

Arizona

Water loss is a particularly important issue in Arizona, where approximately 97% of the population is served by public water suppliers. The US Geological Survey (USGS) estimates that in 2015 (the most recent year available), Arizona's public water suppliers withdrew an average of about 1,195.15 million gallons of water per day for treatment and distribution to customers. Those public water suppliers face enormous challenges when it comes to replacing and repairing their systems. The U.S. Environmental Protection Agency (EPA) recently found a 20-year capital improvement need of more than \$9.13 billion for Arizona's water systems to continue to provide safe drinking water.

The Arizona Department of Water Resources (ADWR) implements the Groundwater Code, which mandates water conservation for municipal, industrial and agricultural users, including specific requirements to minimize lost and unaccounted for water.

Each of the 751 community water systems statewide is required to:

- Report annually all sources of water withdrawn, recovered, diverted or received;
- Develop and report to ADWR a conservation plan with measures to determine and control lost and unaccounted for water [Arizona Revised Statutes (A.R.S.) § 45-342 (J) (1)].

Within the state there are five Active Management Areas (AMAs), containing 80 percent of the state's population, including the Phoenix and Tucson metropolitan areas. Within AMAs the conservation requirements are more robust:

- All providers must meter or measure annually all sources of water withdrawn, recovered, diverted or received using a device or method that results in no less than 10% inaccuracy. If ADWR believes the device or method is inaccurate, ADWR has the authority to conduct a site inspection and check the accuracy of the device or method.
- All 85 large municipal providers (those that serve more than 250 acre feet annually) are required to maintain their system not to exceed 10 percent lost and unaccounted for water. In total, large providers serve roughly 5.2 million people and deliver nearly 1.3 million acre feet of water annually.
- All 224 small municipal providers (those that serve 250 or less acre-feet) are required to maintain their systems such that they do not exceed 15 percent lost and unaccounted for water. In total, small providers serve about 55,000 people and deliver less than 11,000 acre feet of water annually.
- Both large and small providers are obligated to report annually both the total quantity of lost and unaccounted for water during the calendar year and the percentage of the total quantity
- of water that is lost and unaccounted for. The Department may compare these figures and initiate compliance action if the 10% criterion is not met.
- Water suppliers within the AMAs are required to implement a number of best management practices (BMPs) selected from a menu of 53 BMPs. BMP 4.3 is a comprehensive water system audit.

For those providers out of compliance, the Code authorizes a civil penalty of up to \$10,000/day for violations directly relating to the withdrawal, use and transport of groundwater [§ A.R.S. 45-635].

U.S. Geological Survey's "Estimated Use of Water in the United States County-Level Data for 2015", September 28, 2017- <https://www.sciencebase.gov/catalog/item/59a96d18e4b07e1a023db323>

EPA's "Drinking Water Infrastructure Needs Survey and Assessment, Sixth Report to Congress", March 2018 - https://www.epa.gov/sites/production/files/2018-03/documents/sixth_drinking_water_infrastructure_needs_survey_and_assessment.pdf

Third Management Plan (for current rules regarding water loss in active management areas):
<http://www.azwater.gov/azdwr/WaterManagement/AMAs/ManagementPlans.htm>.

Water Audit BMP prepared by the City of Phoenix:
<http://www.azwater.gov/AzDWR/WaterManagement/AMAs/documents/AndyTerrey.pdf>

Municipal Conservation Program:
<http://www.azwater.gov/AzDWR/Watermanagement/AMAs/documents/ch5-phx.pdf>