



# Water Efficiency for Instream Flow:

## Making the Link in Practice



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## Resource Section 1

### Municipal Water Efficiency Program Examples

This section presents successful municipal water efficiency efforts from 18 communities in 11 states coast to coast: programs and rebates, education and outreach, and ordinances. The Alliance for Water Efficiency contributed these examples, which illustrate what is possible, and indeed practical, among municipalities. They can be used as a reference to identify and understand the wide range and diversity of best practices in urban water efficiency, their associated costs and savings, and the types of communities that have undertaken water efficiency efforts.

Information on program offerings and reported water savings was drawn primarily from each utility's own website. Reported savings may be based on a different set of programs than those described as currently or recently offered. Programs target residential customers, unless otherwise noted. In some cases, such as Los Angeles and Albuquerque, both the wholesale and retail water suppliers are involved in water efficiency programs.

More information on the Alliance is at [www.allianceforwaterefficiency.org](http://www.allianceforwaterefficiency.org).

# Albuquerque, New Mexico

## Conservation Efforts

### Programs and Rebates

- Toilet Rebate—Rebates of \$200 per toilet are available when a customer switches out old high-flow toilets, and these rebates apply to both residential and commercial customers. \$50 rebates are available for conversion from low-flow (1.6 gallon-per flush) toilets to high-efficiency toilets.
- Showerhead Rebate—Save water and get a \$10 rebate by replacing the existing showerhead with a WaterSense approved showerhead.
- Urinal Rebate—Conversion of urinals to a one pint or waterless urinal will qualify for a \$75 rebate. In addition, installation of waterless or one pint urinals in new construction also qualify for the rebate.
- Evaporative Cooler Thermostat Rebate (\$25)
- Washing Machine Rebate—\$100 rebate on a customer's water bill when they buy a qualifying high-efficiency washing machine.
- Rainwater Harvesting rebates will be based upon the amount of rain that can be stored:
  - \$25 for 50—149 gallons
  - \$50 for 150—299 gallons
  - \$75 for 300—499 gallons
  - \$100 for 500—999 gallons
  - \$125 for 1000—1499 gallons
  - \$150 for 1500 gallons and over
- Multi-stream rotor heads for sprinklers: \$2 per head.
- Compost: 25 percent of the cost when participating in the xeriscape rebate program. Maximum rebate: \$100 per account.
- Pilot program for 2007: \$20 credit for attending the Water Authority's class on irrigation efficiency. This class will be offered twice a month. The first class will take place at the end of April, check back for a time and location.

There is no limit on the square footage of high water landscape that can qualify for a rebate when it is converted to xeriscape.

### Outdoor Rebates

- 25 percent off the cost of a multi-setting sprinkler controller.
- 25 percent off the cost of renting equipment for removal of grass (e.g. sodcutter, backhoe or Bobcat) when participating in the xeriscape rebate program. Maximum rebate credit—\$50.
- \$25 each for purchase of rain sensors, pressure regulation valves and pressure vacuum break (PVB) backflow prevention valves; atmospheric vacuum breaks (AVB) do not qualify. One rebate for each item will be granted per account, unless there is more than one irrigation system for the account.
- The New Rainwater Harvesting Landscape Rebate—The rebate amount has increased to \$1.50 per square foot. The minimum remains at 500 square feet, and the maximum is 2000 square feet for eligible landscape conversions.
- Xeriscape Rebate—For single-family residential rebates, the customer will receive a water bill credit of \$0.75 for every square foot of qualifying landscape up to 2,000 square feet. They must convert a minimum of 500 square feet to participate. For multifamily (apartment) and nonresidential rebates, customer will receive a water bill credit of \$0.75 for every square foot of qualifying landscape up to 12,500 square feet. They must convert a minimum of 500 square feet to participate.
- Double Rebate Program for Slopes and Small Areas (limited time only April 1, 2011 through October 31, 2011)—Turf on slopes greater than 6:1 or areas less than 10 feet in any dimension can receive a double rebate (1.50/square foot) when the turf is converted to xeriscape. In addition, all

participants in the rebate program can enter a contest for the most creative design and highest water saving potential. First prize is \$12,000, second prize is \$8,000 and third prize is \$5,000. The Customer Advisory Committee will be the judges for the contest.

- **Free Commercial Audit**—These audits provide information that allow the industrial-commercial-institutional (ICI) customer to see where they are using water and to help them develop target areas where water conservation improvements can be effectively implemented.
- **Free Residential Audit**—Free review of a home's water use patterns and billing, free leak check using the home's water meter, free leak check of toilets, free outdoor landscape and sprinkler assessment, and free installation of these high efficiency devices.
- **Irrigation Budget Program for Large Turf Areas**—The Water Authority has over 1,300 irrigation-only accounts for large turf areas. Customers are assigned an annual water budget based on their watering needs. They are assessed annual surcharges if they go over the established water budget. This program has helped reduce water usage by 23 percent for these customers.
- **Water Waste Enforcement**—The Water Authority employs five full-time water waste enforcement staff and ramps up to nine employees during the irrigation season. These employees patrol 24-hours a day, 7 days a week assessing water waste violations to customers who allow water to flow off of their property into the public right-of-way or onto adjacent property or who water during the Time of Day Watering Restrictions (11 a.m.–7 p.m. from April 1, 2011 through October 31, 2011).

## Education and Outreach

- **WaterSmart Classes**—Customers who attend this one-hour class on how to water efficiently receive a \$20 credit on their water bill. In the first year, class attendants reduced their outdoor water use 18 percent more than similar customers who did not attend.
- **Water by the Numbers**—A customer education campaign that encourages customers to water one time per week in March, 2 times per week in April and May, three times per week in June, July and August, 2 times per week in September and October, once per week in November and then no watering until spring. This voluntary program has been in place for the past three years and has helped reduce peak water usage days and prevent mandatory restrictions from being enacted while still achieving conservation goals.

A different 45-minute class is run for each grade level from K-12, so even if students see the presentations every year they never see the same one twice. Every fall an all-day Water Festival for over 1,200 fourth grade students is presented. Students attend five different hands-on activities on the importance of water in the community and how to conserve. During the summers, the program partners with area libraries to present Water Resource puppet shows.
- **Tips for Saving Water Indoors and Outdoors**
- **Xeriscape Plant List**
- **Project WET**—Project WET is an international organization dedicated to Water Education for Teachers. The mission of Project WET is to reach children, parents, educators, and communities of the world with education about our most precious resource on the planet—water.
- **Children's Water Festival**—Provides water resources education at the elementary level.
- **Energy Water Nexus Movie, Student Guides, and Curriculum**—Students discover how water is used to make electricity, and how electricity is used to clean and deliver drinking water (as well as cleaning our wastewater).
- **Resources for Students, Educators, and Consumers**—Virtual Tour of the Water System, classes, curriculum, presentations

## Ordinances

Sewer Use and Wastewater Control Ordinance  
<http://www.abcwua.org/pdfs/section3.pdf>

## Savings Reported

- Specific conservation programs have met with considerable success. By the end of 2010 rebates had been provided for more than 85,000 conversions from high-flow to low-flow or high-efficiency toilets. Water use was reduced from 252 gallons per person per day in 1994 at the start of the conservation program to 157 gallons per person per day by the end of 2010.
- Albuquerque found that, in 2010, its landscaping programs had reduced peak day usage from its high of 212.15 million gallons to 162.45 million gallons in 2010. A reduction of 23 percent.

## Supply Sources

The Albuquerque area relies on two sources for its drinking water: ground water from the Santa Fe Group Aquifer and San Juan-Chama surface water diverted from the Rio Grande via the San Juan-Chama Drinking Water Project. In 2010, 92 wells supplied 19.6 billion gallons of drinking water, while the San Juan-Chama Drinking Water Project supplied 14.2 billion gallons. Ground water and treated surface water are blended for delivery to customers. The Aquifer is located in a region considered high desert with an average annual rainfall of less than 9 inches. Snow melt from mountains in Colorado and northern New Mexico provides most of the water in the aquifer by making its way to the Rio Grande, then penetrating the river bed to become part of the underground water system.

[http://www.abcwua.org/pdfs/2010\\_ABCWUA\\_Water\\_Quality\\_Report.pdf](http://www.abcwua.org/pdfs/2010_ABCWUA_Water_Quality_Report.pdf)

## References

<http://www.abcwua.org/content/view/66/55/>  
Date accessed: 2/25/11

<http://www.cabq.gov/aes/s5water.html>

Communication with Katherine Yuhaus. 4/26/11

## Conservation Efforts

### Programs and Rebates

- Rainwater Harvesting Rebates—Rebate amounts will be calculated at \$0.50 per gallon for non-pressurized systems and \$1.00 per gallon for pressurized systems. The maximum rebate amount will be increased to \$5000, not to exceed 50 percent of the project cost.
- Free Toilet Program—The Free Toilet program provides dual-flush high efficiency-toilets for eligible customers; Ends 8/31/11.
- Landscape Conversion Incentive—Austin Water accepts applications to participate in a Landscape Conversion Incentive to encourage the use of native landscapes while reducing turf areas that require more irrigation.
- WashWise Rebate Program—Customers must purchase and install a qualifying washing machine to be eligible.
- Irrigation Evaluations and Rebates—An irrigation audit must be performed by Austin Water Conservation staff prior to beginning any work to be rebated.
- Pressure Reduction Valve Rebate—The City of Austin offers a \$100 rebate for the purchase and installation of a Pressure Regulating Valve (PRV) for residential water customers. For multifamily customers, the rebate is \$100 per unit up to a maximum of \$500 per property.
- Commercial Process Rebates

### Education and Outreach

- Online Water Use Calculator
- Dowser Dan—Since it first premiered in 1991, The Dowser Dan School Assembly Program has shared an increasingly important message of water conservation with elementary school children in the Austin Water Utility service area.

- Toiletology 101—A toilet is a major purchase, like any other appliance for the home, and it deserves the same amount of research and attention. There are many different types of toilets, and many different factors that can influence a decision.
- WaterWise Seminars—Periodically, Water Conservation offers topical seminars to the general public. Customers and non-customers are welcome to attend these free talks, which last about an hour.
- Speakers Bureau—The Water Conservation Speakers Bureau consists of conservation staff members who will speak on topics such as water conservation, irrigation, leak detection, and water waste.
- Water in Our World Program—Designed for fifth-grade students, the Water in Our World program is a free resource available to teachers in the Austin Water Utility service area.
- 50 Ways to Save Water
- Leak Detection Tips

## Ordinances

Water Use Management Ordinance

<http://www.ci.austin.tx.us/water/downloads/ordinance.pdf>

## Savings Reported

- From 1992–March 2011, Austin Water replaced 86,855 toilets through the free distribution program and 69,576 through the toilet rebate programs (156,431 total) replacements.
- Assuming a 25-year life span of the toilets, Austin’s toilet retrofit program will cost the utility \$75 per lifetime AF of water saved and will save over 1 billion cumulative gallons (3,275 AF).
- The mandatory watering restrictions implemented in 2007 limit watering to two specific days per week and prohibit watering between 10 a.m. and 7 p.m. After two years, water savings have

surpassed annual goals set by the task force, and projections indicate that Austin might have already met the task force’s 10-year goals for that measure.

- After Austin implemented Stage 2 drought restrictions in August 2009, water use dropped dramatically. October 2009 had the lowest per capita usage in 15 years of record keeping, and water use continued to drop, reaching an all-time low of 109 gpcd in February 2010.
- In 2009, Austin saved more than 2 billion gallons of water through the use of reclaimed water, the highly treated effluent from wastewater treatment plants that is recycled to customers, largely for landscaping.

