# SAVING WATER: the politics of conservation

***Interaction between water utilities, green industry groups and government agencies can be confrontational or cooperative.***

by LEAH ROTTKE

*The politics of water is very much like the politics we see from Washington: there are those who make the rules, and those who must obey them, like it or not.*

*But the industry can help legislators understand that turf doesn't waste water, people do.*

*Here's a look at what's happening with water politics in the green industry today.—ed.*

**Nevada association wins**

In January, 1997, the regional water board for the Reno, Nevada area attempted to have turf banned from all new landscape installations on commercial properties. The plan called for:

- no turf on new commercial properties;
- no turfgrass on slopes greater than 10 degrees;
- 25 percent maximum amount of turf allowed in multi-tenant developments.

The Nevada Landscape Association responded quickly, says NLA president Michael King. It turned to Dr. James Beard, professor emeritus, Texas A&M, and others for help. It also hired attorneys and produced a 90-minute video showing industry's side.

The county responded to King's suggestions for revisions. The water board and the NLA met to work out a conservation plan together. They now meet twice each month, but city and county governments dictate irrigation scheduling to green industry professionals with a law limiting landscape watering to two days per week.

King wants to see the state adopt a performance-based water use program based on evapotranspiration (ET) rates.

"This has been a proven method in other cities where I have collected information, and it is a win-win situation in those cities; for the water purveyor, the landscape industry and conservation," says King, who adds that a water conservation program based on performance would secure the water needed for landscapes.

**Automatic shut-offs**

In 1991, the state of Florida passed a law requiring all newly-installed irrigation controllers to have rain shut-off devices. The on/off switch idea sufficed until October 1996, when Hillsboro County passed an ordinance requiring all controllers, regardless of their installation date, to have automatic rain shut-off capability. The penalty for non-compliance is a $500 fine, per controller.

The Southwest Florida Water management District oversees sixteen counties and regulates irrigation scheduling throughout its territory. Even numbered properties are permitted to water on Tuesdays and Saturdays. Odd-numbered properties can water on Wednesdays and Sundays.

Customers using reclaimed water are exempt from restrictions, and a 'stress exemption' can be made for commercial agriculture and golf courses.

The district tempers regulation with communication. A group called the Green Industry Advisory Committee meets with the water authority monthly. According to Water Conservation Analyst, Kathy Foley, all of the committee's revisions to a list of recommended plants—to be published for use by the public—were adopted.

**The Georgia plan**

Georgia passed a water conservation law in 1994 requiring applicants for a new commercial meter to present a water conservation plan. The law

## More science than art

Technological advancements have allowed landscape managers to apply water at much slower rates, using low-flow nozzles and semi-porous tubing that reduce runoff," explains Dave Hanson, Environmental Care, Calabasas, Calif.

"Improvements in drip irrigation and bubbler equipment have made spot applications of water highly successful.

"Combined with changes in irrigation clocks that allow multiple programs and cycles of water application as well as moisture and flow sensing capabilities, one can easily see why water management programs are now more efficient than ever before," says Hanson.

"While we are not yet perfect, the importance of landscape water management is now certainly practiced as more of a science than as an art."

does not regulate specifics, such as irrigation equipment. Currently, only commercial customers using 100,000 gallons or more per day must file for a "withdrawal permit" from the Georgia Environmental Protection Division, but a bill to lower that threshold has been introduced as H.B. 528.

**Jeff Jordan: 'Water Wise' council is working in Georgia.**

Drought conditions of 1988 brought about the formation of the Georgia Water Wise Council.

Jeff Jordan, board member and professor of Agricultural Economics at the University of Georgia, recalls Water-Wise's beginning as "one contentious meeting." The water utility had proposed shutting off the supply to landscaping completely. Today, the council brings together university faculty, the state EPA, municipal and water utility personnel and members of the Georgia Green Industry Association. The post of council president is shared on a rotating basis between representatives of each interest group.

The result of council's interaction is the development of a cooperative approach for Georgia, to conserve water without limits on landscapes.

**California 'BMP' revision**

Water utilities, environmental groups and "other interested parties" (the category green industry associations fall into) signed a "Memorandum of Understanding" in California in 1991. Signatories of this document pledged themselves to certain "Best Management Practices" if they proved cost effective.

The BMPs, a voluntary effort, are now under revision because they weren't specific enough and water savings could not be quantified.

The most recent set of revisions do not offer the changes the California Landscape Contractor's Association hoped to see, says CLCA's Director of Governmental Affairs, Larry Rohlfes.

CLCA supports self-regulation, such as water budgets for landscapes, based on 100 percent ET values for turfgrass and water rate structures that penalize waste.

Otay Water District in Spring Valley, Calif. and Irvine Ranch in Southern California have already adopted these strategies, but older utilities faced with the cost of retrofitting meters, in addition to political considerations, have delayed making a change.

"Another factor to consider," adds Jan Tubiolo, water conservation coordinator for the Otay Water District, "is the financial or staffing capability of an agency to implement the sophisticated computer data base tracking system required." Smaller agencies, says Tubiolo, have limited revenue.

The Otay Water District developed a budget-based Water-Efficient Landscape Irrigation Ordinance to assist commercial irrigation customers in their efforts to reduce water consumption and to achieve savings through reduced water demand. A one-year study used base-year consumption data and 30 years of weather data, based upon a reference evapotranspiration (ET) for the area.

