Texas Water Savers
News of Water Conservation and Reuse in Texas

Volume 1, Number 3, Fall 1994

Water Savers *Welcomes Five New Sponsors*

For some time, we have been seeking sponsors for the *Texas Water Savers* newsletter. These sponsors help us fund the continued publication of the newsletter, which will lead to an increased awareness of water conservation issues in Texas.

We are now pleased to announce that the list of sponsors is growing. Sponsors include:

* The Texas Water Development Board, which promotes water use efficiency and water conservation throughout Texas

* The Lower Colorado River Authority (LCRA), which sponsors municipal conservation efforts and K-12 water education programs. LCRA is also working with Texas A&M University to develop the Landscape Irrigation Auditing Program.

* The Texas Association of Water Board Directors, a Statewide group of municipal water districts promoting local water conservation

* The San Antonio Water System (SAWS), which distributes water throughout San Antonio and encourages conservation efforts. SAWS work to inform consumers of their water use on billing statements is featured in this issue.

* Alan Plummer and Associates, Inc., of Arlington, TX. Alan Plummer and his staff have been involved in many water conservation and reuse projects Statewide.

* Susan Rust of Stewardship Services of San Antonio, a firm that incorporates water conservation and sustainability into land use planning.

We congratulate these groups for coming forth and helping us produce this newsletter so that water conservation information can be shared. We still need many more sponsors to keep producing the newsletter. Please contact us personally if your water district, city government, or company wants to become involved.

Many water related events will be taking place shortly. Please consider attending the "Water for Texas Conference" Jan. 26-27 in Austin. Three sessions of the conference will be devoted to water conservation and reuse.

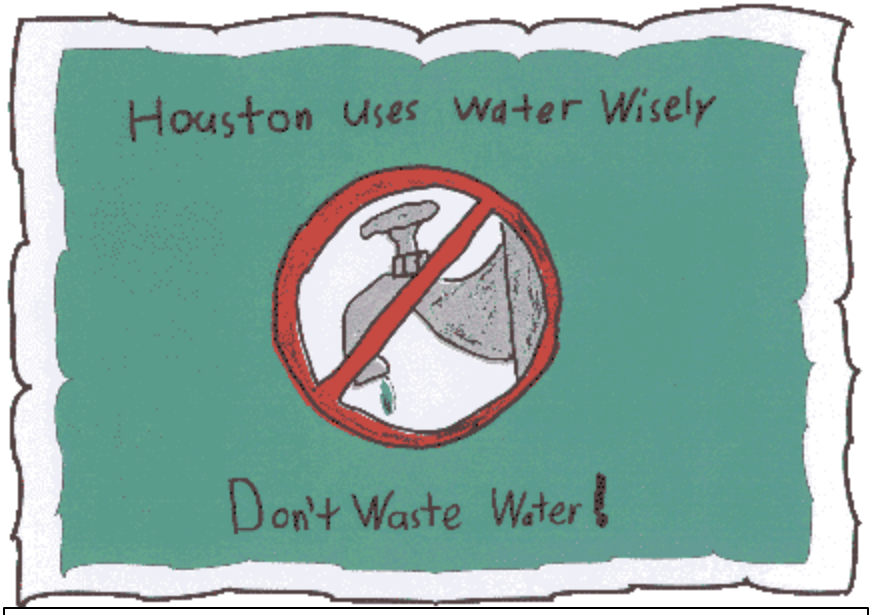
Sincerely,

Ric Jensen

Editor, *Texas Water Savers*

Houston heightens awareness of water conservation

A 12-page "Environmental Source Book" insert to the *Houston Chronicle* was published recently by the City of Houston. The guide offered information on air, land and water resources, including services and helpful hotline numbers. A major section of the insert was devoted to water conservation information geared toward increasing public awareness of Houston's potential water supply problems and the important role of conservation in addressing those problems.



Winning the 1993 design for the annual "Design a T-Shirt" contest by the Water Conservation Section of the City of Houston. The winner was 4th grader Sean Huey of Kate Bell Elementary.

In an article, "Keeping the tap from running dry," some of the long range water planning goals for Houston are explained. Since the 1989 final draft of the Houston Water Master Plan projected shortfalls in available water, the City is currently pursuing innovative plans to ensure clean water well into the 21st Century. The major component of current planning is to implement the Trans-Texas Water Program, a comprehensive regional water supply, management and conservation program. The Trans-Texas Water Program, among other things, is conducting an on-going study of the possible transfer of water from the Sabine River (specifically the Toledo Bend Reservoir) westward to Corpus Christi and San Antonio. The Houston metropolitan area is included in one of the plan's three main study areas.

