Irrigating With Intelligence

Entities with both single and multiple locations drastically cut outside water use with advanced technologies.

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To say that Memphis, TN-based Mid-America Apartment Communities is both a landscaping and sustainability-focused company would be an understatement. The owner of more than 42,000 apartment homes in 11 southern states has had more than 60% of its portfolio recognized, with 36 landscape awards by more than 40 independent associations during the past several years, and maintains a land group consisting of regional landscape directors who manage property landscaping and its financial effects on property operations while subcontracting maintenance locally. Starting in 2005, Mid-America began incorporating smart irrigation technologies into its landscape maintenance at several properties.

The company's use of smart irrigation is just one example of how public- and private-sector entities around the country are reducing water consumption where it is highest and most expensive—outdoors.

In spring 2010, Mid-America planned to expand its smart irrigation systems from seven to more than 20. "We started looking at some of our higher water use properties, and, obviously, the longest watering seasons that cost us the most water and money to operate are in our hotter areas of Florida and Texas," notes Josh White, director of landscape operations. "So we started in those areas, and then realized that the technology will work anywhere we have a footprint. Now we're trying to work it into any of our sites that use a lot of water."

White adds that other criteria for prioritizing implementation are the cost of water in a given region and the sheer size of a community.

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The smart irrigation initiative began to materialize early over the past decade. "You only have to water so much to keep things alive, but the standard in the industry for a long time has been that keeping it green means over-watering a bit to be safe," says White. "A big part of standardizing our whole operation is teaching our vendors environmental stewardship. We wouldn't use a system that was really expensive just for the sake of saving water if it couldn't reduce our expenses enough to offset that cost. But another piece of it was that we noticed that over-watering was really damaging some of our plant material—we were not driving the root growth like we should have been."

Within a couple of years, the company began to search for a specific technology provider. A major consideration was the disparate irrigation system components such as valves, lines, and output devices that were already in place; White notes that compatibility with these components was a major consideration in the choice of a control system.

A typical Mid-America system uses an ET Water smart controller—although any manufacturer's irrigation controller can be utilized—which receives data compiled by the WeatherBug network of local weather stations via cellular signal transmission or telephone

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lines. The systems are controlled by ET Water's ET Manager Web-accessible software. Regional landscape directors can enter zone-specific inputs, which, combined with the weather data and utilizing an algorithm, dictate when the system turns on and how much water is dispensed. The inputs include soil type, slope, sun/shade mix, type of landscape material, plant type, and output device; default settings are also provided. The directors tweak the inputs over time to address dynamic conditions such as root depth.

Photos: ET Water
The use of smart irrigation is just one example of reducing water consumption where it is highest and most expensive—outdoors.

It is possible to override the system and shut it off early when an event characterized by significant foot traffic on turf is scheduled, for example. White points out that the systems also are equipped with flow sensors that alert management of conditions such as leaks or broken sprinkler heads. In addition, the system recently became controllable via smart phones. "As we travel and have access to technology, there's the capability of having access to the Internet while we're standing somewhere," notes White, adding that this capability will also allow one-person control without the need to communicate adjustments to the office.

Smart irrigation fits the company's strategic sustainability goals. Other tactics involve a Ground Cover Initiative that has reduced lawn areas by 120,000 square feet throughout its communities with plants—55% of which reportedly are drought-tolerant. The smart irrigation is expected to reduce water consumption at the properties where it is used by 30%.

White reports that smart irrigation is fundamentally changing the company's approach to irrigation. "We're finding that we can actually drive more efficiency by changing our landscape makeup, and we never thought about that until we saw how often the system should be running,"he says. "We see huge water uses in some areas versus others—shrubs versus ground covers, for example." **Next Page >**

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