## Supply Sources

Customers of the City of Austin Water Utility receive their drinking water from two water treatment plants that pump surface water from the Colorado River as it flows into Lake Austin.

The City draws water from the Colorado River into two water treatment plants that have a rated combined maximum capacity of 285 million gallons per day (mgd) and a storage capacity of 167 million gallons.

## References

Communication with Drema Gross. 4/29/11

<http://www.ci.austin.tx.us/water/conservation/>

<http://www.westernresourceadvocates.org/media/pdf/Smart%20Savings%20Water%20Conservation.pdf>

Date accessed: 1/12/11

# Boulder, Colorado

## Conservation Efforts

### Programs and Rebates

- Toilets and Urinal Rebate—Commercial: up to \$5,000 per year; Residential: up to \$1,000 per year.  
  
Toilet Rebates: Eligible toilets must be 1.28 gpf (gallons per flush) and on the EPA “Water Sense” approved list.  
  
Urinal Rebates: Eligible urinals must be 0.5 gpf (gallons per flush) and on the EPA “Water Sense” approved list.
- Irrigation Controller Rebate—Eligible controllers must be Smart Water Application Technology (SWAT) approved and must be on the SWAT approval list.
- Sprinkler Head Rebate—Only matched precipitation rate spray heads/nozzles that are on the “List of Qualifying Spray Heads” are eligible for rebates.
- Drip System Rebate—Only pressure reducing valves (PRVs) and backflow prevention devices specifically made for drip systems are eligible.
- Washing Machine Rebate—must not only meet the most stringent water efficiency standards based on the Consortium for Energy Efficiency (CEE) but include the most stringent energy requirements from Energy Star so that only water efficient washing machines which are also energy efficient are rebated.
- Since 2007, the City of Boulder has utilized water budgets combined with an increasing block rate structure (five blocks) to encourage lower water consumption. Customers’ budgets are calculated based on indoor and outdoor water allocations for a particular month. To help customers monitor their water use the City offers water monitors for \$75, which affixes to a refrigerator with a magnet and provides updated meter readings. In addition, each customer is allowed one extra complimentary meter reading every six months.
- Slow the Flow Program—Free irrigation audits for residents and homeowner associations. Auditors look for poor coverage, uneven distribution of water, broken heads, arc misalignment and more.
- Garden in a Box Program—Simplifies water-wise gardening by providing professional “plant-by-number” designs, a selection of xeriscape plants, and planting and care instructions all below retail costs.
- Garden Essentials—Residents can purchase low-cost drip irrigation kits, compost and mulch through the Center for ReSource Conservation (CRC).

### Education and Outreach

- Free WaterWise landscaping seminars during the spring of each year.
- Educational Programs for Teachers—The Watershed Outreach Program provides a simple and free way to include new lesson plans in your classroom curricula. The water-related activities, programs and resources provided can help achieve higher academic standards.
- H2O Speakers Program—Find out about a variety of available speakers who can provide information on water conservation at a meeting.
- Conservation A-Z—Terms and glossary
- Water Conservation Activities for Kids
- Landscape and Irrigation Resources

### Ordinances

Water Waste Ordinance

## Savings Reported

- Educated approximately 500 Boulder County residents about xeriscape. This is one of the CRC programs, is conducted annually, and if 2011 numbers are used, it's about 136 people in the city and 277 in the county (413 total).
- The CRC program Garden in a Box provided the materials for 14,700 square feet of xeriscape to be planted. In 2011 they sold the largest amount of gardens to date; in 2010 they sold 182 xeric gardens.
- Conserved 27 million gallons of water through Slow the Flow Colorado. In 2010, CRC did about 68 water audits for residential customers.
- Overall Boulder has set goals to reduce customer use and has come close to meeting or has surpassed reduction goals in many categories: Single family residential reduced water use by 21 percent, multifamily residential reduced water use by 31 percent, and commercial/industrial reduced water use by 19 percent.

## Supply Sources

In 2010, Barker Reservoir provided about 32 percent of the city's annual water supply, Lakewood Watershed provided about 52 percent of the city's annual water supply, Boulder Reservoir provided about 8 percent and Colorado Big Thompson provided about 7 percent.

## References

[http://www.bouldercolorado.gov/index.php?option=com\\_content&view=article&id=12981&Itemid=1189](http://www.bouldercolorado.gov/index.php?option=com_content&view=article&id=12981&Itemid=1189)

Date accessed: 1/5/11

<http://www.ncwcd.org/>

Date accessed: 1/5/11

[http://www.bouldercolorado.gov/index.php?option=com\\_content&task=view&id=4972&Itemid=2104](http://www.bouldercolorado.gov/index.php?option=com_content&task=view&id=4972&Itemid=2104)

[http://www.conservationcenter.org/w\\_main.htm](http://www.conservationcenter.org/w_main.htm)

Date accessed: 1/10/11

Communication with Russ Sands. 5/5/11

# Cary, North Carolina

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## Conservation Efforts

### Programs and Rebates

- Water Conservation and Demand Management Program—It is the policy of the Town of Cary to develop and implement a water conservation and demand management program that will decrease the average annual per capita usage of potable water. The program will include a mixture of educational, financial, and regulatory initiatives to encourage water conserving practices where consistent with the overall mission and values of the Town of Cary.
- Integrated Water Resources Management Plan—This plan recommends a cost-effective integrated water management approach that, through successive steps, focuses future expenditures of time and effort on specific areas of potential water resource management.
- Turf Buy Back program—The Turf Buy Back program will offer property owners a \$500 incentive to replace a minimum of 1,000 square feet of turf with either a natural area or a warm season grass.
- High Efficiency Toilet Retrofit Rebate—This program will provide a rebate of \$100 per toilet to residential and business water customers who replace older toilets that use 3.5 gallons or more per flush with a WaterSense-certified high efficiency toilet (HET) that use 1.28 gallons per flush.
- Rain Barrels for Water Harvesting—The Town of Cary offers citizens the opportunity to purchase barrels and/or conversion kits to build their own rain barrel. The conversion kit is \$16 and barrels are \$15.

## Education and Outreach

- Block Leader Program
- Beat the Peak Campaign—Exercise good water habits.
- Free WaterWise workshops
- Household Conservation Tips—For the bathroom, laundry room, kitchen, and outdoors.
- Internet Scavenger Hunt—The Internet Scavenger Hunt is a lesson designed for elementary and middle school students to discover information about water and water conservation.
- Programs for Schools—WaterWise Educational Programs are free, interactive lessons to help students learn about water conservation and integrate WaterWise habits into their lives.
- Water Efficient Landscaping
- Web Pages—Give Aways (shower timers, shower-heads, faucet aerators, toilet dye tablets and brochure)
- Free Water audits
- Bud/Bud TV—Utility newsletter
- Civic group presentations
- Lazy Daze booth
- Earth Day at Spring Daze Festival
- Plant tours
- WaterSense Fix a Leak Week

## Ordinances

Rain Sensor Ordinance

[http://www.townofcary.org/Departments/Public\\_Works\\_and\\_Uilities/Conservation/Water\\_Conservation/Ordinances\\_and\\_Polices/Rain\\_Sensor\\_Ordinance.htm](http://www.townofcary.org/Departments/Public_Works_and_Uilities/Conservation/Water_Conservation/Ordinances_and_Polices/Rain_Sensor_Ordinance.htm)

Waste Water Ordinance

[http://www.townofcary.org/Departments/Public\\_Works\\_and\\_Uilities/Conservation/Water\\_Conservation/Ordinances\\_and\\_Polices/Water\\_Waste\\_Ordinance.htm](http://www.townofcary.org/Departments/Public_Works_and_Uilities/Conservation/Water_Conservation/Ordinances_and_Polices/Water_Waste_Ordinance.htm)

Alternate Day Watering Ordinance

[http://www.townofcary.org/Departments/Public\\_Works\\_and\\_Uilities/Conservation/Water\\_Conservation/Alternate\\_Day\\_Watering.htm](http://www.townofcary.org/Departments/Public_Works_and_Uilities/Conservation/Water_Conservation/Alternate_Day_Watering.htm)

## Savings Reported

- 99 percent of commercial and residential customers comply with the rain sensor ordinance.
  - Through the HET Rebate Program, it is estimated that between 4 and 5 million gallons of water are being saved per year; through the Turf Buy Back Program, approximately one half million gallons of water is saved. Through the first Beat the Peak campaign, the Tuna Can Plan, the town distributed 25,000 packets to residents to gauge amounts of irrigation and inform them of water wise irrigation practices. The Block Leader program reaches approximately 15 percent of the town's customers, and all residential customers are mailed a Beat the Peak postcard as one initiative of the annual campaign.
  - The weather-adjusted annual average residential gallons per capita per day dropped 15 percent, from 75 gpcd in 1996 when the conservation program was instituted to 64 gpcd in 2007.
- In June 2001, Cary became the first municipality in the state to pump treated wastewater to homes and businesses for irrigation and cooling. The reclaimed water project began with several hundred customers, lessening the amount of drinking water that winds up on landscaping.
  - The state allows Cary to divert a total of about 5 million gallons of treated wastewater a day from the two treatment plants (water reclamation facilities) for reuse rather than discharging into creeks.
  - Amounts reused are: approximately 1.3 million gallons on peak day; up to 20 million gallons monthly in summer.

## Supply Sources

The Town of Cary's drinking water source is the B. Everett Jordan Reservoir, more commonly known as Jordan Lake. The lake is a surface water supply developed and managed by the U.S. Army Corps of Engineers and is part of the Cape Fear River basin. Population in 2009: 136,600

## References

[http://www.townofcary.org/Departments/Public\\_Works\\_and\\_Uilities/Conservation.htm](http://www.townofcary.org/Departments/Public_Works_and_Uilities/Conservation.htm)

Date accessed: 1/5/11

[http://www.epa.gov/WaterSense/docs/utility\\_conservation\\_508.pdf](http://www.epa.gov/WaterSense/docs/utility_conservation_508.pdf)

Date accessed: 1/10/11

[http://superfund.ciesin.columbia.edu/Rocklandwater/demand\\_conserv.html](http://superfund.ciesin.columbia.edu/Rocklandwater/demand_conserv.html)