The Trans-Texas Water Plan seeks to use existing water supplies as efficiently as possible, and the City of Houston is considering policies toward that end. For example, conservation; reclamation and reuse; existing surface reservoirs; coordinated system operation; aquifer storage and recovery; demineralization; new groundwater supplies; new surface water reservoirs; interbasin transfers; and contractual transfers are being studied.

The insert to the *Houston Chronicle* also provided a one-page list of 17 ways to conserve water, including ideas from fixing leaky faucets, installing low-flow faucets and toilets, and taking shorter showers, to planting drought-resistant and xeriscape plants, watering the lawn in the early morning to avoid evaporation, and using a sponge and bucket to wash the car instead of a running hose.

In addition, the insert carried a graphic of the winning 1993 T-shirt design contest. Each year the Water Conservation Section of the City of Houston sponsors a "Design a T-shirt" contest through the Houston Independent School District. The winning design is emblazoned on a T-shirt and given to the winner and his or her classmates and teacher, and the designs are used at other events throughout the year. The contest is open to grades 4-6. The 1993 winner was fourth-grader Sean Huey of Kate Bell Elementary.

The contest and other educational activities are all part of a broader program to teach school-aged children to be water wise. The City of Houston offers a free water conservation education program to school students and civic groups in the Houston area. More than 15,000 students participated during the 1993-94 school year, learning about conservation, water quality, groundwater and surface water, treatment processes, careers in hydrology, and water planning.

That the City of Houston has made a major investment in the future of water conservation is evident in its conservation-based approach to planning, management, and education. Houston is to be applauded for its progressive leadership.

Austin targets a 'xeriscape hungry' public

The City of Austin can barely keep up with the demand for programs, information, and educational material on xeriscape landscaping, which focuses on using low-water use plants and grasses in planning and maintaining a landscape. The City has introduced a number of programs to address the demand, including expanded sessions of the Xeriscape School, landscape rebate programs, a new video entitled `Xeriscape: Gardening for Austin,' and annual xeriscape tours.

The next Xeriscape School is scheduled for Saturday, January 28, 1995. In response to the high demand, two levels will be offered: beginner and advanced. The school has been so popular in the past that it has outgrown its home at the Zilker Botanical Gardens; it will now be held at the Lower Colorado River Authority (LCRA) headquarters on Lake Austin Boulevard where LCRA has its own award-winning xeriscape landscape. Space is limited to 140 people in each level; the cost is $25 per person or $40 for two people registering together. For registration information, call (512) 499-2199.

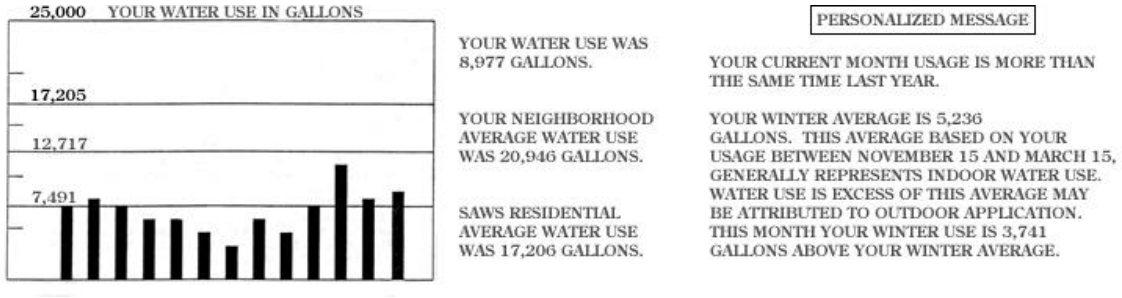
The City also recently produced a video, "Xeriscape Gardening for Austin." The video guides viewers through the principles of xeriscape and explains how to put each principle into practice in the Austin region. The video also includes two additional features: `Money Down the Drain," offering useful water-saving tips for inside and outside the home and "Water Follies," a short animated feature on water conservation. The video cost

for Austin water customers is $6.82 (including tax and postage), and $19.78 for non city water customers. To order, call (512) 499-2199.

Austin has also made a 10-year tradition of its Xeriscape Fall Garden Tour. This year's tour, held on October 8, attracted more than 1200 people who visited 5 homes with buffalograss lawns and other notable xeriscape features. Four of the 5 homes toured were 1994 Xeriscape Recognition Award winners, and 2 had participated in the city's landscape rebate program.

