



Drought resiliency and preparedness update

Tempe Water Utilities implements response to on-going drought

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The [current shortage and conditions](#) on the Colorado River provides an opportunity to raise awareness of drought conditions and encourage additional voluntary conservation by all water users. For the past two years, Municipal Utilities has provided drought resiliency and preparedness updates in the form of [City Council Weekly Information Updates](#) and graphical information fact sheets.

Colorado River Shortage

Currently, the [Colorado River Drought Contingency Plan](#) (DCP) [shortage](#) is Tier 1 for 2022. Tempe is assisting with the effort to keep additional water in Lake Mead through participation in the [500+ Plan](#), which Council approved on April 28. The additional shortage to Tempe's supplies created by participation in the 500+ Plan is mitigated by use of alternative water sources resulting in no physical shortage to Tempe's supplies.

Reclaimed water as an alternative

An important source of alternative supply is reclaimed water produced locally at the Kyrene Water Reclamation Facility (KWRF), which is currently being planned for restart as soon as 2025. Reclaimed water can be used for irrigation at Ken McDonald Golf Course, cooling water at Salt River Project's (SRP) Kyrene Generating Station, groundwater aquifer storage and meeting demands of certain lands within the Tempe Water Service Area through exchanges with SRP. Operations at the KWRF were temporarily discontinued in 2010 as a result of a significant reduction in overall city-wide wastewater flow.

Non-member lands, areas within the Tempe Water Service Area that are not within the SRP service area, require alternative sources of supply to meet their demands. Examples of non-member lands include the areas around Tempe Town Lake and Arizona State University's Novus Innovation Corridor. Supplies from Tempe's Central Arizona Project (CAP) allocation are utilized and can be supplemented with other sources such as reclaimed water to meet this demand.

