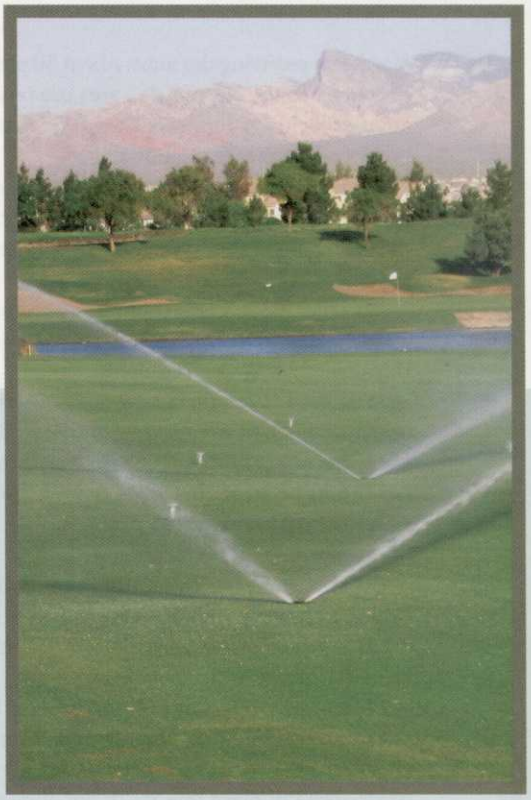
WATER PRESSURE

Many superintendents face challenges when dealing with restrictions and cost

BY JOHN TORSIELLO



At the TPC Summerlin in Las Vegas, superintendent Dale Hahn went from paying $1.69 per 1,000 gallons of water to $2.33. Photos: Dale Hahn

The price of water is rising almost as fast as the cost of gasoline in some areas of the country. Just ask Dale Hahn, superintendent at the TPC at Summerlin in Las Vegas.

"We've gone from paying $1.69 per 1,000 gallons of water to $2.33, and our water budget has increased from a half million dollars a year to almost $900,000 in five years," he says. "We figure $30 of every round goes toward water."

Of course, not every superintendent has to deal with such challenging financial issues. Yet more superintendents are facing tightening governmental water restrictions, especially in drought-plagued areas of the country such as Georgia and Florida.

"We went to a level four restriction this year because all our drinking water for the Atlanta area comes from lakes and rivers and officials were getting nervous because of the severe drought," says Mark Esoda, superintendent at Atlanta Country Club. "What that did was ban all outdoor watering with a handful of exemptions."

Esoda was restricted to watering only greens, despite the fact he draws irrigation water from ponds located on the grounds of the property.

"It seems we have a one-size-fits-all policy, and that doesn't really make sense," he says. "My ponds are full, but I can't use the water. The guidelines should be more site specific."

Keeping the course at the Atlanta Country Club green in the face of such severe water-use limits is a losing battle, Esoda says.

"We're already seeing browning on slopes and under trees," he says. "We're trying to protect the course the best way we can and still allow our members to play golf. That's always the goal."

Esoda limited golf carts to paths to help reduce stress on the thinning fairway turf and raised mowing heights. And a little help from Mother Nature is always appreciated.

"We got lucky last week and had two-tenths of rainfall each on two nights," he says. "In some areas of the state, superintendents are very nervous. Bermudagrass goes dormant and always comes out of the winter worse than it goes in, so we don't know what the ultimate effect will be."

Georgia officials made certain exceptions to the water restrictions in some areas, such as allowing watering coursewide immediately after applying pesticides and fertilizers.

Florida is another state hit hard this year by a lack of rainfall, which resulted in water restrictions in some areas of the state. Mark Jarrell, superintendent at Palm Beach National Golf Club in Lake Worth, Fla., faced a 45-percent reduction of his overall water use in late spring because of the drought. The restrictions were softened in late summer, but some areas around Naples continued to be on a 30-percent reduction of their allowable water use.

"I've heard several courses in the Naples area that normally overseed cancelled it because they're afraid they won't have enough water," Jarrell says. "We had it tough for a while, especially in April and May. Most people stopped watering the roughs right away."

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TIGHT RESTRICTIONS

Golf courses receive their irrigation water from a variety of sources, ranging from recycled effluent to runoff to on site ponds and lakes to wells and private and public water companies. Generally, a golf course in Florida can expect rainfall to amount to about 40 percent of the total needed each year. That number varies throughout the country, with the Southwest receiving the least and the Northwest and

Northeast receiving the most. About 50 percent of courses in the Mesa, Ariz., area use recycled effluent for irrigation, says Gregg Thomas, superintendent at Mesa Country Club.

"Some courses don't have the infrastructure to allow use of effluent or recaptured water, and they're buying water," he says. "My gosh is that expensive."

For water use at Mesa, Thomas must complete a water withdrawal form required by the Arizona Department of Water Resources.

"You need to tell them how much water you use, how much of your usage is from reclaimed water and down the line," he says. "Each course has a yearly average they must meet, and if the department sees repeated overages, they can fine a course."

Geoff Haynes, superintendent at Maderas Golf Club in Poway, Calif., has a uniquely local water-use problem. It seems one of the club's wells affects a nearby homeowner's well.

"When we pump the well in question for a week, we can lower the homeowner's well by about 10 feet," he says. "As a result, there's a trigger-level in place that we're not allowed to breach, or we have to shut down our wells."

Additionally, Haynes must monitor the club's monthly groundwater production through the use of data-loggers (sensors) that have been placed in each of the wells. The sensors take hourly information readings, which are collected via a laptop and sent to a hydrologist monthly. The situation causes a juggling act during the summer months.