San Antonio 'SAWS' a big chunk off water use

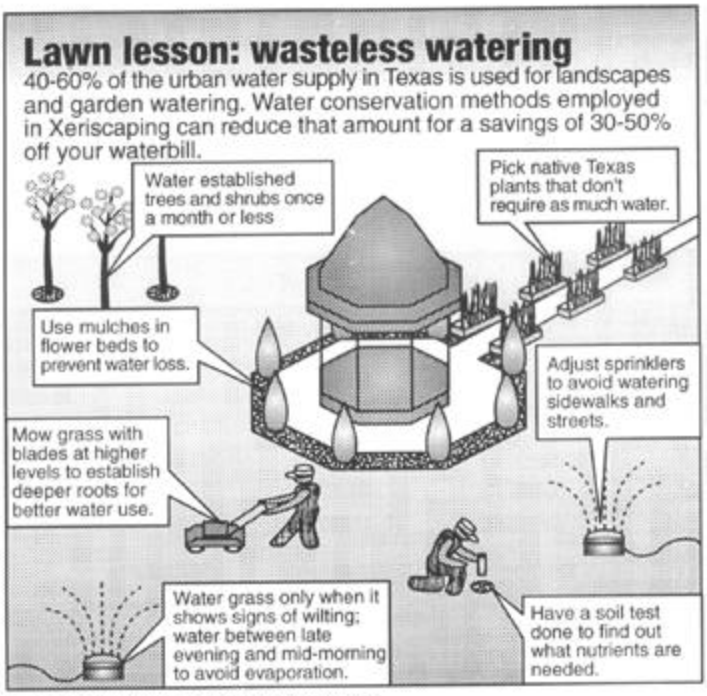
A new water billing format and an "inverted" water use rate structure are two of the ways the San Antonio Water System (SAWS) is beefing up its water conservation program. The two measures are believed to have decreased both August and September water usage by 11 - 22%. Those months are prime outdoor water use times and savings in landscape irrigation water could prove to be important to the City's long-range water planning. Together, the measures are expected to make a significant dent in the overall water use in San Antonio and help that city move toward its conservation goals.



The new billing system is primarily an educational tool that provides an innovative format for presenting a wide variety of water use and water supply information. The information is geared toward increasing conservation awareness at the household level. Often, people assume that the little bit of water they may be able to save in their own household is not enough to make a difference. The billing system is based on the belief that *effective* conservation will depend on everyone, even the "small" savings by individual users. The water bills present such information as water levels in the Edwards Aquifer, notes on aquifer awareness, water use graphs with comparisons of household water use to neighborhood and region-wide average water uses, and a personalized message that compares water use during the current billing period with the same billing period last year, as well as providing seasonal averages. The seasonal averages are important because they highlight peak outdoor water use times, which are also peak opportunities for conservation.

In addition to the new water bills, San Antonio introduced a new water rate structure in June to address the need for conservation by the City's largest water users. The rates are meant to discourage high use and are in addition to surcharges for peak use that have been effect since 1988. The rate structure -- in which the more one uses, the more one pays per unit volume --is also intended to encourage conservation by directly penalizing

the pocketbooks of high-volume users. And the high-volume users are not just commercial and industrial sites. It is estimated that currently 10% of the SAWS residential customers use 30% of the residential water. These customers use more than 17,200 gallons per month. Under the new rate structure, they are paying two to three times more for their water than those customers who use less than a "winter average" of 7,500 gallons per month. The rates are, in fact, specifically directed at the big summer users -- the excessive lawn waterers. Utility officials estimate that during the summer months, 70% of all residential water use is for lawn watering!



Source: Texas Agricultural Extension Service
Graphic: Agricultural Communications, The Texas A&M University System

Historically, water utilities have set rates based on the actual cost of delivering the services. In recent years, however, more communities throughout Texas and elsewhere have changed their water rates in an attempt to affect consumers' behavior. Inverted rate structures for water have been notable success stories in increasing conservation in cities in California, Arizona, and New Mexico, among others. In Texas, the City of El Paso has used progressive rate structures as part of its highly successful water conservation regime.

