Austin Empowers Water Conservation Movement

By Tim denHartog

We've all heard it – water is going to be the oil of the 21st century. The prolonged drought in much of the United States has highlighted this reality, and many cities and governments are starting to take the issue seriously. While some cities are trying to play catch up, Austin, Texas, has long been a leader and national player when it comes to water conservation.

Taking Early Action

Austin first launched its water efficiency program back in 1983, when there was an increase in water demand due to a housing and commercial boom.

"Austin and the surrounding Central Texas region is experiencing rapid growth in population, employment and land area affected by development," said Danny McNabb, Building Regulations manager for the city. The City of Austin grew from a population of 465,000 in 1990 to more than 650,000 people by 2000. By 2010, Austin's population is projected to reach 800,000 — an increase of almost 19,000 people annually, according to McNabb. Regional projections are even more dramatic: Hays, Travis and Williamson Counties' combined 2000 population of 1.16 million is projected to increase to more than 1.4 million by 2010, McNabb said.

In its beginning, the program focused on providing incentives and rebates to install water efficient equipment, services to reduce demand, and regulatory measures.

Austin was an early proponent of low flush toilets, mandating the installation of 1.6 gpf toilets in 1991. Two toilet replacement programs, The Free Toilet Program and The Toilet Rebate Program, were developed to encourage the replacement of older, less efficient models. A similar program was also offered for the purchase of water- and energy-efficient clothes washers.

The rebates weren't just aimed at conservation in the home. Five hundred dollars was offered for the installation of large capacity rainwater harvesting systems. Incentives were also given to replace landscape with drought tolerant trees and shrubs. Customers were offered free irrigation system audits to help them identify areas of improvement.

Due to landscape watering being the key factor of peak day water usage, a three-stage system of seasonal restrictions was implemented on outdoor watering and irrigation.

The city also implemented a block rate structure for it's residential customers. The four-tier system increases rates for those who use more water. While commercial customers were not included in this system, they were charged a "peak rate" in the summer due to the higher usage.

Moving Forward

With continued growth comes the need for increased conservation. More recently, the City Council formed a Water Conservation Task Force, and set a goal of reducing peak day water use by 1 percent a year for the next 10 years.

"Our efforts will be directed toward quantifiable, structural changes in water use," said Councilman Lee Leffingwell, chairman of the new task force. "We're not relying on education efforts and voluntary water conservation, though savings from that are certainly welcome."

The task force came back with a detailed report of recommendations, with the cost and benefit of implementing each item. In May 2007, the City Council voted unanimously to adopt the measures (with minor amendments) recommended by the task group.

What Does it Take?

One of the big opportunities for saving water is through efficient plumbing and fixtures. Part of the recommendations called for amendments to the 2003 *UPC*. For instance, new urinals must have a maximum discharge of one-half gallon per flush. Pressure reduction valves are required on new residential houses with static water pressure above 65 pounds per square inch (psi), as opposed to 80. New multi-family housing units are also required to have submetering. Furthermore, plumbing fixtures must comply with current plumbing code standards on transfer of title. These changes are estimated to save more than 3.5 million gallons a day.

Extensive measures were enacted limiting outdoor watering and irrigation for both commercial and residential buildings. Watering is limited to twice a week, and only during approved hours. Prior to building, an irrigation plan and water budget must be submitted and approved by the City. Landscape must not exceed 50 percent turf grass; new homes must have a minimum of 6 inches of soil. Sprinklers must be installed according to the manufactures specifications, there should be no overspray into non-irrigated areas, and there should be zero runoff. Irrigation systems must also have a city approved weather control system as well. Failure to meet these requirements can result in a $500 maximum fine.

Efficiency standards were also implemented for car washes. Automatic vehicle washes are limited to 40 gallons per vehicle, and in bay washes to 55 gallons. Large vehicle washes are limited to 75 gallons per vehicle. Hand wash nozzles are not to exceed 3 gallons per minute.

Other efficiency requirements targeted cooling towers and commercial clothes washers. Adjustments were made to water utility rates, and the leak detection program was also extended.

In total, the recommendations are estimated to have a peak water day savings of 32.7 million gallons per day.

Green Codes

McNabb has also been following the *UPC* code development cycle with keen interest, particularly the proposals in regard to reclaimed and gray water.

"I see the need for code language that regulates safe Rain Water Harvesting on a large scale as one of the most important pieces of legislative language of the next code adoption process," he said. "Rain water used for multiple uses at a residence or commercial establishment takes the burden off of the utility supplier. Austin will be proactive in this measure along with condensation recovery and reuse, and grey water reuse and reclaimed water use in residential and commercial establishments. Future generations will judge us by our actions and initiatives regarding water conservation."

The City of Austin operates two major wastewater treatment plants, Walnut Creek and South Austin Regional. Reclaimed water from these plants provides a non-potable water supply to applicable commercial, industrial, institutional and residential users in the city.

Support Key to Success

A successful program involves the support of its citizens. So, how do Austin residents feel about these strict measures?

"Citizens in the Austin area generally understand there is no more water than what is already available, and the growth that is sure to come means water conservation is a must," McNabb said. He added that if the 10 percent goal is met, the expansion at the Ullrich Treatment plant could be delayed by seven years, and Water Plant No. 4 could be delayed by eight years. That means tax dollars saved, something that puts a smile on everyone's face.

Part of the program's success can assuredly be attributed to the city's public relations effort regarding water efficiency. The city has implemented extensive outreach programs to inform its citizens of new policy changes and penalties. They also continue to offer education and incentive programs to encourage participation.

What Can Cities New to the Conservation Movement Do?

"Begin a water conservation initiative that includes the Mayor and the City Council," McNabb said. "Obtain their buy into water conservation efforts and put initiatives into place." Participation from all parties involved is the key to conservation. And the time to conserve water is now.