

A Newsletter Published by the New Mexico Water Conservation Alliance

Sandia's Low-Flow Fixtures Produce Real Savings

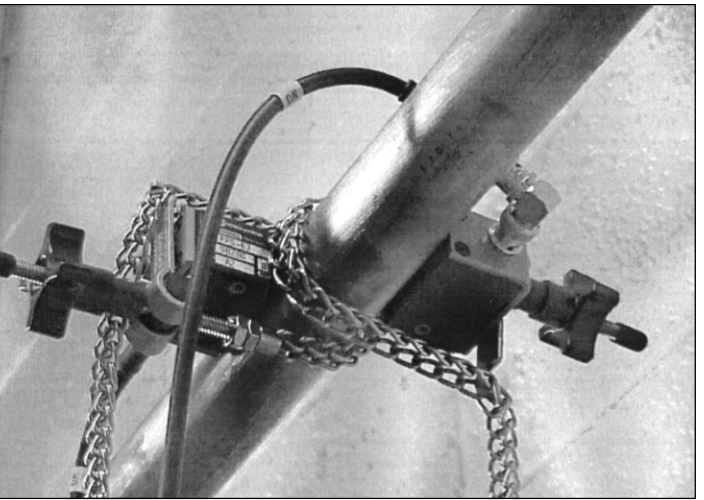
In the ongoing controversy over low-flow plumbing fixtures, one argument centers on whether low-flow toilets and urinals actually save water. Opponents of low-flow fixtures contend that they do not produce real savings, since users may have to flush them more than once to clear them completely. Advocates of low-flow fixtures insist that properly designed low-flow fixtures work as well as those with higher water usage. They also note that users who flush low-flow toilets more than once probably flush high-flow toilets multiple times as well.

To add to the data on the water consumption of low-flow vs. conventional fixtures in actual daily use, the Water Conservation Program at Sandia National Laboratories conducted a full-scale evaluation of low-flow restroom fixtures in comparison with

conventional high-flow fixtures. The result is that low-flow fixtures installed at Sandia have saved 40 to 60 percent of the water used by high-flow fixtures and have presented no extra maintenance burden.

The evaluation involved retrofitting all the restrooms in one of the buildings at Sandia with low-flow toilets and urinals. The building has six restrooms and approximately 400 daily users. To measure usage, Sandia engineers used a portable, non-invasive flow meter. With this meter, water flow can be measured separately at each fixture, and the contribution of toilets and urinals to total building water use can be measured directly.

Baseline measurements showed that the old toilets used four to five gallons per flush (gpf) and the urinals used three to five gpf. The new fixtures measure 1.6 gpf for the toilets and 1.0 gpf for the urinals. For the whole building, water usage for toilets and urinals is down from 3,200 gallons per day before the retrofit to 1,400 to 1,500 gallons per day with the new fixtures.



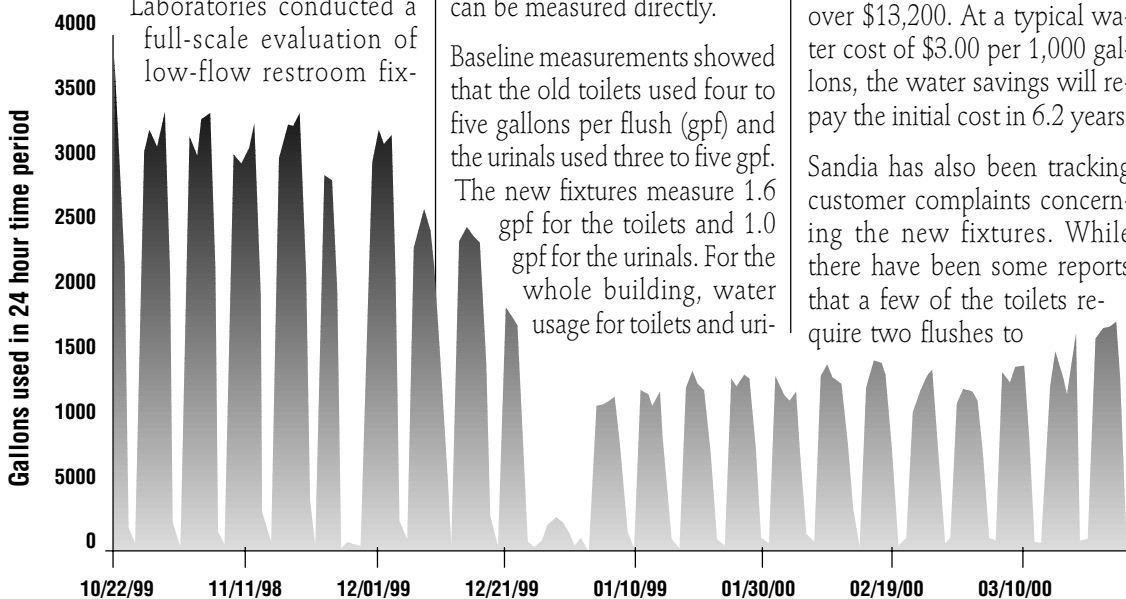
A Portable flow meter can be installed on a pipe without cutting it. This allows accurate flow measurements for all fixtures individually

