

## Colorado Strategies Save Water

By Christy Smith, CH2M Hill, Albuquerque

*The Saving Water 2003, Smart Strategies to Improve the Bottom Line for Business, Industry, and Municipalities* conference, held in Denver in August, presented an informative discussion of innovative ways to conserve water in the municipal and industrial sectors.

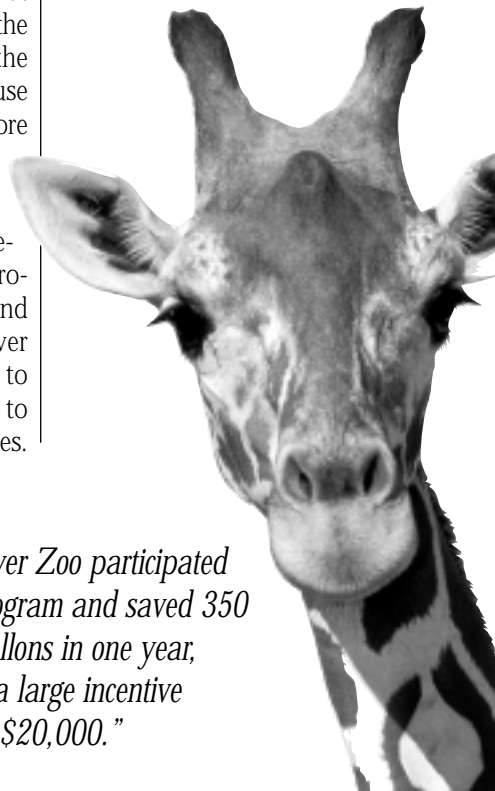
The director of Denver Water Company, Chips Barry, gave a thoughtful presentation about the need to separate drought management from water conservation. Drought response is necessary to deal with acute water shortages and intense water conservation measures are often found in drought plans. However, water conservation is also a long-term tool that should be used all the time to ensure the availability of water supplies in the future. He stated that entities which use water conservation in order to "sell more taps" will not have adequate supplies in future drought circumstances.

An engineer from Denver Water presented details of that city's incentive program to encourage commercial and industrial users who can save over 300,000 gallons of water annually to enter into a contract with the utility to implement water conservation measures. Denver Water will pay the customer \$4,500 per acre-foot of water actually saved, with a maximum benefit of \$40,000. The Denver Zoo participated in this program and saved 350 million gal-

lons in one year, receiving a large incentive award of \$20,000. Projects implemented at the zoo were related to water filtration and allowed longer hold times of the water in exhibits, thus reducing the amount of fresh water needed to accommodate animals such as polar bears, sea otters and flamingos. Including the costs of water, chemicals and electrical pumping costs, the payback period on these projects was less than one year.

Denver Water staff also reported on a pilot study to improve leak detection in the city's water distribution system. Leaks

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## 2025 Program Begins

After touring the West through a series of nine conferences this summer and hearing from thousands of water resource experts, the U.S. Bureau of Reclamation is incorporating the comments and data it gathered and forming a program that is intended to address some of the West's water woes.

The program will be structured around projects to help prevent future conflicts and crises over water shortages, especially in several hotspot areas identified by the agency. One of these areas is the Middle Rio Grande Basin in New Mexico, where the first 2025 project has just been completed. At the end of September, ten weather stations had been installed along the Rio Grande to monitor the weather through real-time data. This information will improve the tracking of river and field conditions, and serve as a tool to help increase water use efficiency in the Middle Rio Grande region. The project was implemented through Reclamation's Water Conservation Field Services Program.

Other selected projects are expected to consist of activities ranging from facilitated meetings to on-the-ground structural improvements, and will be initiated through cost-sharing grants and cooperative agreements with communities, irrigation districts and others. Priority will be given to areas in which crises have the highest likelihood of occurring. SWAT-type Reclamation teams will assess the potential for water management improvements and make project recommendations.

# Evaluations Help Rio Rancho Conserve

By Lorri Skeie-Campbell, City of Rio Rancho

The Rio Rancho Utilities Department recently launched a water use evaluation program to help reduce water use by educating its customers about their past and current water use patterns. The free service includes a water use analysis, leak detection, and meter accuracy verification.

Under the program, the city's contractor, Resource Wise, will:

- install retrofit water-saving devices on plumbing fixtures (residential customers only with approval);
- educate customers about the city's concurrent rebate programs;
- evaluate all indoor and outdoor water uses and habits;
- estimate potential water and cash savings if recommendations are implemented; and
- report findings to both the customer and the city's Water Conservation Office.