"Commercial irrigation accounts have water use allotments set by their reported square footage. The annual allocation is seasonalized," says Tubiolo, "and unused water is banked, to allow them to avoid incurring overuse penalties while using their allocation during brief hot spells, or while establishing new plantings or in the event of system breaks.

Water budgets, explains Tubiolo, give customers with irrigation accounts an annual allocation of water. Monthly water use for irrigation needs is monitored by computer.

**Tubiolo: law sets water budgets.**

"Over-use penalties are automatically set and compliance is enforced through the billing system."

Tubiolo says the water demand on the district was reduced 23 percent the first year.

"Landscape water management is now certainly practiced as more of a science than as an art," says Dave Hanson, vice presiden, regional manager and director of technical support, Environmental Care, Inc. ECI is a division of Environmental Industries, Calabasas, Calif. As new regulations dictate how new landscapes will be designed and irrigated, landscape managers have responded by combining common sense with new technology, says Hanson, a specialist in issues concerning chemical technology and turfgrass science.

**Hanson: common-sense changes can be made.**

Says Hanson, "Common sense changes include eliminating small, difficult-to-irrigate areas; separating plant material into irrigation zones (hydrozones) based on water use requirements; reducing the amount of turf in non-functional areas; and utilizing reclaimed water when possible."

**Hardware solutions**

Lynda Wightman and Eric Bescoby are involved in the issue from the product manufacturers' point of view. Wightman as sales education manager for Hunter Industries, and Bescoby as general manager of Rain Bird's Golf Division.

"As I talk to people, I find water conservation concerns are everywhere, even in places you wouldn't expect to find them," says Wightman.

"It's not confined to Southern California."

Equipment makers are doing what they can, says Wightman, to invent the technology needed to save every extra gallon.

"In today's equipment, you see more specialty features: adjustable arcs; more versatile pop-up strokes; efficient swing joints; adjustable sprinkler

# Ways to conserve

Forward-looking manufacturers are always looking at ways to make their equipment better address the following key areas of opportunity for good irrigation management practices.

**1. Education of industry professionals.** Irrigation product manufacturers, along with landscape architects and irrigation consultants have taken the lead in educating industry professionals about the basics of irrigation design. Rain Bird has taken a pro-active role with the Irrigation Association in promoting water conservation.

**2. Placement of irrigation water.** The design and installation must put water only where it is needed, not on street, sidewalks or walls.

**3. Application rate** of irrigation zone needs to match soil absorption rate.

**4. Apply water** in an irrigation zone uniformly. Note how evenly water is applied.

**5. Use 'deficit watering'**. Apply water today based only on the amount of water that was evapotranspirated the day before.

In order to replace water that has been evapotranspirated, do I have to add 10 percent more (90 percent efficiency); 20 percent more (80 percent efficiency) or 50 percent more (50 percent efficiency) water through my irrigation system? Uniform water distribution can be a big factor in irrigation system efficiency.

Evaporation, misting, overspray, high pressure fogging and misadjusted sprinklers, mean that an irrigation system's efficiency will always be less than 100 percent.

Landscape drip watering is by far the most efficient way to water non-grass areas because pressure regulation, filtration and very slow application rates that are lower than the soil absorption rate are standard when it comes to landscape drip system.

**6. Control zones:** move from electromechanical to 100 percent solid state and hybrid controllers, to increase precision.

**7. Improve** watering efficiencies: control water pressure or water flow at the point of water distribution; use pressure compensating emitters, pressure compensating modules and pressure compensating bubblers; improve the evenness of the water coverage through technological improvements in nozzle design. □

*Karima Lalji, marketing coordinator, Rain Bird Sales, Inc.*

heads; and precipitation rates matched to different soil mixes.

"As a manufacturer," says Wightman, "[Hunter] works with customers, public agencies, designers, installers and maintenance personnel," to conserve more water.

"Even though 80-85 percent of California's water is used for agriculture, golf courses get a lot of public and press attention," says Bescoby. "They're easy targets for environmental and water use issues."

Bescoby cites an Irrigation Association study that says average water use on a California golf course is 250,000 gallons per day.

**Wightman: water issues nationwide**

"Reclaimed water is becoming the trend, and it can be done with a high degree of professionalism," says Bescoby. Other ways to save include reducing runoff; more frequent turf aeration; drought tolerant grasses; weather stations; drip irrigation systems; and mulch.

**Home of xeriscaping**

The word "xeriscape" was coined in Colorado, when local green industry professionals first brought the idea of "water conservation through creative landscaping" to Denver Water's attention. (Denver gets less than 15 inches of rain a year.)

In 1982, they designed and constructed a demonstration garden on ½ acre of the water utility's land. Denver Water has sought to teach by example ever since. Eight years ago, it adopted a 10-year capital improvement plan to convert all of Denver Water's landscaped areas to a more water-efficient style. Now, even the turfed areas are irrigated supplements.

Denver Water sees potable water security as a global problem, that will only grow more difficult to solve, and has prioritized its strategy to meet demand. The plan includes conservation, use of reclaimed water and the development of a new supply.

Ken Ball, landscape architect and Conservation Analyst for Denver Water says the utility supports the use of alternative water sources for commercial users (such as by capturing runoff), and provides engineering assistance to projects during the design process to help develop these outside water sources.

Denver Water's overt restrictions on landscape irrigation are reserved for "crisis situations" only, and have been used in 1955 and 1977. **LM**

*The author is a horticultural and irrigation consultant based in San Diego. "Xeriscape" and the phrase "water conservation through creative landscaping" are trademarked properties of the National Xeriscape Council, Inc. Additional reporting by Terry McIver.*