Date accessed: 1/13/11

Communication with Marie Cefalo. 4/7/11

# Denver, Colorado

## Conservation Efforts

### Programs and Rebates

- Clothes washers—\$150 rebate
- High-efficiency toilets—\$125 rebate. Only listed toilets that use 1.28 gallons per flush or less are eligible.
- Wireless rain sensors—\$50 rebate. Only wireless rain sensor models that connect to an automatic, in-ground irrigation system are eligible.
- Rotary nozzles
- Weather-based smart controllers—\$100 rebate.
- Commercial High-Efficiency Toilet Rebate—Denver Water is offering a rebate to commercial customers who install high-efficiency toilets that use an average of 1.28 gallons per flush (gpf) or less; \$125 rebate, purchased January 1 to March 15.
- Flushometer Bowl and Valve Combination Rebate—Denver Water will pay its commercial, industrial and institutional customers to install flushometer bowl and valve combinations that flush 1.6 gallons per flush (gpf) or less. The flushometer bowl and valve rebate program offers a rebate of: \$125 per installation of HET (1.28 gpf or less) performance tested combinations of flushometer bowl and valve set; \$75 per installation of (1.6 gpf or less) performance tested combinations flushometer bowl and valve set; \$50 per installation of (1.28 or 1.6 gpf) non-performance tested combinations flushometer bowl and valve.
- High-Efficiency Urinal Rebate—\$50 per urinal installed, which flushes 0.5 gallons per flush (gpf) or less.
- Urinal Half-Gallon per Flush Retrofit Rebate—\$25 per urinal retrofitted with applicable kits.
- Coin/Card-Operated Laundry Equipment Rebate—\$150 per high efficiency machine purchased or leased and installed.
- Cooling Tower Equipment Rebate—Denver Water will pay its commercial, industrial and institutional customers to replace/install conductivity control systems and sub-metering devices on cooling towers.
- \$500 per conductivity controller installed; \$50 per flow meter installed to monitor cooling tower make-up and bleed.
- Sub-Meter Rebate—\$40 each for flow meters installed to monitor individual unit water use.
- Commercial Warewashing Equipment Rebate—Denver Water will pay our business and institutional customers to purchase or lease high-efficiency commercial warewashing equipment. \$300 per machine purchased or leased and installed; \$50 additional for automated operational efficiency monitoring equipment.
- Commercial Meter and Meter Reading System Rebate—Denver Water will pay our commercial, industrial, and institutional customers to monitor their water use, which may involve replacing their existing water meter with a water meter compatible with digital meter reading systems.
- Indoor Incentive Program—Denver Water will pay commercial, industrial and institutional customers \$18.50 for each thousand gallons of water saved annually, but they must save at least 100,000 gallons of water in one year. With these incentive contracts, customers can earn up to \$40,000 for conserving water.
- Irrigation Efficiency Program—Denver Water will pay customers with successful proposals \$3,000 per acre foot of water saved for Level 1 improvements, and \$6,000 per acre foot of water saved for Level 2 improvements. Payments for actual water savings are pro-rated over 5 years.
- Soil Amendment Program—Before Denver Water will set new meters, property owners must amend their soil with compost so the soil more efficiently retains water. This rule applies to all new residential, commercial, government and industrial properties within Denver Water's service area.
- Car Wash Certification Program—Facilities must meet the requirements to receive a Denver Water Certificate of Efficiency.
- Free Water Audit—If interested in making changes to become more water efficient, but don't know where to start, customers can request a free water audit and Denver Water will help teach how to "Use Only What You Need."

## Education and Outreach

- Online Conservation Tips and Tools—Repair Leaky Toilet; Repair Leaky Faucet; Replace & Retrofit; Where Your Water Goes; Outdoor; Indoor; and Commercial.
- Xeriscape Information—Seven guiding principals.
- WaterNews—A monthly compilation of water news affecting Denver Water and our customers. This is the online version of the insert printed every month in bills.
- Teacher Resource Packet—Denver Water’s Teacher Resource Packet contains information and activities related specifically to water use and supply in the Denver area.
- Speakers Bureau—Request a speaker on the water topic your organization is interested in and we’ll send an expert to your group’s meeting, free of charge.
- Educational Video Clips—Learn simple water-saving tips that can help us all protect the environment, save unnecessary expense, and ensure that we will have plenty of safe, clean water for generations to come.
- Water Trailer—The Denver Water Trailer supplies high-quality, ice-cold water to large, outdoor, public events. There is no fee for this community service, but event producers may need to provide volunteer servers.

## Ordinances

None reported.

## Savings Reported

- Denver Water’s conservation plan aims to accelerate the pace of water conservation in its service area and reduce overall water use from pre-drought usage (2001) by 22 percent by 2016.
- In 2006, the Denver Water Board of Commissioners set a new conservation goal to reduce water use to 165 gallons per person per day\* by 2016. This is a 22 percent reduction from average pre-drought use of 211 gallons per person per day. Coincidentally, Denver Water customers hit the

goal of 165 gallons per person per day during the drought, but was done in part by making emergency sacrifices, not just by reducing waste.

\* Gallons per person per day is calculated using total treated water consumed by Denver Water customers divided by the population in our service area. It includes all uses: residential, commercial, industrial and institutional.

- Starting in 2005, Denver Housing Authority partnered with Denver Water to design and implement water efficient irrigation systems and Xeriscape landscaping in two of its developments. In these areas, Denver Water reduced sod coverage by 25 percent and reduced irrigation water use by 6–8 million gallons annually.
- Customers are using about 19 percent less water than they did before the 2002 drought.
- Recycled Water—Denver Water opened its Recycle Plant in 2004. The plant takes treated wastewater from the Robert W. Hite Treatment Plant, treats the water to standards set by the Colorado Department of Health and Environment under Regulation 84, and delivers the recycled water to industrial and irrigation users. The recycled water distribution system continues to expand to serve more users. Once build-out is complete, the project will supply more than five billion gallons of recycled water every year, allowing Denver Water to use the water in its reservoirs to provide drinking water to Denver-area residents.

## Supply Sources

The majority of Denver’s water comes from rivers and streams fed by mountain snowmelt. The South Platte River, Blue River, Williams Fork River and Fraser River watersheds are Denver Water’s primary water sources, but it also uses water from the South Boulder Creek, Ralston Creek and Bear Creek watersheds. Dillon Reservoir is Denver Water’s largest storage facility and holds nearly 40 percent of Denver’s water.

## References

<http://www.denverwater.org/>

Date accessed: 1/4/11

Communication with Brandi Honeycutt. 4/27/11

# El Paso, Texas

## Conservation Efforts

### Programs and Rebates

Between 1991 and 2007, El Paso Water Utilities (EPWU) offered several programs that encouraged El Pasoans to implement water-saving practices including:

- Energy Star Clothes Washing Machine Rebate Program—The program offered a one-time rebate of \$100.00 for new water-and energy-efficient washing machines purchased by a direct El Paso Water Utilities customer.
- Free low-flow shower heads
- Rebates for low-flow toilets
- Change from swamp coolers to refrigerated air units
- Turf grass rebate for every square foot of turf removed and replaced with Xeriscap
- EPWU's excess-seasonal-use rate structure promotes conservation. Increasing rate blocks are established annually based on each customer's average winter use. The unit price of water increases as water use increases, which reduces discretionary uses of water.

### Education and Outreach

- Community Education—Partnerships with other civic, government agencies, environmental organizations, universities, and museums. Events, Fairs, Water Festivals, Displays, Presentations, General Water Conservation, Water Conservation Programs, and Desert Blooms CD-Rom.
- School Outreach Programs—Willie has been the utilities mascot since 1991 and is well recognized throughout the community as a positive message to help teach others about saving our most precious resource, water.
- Drinking Water Week Poster Contest
- Conservation Kits—These kits include educational tools that help with conservation efforts.

- Games—Conservation Puzzle, Word Game, Card Game.
- Educational brochures and literature
- Videos—Available for checkout by teachers at the Tech<sub>2</sub>O Water Resources Learning Center.
- Willie's Water World Adventure Through Earth's Resources—Through a computer animated educational tool titled "Willie's Water World," problem solving, critical thinking, and creative assessments help make learning about water more interesting and enjoyable.
- Desert plant list
- Open in 2007, the Carlos M. Ramirez Tech<sub>2</sub>O Water Resources Learning Center offers information and exhibits that increase awareness of water management in the Chihuahuan Desert. The center is open to the public on Saturdays and hosts conferences, workshops, seminars and school field trips during the week. The EPWU Discovery Center, located at the El Paso Zoo, serves as an extension of Tech<sub>2</sub>O.

### Ordinances

Water Conservation Ordinance

<http://www.epwu.org/conservation/ordinance.html>

### Savings Reported

- The water conservation program set out to reduce El Paso's potable water use by 20 percent over a 10-year period. Average daily water use had fallen to 133 gallons per person by December 2010. El Paso is currently saving 18.8 billion gallons of water per year through water conservation rebates and incentives, rate adjustment, education outreach and water reuse.
- Xeriscaping Program: Since 2001, the city has decreased its water usage per person per day by 16 percent and the city has removed more than 11 million square feet of lawn since the program began.

- When customers install water-efficient plumbing fixtures and adopt other indoor conservation habits, less water flows into city wastewater-treatment plants. Wastewater flows were 2 billion gallons less in 2004 than in 1994, which allows the utility to postpone planned plant expansions. This saves ratepayers millions of dollars in capital and financing costs.
- Peak-day water demand, which is what occurs on a hot summer day, has also fallen. Daily water use peaked at 195 million gallons in 1990; it peaked at 156 million gallons in 2010.
- More than 53,900 toilets were replaced with ultra-low-flow units through the Cash for Your Commode Rebate Program, while the Turf Rebate Program led to the removal of 11.2 million square feet of established grass from more than 3,000 sites.
- EPWU collaborated with the electric company to offer rebates for water-efficient washing machines and central refrigerated air systems. Rebates were not the only incentive, however. The utility gave away 185,000 shower heads, 9,000 evaporative cooler bleed-off line clamps, and 170 waterless urinals. Water use has been reduced 3.65 billion gallons per year through conservation incentive programs.
- In 1990, the 544,500 residents in EPWU's service area used nearly 38 billion gallons of water. Yet, despite a population increase of more than 200,000 people, only 37.4 billion gallons of water were used in 2010. This allowed EPWU to save \$460 million in principal and interest payments by deferring the expansion of its water facilities, as well as additional dollars in chemical and power costs.
- The Hueco Bolson, once the principal source of water for El Paso and Ciudad Juarez, Mexico, dropped by as much as 197 feet over the past 100 years. In 1991, it was dropping 1.5-3 feet per year. That prompted the development of a strategic water resource management plan. Due to this plan, the aquifer is now stable.

## Supply Sources

Currently, El Paso Water Utilities supplies about 90 percent of all municipal water in El Paso County. Surface water is supplied from the Rio Grande. Groundwater supplies are pumped from the Mesilla Bolson and the Hueco Bolson. Based on current capacities of wells and surface water plants, and the limitation that surface water is only available during the irrigation season, total available municipal supply in El Paso County is about 150,000 AF/yr. This total includes about 5,000 AF/yr of reclaimed water supply that is available independent of drought conditions. Under full surface water allocation conditions, municipal surface water supply is about 60,000 AF/yr. Under these conditions, Hueco Bolson groundwater pumping supply is about 50,000 AF/yr, and Mesilla Bolson pumping supply is about 35,000 AF/yr for the entire County (FWTRPG, 2006).

El Pasoans use 2.1 billion gallons of reclaimed water annually. This drought-proof resource offsets potable water demand and decreases peak day demand during the summer. As an added benefit, irrigating with reclaimed water provides nutrients to the soil at no additional cost to the customers.

## References

Communication with Anai Padilla. 9/8/11

<http://www.epwu.org/conservation/ordinance.html>

<http://www.kvia.com/news/24790643/detail.html>

Date accessed: 1/11/11

[http://www.texaswatermatters.org/pdfs/news\\_270.pdf](http://www.texaswatermatters.org/pdfs/news_270.pdf)

Date accessed: 1/12/11

# Eugene, Oregon

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## Conservation Efforts

### Programs and Rebates

- Water Budget Timer Rebate—\$25: the sprinkler timer must be installed in the Eugene water service area, must be installed in a home, water budget feature, and must be listed on the Eugene Water Budget Timer Rebate List.
- Horizontal Axis Washer Program—Rebate offered to residential customers who purchase a horizontal washer (a rebate of \$70 for an electric water heating and \$35 for a natural gas water heating).
- Toilet Rebate Program—Offered residential customers rebates for purchasing ultra low flow (1.6 gallon) toilets between 2000 and 2007.

The rebate was offered in 2008 for high efficiency (1.28 gallon) toilets. This rebate was not offered 2009-2011, but it is in the budget for 2012.

- Commercial and Industrial Landscape Audit Program—Based on Irrigation Association auditing principles.

