



5. Discussion of Replenishment Projections for Use in the 2025 CAGRD Plan of Operation

May 18, 2023

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1

Plan Requirements

The Plan must include **an estimate** of CAGRD's projected groundwater replenishment obligation for current members and potential members for the 100 calendar years following the submission of the Plan, **based on reasonable projections** of real property and service areas that could qualify for membership in the ten years following the submission of the Plan.



August 18, 2022 CAGRD & US Committee presentation

2

Plan of Operation Progress

Preliminary Obligation projections presented at March 16th Committee meeting

CAGRDR water providers accounting for over 85% of annual obligation were reached in the month of April to discuss expected reliance on CAGRDR in the next 10 years

Obligation projections were refined for Member Lands and Member Service Area Water Providers

3 | Discussion of Replenishment Projections for Use in the 2025 CAGRDR Plan of Operation



3

Water Provider Meetings

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4

Member Land Obligation Factors

Status of Member Land Lots	Growth Rate	Growth Location	Type of Growth	Reporting Strategies	Member Changes	Conservation
Constructed				✓	✓	✓
Enrolled, Not Constructed	✓	✓	✓	✓	✓	✓
Future Enrollment	✓	✓	✓	✓	✓	✓

Water Provider Interviews

5

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5

Preliminary Assumptions

- **Growth Rate:** Steady growth, but lower than official forecast
- **Growth Location:** Greater Physical Availability constraints on new ML enrollment; some shift to MSAs and non-CAGRD
- **Growth Type:** Multi-family ratio stays above historic average
- **Excess Groundwater Reporting:** Current strategies to reduce CAGRD reliance begin to lose effectiveness during the 20-year period
- **ML to MSA Conversion:** If conversions occur, the increase in AWS demand is largely offset by renewable supplies acquired by the provider
- **Conservation:** Gradual flattening of historic trends through 20-year period
- **Member Service Areas:** Total MSA obligation stays near current levels, with fluctuating reliance by individual MSAs, and periodic increases due to shortages

18 | Report on Progress of Preliminary Obligation Projections for CAGRD 2025 Plan of Operation

March 16, 2023 CAGRD & US Committee presentation



6

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6

ML Water Provider Interviews

Reached 4/5 Top ML Water Providers

Discussion Topics

Use of Groundwater Allowance in Reporting to CAGRDR

Acquisition of renewable supplies to offset groundwater pumping

Potential ML to MSA Conversion

7

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7

ML Excess Groundwater Reporting

- Groundwater allowance use by Member Land water providers can significantly influence the volume and timing of Excess Groundwater reported to the CAGRDR
 - Affected by the nature of a Member Land and when it was enrolled
 - A ML's groundwater allowance can be used until the balance is exhausted or additional Extinguishment Credits are pledged
- Non-groundwater supplies, including effluent and recovered Long-Term Storage Credits, can further reduce CAGRDR reliance
- **Modeling Assumption: Current strategies to avoid Excess Groundwater Reporting continue until exhausted**

8

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8

ML to MSA Conversion

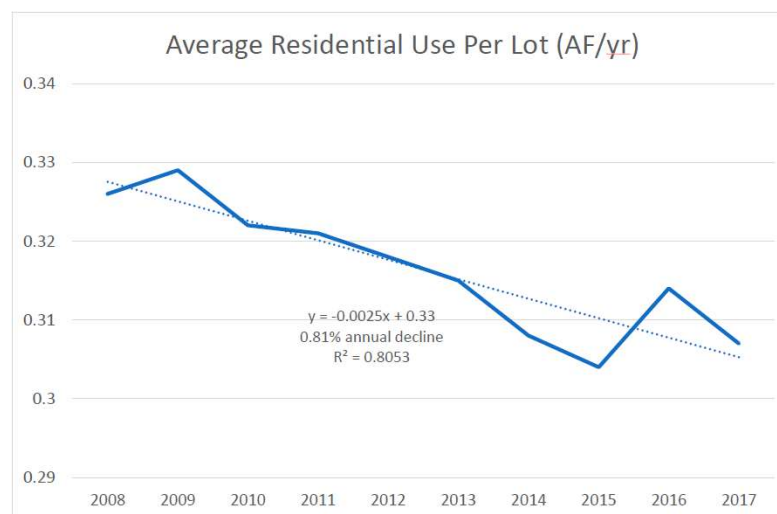
- A Member Land water provider seeking a Designation of AWS may opt to enroll in CAGRD as Member Service Area
 - The AWS requirements apply to all MSA demands, including pre-1995 subdivisions
 - Barring the acquisition of additional renewable supplies by the water provider, conversion to an MSA will increase reliance on CAGRD replenishment
- The Town of Queen Creek and City of Buckeye have indicated a desire to enroll as MSAs, but are also acquiring renewable supplies
- **Modeling Assumption: If conversions do occur, the increase in AWS demand is largely offset by renewable supplies acquired by the provider.**