The City of San Antonio views conservation as a source of water, with the goal of substantially reducing total regional water demand by the year 2008. San Antonio has already reduced its average water use from 188 gallons per person per day in 1988 to 160 gallons today. The goal is to reduce it further, to 150 gallons by 1998 and 140 gallons by 2008. SAWS adopted a conservation and reuse plan in 1993 that spelled out measures to increase water efficiency and conservation. The measures, most of which dated back to a 1988 policy, ranged from educational programs and water rate restructuring to leak detection, requirements for low-flow plumbing devices, xeriscaping public facilities, and aggressive water reuse programs.

Also in the works in San Antonio are a rebate incentive program ("Kick-the-Can") to encourage replacement of old-model toilets (5 gallons per flush) with the newer 1.6 gallons per flush models. Many of the participants will receive a $75 rebate. A public housing retrofit of indoor plumbing fixtures is also being considered by San Antonio officials. For more information, contact Tom Fox, Conservation Director, at (512) 704-7253.

New water wise messages from TWDB

Three new brochures are available from the Texas Water Development Board (TWDB) describing ways to save water inside the home, outside the home, and general water-saving tips. The brochures, available in English and Spanish, are to be used in schools and by public service organizations and TWDB to increase awareness and understanding of the need for household water conservation and its benefits. The TWDB estimates that household water conservation practices could save as much as 30% of the present per capita water use per year, on average.

The brochure *Saving Water Inside the Home* provides specific advice on how to conserve water:

* *in the bathroom* by installing a low-flow showerhead, taking shorter showers, replacing older toilets with low-flow models, and installing water displacement devices in tanks of older model toilets;

* *in the kitchen* by not letting the water run for cooking and cleaning purposes, and only running the dishwasher when it is full;

* *in washing machine use* by washing only full loads or adjusting the water level to match the load; and

* *by fixing all leaks*, such as those in toilet tanks, faucets, and other household plumbing pipes.

The brochure offers specific instructions for locating and repairing leaks, and for implementing water conserving behavior throughout the home. Likewise, the brochure *Saving Water Outside the Home* offers specific and practical tips on water wise lawn watering practices, lawn maintenance, sprinkler selection, mulching, improvements to the soil, and use of water wise or xeriscape plants. The brochure contains detailed information on testing a sprinkling system for its efficiency, improving its efficiency, and watering frequency requirements for turf grasses common throughout Texas.

Forty-Nine Water Saving Tips, the third new brochure in the series, provides a concise summary of indoor and outdoor water-saving practices by putting them into 49 easy-to-understand and remember tips.

To obtain copies of the brochures for personal use, or for your school or organization, contact the TWDB at (512)463-7955.

Water Efficiency Clearinghouse up and running from AWWA and USEPA

WaterWiser, a new water efficiency clearinghouse, has been created by the U.S. Environmental Protection Agency (USEPA) and the American Water Works Association (AWWA) to collect and distribute technical and general information about water conservation and efficiency. The clearinghouse, headquartered at the Denver-based AWWA, is funded through $200,000 start-up and $500,000 follow-up grants from USEPA. Primary users are expected to be drinking water and wastewater professionals in both public and private sectors. The clearinghouse will, however, also be available to the general public on a limited basis. Most materials will be made available at no cost, although a materials fee may be charged for some items.

At all levels, from individual and household users to the Federal Government, water users throughout the country are trying to increase their water use efficiency to preserve their water supplies. Efficient water use makes sense for both drinking water and wastewater treatment operations. While conservation is a vital element, efficiency includes other activities such as water reuse, leak detection, proper landscaping installation and maintenance, education, wise water policy, metering, and water rates that provide consumers with an incentive to conserve water.

WaterWiser will be able to provide information on utility conservation measures, government, commercial, and industrial water conservation programs, wastewater reuse, and referrals for professional advice. Part of that will be included in comprehensive, annotated bibliographies, literature searches, literature packets, and fact sheets now available from the clearinghouse. *WaterWiser* has access to more than 3,000 references, including technical reports, papers on community programs, conference proceedings, as well as referrals for professional support.

Information held at *WaterWiser* will be constantly updated, partially through information made available by clearinghouse users. *WaterWiser* urges all those interested in water efficiency information to consider sharing their own experience with others by making material available to *WaterWiser*, or by letting them know where a copy can be obtained. Some of the best information, according to *WaterWiser* staff, comes from internal utility reports, consulting reports, and unpublished academic work.

Contact *WaterWiser* toll-free at 1-800-559-9855 for more information, to request material, or to pass along any water conservation information worth sharing.

