

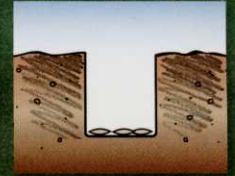


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## THE SCARCITY ERA

If you survived the recent economic crisis, then get ready for the next big challenge – water.

If you haven't already, by the end of this decade the chances are good you'll need to answer tough questions about how you're using water at your facility.

In fact, water usage could easily trump all other critical debates. And like always, this industry seems to have a big, red target painted on its back because golf is commonly deemed as non-essential. Unlike the debates that surround golf about land usage and chemical inputs, when push comes to shove and a water scarcity issues surfaces, the golf industry could be left with an empty cup.

But this doesn't have to be the case, says Charles Fishman, the author of "The Big Thirst." Fishman takes an engaging look at the challenges of smart water management today and into the future. Check out my interview with Fishman on page 64.

The future is only grim for



**Mike Zawacki**  
Editor

colleagues about best practices and frugal water management. It'll also come from exploring what other industries— such as agriculture and manufacturing – have been doing successfully to stretch their water.

"Getting out in front of it is smart strategically," Fishman says. "Reaching out to the community and understanding how other users are achieving efficiency and smart water management. Build the connections that will allow you to manage water smartly and give you insight into the politics of water in your community so that when scarcity comes you're in a better position to handle it."

By devoting an entire issue to water issues,

GCI wants to help bridge the gap about what's working for others throughout the industry. For starters, we partnered with Trone Brand Energy to conduct research on water-usage trends throughout the golf industry (see page 14). In addition, there are article and case studies about how superintendents are taking steps to

Suppose you arrive for work one day to find an official letter stating that your access to water has been cut by 20 percent – effective immediately.

those courses – including those surrounded by seemingly unlimited water resources – unprepared for the eventuality of operating with less, Fishman says. Suppose you arrive for work one day to find an official letter stating that your access to water has been cut by 20 percent – effective immediately. What would you do? What's your contingency plan?

Water is a widespread problem, but it's also chiefly a local problem, Fishman says. This is good for the golf industry. Not only because local problems have local solutions, but because superintendents are great problem solvers. Fishman suggests superintendents need to be out front of this issue – not only with players and members, but also their communities. Success in a water-restricted world will not only stem from learning from

successfully reduce their water needs without compromising playing conditions.

Without a doubt, superintendents do a great job when it comes to managing resources including water. However, it's clear that this is an issue that must be taken seriously. Fishman proposes those courses lacking a clear water-reduction contingency plan will not survive the decade.

Stay ahead of this curve. Communicate with your players, members and community the steps you've taken and the plans on the books to use your water more effectively. Impress them with a plan to reduce water needs by 5 percent this year, 8 percent next year, and even 10 percent in the coming years. Let everyone know you're not all wet when it comes to water conservation. GCI

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## Watching wildlife

It's not uncommon to see animals on the course, but it's tough to know exactly what all really is running wild out there. Henry Michna, superintendent of Winnetka Golf Course in Winnetka, Ill., has a better idea, thanks to Eagle Scout Nick Hedge.

Hedge produced a wildlife guide for the public course as his Eagle Scout project this year, documenting animals with the help of Michna and Mary Cherveney, the park district's communications manager.

As an open space in the community, the course doubles as a walking area and a snowshoe/cross country-skiing area in winter. Hedge's project was meant to make the wildlife of the course more visible to visitors.

During the golf season last year, Hedge observed and documented

animals on the course by taking walks around the course. He noted and researched the animals he spotted. Michna himself got involved, keeping an eye out as he hit the course each morning.

Hedge listed 39 entries in his guide, including a description of each animal, its habitat and other information about the animal from his research.

As another part of his project, Hedge built and placed 12 metal-roofed birdhouses around the course to replace older, worn-down bird habitats.

The wildlife guides are available free at the golf club or from the park district's website.

Eagle Scout Nick Hedge, with his parents and the Winnetka park board.



## A bunker brake

A bunker is one of the worst places to end a drive. But they're especially bad when that drive is in a car, as Patricia Maione of Uxbridge, Mass., discovered.

Police say Maione drove onto Whitinsville Golf Club in Northbridge at about 45 mph. She says she was

just following her GPS, which instructed her to turn left into what she called a "cornfield," and landed in the bunker. Her car was nose-down in the sand, rear

wheels in the air, when police found her.