The cost of replacing 25 toilets and eight urinals was a little over \$13,200. At a typical water cost of \$3.00 per 1,000 gallons, the water savings will repay the initial cost in 6.2 years.

Sandia has also been tracking customer complaints concerning the new fixtures. While there have been some reports that a few of the toilets require two flushes to

clear, complaints are actually down from before the retrofit. This is mostly due to the fact that there have been no clogged drains, no flushometer repairs, and no increased maintenance in the six months since the retrofit.

For more information about the retrofit project, contact the Water Conservation Program Manager, Darell Rogers, at 505-844-5842 or at dmroger@sandia.gov.



PAINTING THE DESERT WITH PLANTS
October 20-21
 See page 3 for details!

A Water Festival for Your Community?

The organizers of the Children's Water Festival for the Middle Rio Grande area, in cooperation with the New Mexico Office of the State Engineer, would like to assist other communities who want to hold water festivals.

Last October, 800 students in the 4th grade from throughout the Middle Rio Grande area gathered to spend a day learning all about water. A second water festival is planned for November 2-3 to continue the learning experience for a new group of students. The festi-

val will feature activities that cover a wide range of core curriculum areas, including language arts, math, science, social studies, visual arts, and health and wellness. Presenters will offer water related facts, concepts and values through hands-on learning activities.

The water festival experience will help students understand that water is an essential and limited resource and what each of us can do to protect and conserve it. Specifically, the activities will help students answer one or more of these questions:

- Why is water so important to life?
- How much water do we use and how much is there?
- What is the water cycle and why is it important?
- How are trees, plants, animals, people, soils, and water interdependent?
- How do our actions affect water and all nature?

An assistance package consisting of a copy of *Making Waves*, a guide to producing a water festival, and the video, *Water in New Mexico - Yesterday & Tomorrow*, is available to communities that wish to hold a festival.

For more information, contact Susan Gorman at 505-265-3234 or e-mail her at bblairb@aol.com.

Rio Rancho Begins Toilet Rebate

As part of its water conservation program, the city of Rio Rancho launched a toilet rebate program this spring. In just two months, and with only four display ads in the local paper, the response has been enthusiastic.

Over 170 people picked up applications, and 49 homes received the \$100 rebate in the form of a check. The homes that changed out toilets will be tracked for a decrease in indoor use, using the winter quarter average next March for comparison.

An item that affected the design of the rebate program is the ongoing

debate about the impact of toilet replacement flappers on water conservation. To comply with the 1.6-gallon-per-flush federal requirement, many manufacturers created specialized flappers to save water. A California study has shown that the volume of flush increases in toilets when the specialized flappers are replaced with generic flappers.

Because of this concern, the Rio Rancho program added a unique element to its toilet rebate program. In order to stretch the investment dollar of its conservation program, the city wished to invest in toilets

which would retain approximately a 1.6 flush over time, even if the flapper is replaced. Therefore, the program designated toilets that do not rely on specialized flappers as the only toilets eligible for the rebate.