Texas prisons are saving water and money with a new toilet design by A&M researchers

Replacement or reconditioning of toilets throughout Texas correctional facilities will comply with state and federal water conservation laws and cost less than anticipated because of research conducted at Texas A&M University's Energy Systems Laboratory (ESL). The State Department of Criminal Justice (TDCJ) contracted with David Claridge, associate professor of mechanical engineering at A&M's Energy Systems Laboratory, to

test two toilet designs for their compliance with state and national water conservation standards. The designs included a prototype for a water efficient toilet for use in new prison facilities, and a low-flow reconditioning for toilets in existing facilities.

Workers at the TDCJ facility in Navasota manufacture water-conserving toilets specifically designed for use in prisons. Workers first build individual components including bowls (see photo, below), and then assemble the finished units (see photo, above).

Claridge, working with Murray Moore, Research Associate and Curtis Boecker, research staff member at ESL, showed that a reconditioned existing toilet (one converted from 4 gallons per flush (gpf) to 1.6 gpf) could perform as well as brand new low-flow toilets, with only minor adjustments in water pressure. Because of this, TDCJ should be able to comply with the rulings at a significantly lower cost. The laws, in effect since January, 1992, stipulate that new state buildings be equipped with low-flow plumbing fixtures for water conservation purposes, and that existing fixtures be replaced as needed by low-flow models. Standards for the laws are based on specific toilet performance standards by the American Society of Mechanical Engineers (ASME).

The team's work also showed that the prototype toilet (a design intended for use in all new prison facilities) meets the requirements with optimal performance. The new design incorporates only small changes in production and will enable TDCJ to use many of its existing dies for further cost cutting. Current plans for new Texas correctional facilities call for

space to accommodate 6,000 additional beds, which means 3,000 toilet fixtures, in addition to the 45,000 prison toilets to eventually be replaced with 1.6 gpf models. Retooling the Navasota-based manufacturing plant cost TDCJ $80,000, but introducing the low-flow toilets is expected to save 50% on water and wastewater treatment costs. Add to that the intangible costs of upgrading sewer and wastewater treatment permits to accommodate more inmates (and more water use), and the TDCJ expects to more than pay back its investment. Part of the savings is expected to result from avoiding increasing wastewater treatment capacity as correctional facilities grow.

The TDCJ embarked on the toilet design and testing project on its own initiative with the belief that saving water in the State's correctional facilities would save money. Early on, the project called for detailed cost/benefit analyses and measurements of water savings to project just how much water and money could be saved with water-saving toilets. Midway through the project, though, new federal and state laws went into effect regulating both the manufacture and sale of indoor plumbing fixtures. With the changes being mandated, TDCJ cancelled plans for water and cost-saving projections. The rulings, in effect, mandated that all new correctional facilities in Texas be equipped with low-flow toilets. Further, the rulings mandated that the TDCJ manufacture only low-flow toilets for sale to county jails and other institutions. The TDCJ already supplies toilets to Arkansas and New Mexico, and expects to begin supplying low flow models to those locations as well as Kansas and other states.

Prison toilets are typically made of 100% stainless steel (all in Texas are stainless), and are more expensive than conventional institutional toilets because of that. Toilets made of porcelain can be broken apart and used as weapons. Otherwise, toilets used inside correctional facilities are just like most other institutional toilets in that they are "tankless." Conventional home toilets have a tank of water above the bowl that provides for gravity flow of water at the appropriate speed and volume to rinse waste. A tankless toilet operates with a larger "flush valve" that sends the same amount of water through the bowl in a fraction of the time.

Toilet reconditioning and manufacture of low-flow toilets for new prisons will be done at a TDCJ facility in Navasota where all Texas prison toilets are manufactured. The facility anticipates filling orders for the low-flow toilets from numerous county jails as well. The trend in county jails is to replace conventional porcelain fixtures with stainless models, most of which will be low flow.

Both toilet designs were tested during the study for removal of solids, washing of flushing surface (rim wash), removal of waste liquids, and drainline transport characterization. The tests showed that the reconditioned toilet (with an altered flush valve and modified rinse ring holes) did not meet ASME standards operating at the specified operating pressure of 35 pounds per square inch (psi) of static pressure. However, by raising the operating pressure to 65 psi static, all performance criteria were met. The prototype design did meet all standards when operating with the 1.6 gallon flush valve at a static water pressure of 35 psi.

For more information, contact David Claridge at (409) 845-1280.