## Education and Outreach

- Water Efficient Plant Guidebook—Horticulture and conservation experts provide a list of plants and outline seven basic steps to help you water your landscape more efficiently.
- Water Saving Tips—Outdoors, inside, and at work
- Finding and Fixing Leaks—Learn how to test for and fix leaky faucets, toilets, and irrigation systems.
- Exploring Planet Water Curriculum—The program provides water efficiency information and activity kits to local school districts.
- Voluntary Irrigation Standards—Provided through multi-stakeholder irrigation efficiency group.
- Green Grass Gauge Giveaway/TV—Helps homeowners and businesses manage water consumption associated with lawn and landscape irrigation through weekly application recommendations based on local evapotranspiration rate and free rain gauges to measure sprinkler application rate.

## Ordinances

No ordinances at this time.

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## Savings Reported

- In 2009, the Leak Detection and Repair program had an estimated savings of 15,920 kilogallons.
- The Water Budget Sprinkler Timer Rebate program had an estimated savings of 202 kilogallons.
- The Horizontal Axis Washer Rebate Program had an estimated savings of 9,823 kilogallons.
- The Smart Controller Rebate had an estimated savings of 423 kilogallons.
- The Cooling Tower Retrofit had an estimated savings of 5,053 kilogallons.
- The Advanced Sprinkler Head Retrofit Program had an estimated savings of 153 kilogallons.
- In 2009, Water Management Services invested more than \$155,000 in water conservation programs, yielding an estimated 31.6 million gallons of water savings.

## Supply Sources

The McKenzie River is the sole source of drinking water for more than 156,000 people in the Eugene metropolitan area. EWEB's McKenzie River water rights allow the withdrawal of nearly 194 million gallons per day to supply drinking water, an amount sufficient to meet projected demand beyond the current 50-year planning horizon.

## References

<http://www.eweb.org/waterconservation>

Date accessed: 1/7/11

<http://www.eweb.org/sustainability/2009report/water> Date accessed: 1/7/11

<http://2010.census.gov/news/releases/operations/cb11-cn43.html> Date accessed: 8/30/11

# Las Vegas, Nevada

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## Conservation Efforts

### Programs and Rebates

- Water Smart Landscapes Rebate—An upgrade of existing grass to water-smart landscaping will receive a rebate of up to \$1.50 per square foot of grass converted to xeriscape.
- Pool Cover Coupons—SNWA offers 50 percent off the cost of a pool cover up to \$50 on a solar cover and up to \$200 on a permanent pool cover.
- Water Smart Car Wash—Uses water that is recycled on-site or sent to a water treatment facility where it is treated and sent back to Lake Mead.
- Rain Sensor or Smart Irrigation Controller Coupon
- Indoor Water Audit and Retrofit Kit—Program for residential customers.
- Water Efficient Technologies—Program for commercial, institutional, and industrial customers with both menu conservation items with established savings (such as High Efficiency Toilets and Urinals, showerheads, artificial turf, cooling tower retrofits, and ice makers) and a custom program track for innovative technologies where savings are based on measured performance.
- Water Smart Contractor—Program lists specially-trained contractors and landscapers throughout the valley who agree to provide water-efficient landscaping and irrigation design.
- Inclining Conservation Rate structures for all purveyors.

## Education and Outreach

- Promoted conservation goal of 199 gpcd by 2035.
- Conservation Helpline—For requesting information and reporting of water waste in all jurisdictions.
- School programs
- Water Smart Home—The Water Smart Home program promotes water efficiency by requiring homes built through the program to include water-smart landscaping and water-efficient appliances.
- Private-public partnership—Water Conservation Coalition—This is a group of local business and community leaders that speaks to civic organizations, executes conservation projects, etc.
- Demonstration gardens—Provides ideas for water-efficient landscaping.
- Template landscape designs
- Landscape training for the public and irrigation professionals
- Water Upon Request—partnership program where participant restaurants only serve water on request.
- Linen Exchange program—partnership program where hotels exchange linens on third day of guest's stay.
- Plant labeling program/plant list
- Find Leaks—Tips to find leaks inside or outside the home.
- Water Waste Class—The Las Vegas Valley Water District offers a free Curbing Water Waste class throughout the year to help customers identify and correct various water-waste issues on their property.
- Television programming “Water Ways”, commercial content promoting watering restrictions.

## Ordinances

For properties built after 2003, prohibition of front-yard turfgrass and all turf at most Commercial and Institutional customers.

Turf in side and backyards of single-family homes limited to 50 percent of the area or 100 square feet whichever is greater. Total in side and backyard also limited to 5000 square feet regardless of size of landscapeable area.

Homeowner Associations are prohibited from restricting property owner's installation of water smart landscape or from changing from turf to water efficient landscaping.

Single-family customers limited to ornamental water features of no more than 25 square feet, otherwise prohibited. Fountains and water features restricted at commercial properties.

Seasonal day-of-week and time of day watering restrictions that are permanent, not tied to a drought stage.

Prohibition of runoff and overspray

Condition of Service water waste restrictions with fees for single-family customers ranging from \$80 for first offense up to \$1280 for subsequent offenses. Higher fees for larger services. Fees assessed to water bill.

Golf Course water budgets

## Savings Reported

- Since 2002 when the drought response plan was first developed, Southern Nevada has reduced its gpcd demand 29 percent from 314 gpcd to 240 gpcd in 2010 (gallons per capita per day). While this reduction in water use can be attributed to community conservation efforts, recent economic conditions also may be a factor in the gpcd reduction.
- The landscape conversion rebate program has cumulatively saved over 50 billion gallons (153,642 acre-feet) of water from 2000 to date. Each square foot of lawn replaced saves roughly 55.8 gallons annually.
- Since inception, approximately 11,071,250 square feet of pool cover have been rebated through the pool cover rebate program. SNWA estimates that pool cover rebates have achieved an approximate savings of more than awarded to date through mid-December 2007 achieve an approximate saving of more than 1.3 billion gallons (4,118 acre-feet) in the Las Vegas Valley.
- Conservation Plan: covering 2009–2013.  
[http://www.snwa.com/assets/pdf/about\\_reports\\_conservation\\_plan.pdf](http://www.snwa.com/assets/pdf/about_reports_conservation_plan.pdf)

## Supply Sources

Southern Nevada gets nearly 90 percent of its water from the Colorado River. The other 10 percent comes from groundwater that is pumped out through existing wells within Clark County. Due to concerns about the reliability of the Colorado, the Southern Nevada Water Authority is pursuing ways to diversify its supply portfolio.

## References

<http://www.lvvwd.com/conservation/conservation.html>

Date accessed: 1/5/11

<http://www.westernresourceadvocates.org/media/pdf/Smart%20Savings%20Water%20Conservation.pdf>

Date accessed: 1/11/11

[http://www.snwa.com/assets/pdf/wr\\_plan.pdf](http://www.snwa.com/assets/pdf/wr_plan.pdf)

# Los Angeles, California

## Conservation Efforts

### Programs and Rebates

- High Efficiency Clothes Washers—\$300 Clothes washers must have a water factor of 4.0 or less.
- Residential Drought Resistant Landscape Incentive Program—\$1 per square foot.
- High Efficiency Toilets—\$100 for upgrading 1.6 or greater gallons per flush toilets to 1.28 gallon models or less.
- Weather-Based Irrigation Controllers—\$200 per controller for less than one acre of irrigated landscape; \$25/station for 1 acre or more of irrigated landscape.
- Rotating Nozzles—\$8 per nozzle (must purchase a minimum of 25 nozzles to qualify for a rebate).
- Small Business Direct Install (SBDI) Program.
- Large Rotary Nozzle Retrofit—\$13/head (8 head minimum).
- Ultra Low Water Urinal— retrofit with 0.0–0.125 gpf urinal replacing  $\geq 1.5$  gpf urinal \$500, replacing  $< 1.5$  gpf urinal \$250.
- Free showerheads and aerators
- Water Conservation Technical Assistance Program (TAP)—The Technical Assistance Program (TAP) is a financial incentive program offering commercial, industrial, institutional, and multifamily residential customers in Los Angeles up to \$250,000 for the installation of pre-approved equipment and products, which demonstrate water savings.
- Innovative Conservation Program—The ICP provides funding to promote new innovative devices, technologies and strategies that save water, energy and embedded energy and reduce urban runoff to help achieve regional water supply reliability within Metropolitan’s service area.
- Enhanced Conservation Program
- Scattergood Seawater Desalination Pilot Project—The Los Angeles Department of Water and Power (LADWP) is actively pursuing alternative water Supply Sources including conservation, water recycling, ground water storage, and water transfers. Seawater desalination may be one of the long-term water supply resources considered by LADWP in the future.
- Water Savings Performance Program—The program is designed to provide financial incentives to commercial, industrial, institutional and higher density landscape properties through two different conservation options.

### Education and Outreach

- Online Water Efficiency Guide for the Home and for the Business
- A 10 Step Water Conservation Plan for Your Business—This page outlines a 10-step approach to a Water Conservation Program for Businesses. These basic guidelines have been proven essential to a successful conservation effort.
- Conservation Tips for Your Home—Ways to Save Indoors and Outdoors.
- Times in Education Program—The curriculum for grades 4–12 include new lessons on water Supply Sources, water conservation, along with existing lessons on energy Supply Sources, fossil fuels, renewable energy, energy efficiency, air quality and water conservation.

### Ordinances

Water Conservation Ordinance

<http://www.ladwp.com/ladwp/cms/ladwp012434.pdf>

Retrofit on Resale Ordinance

<http://www.ladwp.com/ladwp/cms/ladwp001225.jsp>

High Efficiency Plumbing Fixture Ordinance

<http://www.ladwp.com/ladwp/cms/ladwp013145.pdf>

Water Efficiency Requirements Ordinance

[http://clkrep.lacity.org/onlinedocs/2009/09-0510\\_ord\\_180822.pdf](http://clkrep.lacity.org/onlinedocs/2009/09-0510_ord_180822.pdf)

## Savings Reported

- Metropolitan’s regional Save A Buck (Multi-Family) program extends rebates to multi-family dwellings. More than 40,000 rebates were issued fiscal year 2008/09 for high-efficiency toilets and washers for multi-family units within Southern California. Metropolitan has provided nearly \$7.5 million in fiscal year 2008/09, resulting in annual water savings of 1,700 acre-feet.
- The majority of this year’s commercial conservation activity came from Metropolitan’s regional Save A Buck program (Commercial). Though budget limitations required Metropolitan to suspend the program 10 months into the fiscal year, the Save A Buck program provided about \$8.8 million in rebates for about 145,000 device retrofits and water savings of about 3,600 acre-feet.
- Metropolitan’s new region-wide residential program SoCal Water\$mart completed its first year of operation. Rebate activity in this program exceeded expectations as many residential customers became increasingly aware of the financial incentives available to them to help offset the purchase of water-efficient fixtures. Metropolitan issued a record 54,000 rebates for residential fixtures totaling \$10 million in fiscal year 2008/09, resulting in approximately 2,300 acre-feet of water to be saved annually.
- LADWP currently operates several water recycling projects in the city, from the San Fernando Valley to the Harbor area, and is developing several others. Los Angeles has used recycled water since 1979 for irrigation and industrial purposes.

- By connecting the Valley power plant to the City’s “purple pipe” network, the LADWP will save about 684 million gallons of purified and treated water per year—enough drinking water for up to 4,200 households.
- In a normal year, approximately one-third of the rain that falls within the San Fernando Basin is retained within the basin as recharged groundwater. A substantial amount of that water is conserved through facilities which allow percolation of the water into the groundwater basin for future withdrawal and use.

## Supply Sources

In 2009–2010, approximately 36 percent of the water supply was from the Los Angeles Aqueducts, 14 percent from local groundwater, 48 percent from Metropolitan Water District, and 1 percent from recycled water. Colorado River supplies, State Water Project supplies, In-Basin Storage, Outside-Basin Storage, and Water Transfers together comprise Metropolitan’s total system water Supply Sources.

