



ARIZONA DEPARTMENT OF WATER RESOURCES

Prescott Active Management Area

Water Demand and Supply Assessment: 1985 — 2025

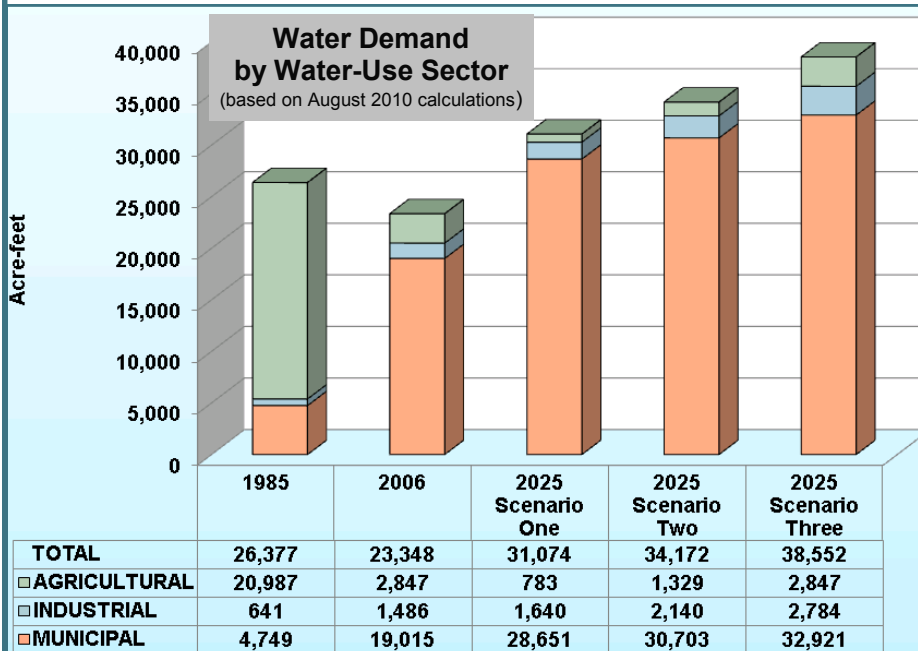
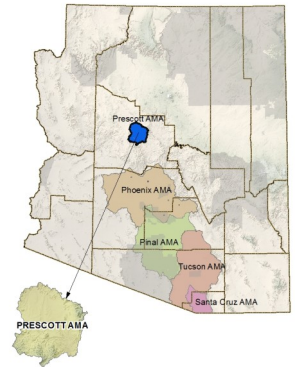
The Arizona Department of Water Resources conducted a Water Demand and Supply Assessment for each Active Management Area (AMA) in preparation for the Fourth Management Plan. The Assessments consist of historical water demand and supply characteristics for 1985 through 2006 as well as projections to 2025. Once the assessment for each AMA is finalized, preparation of the Fourth Management Plan will begin by evaluating the data compiled and identifying potential solutions to water management issues. The Assessments will continue to be updated annually.

The water management goal of the Prescott AMA is to attain safe-yield* by the year 2025.

The Prescott AMA is 485 square miles in area and was established in 1980 upon enactment of the Groundwater Code. Since the 1970's, water users in the Prescott AMA have depended almost solely on groundwater as a source of supply due to the limited and unreliable nature of surface water supplies in the AMA. The direct delivery and storage of reclaimed water began in the mid-1990's and has increased over time, somewhat reducing the reliance on groundwater supplies.

A review of historical annual water demand, supply, and overdraft in the Prescott AMA from 1985 to 2006 shows that the volume of groundwater overdraft fluctuated on an annual basis, but generally increased over time with fifteen of the sixteen years exhibiting overdraft. While high precipitation events did help offset groundwater pumping, the relief was only temporary. The severity of the groundwater overdraft situation in the Prescott AMA ultimately resulted in ADWR issuing a determination on January 12, 1999, that the AMA was no longer in safe-yield.

*Safe-yield is a balance between the amount of groundwater pumped from the AMA annually, and the amount of water naturally or artificially recharged.



NOTE: The 2025 projections consist of three baseline scenarios with the following assumptions:

- Scenario One: lowest reasonable water demand.
- Scenario Two: demand in-between Scenario One and Scenario Three.
- Scenario Three: highest reasonable water demand.

The proportion of water demand among water-use sectors in the Prescott AMA changed significantly between 1985 and 2006, primarily due to a switch between agricultural and municipal sector demands.

MUNICIPAL DEMAND: Between 1985 and 2006, municipal water demand increased by 300%, mainly due to rapid growth in Prescott, Prescott Valley and Chino Valley. In 1985, municipal demand accounted for only 18% of the AMA's total water use, but grew to 81% by 2006. Municipal demand projections include assumptions on population growth and future water use.