"We're striving to meet the turfgrass' need for water and also respect the trigger-level so that we can continue pumping groundwater," he says.

Water-use restrictions are becoming so tight in Nevada some courses are removing turf as a way to reduce their consumption. Others have incorporated more native areas.

"There's a golf course down the road that's in the process of removing 90 acres of turf," Hahn says. "It just makes sense from a financial standpoint. Plus, the state will pay you $1 per square foot of turf removed to conserve water."

Hahn, whose course draws water from a recycled water plant a mile away from the club, says the Southern Nevada Water Authority conducted an aerial survey of golf courses in the Las Vegas area to determine what the department felt was a fair usage level according to the amount of turf each had. Hahn's course is allowed to use 6.3 acre feet of water per irrigated acre.

"Some courses were using as little as three acre feet per acre and others were as high as 10 acre feet," he says. "They drew a line at 6.3, and that was the figure we had to live by. There's talk it might be lowered to 6.0.

"The Authority was very fair and open-minded setting up the regulations," he adds. "They met with every superintendent and took our input and adjusted the acreage that needs to be watered accordingly."

But some don't view governmental regulations in such a favorable light.

"The golf industry is an easy target when water gets tight," says Joel Jackson, a spokesman for the Florida Golf Course Superintendent's Association. "I've seen studies that show golf courses in Florida use three percent of the daily consumption of the state's water supplies. The general public uses 30 percent, and half of that is on lawns."

Golf course superintendents are the first to get fined and the only ones who have to report water use daily, Jarrell says.

"Golf is an $8-billion-a-year business in Florida, but the public perception is that water a golf course uses gets wasted," he says. "The fact is every golf course is a positive recharger of the water supply. I have 159 acres of turf, and in an average year with 54 inches of rain, 227 million gallons of water will hit my ground. A small percentage will run off, and some will

At the TPC at Summerlin, superintendent Dale Hahn's water budget has increased from $500,000 a year to almost $900,000 in five years. Photo: Dale Hahn

To maximize water allotments and prevent overwatering, some golf courses need upgraded irrigation systems. Photo: Dale Hahn

evaporate, but a majority will go into the ground water supply.

"If it rains at 1 a.m., I go to the course and turn the irrigation system off," he says. "I'll be driving to the club in a rainstorm, and there will be water bubbling up on lawns from sprinkler systems that are left on."

SPREAD THE WORD

Jarrell and others will continue to take their arguments for more site specific and enlightened water regulations to government agencies and the public. Thomas and other superintendents in the Mesa area are conducting an aggressive educational campaign to inform the public about their concern for water conservation.

"We'll be at various tournaments throughout the region this winter and at different industry events educating the public," Thomas says. "The project will allow us to get the word out that golf in Arizona is a $3.4-billion-a-year business and we use two percent of the state's water. That was according to an Arizona State University study in 2004. But the perception is that we waste water. We're good citizens and want to tell that story."

Education also extends to club members and customers. Esoda says superintendents should always tell their members what they're dealing with. Jarrell concurs.

"Member expectations have gone through the roof when it comes to the look of the course," Jarrell says. "You have to make them aware of water restrictions and that your course can't always be as green as they expect 365 days a year."

A LITTLE HELP

Superintendents employ various methods to maximize their water allotments. Almost all use wetting agents that allow water supplied by irrigation and rainfall to soak into the ground more effectively and reach the roots of the turf where it does the most good. Others have updated their irrigation systems, and some have gone high tech.

"You have to upgrade your irrigation and computer controls," Hahn says. "We've got a small weather station that allows us to closely monitor conditions and fine-tune our watering. We read our usage meters once a week and adjust our watering accordingly. A course that makes $100,000 a year can lose all of that by overwatering. When water becomes more expensive and is tightly restricted more ... an expenditure on a new, state-of-the-art system makes sense."

Thomas says he doesn't know of anybody who isn't using wetting agents.

"At some of the higher-end courses that have PGA Tour events and private clubs, they use wetting agents wall to wall," he says. "Everyone has a computer-controlled irrigation system and weather stations to help them closely monitor and adjust their water usage. We also reduce the depth of our watering to conserve."

WATER SURPLUS

But not all superintendents worry about water use. In fact, Bob Wolverton, superintendent at Bayonne (N.J.) Golf Club, is in the opposite position.

"The city of Bayonne has a surplus of water, and it wants us to use as much as we can, which is nice for us," Wolverton says. "We have lost some big industrial sites down here, and the city dropped almost 4 million gallons of usage a day because of it."

Bayonne's developers attempted to find other sources of water but ended up with no appreciable results.

"We can't drill wells because we bring up brackish water," Wolverton says. "We will try to keep our water usage less then 25 million gallons this year, and we do that by using as little water as possible to keep the course alive through the summer. But one of the reasons we built a course in the links style was because we wanted to keep it firm and dry."

Bayonne doesn't benefit greatly from rainfall because the water filters quickly through a sand cap under the turf.

"I can have a one-inch rain event and then be syringing by the afternoon," Wolverton says.

DOWN THE ROAD

With greater variations of weather patterns and urban sprawl into arid sections of the country, water will likely become an increasingly precious and well-guarded commodity.

"There's talk of reducing our water usage," Hahn says. "If it gets much tighter, we'll have to start removing turf."

Jackson is sure water regulations will get more stringent, and to combat that, the industry might see greater turf reduction on courses in the near future.

Haynes recommends superintendents educate themselves about their course's average annual water requirements then make sure they thoroughly understand the restrictions in place and how they might limit consumption or production abilities. Superintendents then should be able to author a plan about how to continue providing their course with the necessary amounts of water. **GCI**

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