

City of Casa Grande — Arizona Water Company



Background

The city of Casa Grande is the largest community in western Pinal County, with a population of approximately 45,993 residents.* Water is provided to city residents by a private water utility, Arizona Water Company. Situated half-way between Tucson and Phoenix, the city has a land area of 109 square miles and lies in a valley with the Sacaton Mountains to the north and the Casa Grande Mountains to the south.

Located in the Sonoran Desert and within the Basin and Range physiographic province, average precipitation in Casa Grande is 9.22 inches per year. Average high temperatures in the summer are close to 100 degrees (°F), and the lowest average temperature in the winter is 37 degrees (°F).†

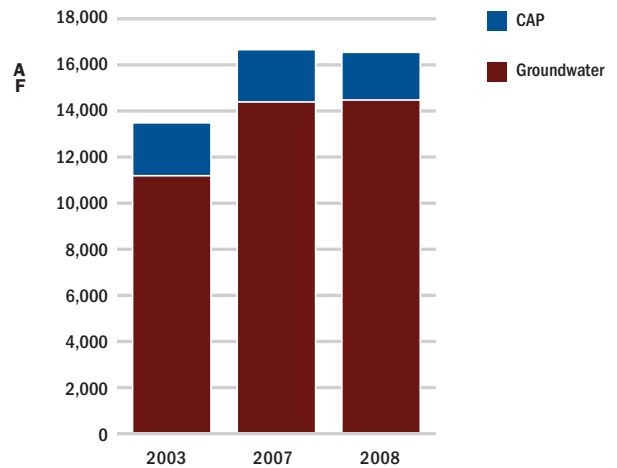
Water Supply and Deliveries

The Arizona Water Company (AWC) provides potable water service to citizens in Casa Grande, relying predominantly on groundwater to meet customer needs. Casa Grande is AWC's largest water system in the state, with over 20,000 single-family residential connections. In 2008, 88% of the water supplied to Casa Grande was sourced from 14 wells, with the remaining 12% coming from the Colorado River via the Central Arizona Project. Direct effluent use is not part of the water resource portfolio of AWC-Casa Grande because wastewater is handled by the city of Casa Grande. The majority of water delivered by AWC is used by single-family residential customers (40.5%), with commercial, industrial, and turf consumption making up most of the remaining demand.

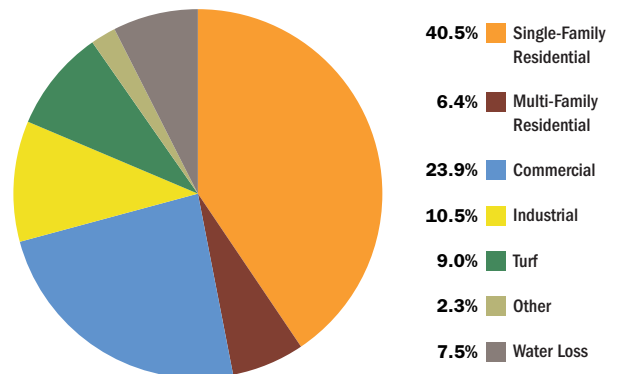
* Arizona Department of Commerce. 2009. *Arizona population estimates, 2009*. Available at: <http://www.azcommerce.com/econinfo/demographics/Population+Estimates.html> (accessed May 5, 2010).

† IDcide Local Information Data Server. Casa Grande, AZ weather. <http://www.idcide.com/weather/az/casa-grande.htm> (accessed April 12, 2010).

SOURCES OF WATER FOR AWC-CASA GRANDE



2008 WATER USE IN AWC-CASA GRANDE





Per Capita

AWC-Casa Grande has significantly reduced gallons per capita per day (GPCD) water use from 2003 to 2008. Water consumption was reduced by an average of 41 gallons per person per day in the single-family residential sector (-30% change), and by 50 gallons per person per day system-wide (-19% change).

AWC-Casa Grande GPCD

Per Capita Water Use	2003	2007	2008
Single-Family Residential ^a	140	101	99
System-Wide Potable ^b	251	216	203
System-Wide Total ^c	269	226	219

^a Treated water deliveries to single-family accounts ÷ single-family residential population

^b Total treated water delivered ÷ service area population

^c Total raw water from all supply sources + direct effluent use ÷ service area population

Rate Structure

AWC-Casa Grande uses a three-tier inclining block rate for residential water accounts.

Usage Per Dwelling Unit	Cost
0–3,000 gallons	\$1.00 per 1,000 gallons
3,001–10,000 gallons	\$1.49 per 1,000 gallons
Over 10,000 gallons	\$1.65 per 1,000 gallons

Residential accounts have a base service fee of \$10.48, which represents 36% of an average customer’s monthly bill for 10,000 gallons, as well as an arsenic fee of \$2.72 plus \$0.2147 per thousand gallons of use. The slope of AWC-Casa Grande’s average price curve is -0.0138, indicating that the average price of water declines as consumption volume increases.

Conservation Measures

AWC-Casa Grande is regulated in the Pinal Active Management Area as a large municipal provider under the Modified Non Per Capita Conservation Program (NPCCP). As a Tier-II municipal provider, it is required to implement a public education program and has

selected the following five additional, state-approved water conservation best management practices:^{*}

- 3.1 – Residential Audit Program
- 3.6 – Customer High Water Use Inquiry Resolution
- 3.8 – Water Waste Investigations and Information
- 4.1 – Leak Detection Program
- 4.2 – Meter Repair/Replacement Program

Customer Rebates

No rebates are currently offered to customers, either by AWC-Casa Grande or the city of Casa Grande.