From water 'cops' to xeriscapes: Cedar Park takes water conservation seriously

The City of Cedar Park is taking water conservation very seriously indeed. A year or so ago city officials realized that rapid growth would outstrip the existing capacity of wastewater treatment facilities, and that expansion of the facilities was still nearly three years away. They knew there would be problems keeping up with demand on the facilities until the expansions are placed on line. Their answer: 1) begin an expansion project; and 2) conserve water in the meantime.

The City of Cedar Park recently installed a new xeriscape at their headquarters. The landscape is a highly visible example of water conservation that customers may want to follow at homes or businesses.

Today, with the expansion project still about a year away, the City appears to have fully embraced conservation as a long-term demand side planning technique rather than just a stopgap until more treatment capacity goes on line. Cedar Park, a city of about 16,000, has watched many of its Texan neighbors limp through especially dry summers without adequate planning and conservation. So when Cedar Park, like so many other towns in Texas and elsewhere, was faced with the immediate need to radically conserve water, Cedar Park officials did what more and more Texan towns are doing - they developed a comprehensive water conservation program and then put it right to work.

Enter Beth Doolittle. Doolittle joined the Cedar Park planning staff as a full-time water conservation planner and "Water C.O.P." or Conservation On Patrol officer. Doolittle has been able to launch a number of highly visible public information programs focusing on lawn watering, xeriscape landscaping, and general water conservation.

For example, Cedar Park hosted two 3-part classes last summer on xeriscape landscaping. Free of charge to water utility customers, the "Water-Thrifty Landscape" classes drew about 40 participants who were given an introduction to the principles of xeriscape landscaping, a free and detailed xeriscape plan for their own property, and demonstrations on the installation and maintenance of a xeriscape landscape. The demonstrations were offered at Cedar Park's own xeriscape landscape in front of the Cedar Park City Hall.

The landscape was begun last summer with plantings and limestone walkways donated from nearby quarries. The area defies most people's conceptions of a xeriscape (nothing but rock and cactus) by incorporating plants like a mountain laurel tree, a desert willow, miscanthus, flowering perennials, and purple fountain grass to give the garden color, texture, and even some evening shade.

The Cedar Park xeriscape also includes a soaker hose system, which was used once a week last summer and will be used again once a week next summer to ensure proper plant establishment. Doolittle anticipates, however, that after next summer supplemental waterings will not be needed at all. Doolittle is now preparing a publication to be made available free of charge at the landscape. The guide will detail the principles of xeriscape gardening, use of soaker hoses, installation and planting guides, and general maintenance information.

Doolittle has also taken her water conservation information into the Cedar Park schools. During National Drinking Water Week, she dresses like a fish and explains that clean drinking water is not to be taken for granted, and offers water conservation tips for kids by kids. In addition, when a new area junior high school is completed, Doolittle will launch a pilot Water Wise program with 7th and 8th grade science students. The program, also used in the Houston area and elsewhere in Texas, provides 10 hands-on activities over a 6-week time period for students to learn about and come to appreciate water conservation and efficiency.

And Doolittle doesn't want to stop with students. An immediate goal is to establish a buffalo grass pilot project with area home builders and contractors. Until then, she will continue to make an effort to educate the public that 30% of all water used in Cedar Park goes toward watering St. Augustine grass. Much of that water use could be cut through the use of buffalo grass and other grasses that have low water demands.

Doolittle's role is not only educational - she also carries, after a fashion, a "regulatory" role. Last summer, when Cedar Park established mandatory water conservation rules about lawn watering, Doolittle was the city's water C.O.P. Cedar Park implemented its mandatory water conservation schedule, which included watering outdoors only on alternate days of the week, and only between the hours of 6 p.m. and 11 a.m. While the program was voluntary, and no penalties were given for noncompliance, participation was strongly encouraged. Doolittle patrolled the streets on the lookout for water hogs and for those who were violating the conservation rules. She did not give tickets, but gave friendly reminders and lectures on the importance of water conservation and tips on less wasteful ways to keep lawns green. City employees working out in the field were given forms on which to "report" water conservation violators. The forms were forwarded to Doolittle, who contacted the residents, either by letter or with a visit, reinforcing the importance of conservation.

Cedar Park anticipates at least one more very water-short summer before the new treatment plant is complete, and that will likely mean more odd/even lawn watering and

another summer of water "copping" for Doolittle. For more information on the Cedar Park water conservation program, contact Doolittle at (512) 258-4121.