NEWS BITS

Southwest Yard and Garden, a half-hour television program produced by the New Mexico County Extension Service, is aired weekly on public television stations around the state. Devoted to helping Southwestern gardeners deal with the unique environment in which they garden, the program features gardening techniques and plants appropriate to the region,

including water conservation and xeriscaping. Tune in at KNME-TV on Sundays at 1 p.m., KENW-TV Saturdays at 10 a.m., and KRWG-TV on Saturdays at 10:30 a.m., Sundays at 11 p.m., and Thursdays at 1 p.m.

The city of Las Vegas is holding its Water Conservation Solutions Expo 2000 on September 7-

9. Demonstrations, exhibits and presentations at each day's expo will focus on water conservation issues and educational activities for the city's residents, businesses and school children. The city will also hand out 2,000 water conservation kits, which the Las Vegas Water Department has agreed to install.

A dedication ceremony for a water conservation demonstration garden was held in June at the



Painting the Desert with Plants

Painting the Desert with Plants will be the theme of this year's xeriscape conference to be held at the Albuquerque Convention Center October 20-21. The theme recognizes that xeriscape not only conserves precious water resources, but also captures the beauty of our desert surroundings for residential and commercial landscapes.

The conference will give homeowners, developers, professional landscapers, government officials, scholars and others interested in xeriscape an opportunity to share experiences and the results of most recent studies. Key-note speaker will be Sandra Postel, author of *Pillar of Sand: Can the Irrigation Miracle Last* and *The Last Oasis*. For a number of years, Postel was the co-project director of the World-

watch Institute's State of the World Report. She will bring a global perspective to the very local endeavor of landscaping with water conserving plants.

Other presenters include experts in xeric and native landscapes, including authors Jim Knopf, Judith Phillips, David Salman and Judy Mielke, landscape architects, plant professionals and builders. The conference is sponsored by the Xeriscape Council of New Mexico, with co-sponsors including the New Mexico Water Conservation Alliance, the Native Plant Society of New Mexico, and the New Mexico Society of Landscape Architects.

For more information, contact the council at 505-343-4121 or access the conference web site at <http://www.xeriscapenm.com>.

PHS Faces Conservation Challenges

Contributed by Lonnie Burke, Presbyterian Healthcare Services

Presbyterian Healthcare Services, the third largest water user in the private sector in the Albuquerque area, used 163 million gallons of water last year at its various locations. Examples of annual water use at the main hospital alone are: cooling towers, 18 million gallons; sterilization equipment, 9 million gallons; film processing, 4 million gallons; medical vacuum pumps, 3 million gallons, and irrigation, 9.5 million gallons. The hospital also has 577 toilets, 1,030 lavatories, 139 showers, 42 icemakers, 26 urinals, and many other types of plumbing.

The city of Albuquerque has challenged PHS to reduce water use at Presbyterian Hospital and Kaseman Hospital by 30 percent over the next five years. CEO Jim Hinton has responded by stating, "As a member of this community, PHS will take this challenge seriously." PHS is taking the challenge one step further by including all its buildings in the Albuquerque area in the water conservation effort. These facilities cover a total of 44 buildings and 60 acres.

Since 1995, with minimal budget, PHS has taken the following conservation actions and achieved the results indicated.

- Installed timers on the medical vacuum pumps that had used water 24 hours a day at the Day Surgery facility. Now the equipment shuts down automatically when it is not being used at night and during weekends. **Water saved - 1.4 million gallons per year**
- Installed new medical vacuum pumps at Kaseman Hospital, replacing the old water-sealed ones with oil-sealed pumps. **Water saved - 2.6 million gallons per year**
- Shut down x-ray developers when the Family Healthcare centers close at night. **Water saved - 1.8 million gallons per year**
- Installed condensate return pumps in Central Supply to return the water that was being dumped down the drain. **Water saved - .5 million gallons per year**
- Replaced 130 high-water-using toilets with low-flow models during remodeling projects. **Water saved - 3.2 million gallons per year**
- Installed pressure-reducing valves on five buildings that did not have them (excess pressure wastes water and wears out plumbing fixtures prematurely).
- Began an in-house water conservation education program for 30 to 70 PHS employees per week. Response has been very positive and added support to the program.

Valencia County garden site by the Valley Improvement Association. The garden, which was the idea of Alliance member Jacqueline Guilbault, features water conserving plants in a design created by Southwest gardening expert Judith Phillips. The garden is located south of the Pasitos del Cielo subdivision and east of the University of New Mexico Valencia campus.