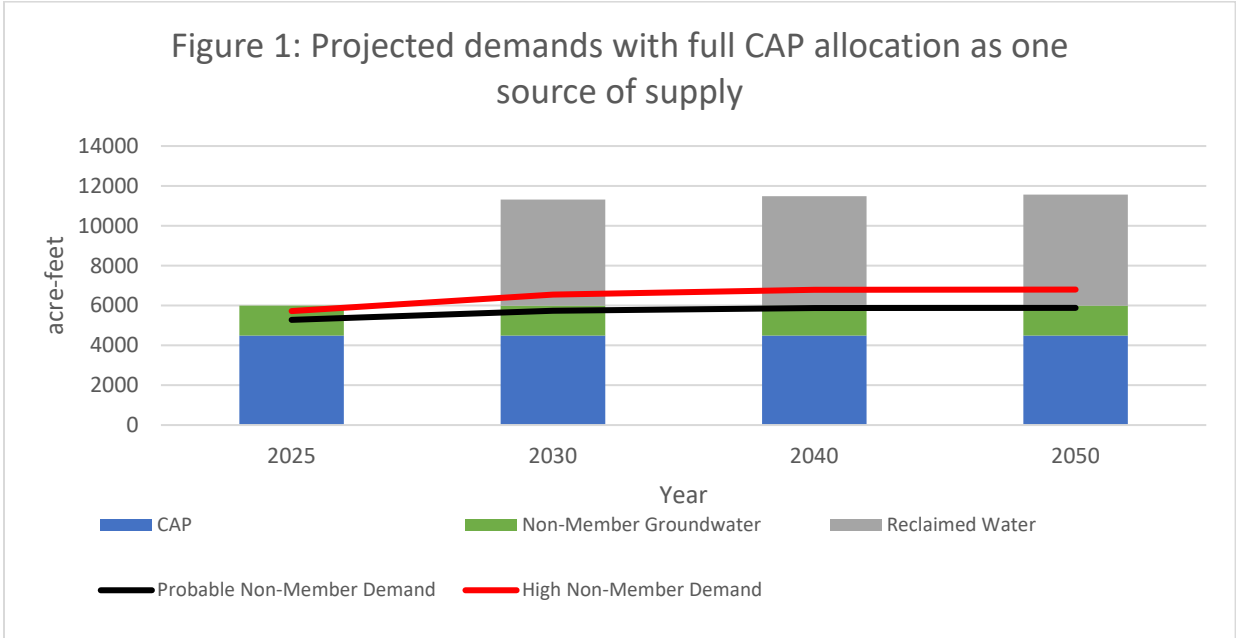
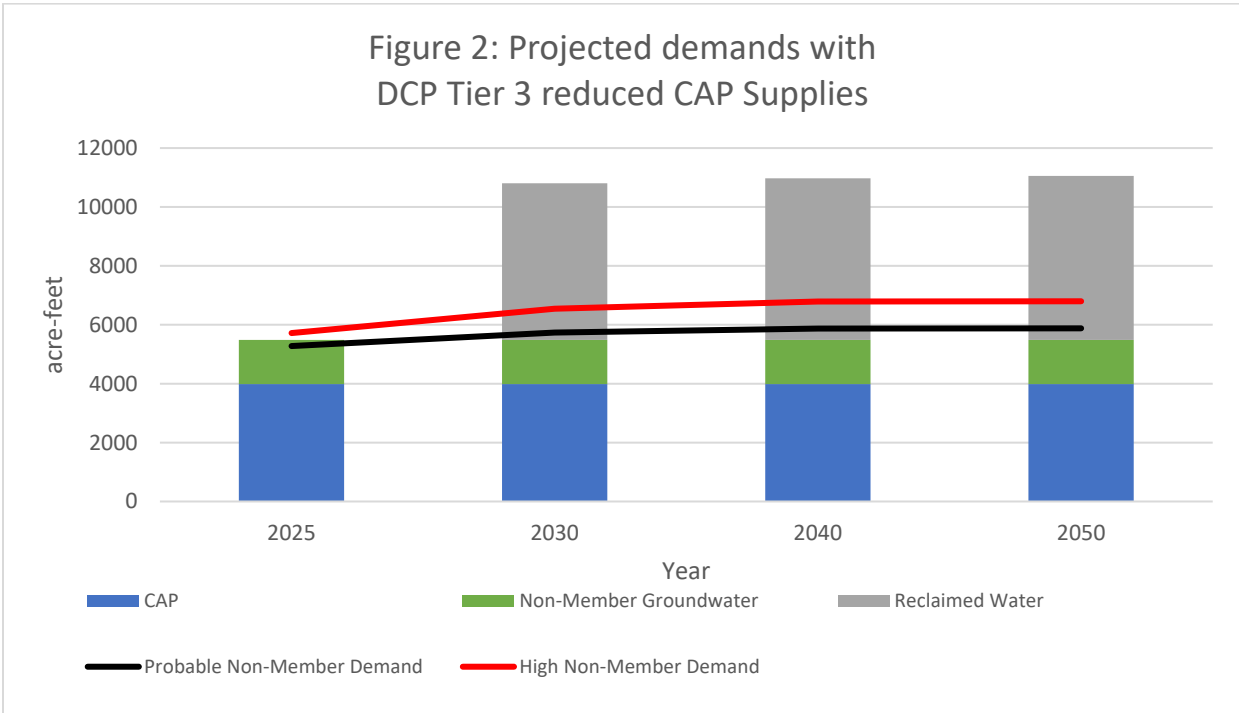


Figure 1 shows full (non-shortage) CAP allocations and the non-member demand curves used for planning purposes. This chart indicates that Tempe’s future demands will be very close to available supplies using only CAP and groundwater wells. When shortage to CAP supplies is factored into demand planning, the value of reclaimed water produced at KWRF to meet non-member demands becomes critical. Figure 2 includes the potential impact of a DCP Tier 3 shortage to Tempe’s CAP supplies and the need for the indirect use of reclaimed water produced at KWRF to meet non-member demands.



KWRF is expected to be online by 2025, which aligns well with forecasted future demand in the water service area. Planning for the full utilization of reclaimed water from the KWRF

includes increasing recharge capacity at the Ken McDonald Golf Course Underground Storage Facility. This will maximize Tempe's ability to store and recover water as [Long-Term Storage Credits](#) for use to meet demands during future supply limitations on either the CAP or SRP systems. This stored water will be recovered when needed utilizing existing and future planned groundwater recovery wells. The anticipated cost to reactivate KWRF and construct additional recharge wells and associated infrastructure is \$60 million over the next five years and is included in the current proposed five-year Capital Improvement Program.