## References

<http://www.ladwp.com/ladwp/cms/ladwp001257.jsp>  
Date accessed: 1/3/11

[http://www.mwdh2o.com/mwdh2o/pages/yourwater/SB60/archive/SB60\\_2010.pdf](http://www.mwdh2o.com/mwdh2o/pages/yourwater/SB60/archive/SB60_2010.pdf)  
Date accessed: 1/3/11

# Mesa, Arizona

## Conservation Efforts

### Programs and Rebates

- Grass to Xeriscape Rebate—When 500 square feet or more of established grass is removed and replaced with a water-thrifty landscape the customer will receive a \$500 rebate from the City of Mesa.
- Multi-Family Property Program—By request, the City will work with managers and/or owners to review onsite water use, identify water saving options, and construct a cost/benefit analysis. Conservation staff can provide the customer with tools to enable them to determine the best ways to save money on the water and wastewater portion of their utility bill.
- Residential Audit Program—Mesa provides free self audit kits for homeowners upon request, in addition to information that helps residents understand how to read their water bill, water meter, and determine where water might be wasted.
- Innovative Water Management Award—If the customer is an industrial, commercial, or institutional water customer in Mesa that has shown a significant long-term reduction in water consumption, they may be eligible to receive the Innovative Water Management Award. For those businesses who can use a little help getting started on the water conservation path, the Conservation staff provides the tools necessary to save water and money.
- Water Budgeting Program—Mesa provides outreach to businesses and multifamily communities to show how saving water can help reduce costs. Staff works with managers and/or owners to review on-site water use, identify water saving options, and construct a month-by-month outdoor water budget. City departments and the Arizona Department of Transportation also participate in this program.

## Education and Outreach

- As a member of Arizona Municipal Water Users Association, Mesa participates in the “Water—Use It Wisely” messaging campaign, SmartScape training program, outreach at tradeshow and conferences, and distribution of AMWUA brochures, such as “Landscape Plants for the Arizona Desert” and “Watering by the Numbers.”
- Email subscriptions—A Landscape Watering Reminder email service is available through the city that advises subscribers on watering frequencies based on current weather conditions. There are currently over 1,200 subscribers.
- High Water Use Action Plan—A guide to help the customer understand their water bill and read their water meter
- Pool leaks and conservation tips
- Programs for Schools—The curriculum includes concepts on water resources, water treatment, water conservation, and the importance of making responsible decisions relating to water use.
- Rainwater harvesting information
- Conservation publications
- Xeriscape Demonstration Garden—The city partners with Mesa Community College’s main campus and Red Mountain campus to maintain a demonstration garden that includes interpretive signs and displays featuring low-water-use plants and desert landscape techniques.
- Landscaping Workshops and Presentations—Mesa offers free water conservation and landscape classes for homeowners (12 per year) as part of its “Living Green Workshop Series: Earth Friendly Advice for Home and Garden.” Classes are advertised in the utility bill newsletter, in The Arizona Republic, and press releases.

## Ordinances

Water Conservation Program—Ordinance No. 21  
<http://www.mesawater.org/pdf/Ordinance21.pdf>

## Savings Reported

- The city of Mesa reduced its gallons per capita per day water use from 2003–2008 across all metrics: single-family residential (-23.7 percent change), system-wide potable (-8.9 percent change), and system-wide total (-2.9 percent change).
- The city of Mesa provided 107 Xeriscape rebates between 2007 and 2009. Preliminary data from the homes suggest an average savings of approximately 19,000 gallons per home per year, a 13 percent reduction in household water use. Extrapolating to all homes in the program and the 113,420 square feet of turf removed, Mesa estimates this program saves 2,039,000 gallons of water annually.
- Mesa’s water conservation staff provides 5–10 homeowner association water audits each year. In one example, an HOA with 19 acres of turf reduced consumption postaudit by 21 million gallons, generating a savings of \$100,000 in water costs for the association. During the audits, HOAs are also encouraged to not over-seed their common areas during the winter. Using conservative assumptions, the city estimates this specific measure to save more than 30,000,000 gallons annually, and has cumulatively saved more than 242,000,000 gallons since program inception.

## Supply Sources

Mesa relies on three drinking water sources: Salt and Verde River water from Salt River Project (SRP), Colorado River water from Central Arizona Project (CAP), and ground water from 31 wells located across the City. In 2008, 42 percent of the water used in Mesa came from CAP, 53 percent from SRP and the remaining five percent from the City’s wells. Population in 2009: 462,300

### References

<http://www.westernresourceadvocates.org/azmeter/mesasumm.pdf>

<http://www.westernresourceadvocates.org/azmeter/report.pdf>

# New York, New York

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## Conservation Efforts

### Programs and Rebates

- Long-Term Watershed Protection Program—Maintains and protects the high quality source of drinking water for nine million water consumers representing nearly half the state's total population.
- Toilet Rebates—The New York City Toilet Retrofit Rebate Program offers a financial incentive to home and multi-family building owners to replace old toilets which used five gallons per flush (gpf) with modern, low-flow toilets which use less than 1.6 gpf (1994–1997, 1.3 million toilets replaced, 70–90 MGD savings.)
- Leak Notification Program—a new initiative that allows DEP to proactively alert customers to potential water leaks on their property.
- Comprehensive Water Reuse Program—NYC Water Board offers a rate reduction for buildings that recycle much of their water and reuse it.
- Open Hydrant Emergency Response—DEP's BWSO has a field team dedicated to monitoring unauthorized fire hydrant use and closing full flowing hydrants, particularly during the summer peak days.
- Water Saving Kits and Residential Surveys—DEP continues to offer free water saving kits to homeowners as well as free walk-through surveys of private homes to identify leaks and install low-flow showerheads, faucet aerators, and toilet displacement bags.

## Education and Outreach

- Water Conservation Seminars for Building Managers—DEP and Housing Preservation and Development co-sponsor a series of free, three-hour seminars on water conservation, water/sewer billing and the transition to metered billing. Seminar presentation available at [http://www.nyc.gov/html/dep/html/ways\\_to\\_save\\_water/wcclasses.shtml](http://www.nyc.gov/html/dep/html/ways_to_save_water/wcclasses.shtml)
- Publications—The wide array of DEP environmental education related material will continue to be produced and updated, as necessary, for distribution to students and teachers at public events, and on the DEP website.
- Repair Your Leaking Toilets brochure
- Residential Water Use fact sheet; Leaks and Their Cost fact sheet
- Water Saving Tips For Lawns; Seven Steps to a Water-Saving Garden
- List of high-efficiency clothes washers

## Ordinances

Fixture standards increase to WaterSense level July 1, 2012.

Energy and water benchmarking required for buildings 50,000 sf or greater.

## Savings Reported

- Overall, New York's conservation efforts resulted in a drop in per capita water use from 195 gallons per day in 1991 to 126 gallons per day in 2009.
- The city replaced 1.3 million inefficient toilets between March 1994 and April 1997, saving an estimated 70 to 80 mgd. Customers realized 20 to 40 percent savings in total water and wastewater bills.
- The leak-detection program saved 30 to 50 million gallons per day (mgd) in its early years and continued to help reduce losses. In 1996, leak detection and repair efforts saved approximately 11 mgd. Savings from metering total more than 200 mgd at a cost of \$150 million.
- New York City performed more than 200,000 homeowner inspections, resulting in the elimination of more than 4 mgd in leaks.
- DEP has built or will build \$3.7 billion in CSO reduction and other CSO-related cost-effective grey infrastructure projects. These projects will reduce CSOs by 8.3 bgy and will result in less floatables and higher dissolved oxygen levels to improve water quality.
- In 1993, DEP began installing locking caps on approximately 40 percent of the fire hydrants in the city.
- In 1985, The New York City Water Board established a requirement of metering as a condition of receiving water and sewer service from the city. Penalties were established for failing to meter and in 1999 and 2000 DEP issued notices to unmetered properties requiring them to either install a meter or be subjected to a 100 percent surcharge on their annual flat-rate water/sewer bill. Initially, about 35,000 properties were surcharged but that number decreased to about 8,200 by the end of 2009.

## Supply Sources

The Croton System normally provides approximately 10 percent of the City's daily water supply and can provide substantially more of the daily water supply during drought conditions. The Catskill System watersheds occupy sparsely populated areas in the central and eastern portions of the Catskill Mountains and normally provide approximately 40 percent of the City's daily water supply. The Delaware System, located approximately 125 miles north of lower Manhattan, normally provides approximately 50 percent of the City's daily water supply. In addition, wells in Queens can supplement the City's water supply.

## References

<http://www.nyc.gov/html/dep/html/home/home.shtml>

Date accessed: 1/5/11

[http://www.epa.gov/WaterSense/docs/utility\\_conservation\\_508.pdf](http://www.epa.gov/WaterSense/docs/utility_conservation_508.pdf)

Date accessed: 1/10/11

<http://www.nyc.gov/html/dep/pdf/wsstate09.pdf>

Date accessed: 3/8/11

# Phoenix, Arizona

## Conservation Efforts

### Programs and Rebates

- As required by the 1980 Arizona Groundwater Code, the Arizona Department of Water Resources periodically sets conservation goals for each water provider with a timeframe to reach required water use reductions. Through good management practices and water conservation and efficiency efforts by our customers, Phoenix has been able to achieve and surpass its goal without financial incentives.
- Residential Interior Retrofit Program—Approximately 300 hundred low-income homes are retrofitted annually for high-efficiency toilets, showerheads and other water conservation technologies. At the time of the retrofit, the irrigation system and controllers are evaluated for leaks and recommendations are made for repairs. Homeowners are also provided landscape and irrigation materials in English and/or Spanish.
- Conservation Credits—Credits toward Water Resource Acquisition Fees are available to new residential and commercial development when it is demonstrated that 1) conservation savings exceed current water use standards or norms, 2) structural efficiency is enhanced, and 3) conservation savings are long-term.
- Water–Use It Wisely and Other Water Conservation Promotional Programs and Outreach—As a member of Arizona Municipal Water Users Association (AMWUA), Phoenix participates in messaging efforts such as Water–Use It Wisely; the coordinated promotion of professional landscape training programs; and messaging and publicity through the AMWUA website, including promotion of the EPA WaterSense program. Participates in the City’s Channel 11 WaterWorks program promoting water efficiency and drought preparation. The Water Resources and Development Planning group created a Web site featuring conservation for home and commercial use, and information about water resources and supplies.
- Tradeshows, Conferences, and Events—As a member of AMWUA, participates in outreach at trade shows and conferences, home and garden shows, and other public events. Participates in City sponsored community and public/private events, such as Keep Phoenix Beautiful Earth Day, the Statewide Water Conservation Information Sharing Group, and other large and small events.
- Customer Assistance Materials—As a member of AMWUA, distributes educational brochures, booklets, and resource materials such as: Landscape Plants for the Arizona Desert; Watering by the Numbers; Xeriscape: Landscaping with Style in the Arizona Desert; Guidelines for Drip Irrigation System; Home Water Audit Guide; Facility Manager’s Guide to Water Management; and other materials. Materials are distributed through nurseries, customer pay stations, by phone and on the Web site. As a new service to customers, including retail outlets, brochures can be ordered in quantities directly from Web site.
- Smartscape Training Program—As a member of AMWUA, participates in the sponsorship, implementation and promotion of the Smartscape training program for landscape professionals and participates in sponsoring, planning, staffing, and providing speakers for local landscape professional conferences. Phoenix also participates in the Arizona Nursery Association Southwestern Horticulture Annual Day of Education for landscape professionals.