9 | Discussion of Replenishment Projections for Use in the 2025 CAGRD Plan of Operation



9

CAGRD ML Conservation



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10

MSA Water Provider Interviews

Reached 18/23 MSAs

Discussion Topics

Expected reliance on CAGR

Acquisition of renewable supplies to offset groundwater pumping

Re-Designation

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11

Member Service Areas

- Member Service Areas have a fundamentally different relationship with the CAGR than water providers serving Member Lands
 - Charges for CAGR's replenishment are collected directly from the MSA, rather than through a property tax assessment
 - As Designated providers, MSAs have greater control over the management of their water supply portfolio, including acquisition of new supplies
 - Reporting Excess Groundwater is typically the costliest way for MSAs to satisfy the annual AWS renewable supply requirement
- MSA replenishment obligation could increase due to shortage impacts to the provider's supply portfolio, or changes in the relative pricing of other supplies
- **Modeling Assumption: Total MSA obligation is slightly elevated, with fluctuating reliance by individual MSAs, and periodic increases due to shortages**

12 | Discussion of Replenishment Projections for Use in the 2025 CAGR Plan of Operation



12

Refined Obligation Projections

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13

Modeling Member Land Obligation

Member Land-specific avoidance potential requires individual modeling for 1,200+ subdivisions

Existing and new housing attributed by Member Land subdivision and AMA

Water Provider-level attributes included, such as reporting strategy and access to non-groundwater supplies

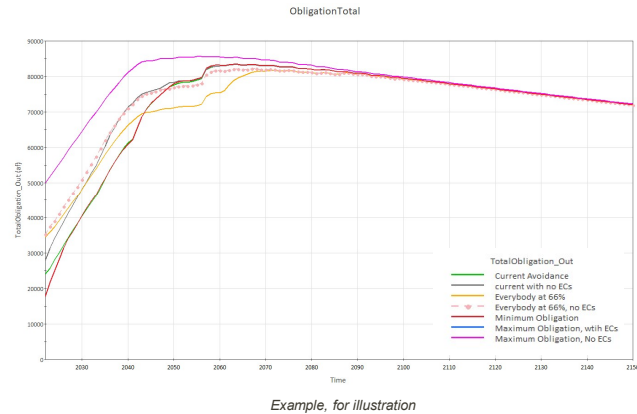
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14

Sensitivity Analysis- Reporting Behavior

- In the longer term, the model results converge as existing groundwater balances are exhausted
 - Current avoidance strategies may be extended, but the availability of Extinguishment Credits is limited, and new credits cannot be created past 2025



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17

Additional Analysis

- In addition to Excess Groundwater reporting behavior, Staff have analyzed combinations of factors that could affect Member Land obligation, including differing rates of construction, conservation and enrollment
 - The rate of new enrollment could have a significant impact on long-term obligation, but there are new and emerging regulatory constraints associated with demonstrating AWS Physical Availability on the basis of groundwater
 - No new groundwater-based Certificates of AWS are expected in the Pinal AMA, and a small and declining number in the Phoenix AMA