Other services that may be included are cross-connection and backflow prevention inspections, pressure tests, and flow profiling.

Ensuring that the city leads by example, all Rio Rancho city government facilities have been evaluated. Water use evaluations for large-meter customers (greater than 2"), meters registering greater than one million gallons, and pre-1992 residential structures are now underway. Older single-family residences are the primary target, although water use evaluations are also offered to any household with higher-than-average usage (an annual monthly average greater than 12,000 gallons per month).

Water utility customers who choose to participate in the voluntary program will be scheduled on a first-come, first-served basis until the funds are depleted for each fiscal year.

# Conservation Awards Exchanged

The New Mexico Water Conservation Alliance celebrated the success and support of some of its members at a luncheon preceding its July meeting.

Alliance president Jean Witherspoon presented the U.S. Bureau of Reclamation's (BOR) Joe Alderete (right) and David Allen with awards recognizing the key role they have played in promoting and supporting water conservation in New Mexico. In recent years, BOR grants have been a critical funding source for the *Conservation Current* and conservation education materials produced by the New Mexico Office of the State Engineer, as well as for many Alliance educational activities. The awards are inscribed "With much appreciation for the leadership shown in promoting water conservation programs in New Mexico."



David Allen made a presentation, then Joe Alderete (left) presented Cheri Vogel with a BOR award for her contributions to the water conservation field, especially for the development of the *Learning to Xeriscape* curriculum for mid-and high-school students she has just completed. Vogel's award is inscribed "In recognition for outstanding contribution to water and resource management in New Mexico."



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in water lines are a problem for every water utility, with average losses of three gallons per minute per mile of pipe. Acoustic loggers are electronic "listening" devices that can be placed on pipe fittings. At night, the loggers automatically record frequencies and send data to a receiver. Using this technology greatly increases the frequency with which a utility can check its distribution system. The Denver study placed 30 loggers in areas where manual leak detection had already been performed and found 21 additional leaks. In the three months of the study, Denver Water estimated that 10 million gallons were saved at a cost of \$17,200. An additional savings of \$10,500 was attributed to addressing leaks before

they became a crisis, which meant smaller excavation and backfill costs and lower emergency repair costs because the repairs could be scheduled.

The Rebuild Colorado organization made a presentation about setting up performance contracts to facilitate funding for conservation projects. Energy service corporations, called ESCOs, will front the money for conservation projects, with savings guaranteed. They wait to get paid when the savings occur and/or they finance over a number of years. For more information on performance contracting, go to [www.esperform.org](http://www.esperform.org).

U.S. Department of Energy scientists demonstrated new software for steam system optimization and a new pump system

assessment tool. These and other programs are available free from DOE's Industrial Technologies Program at [www.oit.doe.gov/bestpractices/software\\_tools.shtml](http://www.oit.doe.gov/bestpractices/software_tools.shtml).

The Industrial Assessment Center (IAC) at Colorado State University, sponsored by DOE, provides assistance nationwide. Facility audits are provided to manufacturing plants that meet certain size and staff requirements. Energy conservation and water conservation are common recommendations. Check out the audit assistance program at [www.engr.colostate.edu/IAC/](http://www.engr.colostate.edu/IAC/). This is a DOE program and Colorado State University is just one of the schools participating. More information is available at [www.oit.doe.gov/iac/](http://www.oit.doe.gov/iac/).

# EPA Encourages Water Efficiency

The U.S. Environmental Protection Agency has taken two recent actions to encourage water conservation by municipalities and residents.

In July, the agency issued a policy memorandum to its regional directors to clarify its position on using state revolving loan funds from the federal Safe Drinking Water Act (SDWA) to cover the costs of implementing water efficiency measures. It follows a similar memo issued in 2000 regarding Clean Water Act funds.

The memo states that the costs of meter installation, plumbing and appliance retrofits, implementation of conservation incentive programs such as rebates and conservation rate structures, and the installation of dual pipe distribution systems can be covered with SDWA funds. In addition, administrative costs for implementing incentive programs are also eligible.

The SDWA also gives states the option of requiring a water system to submit a water conservation plan as a condition of receiving SDWA funds and awarding funding priority bonus points to systems that have developed conservation plans or implemented conservation measures.

In addition, states may use set-aside funds under the act to promote water efficiency through technical assistance, incentive and monitoring efforts, and education.