Ordinances/Rules

International Plumbing Code Adopted[†] – The city of Casa Grande adopted the International Plumbing Code, which sets standards for high-efficiency plumbing fixtures and appliances to be used within a home.

Low-Water-Use Plants and Landscaping[‡] – In order to conserve water, all plant materials installed shall be listed on the city’s low-water-use plant list. Any plants located in public right-of-ways must be listed on the plant list.

Irrigation Standards[§] – All landscaped areas shall be supported by an automatic irrigation system, which may be a spray, bubbler, or drip-type system. All irrigation systems and landscaped areas shall be designed, constructed, and maintained so as to promote water conservation and prevent water overflow or seepage into the street, sidewalk, or parking areas.

Excessive Water Flow[¶] – Causing or permitting to cause excessive water flow onto public streets is unlawful.

Education

Water Audit Program – An AWC Water Conservation Auditor will conduct a free internal water audit for any single-family residential, multifamily residential, or nonresidential customer to address water conservation opportunities. A written conservation recommendation

^{*} ADWR List of Best Management Practices (adapted from the 2nd Modification to the Third Management Plan Chapter 5, May 2008).

[†] CASA GRANDE, ARIZ., CODE § 15.16 (2010).

[‡] *Id* § 17.52.410.

[§] *Id* § 17.52.440.

[¶] *Id* § 9.12.090.



will be furnished to the customer along with selected conservation pamphlets upon completion of the audit.

Water Conservation Webpage – AWC maintains a water conservation webpage that includes a description of its water conservation programs, provides links to more than 20 water conservation brochures and activity books, and lists several free “giveaways” for customers.

Helpful Hints to Reduce Water Use – A water conservation informational leaflet is included in mailed notices and other public notices of curtailment during temporary water shortages.

For Kids – AWC’s website provides educational material targeted specifically to children, including several brochures, activity books, and links to outside websites.

Implementation of Conservation Measures

As a participant in the Modified NPCCP, AWC-Casa Grande is required to submit a conservation efforts report each year that details the success of its programs. In 2009:

- 32 scheduled water audits were conducted.
- Over 200 high-water-use inquiries were investigated and resolved, the majority resulting from leaky irrigation systems and toilets.
- More than 5,000 pieces of written water conservation information and giveaways were distributed.
- AWC attended a home and garden show and an Arizona Project WET water festival to increase customer contact opportunities.

Funding for Conservation

AWC-Casa Grande does not track conservation funding or spending as a separate line item in its budget—it is lumped in with other costs. This is primarily because the Arizona Corporate Commission (ACC) has not allowed cost recovery for conservation spending in the past; thus, AWC did not have a need to track this type of information. The ACC may allow cost-recovery in the near future, so AWC may begin collecting and tracking conservation expenditures in the next few years.

Goals for Conservation

AWC-Casa Grande’s goals are to maintain compliance with the Modified NPCCP, keep lost and unaccounted

for water below 10%, resolve customer concerns in a timely manner, and provide customers with beneficial conservation information whenever possible.

Water Loss

In 2008, AWC-Casa Grande recorded 1,238 AF (403 million gallons) of water loss, representing 7.5% of total water supplies. AWC-Casa Grande tracks 11 categories of water use other than sales, including such uses as construction water and fire flows. Data indicates that AWC-Casa Grande consistently maintains system losses below 10%.

Supply-Side Efficiency Measures

AWC-Casa Grande utilizes an active leak detection program to minimize physical line losses. A leak detection logger is used to survey large areas of the distribution system to locate potential leaks. Then a leak correlator is used to pinpoint the location of leaks identified by the detection logger. Identified leaks are repaired in a timely manner.

AWC’s meter shop has established specific replacement criteria based on total gallons and length of time in service for meters in the Casa Grande system. These criteria differ for each of AWC’s water systems, based on water quality, temperature, and other factors that affect meter wear. The meter shop also periodically tests Casa Grande meters to provide an ongoing assessment of the replacement criteria. The current replacement schedule for residential-size meters in Casa Grande is:

- 5/8” meters – 1 million gallons/10 years
- 1” meters – 3 million gallons/10 years

In 2009, 1,205 meters were repaired or replaced in the Casa Grande system. There were also three visits from other water companies to the meter shop to discuss adoption of AWC’s meter repair and replacement program.



Effluent Use

AWC-Casa Grande does not deliver effluent for reuse because wastewater services are handled by the city of Casa Grande. However, the city and AWC recently participated in a joint planning effort to produce a Reclaimed Water Use Conceptual Master Plan. The plan:

- Provides a high-level analysis of the reclaimed water use alternatives available for implementation within the planning area.
- Evaluates the potential costs, benefits, technical challenges, regulatory issues, and financing alternatives for effluent reuse options.
- Provides a recommended implementation action plan, including system funding alternatives.
- Discusses and provides a potential framework for a memorandum of understanding between Casa Grande and Arizona Water Company designed to facilitate reclaimed water use within the service area.
- Identifies additional engineering, hydrologic, and financial analyses required.

Due to the economic recession, plans for integrating reclaimed water between AWC and the city have slowed substantially.

The city of Casa Grande produces approximately 6,700 AF of wastewater per year and delivers about half of this total to industrial customers.* The other half of treated effluent is discharged to the local wash. Currently, the city does not receive recharge credits for this water, but it will after implementation of the Reclaimed Water Use Master Plan.

Additional Information

AWC is working with Arizona Project WET to develop activities and educational materials for middle-school-aged children in Casa Grande. AWC addresses energy use by primarily relying on its most efficient wells—when demands increase, production is ramped up at wells with lower efficiency.

* Personal communication between Jon Parrish, Wastewater Division, Casa Grande Public Works, and Drew Beckwith, July 15, 2010.