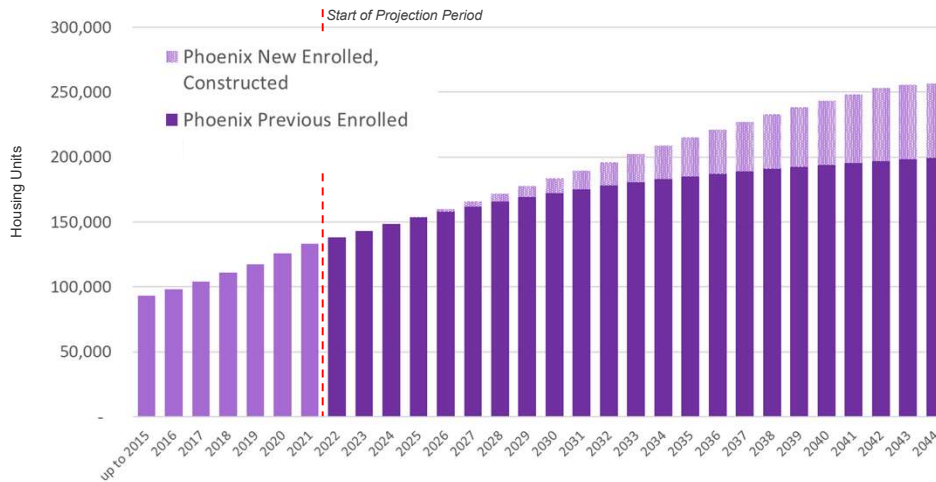
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18

Cumulative Construction on MLs

Phoenix AMA



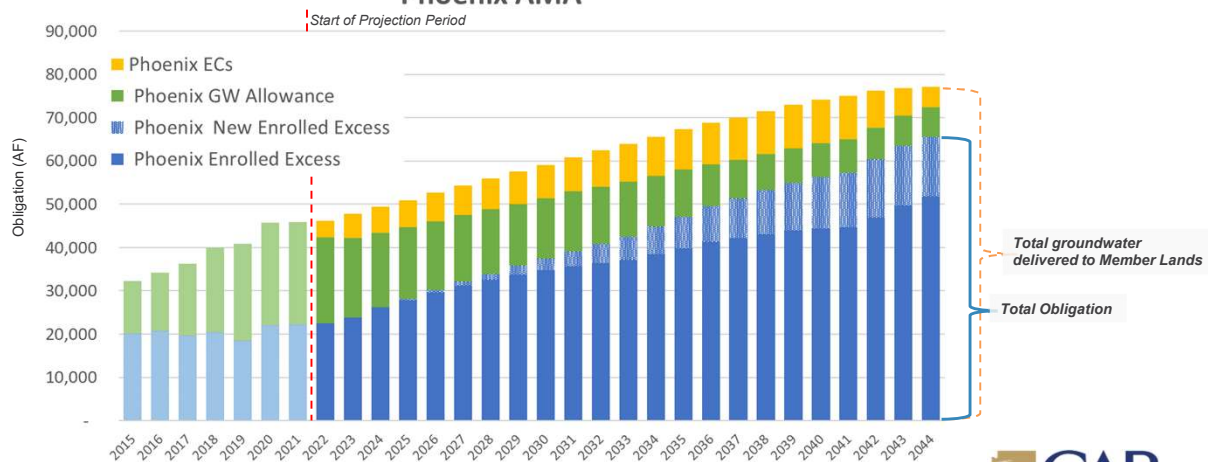
19 Discussion of Replenishment Projections for Use in the 2025 CAGR Plan of Operation



19

Phoenix AMA ML Obligation Forecast

Phoenix AMA



20 Discussion of Replenishment Projections for Use in the 2025 CAGR Plan of Operation



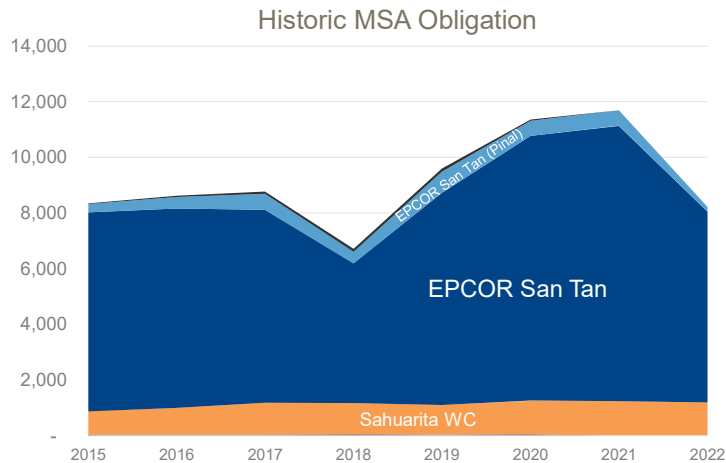
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Member Service Area Obligation

Current MSA Obligation is from 3-5 water providers, out of 22 enrolled members

Water provider feedback indicated continued view of CAGR D as “supply of last resort” for most providers

