



Water conservation plays a key role in helping communities meet growing demand and reduce the need to invest in expensive water development projects. Many utilities have implemented cost-effective programs that have resulted in significant water savings. Understanding the components of a successful program and the costs involved make for better decisions. There are many examples of successful water conservation programs. This factsheet presents some of the most well-researched efforts, including water savings, costs, pros and cons, and things to consider when developing a program.

Why are they effective?

Toilet incentive programs have been a staple of utility sponsored water conservation programs for years and for good reason. Toilets are the largest water users in almost all homes. Replacing old, inefficient, and (frequently) leaking toilets with new, high-efficiency models results in years of measurable, reliable water savings.

Toilets can last for 20 years, so a one-time investment pays large water savings dividends over time. Reductions in customer water use experienced by large and small water utilities nationwide are due, in part, to the widespread replacement of high volume toilet fixtures with ultra-low-flow (ULF) and high-efficiency toilets (HET).

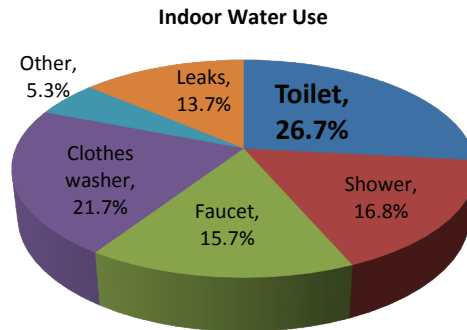
What are the program components?

Utility toilet incentive programs usually take on one of four standard forms:

- Distribution program (toilet “giveaway”)
- Direct installation programs (toilet “giveaway” + installation)
- Voucher program (coupon that provides a discounted price at time of purchase)
- Rebate program (money provided to customer after purchase)

Some utilities have moved from rebate/voucher programs to direct distribution to minimize

While most toilet replacement programs have been geared toward residential users, commercial replacement can yield significant water savings. For example, replacing a water using urinal in a high use area with a waterless urinal can save up to 40,000 gallons a year at a cost of \$250-\$500/fixture.



administrative costs and to ensure that high quality toilets are installed. Purchasing in bulk can keep costs low. For example, the San Antonio, Texas water system was able to provide toilets to customers at a cost of \$90.15. Similarly, The Cochise Water Project, a non-profit organization in Sierra Vista, Arizona has distributed toilets that use less than a gallon of water per flush for a \$75 participation fee that includes installation. Costs are kept low by buying in bulk and capping payment to installers.

Programs may be financed through water customer revenue, general funds, grants, or by developers as part of a community’s water demand mitigation program.



EPA WaterSense Certified toilets must pass strict standards that ensure high performance and quality. Many affordable options are available.

What are the water savings and costs? - Case Studies

Water savings and costs vary depending on the age of toilets being replaced, the replacement toilet, type of program, administrative costs (often not included in estimates), and other factors. The San Antonio Water System has successfully implemented a wide variety of toilet incentive programs since 1994. A few examples of well-researched water savings and costs are shown in the following table.

Utility/Study	Target Sector	Old Gallons Per Flush*	New Gallons Per Flush	Toilets Replaced	Savings/ Fixture (gallons/yr)	Costs/ Acre-Foot
San Antonio Water System	Residential; Non-residential	varied	1.6 to 1.28	240,000	11,707	\$250-\$286
Jordan Valley Water Conservancy District-Utah	Single-family	4.16	1.56	275	8,286	\$313
2011 Albuquerque Study	Single-family	2.31	1.36	29	4,500	N/A

Aquacraft, Inc. who conducted the Albuquerque study stated, "The study has shown that there is a potential to generate nearly 9,000 acre feet of supply through [residential] conservation, and this water is certainly going to be less expensive and environmentally damaging than traditional supply side efforts. While conservation is not a panacea it is very important to recognize its potential, and factor in its impacts on water supply and operations studies in the future."

Things to Consider

Communities with substantial numbers of older homes can achieve significant, long-term water savings from a toilet retrofit program. But even replacing toilets that meet the federal plumbing code standard of 1.6 gallons per flush with WaterSense certified toilets can result in meaningful savings over time.

Understanding the service area demographics, including income level and community support for conservation, are important considerations. Conducting a pre-program survey can be useful in designing a successful program.

Some programs focus on the low income sector under the assumption that these customers might not be able to afford to replace an old toilet without a subsidy.

27%

Percentage of household water used by toilets.

1.28 gallons

Amount of water used per flush by an EPA WaterSense Certified toilet.

200,000 gallons

Amount of water saved per household by replacing an inefficient toilet with a WaterSense certified toilet over the lifespan of the toilet.

References:

- Aquacraft, Inc. 2011, Albuquerque Single Family Water Use Efficiency and Retrofit Study
- Mohadjer, P. 2003. Residential Ultra Low Flush Toilet Replacement Program. Jordan Valley Water Conservancy District, West Jordan, Utah
- San Antonio Water System Water Conservation Program, 2012. SAWS High-Efficiency Toilet Programs
- Tucson Water Residential High Efficiency Toilet Rebate Program http://cms3.tucsonaz.gov/water/HET_residential

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