The city of Albuquerque has published yet another water conservation publication. The Low

Volume Irrigation Design and Installation Guide covers a variety of topics on low-volume irrigation, including designing and installing a drip irrigation system, scheduling irrigation timers, and maintaining the system. If you live in Albuquerque and would like to obtain a copy of the guide, contact the Albuquerque Water Conservation Office at 768-3650. If you live outside of Albuquerque, call the New Mexico Office of the State Engineer for a copy at 1-800-WATERNM.

The New Mexico Office of the State Engineer welcomes a new water conservation education specialist, Cheri Vogel. Vogel has recently moved to New Mexico after working on water, energy and other environmental education programs at the Lower Colorado River Authority in Austin, Texas. In her new job, she will be working on various statewide water conservation programs for adults and children.

Santa Fe Changes Rate Structure

Contributed by Dee Fuerst, Sangre De Cristo Water

The city of Santa Fe's water operations, Sangre De Cristo Water, recently changed its water rates and pricing structure.

Santa Fe's city councilors approved an increase in the water rates and utility expansion charges to help stabilize the water utility's financial situation. Rates had not been increased since 1983, more than 16 years ago. Due to the added costs of complying with new federal regulatory requirements and of replacing aging infrastructure, revenues were insufficient under the old rates.

The new commodity rate schedule eliminates the discount for lower-volume water users. The new rate structure also removes the pricing tiers in both the residential and commercial schedules and removes the differentiation between small and large commercial accounts. Although removal of the discount and pricing tiers would eliminate some of the rate incentives aimed at encouraging water conservation, the re-

maining high rates are expected to continue discouraging high water use. Water users are also still subject to high-water-use surcharges and low-water-use rebates from May through October.

The increases in the commodity rates per 1,000 gallons are phased in over four years as follows:

Sangre De Cristo Water City of Santa Fe Water Commodity Charges		
	Residential	Commercial
Feb.1, 2000	\$ 3.50	\$ 2.70
May 1, 2000	3.64	2.81
May 1, 2001	3.79	2.92
May 1, 2002	3.94	3.04
May 1, 2003	4.09	3.16

The largest rate adjustment was in the utility expansion charges. These charges apply to the cost for connecting new developments to the utility and are added costs of water

supply development and system expansion not paid by regular line extension policies. The utility expansion charges are:

Sangre De Cristo Water City of Santa Fe Utility Expansion Charges (UEC)		
Meter Service	EQM Factor (x \$ 2, 013)	UEC
5/8" ^{low priced dwelling unit*}	NA	\$ 800
5/8"	1.0	\$ 2,013
3/4"	1.5	\$ 3,019
1"	2.5	\$ 5,032
1 1/2"	5.0	\$ 10,065
2"	8.0	\$ 16,104
3"	15.6	\$ 31,402
4"	25.0	\$ 50,325
6"	50.0	\$ 100,650
8"	80.0	\$ 161,040

* must meet the affordable housing criteria

For more information about the commodity charges, call Craig O'Hare at 505-954-7125. For information about the utility expansion charges, call 505-954-7101. To receive a detailed copy of all the rate schedules, call the Sangre De Cristo Water Conservation Office at 505-954-7199.



New Mexico Water Conservation Alliance

369 Montezuma Avenue, #149
Santa Fe, NM 87501

The *Conservation Current* is a quarterly publication of the New Mexico Water Conservation Alliance, an organization of municipal and industrial water conservation professionals dedicated to water conservation education and networking. *Current* articles may be reprinted for use in other publications by crediting the *Current* as the source.

Newsletter co-editors are Robert Matthews and Alice Darilek. Newsletter production is funded by the U.S. Bureau of Reclamation; design is provided by Kenesson Design; and printing is by Roller Printing. Other contributors to this issue were Lonnie Burke, Dee Fuerst, Colleen Logan, Susan Gorman, Curtis Smith and Benito Duran.

To add a name to the *Current* mailing list, or to find out more about the Alliance, write to the return address listed on the back of the newsletter or call 1-800-WATER-NM. The *Current* can also be found on the following web site: <http://wri.nmsu.edu>.