A Tier 2a shortage:
  - Reduces Arizona's Colorado River supply by an additional 80,000 acre-feet (3 percent)
  - Total Arizona supply reduction of 592,000 acre-feet (21 percent) for 2023
  - Glendale's Colorado River supplies reduced by less than 1% (under 200 acre-feet)
  
- 2024 predictions are showing a Tier 3 or deeper shortage.



# Lake Mead August 24-Month Study

Starting on January 1, 2023, we will be in a Tier 2a shortage between elevation 1,050 and 1,045 feet.

Starting on January 1, 2024, we may be in a Tier 3 shortage as shown on the graph.



## Drought Contingency Plan (DCP) Shortage Tiers

Tier 0 - Elevation 1,090 feet

Tier 1 - Elevation 1,075 feet

**Tier 2a - Elevation 1,050 feet**

Tier 2b - Elevation 1,045 feet

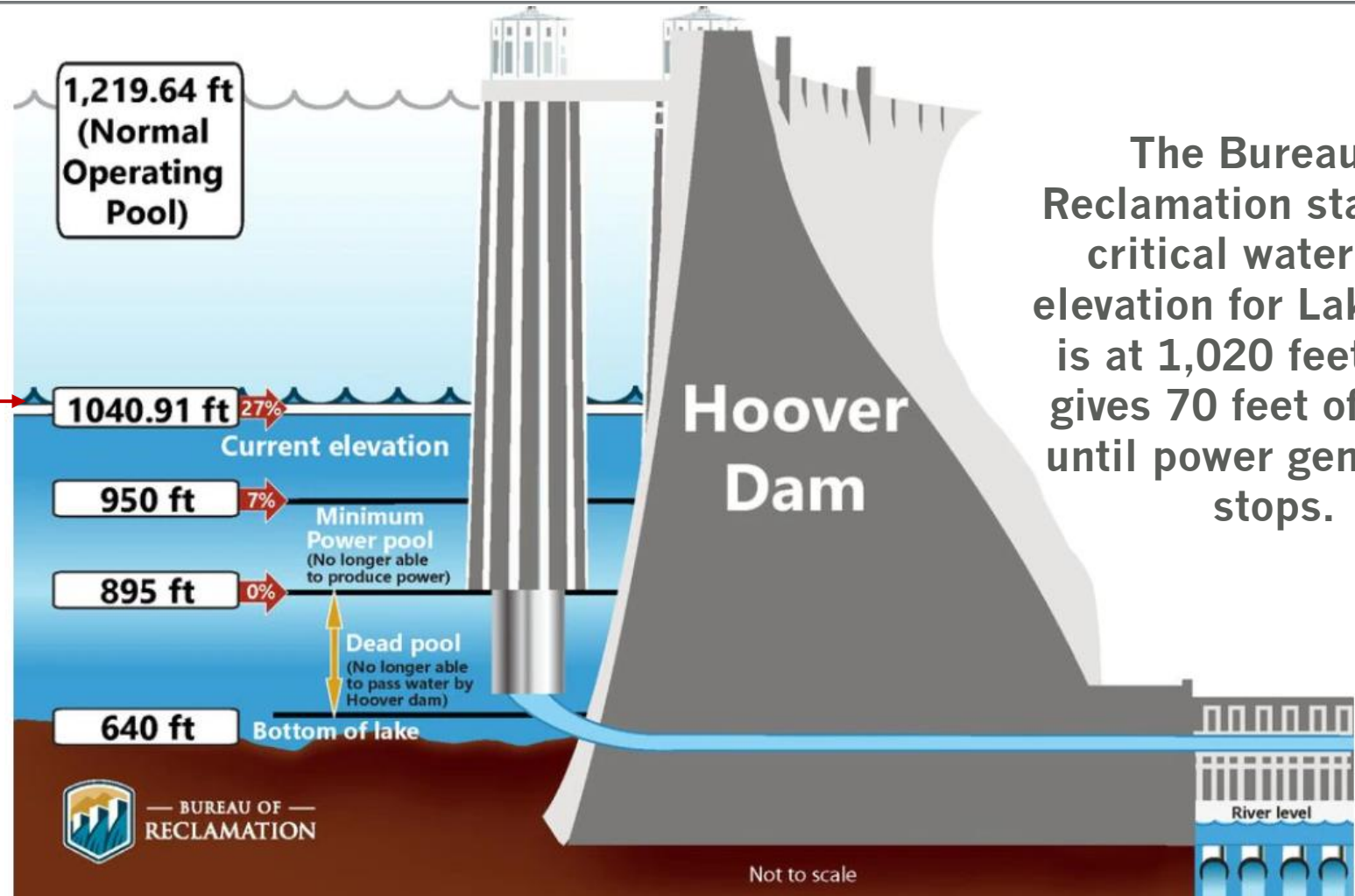
Tier 3 - Elevation 1,025 feet



# Lake Mead

Projected  
Water Level  
at the end  
of 2023

about **1,041 ft**



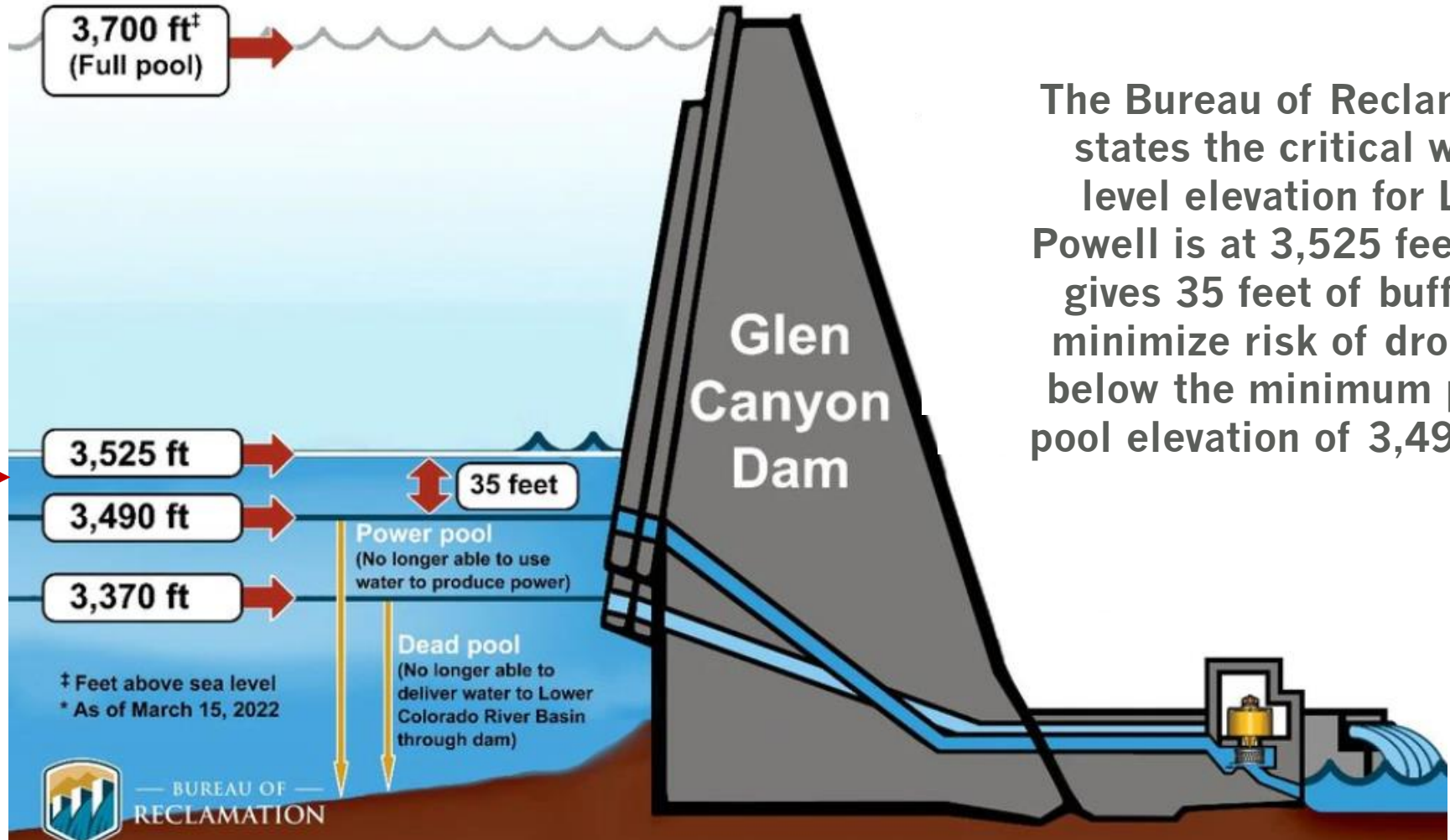
The Bureau of Reclamation states the critical water level elevation for Lake Mead is at 1,020 feet. This gives 70 feet of buffer until power generation stops.



# Lake Powell

Projected  
Water Level  
at the end of  
2023

3,520 ft



The Bureau of Reclamation states the critical water level elevation for Lake Powell is at 3,525 feet. This gives 35 feet of buffer to minimize risk of dropping below the minimum power pool elevation of 3,490 feet.



# Colorado River Actions Being Taken

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- Based on the August 24-month study, there will be a Tier 2a shortage for 2023 with small cuts to Glendale's supply.
- We are uncertain what the Federal Government will do to implement mandatory cuts in the supply of Colorado River water coming out of Lake Mead and when those cuts may take effect.
- We are prepared for any future cuts and will take a conservative operational approach with our Colorado River supply in 2023.