### Education and Outreach

- As a member of Arizona Municipal Water Users Association, Phoenix participates in the Water–Use It Wisely messaging campaign, SmartScape Training Program, outreach at tradeshows and conferences, and the distribution of AMWUA brochures, such as “Landscape Plants for the Arizona Desert” and “Watering by the Numbers.”
- Classroom Programs—Phoenix provides Project WET training for classroom teachers in grades preschool through 12. Four curriculum guides are offered, including two with foci on the Colorado Watershed, which covers most of Arizona, and Arizona water conservation. The city also provides

assembly programs and classroom materials about water conservation, water quality, natural resources, and the environment.

- Water Tips for home, business, and school
- Water News

## Ordinances

Water Resources Acquisition Fee Ordinance  
<http://www.codepublishing.com/az/phoenix/html/Phoenix30/Phoenix30.html#30>

## Savings Reported

- The City's Average overall per-capita water use has declined more than 25 percent since 1980. This achievement is the result of customer response to conservation messages, more efficient construction and plumbing techniques, and widespread usage of less water-intensive landscaping.
- Educational Materials—In 2009, 42,806 pieces of school materials were supplied to students.
- Retrofit Program—Residential Interior Retrofit Program—Approximately 300 hundred low-income homes are retrofitted annually for high-efficiency toilets, showerheads and other water conservation technologies. In 2008, 1.13 toilets, 0.37 faucets, 1.37 aerators and 0.71 showerheads were replaced per home. In addition, 89 percent of homes received irrigation system advice.
- Conservation Credits—Implementation of this program has been delayed due to State law establishing a moratorium on changes to impact fee programs.
- Water—Use It Wisely and Other Water Conservation Promotional Programs and Outreach.
- In 2009, this effort included numerous television advertisements on local TV affiliate KPNX, three live segments on local TV news programs, streaming video on azcentral.com, advertisements in the Arizona Republic newspaper, including banner leads on the weather and news pages.
- Water bill messages sent to 350,000 residential accounts promoting water efficiency.
- Tradeshows, conferences, and events—2009: 7 major community events (>5,000 attendance); 14 small community events (<5,000 attendance), 11 community presentations; EPA Fix A Leak Week Event (2009 and 2011)
- Customer assistance materials—The Water Conservation Office distributed 5,464 pieces of literature and 300 DVDs in 2009.
- Smartscape training program—In 2009, 60 landscape professionals were trained.
- Over 90 percent of the water “reclaimed” from Phoenix’s wastewater treatment facilities is reused.
- In cooperation with other local agencies, the city engages in groundwater recharge and groundwater savings activities. Groundwater usage has been reduced from approximately 35 percent of the Phoenix water supply in 1984 to only 3 percent today in a normal supply (non-drought) year.

## Supply Sources

Water comes from one of these four main categories of supply: surface and groundwater from the Salt River Project (54 percent); water from the Colorado River, delivered through the Central Arizona Project (36 percent); ground water pumped from the City's wells (3 percent); and reclaimed water (7 percent). The CAP system includes a series of pumps and an integral storage reservoir at Lake Pleasant. The system is capable of carrying up to 1.8 million acre-feet each year. The Salt River Project (SRP) conveys surface water from the Verde River and Salt River watersheds that lie to the north and east of Phoenix. The SRP system is composed of six dams, 1,300 miles of canals and 255 high-capacity wells. Phoenix water treatment plants receive about 20 percent of the roughly one million acre-feet of water delivered each year by SRP to the metropolitan area.

## References

<http://phoenix.gov/waterservices/wrc/index.html>  
Date accessed: 2/28/11

Communication with Girard Silvani. 5/2/11

# Portland, Oregon

## Conservation Efforts

### Programs and Rebates

- Toilet leak detection tablets
- Toilet fill cycle diverter
- Toilet Tank Bank—The Toilet Tank Bank helps toilets that use 3.5, 5, or more gallons per flush to be more efficient. The bag takes up space in the tank, so that less water is needed to refill the tank after each flush. Estimated savings are 1/2 gallon per flush (gpf).
- Housing Authority of Portland toilet replacement
- WaterSense toilet rebate program
- Bathroom faucet aerator—The current plumbing code for residential bathroom faucets is a flow rate of 2.5 gallons per minute (gpm). By installing this high-efficiency aerator, water use can decrease to 1.0 gpm.
- Kitchen faucet aerator—The current plumbing code for residential kitchen faucets is a flow rate of 2.5 gallons per minute (gpm). By installing this low-flow aerator, water use can decrease to 1.5 gpm.
- High-Efficiency showerhead—The current plumbing code for showerheads is a flow rate of 2.5 gallons per minute (gpm). This high-efficiency model uses only 1.5 gpm and still delivers good pressure.
- 5-Minute shower timer
- Home Water Audit Kit—The kit contains tools to help determine how much water a current toilet, showerhead, kitchen and bathroom faucets use, and whether installing new, high-efficiency fixtures would help save water and money. Kit contains a flow bag, drip gauge, toilet leak detection tablets, and a toilet tape measure.
- Watering gauges

## Education and Outreach

- Several community events are offered each year, some in a combined city-bureau effort, called Your Sustainable City; some in partnership with the Regional Water Providers Consortium, of which Portland is a member ([www.conserveh2o.org](http://www.conserveh2o.org)).
- Children’s Clean Water Festival—over 1,400 Portland metro area 4-5th graders participate in classroom presentations and exhibits in a one-day event that Portland helps organize.
- 2010 Summer Radio Program—1,440 radio spots offering peak season water tips on 20 stations, reaching 1.8 million listeners. The Portland Water Bureau is turning this over to the Regional Water Providers Consortium beginning winter 2011.
- Brochures and fact sheets on water conservation.
- How-to Videos—Step-by-step instructions on finding leaks and saving water indoors and outside.
- Find and fix a leak promotion
- School Assembly Program—This interactive science-based show for grades 3–5 about the importance of using water wisely highlights the unique and magical properties of water, and encourages students to use it wisely.
- K-8 lesson plans
- Community presentations—The Portland Water Bureau provides indoor- and outdoor-focused
- Water conservation information to homeowners, commercial property managers, landscape professionals, gardeners, and children at community events and through presentations.
- BIG (Business, Industry & Government) Program—Staff from the BIG program provide onsite water surveys that help customers better manage their water use.
- Residential Water Assessments—The Portland Water Bureau provides a limited number of free home water assessments to single-family

residential customers. A professional auditor from the Energy Trust of Oregon will visit the customer's home and install water conservation devices, as well as energy-saving light bulbs.

- Demonstration garden

## Ordinances

None reported.

## Savings Reported

- In 2009, 503 toilet rebates were disbursed. Based on information provided by rebate customers, it is estimated that approximately 4 million gallons of water will be saved per year.
- In partnership with the Energy Trust of Oregon and other local utilities, 180 households received assessments and devices in 2009–2010.
- The Portland Water Bureau provided 250 WaterSense-labeled flapperless 1.28 gallon-per-flush toilets to the Housing Authority of Portland (HAP) for installation in January of 2009. The new toilets replaced older toilets that flushed more than 1.6 gallons-per-flush. It is estimated that water savings from this effort will be similar to the previous year's 13 percent reduction in water use.
- Low Income Housing Providers Toilet Replacement Grant Program: Beginning in 2010, a toilet replacement grant program began for those who provided housing to low income residents in Portland. 146 toilets were replaced with WaterSense HETs in 2010 and more are scheduled for replacement this year.
- The Water Bureau distributed 2,285 kits (fill cycle diverters, leak detection tablets, 1.5 gpm kitchen aerators, 1.0 bathroom aerators, hose nozzles, seeds, and brochures) in our Smart Drips program, which partners with the Bureau of Transportation's Smart Trips Program, targeting various neighborhoods in Portland each year, delivering all kits by bicycle.
- From May through September, 4,520 radio spots aired on 21 stations. The radio campaign reached 1.8 million listeners weekly during the 5-month campaign.
- Business, Industry, and Government Program: Portland BIG staff provides on-site water management surveys and follow-up reports to industrial, commercial, and institutional customers of the Portland Water Bureau. In 2009–2010 over 40 site surveys were started, with an estimated 6.4 million gallons saved each year by customers who requested this service and made changes to their water use.

## Supply Sources

Customers of the Portland Water Bureau receive their water from one of two sources: The Bull Run watershed, a surface water source of water or the Columbia South Shore Well Field, a groundwater source. The Bull Run watershed acts as Portland's primary source of tap water, and the Columbia South Shore Well Field acts as a backup during turbidity events or other supply problems in the watershed. It also acts as a seasonal supply augmentation source. The Columbia South Shore Well Field can provide 82–102 million gallons a day of water depending on the length of the pumping duration.

## References

<http://www.portlandonline.com/water/index.cfm?c=29334>

<http://www.portlandonline.com/water/index.cfm?c=51028&a=270585>

Date accessed: 1/11/11

Communication with Judi Ranton. 5/2/11

# San Antonio, Texas

## Conservation Efforts

### Programs and Rebates

- Watersaver Landscape Rebate—Rebate of up to \$300 for landscaping a yard with low-water plants and taking other steps to conserve water.
- Residential Irrigation Design Rebate—A maximum of \$400 for any combination of options, depending on the number of zones converted or capped, and if irrigation remains at or below a personalized schedule for water use over a one-year period.
- Free Water-efficient toilet—SAWS will give up to two new water-efficient toilets free.
- Wash Right Washing Machine Rebate—\$100 rebate (ended Dec. 2010).
- Hot-Water-On-Demand System Rebate—\$150 rebate on a SAWS-approved hot-water-on-demand system.
- Commercial Large Scale Retrofit Rebate—Rebate of up to 50 percent of the installed cost of new water-saving equipment.
- Commercial Irrigation Consultation & Design Rebate—SAWS conservation consultants will work with an irrigator to help identify design flaws in the irrigation system that, if changed, can result in water savings and healthier landscapes.
- Commercial Cooling Tower Audit—The free audit looks for more efficient ways to use water for cooling.
- Commercial Toilet Retrofit Program—Replace old high water use residential and industrial style toilets with new high-efficiency toilets—provided by SAWS for free.
- Certified WaterSaver Program—Car Washes—Today's WaterSaver Car Wash Program results in real water savings, protects water quality, provides recognition and financial incentives for program participants and works with local nonprofits seeking to earn money for worthwhile projects.

- Certified WaterSaver Program—Restaurants—Retrofitting a business with water-conserving products can lower the operating costs.

### Education and Outreach

- Online list of low water plants and water saving tips.
- 7 Steps to Xeriscaping—Seven step guide to planning a water-saving landscape.
- Leak identification—Information on how to identify and repair water wasting leaks in the home.
- Lawn watering rules and tips—Frequently asked questions and about watering rules and tips for the lawn.
- Rain harvesting—Ideas to put collected rainwater to good use.
- Water Saver Lane—WaterSaver Lane was created to celebrate the work of the EPA-sponsored Lawns and Environment Committee, which produced new guidelines for an environmentally-responsible natural landscape. The exhibit also shows the versatility of a low-water-use landscape in San Antonio.
- WaterSaver newsletter—weekly publication that provides information on how to create landscapes that use less water.
- Conservation workshops, seminars, lectures and other functions are offered.

### Ordinances

Conservation Ordinance: [http://www.saws.org/conservation/ordinance/Ch34\\_Ordinance\\_2009.pdf](http://www.saws.org/conservation/ordinance/Ch34_Ordinance_2009.pdf)

### Savings Reported

- The San Antonio Water System's (SAWS) water conservation efforts have saved more than 175 billions gallons of water equating to over \$500 million in savings. The utility built on this success by incorporating WaterSense into their water-efficiency programs.