An officer had been following her green Buick after a call to the police from Maione's former boyfriend who alleged she had violated a no-trespassing order. Officers found her still in her vehicle in the bunker when they arrived.

She failed a field sobriety test, and admitted to officers she had consumed about a half liter of vodka earlier in the day.

An officer found a cup containing an alcoholic beverage in the car. She was arrested and charged for driving with a suspended license and drunk driving, fourth offense.

We're going to guess she also didn't rake the bunker afterward.



# Heart hero

May 23 could've been the last day of Fred Elliott's life. But thanks to a recently placed defibrillator and a heroic assistant superintendent, he has survived to play another game.

Elliott, a 66-year-old golf pro at Hidden Valley Country Club in Reno, Nev., was playing in the Sierra Nevada Chapter's championship when a family history of heart issues caught up with him. His group had just moved to the No. 12 tee when he collapsed, suffering cardiac arrest.

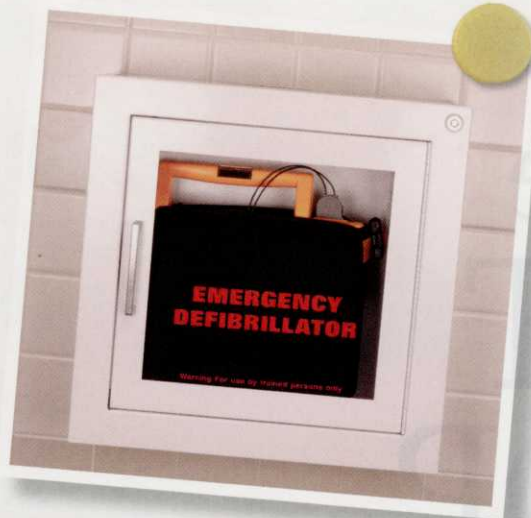
"I was working the green there," says Franco Ruiz, assistant superintendent. "I thought they were playing a joke, but another employee said, 'I think they're having a problem.'"

Though the course had two Automated External Defibrillators, one in the clubhouse and one on a marshal's cart, the country club added two more only this year. They placed them just in April, one between the No. 5 and 6 holes and the other between the No. 11 and 12 holes: the latter right where Elliott had fallen.

Ruiz himself, as well as the rest of the staff, had received training on the AED only a few months earlier, along with a CPR class. He took the device and hooked it up to Elliott.

"I know this person very well. He's been a pro a long time," says Ruiz. "When you see someone you've known for a long time, you feel kind of tight. I had to do something. I tried to do my best. At the time, you think of nothing, just what you're doing."

Ruiz shocked Elliott three times when an ambulance arrived and trucked him to Renown Medical Center. Two stents were placed in a blocked artery and he spent nearly a week in the hospital – but he's alive and home, thanks to Ruiz.



## KEEP AN EYE ON THE SKY

As storms pummeled the coast at the end of July, harsh weather gave golfers and course workers more and more reasons to pay attention to the lightning warning signal.

At the Lake of Isles course in North Stonington, Conn., course workers had sought shelter from the storms in a grounded, enclosed building on the course. Seven of them had headed in when lightning struck the ground nearby.

All seven workers were conscious and alert when they were taken to the local hospital, say state police.



## From THE FEED

GCI's Pat Jones recently caught up on the newest happenings in the power equipment world at the annual OPEI meeting, reporting on speakers and notable events through Twitter.

GCI @GCImagazine The legendary Howard Fineman of Newsweek, NBC and Huffpo fame now speaking to the @OPEIInstitute meeting.

GCI @GCImagazine Fineman: Twitter is the ultimate expression of today's short attention span ethos. #youkidsgetoffmylawn!

Russell Heller @fpsuper Totally agree. Twitter has caused me to



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# To the LAST DROP...

Las Vegas superintendent Tim Cloninger has made a career out of knowing how to use his water resources. by Brian Vinchesi

**T**im Cloninger has been the superintendent at Shadow Creek since July of 2011. He was also the assistant superintendent from late 2005 to the end of 2007. Tim has an interesting background for a golf course superintendent, which includes positions in Australia, Mexico and the Cayman Islands. In addition to obtaining a turf degree, he has done graduate work in Water Policy and Geographical Information Systems (GIS). Given his background working with water policy and state of the art technologies, I interviewed Tim about maintaining an exclusive golf course in the Las Vegas heat with a limited water supply.