# Glendale's Operational Approach

- Water Services has developed water supply plans based on potential Colorado River cuts from 10 to 75 percent.
- The plans provide sufficient water supply based on average water demands over the last five years (approx. 43,000 acre-feet).
- The plans rely on groundwater, recovered water, and our New Conservation Space (NCS) water that is stored in Roosevelt Lake.





# Glendale's Plans for Colorado River Shortage

*All volumes are in acre-feet*

Operational Scenario*	CAP	SRP	Groundwater	Other Sources (NCS, FCS, Credits)	Total Supply	Total Demand
<u>Normal (no cuts to CAP)</u>	22,582	18,500	3,000	0	44,082	43,000
<u>20% Cut to CAP</u>	17,929	22,000	3,000	1,000	43,929	43,000
<u>50% Cut to CAP</u>	11,206	22,000	4,000	6,500	43,706	43,000
<u>75% Cut to CAP</u>	5,603	22,000	4,100	13,000	43,703	43,000

\* Table shows just a few of the possible operational scenarios. Under each scenario, there is sufficient water supply to meet water demands. Also, demands may decrease due to conservation measures.



## Next Steps

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- CAP water order is due on October 1. Glendale Water Services will order according to the cuts mandated by CAP and the Bureau of Reclamation.
- Water Services will use our water supply plans to meet potable water demands in our service area in 2023.
- Continue to implement our Drought Management Plan.
- Continue to monitor Colorado River conditions.



# Continue to Plan and Prepare

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- Continue to plan, prepare, and implement projects for a future with less Colorado River water.
  - Drilling new groundwater wells for resiliency and redundancy
  - Working with the Salt River Project on new water supply projects
  - Continued conservation projects
  
- Continue to strengthen our water conservation efforts and water savings programs for City facilities/operations, residents and businesses.



# Questions?