- In 2007, SAWS officially launched its “Kick the Can” toilet giveaway program, which offers customers up to two free WaterSense labeled toilets per household. The program is funded through SAWS’ tiered rate structure. A percentage of the revenue from the highest tier is dedicated to a general conservation fund that supports the program. In less than a decade, SAWS has seen its retrofits increase six-fold, climbing from 5,000 in 1998 to more than 30,000 toilets in 2007. On the commercial side, SAWS has performed 60,000 apartment retrofits since 1998 and has now retrofitted every school, college, and university in the San Antonio area. Additionally, 1,200 restaurants and three hotels have participated in the “Kick the Can” program.
- 50-Year Water Management Plan—By leveraging the utility’s successes in water supply conservation, development, management and policy, SAWS have extended the pledge to help communities flourish—even in times of drought—to 2060 and beyond. The goal is to effectively manage existing supplies, while developing new water sources for the future.
- The AT&T Center—home to the Rampage hockey team, Silver Stars, the San Antonio Stock Show & Rodeo and San Antonio Spurs—unveiled a \$190,000 upgrade, due to a SAWS grant to retrofit bathrooms with water-saving fixtures and use recycled water from the cooling towers. Estimated water savings are more than 13 million gallons a year.
- SAWS is the first major utility in the nation to sell methane gas generated while treating the city’s sewage. Capturing and selling methane gas is good for San Antonio’s air quality and puts this natural, renewable energy resource to work for San Antonio. SAWS will sell the gas to Ameresco, which will resell the gas on the open market. SAWS will receive a 12 percent royalty from gas sales—estimated at \$200,000 to \$250,000 per year—benefiting ratepayers through reduced operating costs.
- Recycled water has become an economic resource for the San Antonio community. Seven years after the nation’s largest direct recycled water program began pumping treated wastewater as a new

source of water to businesses and institutions, 10 billion gallons (and counting) has been delivered through SAWS’ recycled water network to Toyota, Microsoft, USAA, the Alamo, Lackland Air Force Base, Fort Sam Houston, Brooks City-Base, Trinity University, UTSA and municipal golf courses. The recycled water program provides an easily accessible and readily available water supply attractive to businesses looking for a new location.

- Residents in some of the city’s oldest neighborhoods were greeted by SAWS one fall morning for their own Conservation Makeover: Home Edition. SAWS plumbers swapped out water-guzzling toilets and showerheads with highly efficient ones, fixed leaky pipes and made other minor plumbing repairs. More than 120 customers received full service from SAWS, which also partnered with CPS Energy to supply residents with energy-efficient light bulbs and water heater blankets. This conservation program estimates an annual water savings of 7.5 million gallons from these homes.

## Supply Sources

Currently more than 90 percent of drinking water used by SAWS customers comes from the Edwards Aquifer. Overall, the aquifer makes up only 61 percent of the total water supply, which includes both potable and non-potable sources.

## References

<http://www.saws.org/conservation/>

Date accessed: 12/29/10

[http://www.saws.org/our\\_water/waterquality/Report/docs/2010\\_WaterQualityReport.pdf](http://www.saws.org/our_water/waterquality/Report/docs/2010_WaterQualityReport.pdf)

Date accessed: 12/29/10

[http://www.saws.org/who\\_we\\_are/Annual\\_Reports/reports/2008/SAWS\\_AnnualReport2008-full.pdf](http://www.saws.org/who_we_are/Annual_Reports/reports/2008/SAWS_AnnualReport2008-full.pdf)

Date accessed: 1/3/11

<http://www.epa.gov/WaterSense/partners/saws.html>

# San Francisco, California

## Conservation Efforts

### Programs and Rebates

- Residential Toilet Rebate—San Francisco single-family and multi-family and commercial businesses residents are eligible for cash rebates of up to \$125 per tank style toilet and up to \$200 per flushometer valve toilet when they replace their high-flow toilets (3.5 gpf or more) with High-Efficiency Toilet models that are 1.28 gpf or less. Rebates are no longer provided for 1.6 gpf toilets.
- Residential Clothes Washer Rebate—customers can receive a cash rebate of up to \$125 for the purchase of select high-efficiency clothes washers.
- The Direct Install Program—Includes a required onsite water efficiency site evaluation. A water conservation specialist will walk through the customer's home, and provide information on how water is used and point out inefficient plumbing fixtures and leaks that can increase water bills. Evaluators will also provide free high-efficiency showerheads, faucet aerators, toilet replacement parts and determine eligibility for toilet replacement. A licensed plumber will install toilets that qualify—free of charge.
- Commercial Clothes Washer Rebate—Up to \$200 per commercial high-efficiency clothes washer with a water factor of 4.5 or below. As of January 1, 2010, the SFPUC no longer rebates clothes washers with a water factor greater than 4.5.
- Commercial Urinal Rebate—San Francisco commercial businesses are eligible for cash rebates of up to \$200 per urinal when they replace their high-flow urinals (1.5 gpf or more) with High-Efficiency Urinal models that are 0.5 gpf or less.
- Rainwater Harvesting Program—While supplies last, San Francisco residents can purchase 60-gallon rain barrels and larger volume cisterns at steep discounts, compliments of the San Francisco Public Utilities Commission's (SFPUC's) Wastewater Enterprise.
- Large Landscape Grant Program—The SFPUC periodically offers grants to retail water service customers with 2.5 acres or more of irrigated landscape to help them use water more efficiently.
- Recycled Water Program—In 2004, the SFPUC contributed funds to the North San Mateo County Sanitation District towards the upgrade of their wastewater treatment plant to produce tertiary-level recycled water. This facility currently serves three golf courses, two of which are located partially in San Francisco. The use of recycled water at these locations replaces groundwater previously being used for irrigation.
- Groundwater Program—Delivers Sierra Nevada water from the Hetch Hetchy Reservoir, and runoff from protected local reservoirs, to our customers.
- Toilet Recycling Program—If a customer is planning to buy a new toilet they can now recycle their old one instead of sending it to a landfill.
- Automated Water Meter Program—In spring 2010, the SFPUC began the first phase of an Automated Water Meter Program, installing approximately 5,000 new meters. Over the next two years, the SFPUC will replace meters for each of its 175,000 retail customer accounts.

### Education and Outreach

- Free gardening classes and workshops
- The Water Saving Hero Campaign—highlights simple and effective steps Bay Area residents can take to conserve water now and for the future.
- Water resources links
- Water conservation publications
- Teaching materials and class presentations
- Direct mail—The Water Conservation section sends letters to the top 5 percent of water-users to improve water efficiency, alert them to the possibility of plumbing leaks, and offer free water wise evaluation. More than 2000 letters were sent.
- Newsletters—In 2008, the SFPUC also created a series of direct mail newsletters entitled "Water Conservation Starts with You." The newsletter series addressed the need to implement voluntary cutbacks in response to historic dry-winter conditions. The SFPUC mailed 340,000 newsletters to San Francisco residential households and 15,500 to commercial accounts, informing them of dry-year conditions, simple conservation practices and SFPUC conservation program incentives.

## Ordinances

Water Efficient Irrigation Ordinance  
<http://sfwater.org/index.aspx?page=452>

Green Landscaping Ordinance  
<http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances10/o0084-10.pdf>

## Savings Reported

- Over the reporting period from 2007–2010, San Francisco customers used an average of 68 million gallons per day (mgd). A little more than half the City's water use is residential, the majority for multi-family residences. In 2009–2010, residential per capita use was estimated to be approximately 50 gallons per capita per day, one of the lowest of any major urban area in California.
- The department provided 23,000 rebates for high-efficiency fixtures to residential and commercial customers, an increase of more than 50 percent since 2006. The SFPUC's conservation programs over the last three years have an estimated savings of 26,566 acre feet of water.
- Performed more than 2,500 residential and commercial water conservation site evaluations by in-house inspectors.
- Conducted 180 water efficiency evaluations for San Francisco Green Business recognition applicants.
- Developed a direct install program which, in the first six months alone, provided more than 900 high-efficiency toilets free to low-income residents.
- Launched a pilot Water Savers Program for commercial and industrial customers, estimated to reduce water use by approximately 566 acre feet.
- The SFPUC's combined water programs over the last three years have an estimated savings of 26,566 acre feet of water.
- Residential Water Wise evaluations provided over the last three fiscal years have an estimated savings of 5 acre feet of water.
- Over the reporting period, conservation staff conducted 1,619 single-family water wise evaluations, an estimated savings of 5 acre feet of water.
- The conservation section offers a variety of free conservation devices to customers during scheduled water wise evaluations, including reduced flow faucet aerators, 1.5 gpm shower heads,

garden spray nozzles, and toilet replacement parts such as flappers and fill valves. Together, installing one faucet aerator and one low-flow showerhead can result in an average combined household savings of 7,000 gallons per year. From July 2007 to June 2010 the SFPUC distributed a total of 99,007 water efficient devices to both residential and commercial sectors.

- Over the reporting period, 429 commercial Water Wise evaluations were conducted, representing an estimated savings of 564 acre feet of water.
- City departments were urged to reduce irrigated landscape use by 10 percent, encouraged to irrigate after dusk or before dawn to avoid excessive evaporation loss, and initiated regular maintenance to identify and repair leaks. Municipal departments reduced use in irrigated areas such as parks and center medians. Installation of turf ceased, instead native and climate appropriate plantings were utilized. Analysis of water consumption following the Mayor's Executive Directive shows that City departments met the savings goal and achieved a 10.8 percent reduction in water use, saving the city 733 acre feet of water.

## Supply Sources

For more than 75 years, San Franciscans have obtained all of their drinking water from local watersheds and the Hetch Hetchy Reservoir in the high Sierras. The Hetch Hetchy watershed, an area located in Yosemite National Park, provides approximately 85 percent of San Francisco's total water needs. Spring snowmelt runs down the Tuolumne River and fills Hetch Hetchy, the largest reservoir in the SFPUC system. Together the Alameda and Peninsula watersheds produce about 15 percent of the total water supply. The Alameda watershed, located in Alameda and Santa Clara Counties, contributes surface water supplies captured and stored in two reservoirs: Calaveras and San Antonio. The Sunol Filter Galleries located near the Town of Sunol, are a groundwater source supplying less than one percent of San Francisco's water. The Peninsula watershed in San Mateo County contributes surface water supplies captured and stored in lower and upper Crystal Springs and San Andreas Reservoirs and in two smaller reservoirs, Pilarcitos and Stone Dam.

## References

<http://www.sfwater.org/index.aspx?page=136>

# Santa Fe, New Mexico

## Conservation Efforts

### Programs and Rebates

- High-efficiency toilet (HET) rebates for residential or commercial—  
\$175 rebate for a high-efficiency toilet with an effective flush volume of 1.28 gallons or less.  
\$125, \$250, or \$500 rebate for a high-efficiency toilet with an effective flush volume of 1.28 gallons or less;  
\$125 for hotel/motel HET retrofits;  
\$250 for commercial tank type HET retrofits;  
\$500 for commercial flushometer valve HET retrofits.
- Water free urinal rebates—\$500 Rebate for a water free, waterless, or no-flush urinal.
- Clothes washer rebates—\$150 Rebate for a tier 3 high-efficiency clothes washer when replacing an existing front-loader \$350 Rebate for a tier 3 high-efficiency clothes washer when replacing an existing top-loader.
- Commercial process efficiency rebates—The Water Conservation Office offers rebates to commercial, industrial, and institutional customers for installing new equipment and processes that conserve water at existing facilities. The amount of the rebate will be based upon a calculation of the estimated amount of the potable water saved by the process upgrade at a rate of \$15,000 per acre foot or 50 percent of the installed cost, whichever is less.
- Irrigation efficiency rebates—Water customers will learn how to fine tune, upgrade, and maintain their in-ground irrigation system to be more efficient resulting in healthier plants and saved water.
- Water harvesting rebates—\$12, \$25, or \$50 rebate for the purchase of up to four rain barrels and receive a rebate:

\$12—50 to 99 gallon barrel;  
\$25 —100 to 199 gallon barrel;  
\$50 —200 to 499 gallon barrel; or  
\$0.25 per gallon capacity for the installation of a water harvesting system.