In another initiative, EPA is considering the development of a water-efficient product labeling program to promote water saving products to consumers. The program would likely be patterned after the successful Energy Star program, which promotes energy-efficient appliances.

The agency was spurred to consider such a program when over 100 manufacturing companies, civic organizations, associations, utilities and governmental agencies, including the New Mexico Office of the State Engineer, signed a position statement in support of the labeling program. The New Mexico Water Conservation Alliance also sent a letter in support of this effort.

EPA is holding several stakeholder meetings to solicit comments on program concepts and possible directions. The first of these was held in Washington, D.C. on October 9. The other meetings have not yet been scheduled.



## Rainwater Conference A Success

About 150 people attended the first national rainwater harvesting conference in Austin, Texas, in August. The large and enthusiastic group surprised conference organizers, who had initially expected about half that turnout.

Speakers from New Mexico, Texas and the rest of the U. S., as well as others from Japan, the Netherlands, India and France, discussed various opportunities and reasons for installing rainwater harvesting systems in their communities. In New Mexico, where little rain falls, rain catchment systems are used primarily for landscape irrigation. In Seattle and Tokyo, where rain is abundant, the primary purpose of rainwater harvesting is to slow runoff to rivers.

A conference tour to sites in Austin and nearby communities included visits to rainwater harvesting systems at the Lady Bird Johnson Wildflower Center, a large grocery store, a pet grooming and kennel operation, a pottery manufacturing facility, and a rainwater bottling company. In several of these communities, where the annual rainfall is about 30 inches, rainwater is typically harvested, treated, and used for drinking water.

The primary sponsor of the conference was the American Rainwater Catchment Systems Association, with cooperating local partners. The group moved on to Mexico City the following week for an international conference on the same topic.



## Germans Study (Human) Dishwashers

Researchers at the University of Bonn in Germany have studied the water use efficiency of people who wash dishes by hand. Seventy-five volunteers from seven European countries were recruited to wash typical family loads of pots and plates covered with hardened egg, spinach and margarine.

The results showed that handwashing used between five and 86 gallons of water compared to the water consumption of a

conventional European dishwasher that uses four to five gallons of water per load. According to the American Water Works Association, automatic dishwashers in the U.S. use approximately nine to 12 gallons, while hand washing can use up to 20 gallons. (Newer automatic dishwashers use about seven gallons per load.)

Other interesting results showed that German and British handwashers performed the task more economically than did their Spanish and Turkish counterparts, while the Spanish ended up with the cleanest dishes.

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## There's More ...

**Efficient Habitat Home** - A new Habitat for Humanity house in Albuquerque is expected to use 30 to 50 percent less energy and water because of efficiency techniques used in its construction. The lawn is a special, low-water-use blend of grass, and the garden will be irrigated with collected rainwater. The three-bedroom, 1,200 square-foot home is located in the Sawmill area north of downtown and is the first of its kind for Habitat for Humanity in New Mexico. More energy- and water-efficient houses are planned by the organization for its future building projects.

**Instant Water Use Metering** - Imagine monitoring water use in your home at the moment that water is being used without having to go out in the yard, pull off the heavy metal lid, and peer at the indicator on the buried water meter. That's now possible with a touch-screen water monitor being offered as a standard option in new homes in the Rancho Viejo subdivision near Santa Fe. Manufactured by Smart Systems Technologies and costing about \$5,800, the monitoring system has also been ordered by other homeowners in the Santa Fe area and in Albuquerque.

**Call for Papers for Jordan Conference** - The call for papers has been issued for an international conference on water demand management to be held in Amman, Jordan, early next June. It will provide a forum for discussing water efficiency research, technologies and experiences in the domestic, industrial and agricultural sectors and will showcase state-of-the-art technologies. The deadline for submitting papers is November 15. For more information, go to [www.wdm2004.org](http://www.wdm2004.org).

## Mark Your Calendar!

If you want to find out the latest information on water conservation and reuse technologies and practices, plan on attending the Water Sources Conference in Austin, Texas, January 11-14.

Sponsored by the American Water Works Association, the conference features workshops, reuse tours and numerous technical sessions. Perhaps most useful of all, it provides networking opportunities with water conservation professionals from all around the country.

The conference will be held at the newly built Hilton Hotel in downtown Austin. Registration fees are \$535 for the full conference, with additional fees for the specialty workshops.

*For more information, go to [www.waterwiser.org](http://www.waterwiser.org) and click on the Calendar section.*