Final Galveston Bay Plan released; Water conservation key to freshwater inflow

The health of the Galveston Bay ecosystem is dependent, to a great extent, on the volume, quality, and timing of freshwater inflows to the estuary. Freshwater inflows affect circulation and water quality within the estuary, and many species of fish, wildlife, aquatic plants, and shellfish depend on adequate freshwater inflows for survival. Freshwater inflow amounts depend on precipitation timing and intensity, amount of paved surface affecting runoff, and on water consumption. Planning for water conservation measures to reduce per capita water consumption will play a role in the new Galveston Bay Plan.

The final draft of the plan, which has been 5 years in the making and has undergone 8 revision cycles, was released in mid-December by the Galveston Bay Program. The plan is being reviewed by the Environmental Protection Agency Regional Office and then will go on to the Governor's Office for anticipated signing in the Spring of 1995. The plan recognizes the importance of reducing *per capita* water use and consumption, noting that as long as the bay area maintains its current growth rates an *overall* net reduction in water consumption is probably not practical.

Since future demands for freshwater may seriously affect the productivity and overall ecosystem health of Galveston Bay, one of the major goals of the plan is to ensure beneficial freshwater inflows necessary for a salinity, nutrient, and sediment loading regime adequate to maintain productivity of the economically important and ecologically characteristic species. To accomplish the goal, the plan calls for determining annual and seasonal inflow needs to the bay (by 1995), incorporating inflow needs in regulatory authority and planning processes (by the year 2000), and increasing water use efficiency within the Galveston Bay Program area by 10% (by 2005).

Six specific actions are incorporated into the plan regarding freshwater inflow management; one of those actions is to reduce water consumption by increasing water conservation in the regions surrounding the Bay. Future development within the watershed may put additional pressure on available water supplies, resulting in reduced freshwater inflows to the estuary. A long-term strategy of water conservation could help ensure that adequate freshwater inflows are provided to the Bay.

Step 1 in the plan to reduce water consumption will be for the Galveston Bay Program to cooperate with the Harris-Galveston Subsidence District, municipalities, and other local water utilities in encouraging the use of existing surface-impounded water supplies instead of the development of new surface sources of water. This will include pursuing the Trans-Texas project (a comprehensive and statewide water supply initiative) and having the Texas Water Development Board (TWDB) incorporate the same policy into the State water plan.

Step 2 will be for the Galveston Bay Program and the TWDB to interact with municipalities and other local water utilities to implement the State plumbing code and other codes that require low water use devices (such as low-flow faucets) on new or replacement fixtures, as well as the adoption of strategies (such as educational programs and water rate structure changes) for reducing per capita water use. Other possible long-term strategies include using recycled water for irrigation, watering and cooling; developing water markets; and consumer water collection. The Galveston Bay Program anticipates receiving funding from the TWDB for pilot programs.

Step 3 in the plan calls for the Galveston Bay Program to seek TWDB funding to develop a regional water conservation plan to be incorporated, when complete, into the Texas Water Plan.

These activities are expected to cost $141,250 over 5 years and will be led by the Galveston Bay Program, TWDB, and the Harris-Galveston Subsidence District. Other participants will include the Texas Natural Resource Conservation Commission, various municipalities including the City of Houston, the Trinity River Authority, the San Jacinto River Authority, and numerous water utilities.

The plan does not specify exact goals for reduced water consumption. Researchers are expected, within several months, to release information on precisely how much freshwater inflow Galveston Bay needs. Based on that information, the Galveston Bay Program plans to set and implement reduced water consumption goals specifically to meet the needs, present and projected.

For more information on this and other aspects of the new Galveston Bay Plan, contact Frank Shipley at (713) 332-9937.

Time for AWWA's special annual conservation awards

The Texas section of the American Water Works Association (AWWA) will be recognizing outstanding efforts by utilities, companies, government agencies and others in the development and use of innovative and successful water conservation methods. The Texas AWWA is now accepting applications for the competition, which is open to all who are active in promoting and supporting water conservation in Texas. Entries must be received by December 15. Winners of the competition will be announced at the Texas AWWA Section conference in Corpus Christi in April, 1995.

There will be seven awards made, including the special annual Bob Derrington Water Reclamation Award in honor of Bob Derrington. Derrington was Director of Utilities for the City of Odessa from 1978 until his death in 1990. He also served as President of the Texas Water Utilities Association and the Texas Municipal Utilities Association. All water reuse projects will be eligible for the Bob Derrington Award.