MSAs that currently rely on CAGR D expect to report similar amounts and to include CAGR D for future growth



21 | Discussion of Replenishment Projections for Use in the 2025 CAGR D Plan of Operation



21

Proposed Replenishment Obligation Estimate

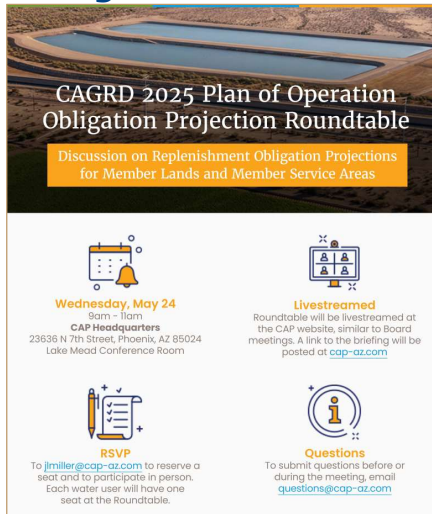
		20-Year	100-Year
Member Lands	Previously Enrolled Lots	56 KAF	63 KAF
	Newly Enrolled Lots	15 KAF	13 KAF
Member Service Areas		12 KAF	15 KAF
TOTAL		83 KAF	91 KAF

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22

May 24th Roundtable



**CAGRD 2025 Plan of Operation
Obligation Projection Roundtable**

**Discussion on Replenishment Obligation Projections
for Member Lands and Member Service Areas**

Wednesday, May 24
9am - 11am
CAP Headquarters
23636 N 7th Street, Phoenix, AZ 85024
Lake Mead Conference Room

Livestreamed
Roundtable will be livestreamed at the CAP website, similar to Board meetings. A link to the briefing will be posted at cap-az.com

RSVP
To jmiller@cap-az.com to reserve a seat and to participate in person. Each water user will have one seat at the Roundtable.

Questions
To submit questions before or during the meeting, email: questions@cap-az.com



Discussion on Replenishment Obligation Projections for Member Lands and Member Service Areas

-Stakeholder Roundtable

-Will include presentation on modeling, planning assumptions, and projections for near, mid, and long-term Obligation



23 | Discussion of Replenishment Projections for Use in the 2025 CAGRD Plan of Operation

23

2025 Plan of Operation on CAGRD Website



Home / Operations / Plan of Operation and Mid-Plan Reviews

Plan of Operation and Mid-Plan Reviews

Every 10 years CAGRD is required to submit a Plan of Operation for approval by the Director of the Arizona Department of Water Resources. Plans were submitted and approved in 1994, 2004 and 2014. Work on the 2025 Plan of Operation is currently ongoing, with an estimated submittal to the Arizona Department of Water Resources in the second half of 2024.

→ [Timetable for the 2025 CAGRD Plan of Operation](#)

→ [2015 Plan of Operation](#)

→ [2019 Mid-Plan Review](#)

→ [Previous Plans of Operation](#)

According to ARS §45-576.02.C.2, each Plan of Operation is required to have the following elements for each active management area (AMA) where a member land or member service area is located:

<https://cagrd.com/operations/plan-of-operation-and-mid-plan-reviews/>

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24 | Discussion of Replenishment Projections for Use in the 2025 CAGRD Plan of Operation

24

2025 Plan of Operation on CAGRD Website

2025 Plan Progress

PREVIOUS MEETINGS AND MATERIALS	UPCOMING MEETINGS
Report on Preparation for the 2025 Plan of Operation – August 18, 2022 <ul style="list-style-type: none"> Presentation Materials Video 	May 18, 2023 Report on Preliminary Projections to be used in 2025 Plan of Operation (CAGRD Committee meeting)
Developing Projections for 2025 Plan of Operation: Tools and Methodology (stakeholder briefing) – November 9, 2022	May 24, 2023
Report on Tools and Methodology for Development of the 2025 Plan of Operation (CAGRD Committee meeting) – November 17, 2022	June 15, 2023*
Report on Progress of Preliminary Projections (CAGRD Committee meeting) – Report to Committee on progress – March 16, 2023	August 3, 2023*
	Q3 2023*
	September 6, 2023*
	Q3 2023*
	Q4 2023*
	Q2 2024*
	Q2 2024*
	Q3 2024*
	Q3 2024*
	Q3 2024*

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25

Thank You Questions?

26