Colorado River DCP tiers, shortage

In late August, the United States Secretary of the Interior will make the official declaration of DCP shortage Tier for 2023. For information on how this shortage is determined, see the [December 2021 Council Update](#). In April 2022, as the surface elevation in Lake Powell approached critically low levels, the Department of the Interior's Assistant Secretary sent a [letter](#) to Colorado Basin states' representatives proposing a creative solution to preserve the lake's ability to continue to deliver water and provide power through hydrogeneration. The representatives of the Basin states [responded](#) to the letter and agreed to this proposal, which involves forgoing a portion of the deliveries scheduled from Lake Powell to Lake Mead in 2022. While this will provide temporary relief to declining levels of Lake Powell, the decline of levels in Lake Mead will increase. This is concerning and will require the Lower Basin states to use less water in the short-term until the rules governing the operation of the Colorado River can be renegotiated by 2026. These operational rules will need to incorporate current levels of precipitation and runoff that will allow more sustainable operation of the system.

To address these issues, Municipal Utilities maintains a [Drought Preparedness Plan](#) (DPP) to ensure that strategies are in place to predict and adequately react to shortages.

Tempe Drought Preparedness Plan implementation

Although the reductions to Tempe's supplies in 2022 are being mitigated with other water resources, the current situation on the Colorado River provides an opportunity to raise awareness of drought conditions and encourages additional voluntary conservation by all water users. Demand management strategies described in the DPP range from heightened awareness and communication of drought conditions to enacting specific measures to decrease demand. Responses described in the DPP are designed as a suite of strategies that can be implemented to meet the needs of each unique situation and applied across the different customer types to ensure Tempe maintains the ability to provide water for as much demand as possible, regardless of the magnitude of a shortage or future supply challenge. Municipal Utilities has undertaken many of the strategies in Stage 0-Watch of the DPP.

We have had tremendous success with our long-standing water conservation program over the last twenty years resulting in a 10% reduction in potable demands despite increasing population. These efforts will continue to further encourage increased participation in our water conservation program. Due to the on-going drought on both the SRP and CAP watersheds and condition of the Colorado River supplies and watershed, DPP Stage 0-Watch will be implemented next week. Strategies include:

- Increasing the frequency of routine updates regarding drought status.
- Monitoring forecasts for watersheds and the potential impacts of the shortage on the Water Utility's ability to meet demands.
- Increasing public messaging of drought status and reduced water use recommendations.
- Increasing recharge of available supplies, reduce pumping of groundwater beyond the safe-yield groundwater allotment.
- Initiate use of reclaimed water from Tempe's KWRF.

Later this summer, Municipal Utilities will convene a Water Shortage Response Team unique to the current drought and shortage. The Water Shortage Response Team ([DPP page 15](#)) will include essential stakeholders from Municipal Utilities staff, Communication and Media Relations, Sustainability and Resiliency, Parks, Facilities, Community Development and

Customer Services. The Water Shortage Response Team will receive routine updates on the current shortage, review and discuss additional strategies or actions to manage demands when needed and provide recommendations to the Municipal Utilities Director for approval and potential implementation. The participants in the Water Shortage Response Team may change as additional strategies are considered and in an effort to meet changing conditions on the watershed and associated with Tempe's changing water demands.

The Water Utilities Division has been investing resources in resiliency for many years. From maintaining an appropriately-funded Utility that allows the city to upgrade and optimize critical water infrastructure to forging strong partnerships with other municipal providers and state and federal organizations to collaborate on numerous water resiliency projects, the City of Tempe is prepared to meet the challenges posed by drought and shortage, now and into the future.

In the coming months, Water Utilities will be coordinating a robust media campaign containing updates and providing residents and customers with additional actions they can take to conserve water.

For information, visit tempe.gov/water.

Drought Resiliency and Preparedness Fact Sheets:

[September 2021](#)

[March 2021](#)

[January 2021](#)

[November 2020](#)

[July 2020](#)

Drought Resiliency and Preparedness Council Updates:

[Colorado River Shortage Awareness, 500+ Plan, January 7, 2022](#)

[Colorado River Shortage Awareness, 500+ Plan, December 3, 2021](#)

[Salt and Verde River Surface Water Studies, June 4, 2021](#)

[Drought Resiliency and Preparedness Update, May 28, 2021](#)

[Drought Resiliency and Preparedness Update, Colorado River Shortage Awareness, February 19, 2021](#)

[Drought Resiliency and Preparedness Update - November 25, 2020](#)