Other award categories include both direct and indirect conservation programs for small utilities, large utilities and non-utilities. Direct programs directly reduce water consumption, such as a retrofit program. Indirect programs include education or

demonstration projects that promote conservation, but where results are not always easily measured. Application for the Bob Derrington Award does not exclude an entry from any of the other categories.

Each entry should include a completed entry form and a two-page summary describing the entry, and providing information on why the program was necessary, what the program objectives were, details of the implementation, and an evaluation of the results of the effort. Other supporting materials, such as videos, newspaper articles, brochures and customer responses may also be included with the application. However, due to the number of entries, the awards committee asks that supporting materials be kept to a minimum.

To obtain an entry form, contact Cheri Vogel at the Lower Colorado River Authority at 1-800-776-5272, extension 7586.

Water reuse considered for Austin's new airport

The City of Austin's Water and Wastewater Utility is considering using reclaimed water at its new airport to be opened at the former Bergstrom Air Force Base. After evaluating the feasibility of using reclaimed water for toilets and urinals at the terminal, and for irrigation around the terminal, the Utility determined that reclaimed water would be used solely for irrigation for the time being. The Utility recommends the plan in light of Austin's goal to reduce maximum daily water demand by 10% and average per capita daily consumption by 5%.

The Utility recently conducted a feasibility study of providing reclaimed water to the new airport, concluding that the present infrastructure is not capable of supplying filtered water for toilets and urinals to the new airport without extensive and costly improvements. With necessary upgrades, the Utility would be able to provide filtered, reclaimed water to the new airport. With the necessary improvements in place, there may well be other potential reclaimed water customers in the vicinity of the new airport, including several golf courses and industrial facilities.

One of the major obstacles to use of reclaimed water in a public facility has traditionally been public acceptance. The feasibility study included a random sample of 509 households polled for their perceptions about using reclaimed wastewater. The results showed: (1) 83% agreed that they were comfortable with using reclaimed water for purposes other than drinking; (2) 76% agreed with providing reclaimed water to residential customers for watering their lawns; and (3) 81% agreed with providing reclaimed wastewater for manufacturing and other industrial uses. Based on this, the Utility contends that Austin's public will generally accept the use of recycled water in toilets inside the airport, and for landscape irrigation outside the airport.

The other major obstacle for the project will be funding for the needed improvements. The Utility agreed to absorb the costs associated with providing the additional operational and maintenance costs related to delivering the unfiltered water to the new airport property line, but cannot commit to providing reclaimed water within the boundaries of

the new airport without additional funding assistance. Part of the funding shortfall may be compensated for through a revised rate structure that more accurately reflects the costs of providing filtered and unfiltered, reclaimed water. For more information, call Cris Guzman at (512) 322-2894.

Reclamation and reuse have great potential in Texas

Interest in using reclaimed wastewater in Texas continues to increase as communities struggle with rising water and wastewater costs and look for additional, reliable water supplies for the future. Approximately 65 million gallons a day (mgd) of effluent are reused each year in Texas, but the potential for reuse is much higher. Texas cities discharge about 55% of the water they typically use, or about 1.6 billion gallons a day. That figure is expected to climb to 2.5 billion gallons a day within the next 50 years. With that in mind, Texans currently reuse only about 3 or 4% of the available municipal effluent generated in the State.

The Texas Water Development Board (TWDB) estimates that the potential for conventional use of reclaimed water in Texas is currently an additional 200 to 400 million gallons per day, which is significantly more than is now occurring. In addition, homeowners produce about 500 mgd of "graywater" from their use of showers, clothes washers, and bathroom lavatories. That figure will almost certainly increase over the next 50 years. In fact, the potential for reusing graywater is so high that the Texas State Board of Plumbing Examiners has recently proposed guidelines for the treatment and disposal of graywater, including systems designed to treat or distribute reclaimed graywater for reuse.

A recent study showed that on a county by county basis, without regard for cost, local geography, or environmental considerations, as much as 850 million gallons a day of effluent could be reused by conventional means including irrigation, industrial, and other urban uses. However, the real potential is less than that and is probably in the range of 200 to 400 mgd.

Effluent offers a "drought proof" and secure source of water for commercial landscape irrigation and industrial use, and treated wastewater is the only "source of water" that is expected to continue to increase. Reuse is considered an integral part of overall water planning efforts by numerous Texas agencies. In addition, the TWDB is funding several innovative reuse research projects. For more information, call Bill Hoffman at (512) 463-7932.