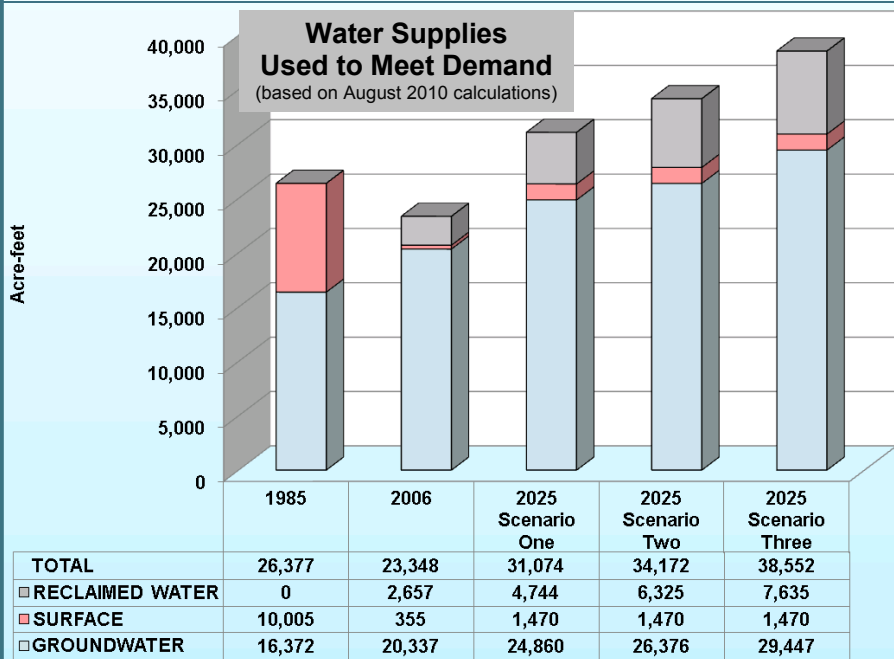
AGRICULTURAL DEMAND: Historically, agricultural water use accounted for the largest portion of the Prescott AMA's total water demand, accounting for 80% of the AMA's total water demand in 1985. By 2006, agricultural water use had decreased to only 12% of the AMA's total water demand. The 1999 sale of Chino Valley Irrigation District's (CVID) surface water rights to the City of Prescott resulted in decreased agricultural water use within the CVID boundaries. Between 1999 and 2006, the total agricultural demand decreased by 5,719 acre-feet (~67%). Agricultural demand projections include assumptions on the retirement of irrigation acres and the extinguishment of irrigation rights.

INDUSTRIAL DEMAND: Industrial water use within the Prescott AMA is quite small relative to the municipal and agricultural sectors. Industrial water use in 1985 was 641 acre-feet, only 2.5% of the AMA's total water use. By 2006, industrial demand had increased to 1,486 acre-feet, but still remained well under 10% of the AMA's total water demand. Industrial demand projections include assumptions regarding new turf-related facilities and other new uses.

INDIAN DEMAND: The Yavapai-Prescott Indian Reservation covers approximately 1,400 acres within the city limits of the City of Prescott. Pursuant to the 1994 Yavapai-Prescott Indian Tribe (YPIT) Settlement, the City of Prescott agreed to provide water to the YPIT in perpetuity. The city estimates that the YPIT's total annual water use is less than 200 acre-feet. All Indian uses in the AMA are included within the municipal sector.

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- **Scenario Three:** highest reasonable water demand.

Prior to the late 1940's, surface water was the primary source of supply for water users in the Prescott AMA.

By 1985, groundwater was the AMA's primary source of supply with surface water being used mostly for agricultural demands.

Since then, water users in the AMA have continued to heavily rely on groundwater leading to an imbalance in the amount of groundwater pumped versus water recharged each year.

The following is a list of water supplies used between 1985 and 2006 in the Prescott AMA.

GROUNDWATER: In 1975, over 90% percent of the water utilized by the City of Prescott was groundwater supplied by the Chino Valley well field. In 2006, groundwater remained the primary source of supply, accounting for approximately 88% of the total water supplies used. Groundwater accounts for nearly 80% of the total supplies in the projected supply scenarios. An additional scenario incorporates groundwater transported into the AMA from the Big Chino Sub-basin as an alternative source of supply. This scenario recognizes that utilization of transported groundwater may assist the AMA in reaching its goal of safe-yield by 2025.

SURFACE WATER: The Prescott AMA has limited access to alternative surface water supplies. Historically, a significant portion of the AMA's agricultural demand was met with surface water supplied by the CVID. In 1985, approximately 38% of the AMA's total water supply was surface water served within the CVID's boundaries. In the late 1990s, CVID and the City of Prescott entered into an agreement replacing CVID's surface water deliveries with recovered reclaimed water. The surface water rights were transferred to the City of Prescott who manages the surface water using artificial recharge and recovery. Between 2000 and 2006, the City of Prescott was the only water provider authorized to use surface water, with an average annual use of less than 800 acre-feet. Projected supply scenarios include surface water utilized by the City of Prescott via annual recharge and recovery.

RECLAIMED WATER: Reclaimed water was not a significant source of supply in the AMA between 1985 and 2006. In 2006, reclaimed water only accounted for approximately 11% of the AMA's total water supply. In the projection scenarios, reclaimed water supplies are used to meet increased demands. Artificial recharge and recovery of reclaimed water could help the AMA achieve safe-yield by serving as one of the few alternatives to the groundwater supply.

The historical data presented in the AMA Assessments were obtained from Annual Water Withdrawal and Use reports submitted to the Department from 1985 to 2006.

The projections for 2025 consist of three baseline scenarios:

- Scenario One assumes the lowest reasonable water demand
- Scenario Two assumes demand in between Scenario One and Scenario Three
- Scenario Three assumes the highest reasonable water demand

The Assessments also address two other scenarios:

- the effects of climate change on each baseline scenario, and
- a scenario that maximizes the use of reclaimed water due to population growth

The Templates and Budget Summaries for each AMA Assessment are available on the web at:

www.azwater.gov/AzDWR/WaterManagement/Assessments/default.htm