- The rebates offered by the City of Santa Fe's Water Conservation Office were suspended July 18, 2010.

### Education and Outreach

- Children's poster contest—Provides teachers the opportunity to discuss with their students the importance of conserving water.
- Just 4 Kids—Activities, fun facts, and games
- Children's Water Fiesta—Invites students in the 4th grade from throughout the area to gather to spend day learning all about water.
- Water saving tips and harvesting
- Water use calculator
- Water demonstration gardens
- Water-efficient landscaping and gardening
- Irrigation efficiency
- Information on grey water for landscapes

### Ordinances

Water Conservation Program Charge Ordinance  
<http://www.santafenm.gov/archives/156/2008-3.pdf>

Santa Fe Co. Growth Water Conservation Ordinance  
<http://www.santafecounty.org/userfiles/Water%20Conservation%20Ordinance.pdf>

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## Savings Reported

- A primary measure of Santa Fe's water conservation and drought management success is declining total annual water diversions (29 percent) to serve a growing number of customers (15 percent) since 1995.
- The annual water diversions totaled 9,086 acre-feet in 2009, compared with 12,737 acre-feet in 1995, while the number of customers served by Sangre de Cristo Water Division increased to an estimated 79,808 people in 2009, from an estimated 67,839 in 1995.
- Sangre de Cristo water customers reduced their water use by 42 percent from 1995 to 2009. Per person usage has dropped from 168 gallons per capita per day (gpcd) in 1995, to 98 gpcd by the end of 2009.

## Supply Sources

The Upper Santa Fe River Watershed provides up to fifty percent of Santa Fe's water. The Watershed provides water for approximately 30,000 households and businesses within the City of Santa Fe and surrounding communities. The municipal watershed comprises the upper 17,384 acres of the Santa Fe river basin. Two reservoirs hold approximately 4,000 acre feet, which is about one-third of the water used annually in the Santa Fe water system. The upper 10,000 acres of the municipal watershed are contained within the Pecos Wilderness Area. The lower 7,270 acres of the municipal watershed is dominated by ponderosa pine and piñon pine-juniper woodlands.

## References

<http://www.water2conserve.com/>

Date accessed: 2/25/11

# Seattle, Washington

## Conservation Efforts

### Programs and Rebates

- Multi-family toilet rebates—Building owners can receive a \$100 rebate towards the purchase and installation of each WaterSense-labeled high-efficiency toilet.
- WashWise washers in multifamily buildings—Rebates up to \$100 for the purchase of qualified WashWise machines in apartment and condo units or common area laundries.
- Sprinkler system rebates—Receive rebates for upgrading existing automatic underground sprinkler systems or installing a “smart” controller on a new system.
- Commercial flush valve toilets and urinals—\$100 to \$150 rebate per fixture for replacing older toilets and urinals with efficient models.
- Commercial laundry—\$300 rebates for efficient coin-op machines (Tier 2 and above) or up to 50 percent of large system improvements.
- Process water improvements—Rebates for up to 50 percent of costs for projects involving water-cooling of industrial processes.
- Other water use technologies—Rebates for up to 50 percent of project costs for projects meeting cost-effective criteria.
- Showerheads—Free units or \$5 rebate per WaterSense showerhead.
- Bathroom aerators—Free units or \$2 rebate per aerator that uses 1.0 gpm in multi-family buildings or 0.5 gpm in commercial buildings.
- Time-of-use data—Main water meter (commercial customers only)—\$250 for a building management system for tracking water consumption in real time.
- Conservation rates and system Improvements such as Reservoir-Covering, Meter Accuracy, Overflow and Leak reduction programs are not part of regional customer demand reduction pro-

grams, but these are included and funded by individual utility conservation efforts. Some individual utilities also have rainwater harvesting programs.

### Education and Outreach

- Smart Watering guide
- Online conservation resources
- Green Stormwater Infrastructure Information—Guidance for modest to grand transformations of Seattle’s urban landscape, creating green elements that welcome the rain—storing, draining, and cleaning it.
- RainWise tools
- Resources for Seattle teachers, youth, and community groups on resource efficiency
- Training and landscape outreach, including various forms of media and garden writer articles, and close collaboration with nurseries and landscape professionals. Outreach in Spanish and Cambodian languages have recently been added to the education effort.

### Ordinances

Environmentally Critical Areas Ordinance—to better protect wetlands, creek corridors and shoreline areas. [http://www.seattle.gov/dpd/Planning/Environmentally\\_Critical\\_Areas\\_Update/Overview/default.asp](http://www.seattle.gov/dpd/Planning/Environmentally_Critical_Areas_Update/Overview/default.asp)

### Savings Reported

- According to the Seattle Public Utilities’ website the average American uses around a hundred gallons of water a day. In the Seattle region, it’s less than 70 gallons a day, due to high-efficiency showerheads, toilets and clothes washers, and water-wise gardens.
- In 2009, Seattle’s regional water conservation program—including 17 surrounding water utility partners in the Saving Water Partnership—achieved an estimated 610,000 gallons per day

of annual savings. Since the beginning of the program in 2000, an estimated 9.0 million gallons per day (mgd) have been saved toward the cumulative 2010 target of 11 mgd.

- SPU supplied 47.3 billion gallons of drinking water in 2009, of which, 2.5 billion gallons were classified as leakage. The leakage rate system-wide has averaged four percent over the last three years—very low compared with most other water utilities and below the 10 percent state standard.
- In 2009 the 1% Program achieved 0.61 million gallons per day (mgd) of savings, for a cumulative total of 9.0 mgd. The Program has contributed to meeting the performance goal, set in 1999, of keeping total water demand at the end of 2010 no higher than it was in 2000, despite anticipated growth in population and economic activity.
- Hardware Incentive Savings include new fixtures and equipment upgrades that were supported with program incentives, as well as accelerated fixtures (beyond rates and code) that were upgraded without rebates. Based on program records, these savings are estimated to be 0.46 mgd annual average in 2009.
- The Saving Water Partnership supported a major regional multifamily Showerhead and Aerator Distribution program targeted to apartments and condominiums. Nearly 9,000 showerheads were distributed to multifamily buildings that participated. The cooperative program will continue in 2010 with Seattle City Light and Puget Sound Energy.
- The commercial program upgraded to high-efficiency or WaterSense-labeled fixtures, rebating 3,000 toilets and 700 urinals.
- The WashWise Program processed nearly 6,000 residential high efficiency clothes washer rebates in 2009 and achieving nearly 95,000 gallons per day of savings.
- In 2009, nearly 2,900 toilets in 109 apartment buildings were upgraded to 1.6 or 1.28 gallons per flush from 3.5 gallons per flush or greater models, saving the region 72,339 gallons per day.

- 42 blocks of natural drainage systems were installed.
- A new grant program was created to provide residents and businesses with matching funds for aquatic habitat restoration (five awards totaled \$300,000).
- The reservoir-covering program—which will create 76-acres of new public open space—is one example of a multiple-benefit project. Of the thirteen reservoirs, nine are covered today, two are in construction and two will be taken out of service, because they are no longer needed.
- Seattle Public Utilities (SPU) and its 17 water district partners, the Saving Water Partnership, won the Environmental Protection Agency's WaterSense Partner of the Year for our creative water saving programs in 2008.

## Supply Sources

Seattle Public Utilities supplies water to 1.3 million people and businesses in the region. Nearly all this water is from the 90,000-acre Cedar River Watershed (70 percent) and the 13,300-acre South Fork Tolt River Watershed in eastern King County (30 percent).

## References

[http://www.seattle.gov/util/Directory/Conservation\\_Index/index.asp#P2\\_150](http://www.seattle.gov/util/Directory/Conservation_Index/index.asp#P2_150)

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[http://www.seattle.gov/util/groups/public/@spu/@ssw/documents/webcontent/spu01\\_006652.pdf](http://www.seattle.gov/util/groups/public/@spu/@ssw/documents/webcontent/spu01_006652.pdf)

Date accessed: 1/3/11

[http://www.seattle.gov/environment/Documents/ea/2006\\_Brochure\\_color.pdf](http://www.seattle.gov/environment/Documents/ea/2006_Brochure_color.pdf)

Date accessed: 1/4/11

[http://www.seattle.gov/util/groups/public/@spu/@csb/documents/webcontent/01\\_010295.pdf](http://www.seattle.gov/util/groups/public/@spu/@csb/documents/webcontent/01_010295.pdf)

Date accessed: 1/6/11

# Tampa, Florida

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## Conservation Efforts

### Programs and Rebates

- Free rain barrel for attending a Hillsborough County Extension Florida Yards and Neighborhoods Rain Barrel Workshop.
- Between 1993 and 2008, the Tampa Water Department offered Toilet Replacement Rebates of up to \$100.
- Free **Plumbing Retrofit Kit**- Free showerheads, faucet aerators and toilet leak detection dye tablets.
- Free **Rain Sensor for automatic irrigation controllers**
- Free **Save Water Kit**
- Home Water Efficiency Tool Kit—7 Steps to Control Your Water Use—Free printable workbook to perform a home water audit and create a water budget.
- Sensible Sprinkling Irrigation Evaluations—Free evaluations to help improve the water efficiency of in-ground sprinkler systems.
- Meter replacement program

## Education and Outreach

- 110 Ways to Save Water
- Water Use Calculator
- 7-Day Drinking Water Challenge—Do you know how much water you use every day?
- Water Conservation Education Program—Lesson plans, recommended reading, and websites.
- Conservation Quiz
- Fix Leaks—Tips to locate and repair common leaks around the home
- Brochures
- Saving Water in the Bathroom, Kitchen, and Laundry Room Information

## Ordinances

Water Conservation Ordinance

[http://www.tampagov.net/dept\\_Water/files/WUR\\_and\\_Rate\\_Ordinances/Tampa\\_Code\\_Sec26-97.pdf](http://www.tampagov.net/dept_Water/files/WUR_and_Rate_Ordinances/Tampa_Code_Sec26-97.pdf)

## Savings Reported

- Tampa embarked on an extensive meter replacement program in fiscal year 1992, to reduce authorized and unauthorized water use losses. As of Sept. 30, 2008, the City has replaced more than 200,000 meters, contributing to a reduction in non-revenue producing water.
- The Sensible Sprinkling irrigation evaluation program resulted in a 25 percent drop in water use.
- Estimates indicate that the distribution of more than 100,000 conservation kits resulted in savings of 7 to 10 gallons of water per person per day.
- An evaluation of the pilot toilet rebate program revealed that household water use decreased from an average of 258 gallons per day to 220 gallons per day—a 15 percent reduction.
- The city replaced 27,239 older toilets with high-efficiency toilets, accounting for 245.9 million gallons of water saved each year.
- Although the city's water service population increased 20 percent from 1989 to 2001, per capita water use decreased 26 percent.

## Supply Sources

The Hillsborough River is the surface water source that supplies most of Tampa's water demand, an average of 82 million gallons a day. During our dry season, usually April through June, Tampa's river supply may be supplemented by the Aquifer Storage and Recovery (ASR) system and regional groundwater, surface water and desalinated seawater purchased from Tampa Bay Water. During 2009, less than 6 percent of the water supplied to our customers was purchased from Tampa Bay Water.

### References

<http://www.tampabaywater.org/conservation/>

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