**How old is the irrigation system at Shadow Creek, and what type of system is it?** The irrigation system at Shadow Creek was originally installed with the construction of the golf course in 1990. The fairways and rough irrigation systems were redone in 2003 and the greens and tees in 2004. In 2008 the golf course was renovated and adjustments were made to the irrigation system. The native area irrigation systems are all still original. A new 7,200-gallon-per minute (gpm) Watertronics pump station was installed in 2011. The system is primarily Rain Bird with some miscellaneous equipment in the native areas.

**What don't you like about your irrigation system?** The native areas – which are native for the golf course, but not native to Las Vegas – are all block controlled and waste a lot of wa-

ter. They need major improvements as there is not enough control and they have poor sprinkler spacing as well as aging equipment. There is also a large amount of drip irrigation installed and I do not have a good handle on how much water it is using and I feel if we can improve the scheduling of the drip irrigation we can save a lot of water.

**Is there anything you like about your irrigation system?** There are a lot of quick couplers on the course and they are spaced in such a way that we can water any turf area on the golf course with a 100-foot hose, which we do a lot. I also like that we have two-part circle sprinklers on the edge of the fairways to separate the rough and fairway watering which is nice if you don't over seed, but also because our fairways are sand capped and the rough isn't so they have very different watering requirements.

**How does your irrigation system waste water?** The block system in the native areas is wasteful on many levels. The spacing is not ideal and the system is old. The zones cover a lot of area with different soils and different plant material as well as widely varying topography. There is a very large amount of drip irrigation installed on the perimeter of the property and the plantings along the golf course. We do not have a very good handle on the size of the drip zones and I think could do a better job of scheduling the



drip zones. We also have a large amount of surface water with a high evaporation rate.

**If money was no object, what would your No. 1 irrigation improvement be?** I would work on the native areas which in Las Vegas are not native with only 4 inches of rainfall a year they are irrigation dependent. I would fix the spacing's and get more control of the operation by having single sprinkler control or much smaller zones. Given our plant height, many of the sprinklers need to be above grade to provide more uniform coverage.

**Water policy is starting to influence golf course watering and will continue to in the fu-**



Cloninger: "Water is an area where I can reduce cost and improve conditions at the same time."

**How does your educational background in water policy help you as a golf course superintendent?** It helps to have knowledge of the water situation in the region and in the country. It gives you a better understanding of where golf courses fit in the realm of water use and understanding the need for water conservation. Having an understanding of local/regional water policy when talking to policy makers can be used to represent golf courses in a better way. It gives me the ability to communicate with regulators before policy is made, not after. If you show concern that you are trying to do the right thing you end up with better policy in the long run. I provide facts that compare golf

with other water use sectors. When I worked at the University of Arizona Water Resources Research Center I noticed that there is a lot of misinformation about golf course water use. It is important to have someone from golf who understands water use and water policy and is not just representing one side. **Describe your water supply.** We have a 4-acre irrigation storage pond between holes No. 3 and No. 4. The water supply is made up of approximately half permitted groundwater from three wells and half from a 10-inch potable city water feed. Two of the wells discharge directly into the pond and the city wa-

ter and the newest well into the pump house wet well. Since the irrigation pond is very much in play, the level needs to be carefully managed. The wells also have to be managed to make sure their individual permit amounts are not exceeded on a monthly and yearly basis. Golf courses in Las Vegas use large amounts of water (annual ET rates are 90 inches) and the supply needs to be carefully managed. Shadow Creek is no exception. **How do you determine the amount of water to apply?** The green, tees and approaches are sand based bent grass and I use a TDR 3000 soil moisture meter daily to gauge the amount of water to apply. We have cal-





By mapping all the dead spots late last summer, Cloninger was able to sod those areas earlier this year to give the Bermuda a chance to grow.

culated very specific precipitation rates for each area and water deeply and infrequently to a specified depth and not based on time. There is also a small sample (four greens) of in ground sensors that report the soil moisture and salinity. The in ground sensors assist me with determining when to flush the greens. I lean to the dry side and try to stay consistent throughout the week and usually hit watering hard on Fridays.

The fairways, rough and native areas run off of the reference ET produced by our two on-site weather stations. Each zone is assigned to one of the weather stations. The turf ET is then calculated based off of the crop coefficient for the type of turf. Our crop coefficient changes throughout the year as our turf type changes from ryegrass to Bermuda grass during over seeding. We start with an 80 percent crop coefficient and do a global adjust based on what the course is doing. Because our summer water window is not very flexible we can't move around our schedule too much, but do during the rest of the year. We don't

throw water out just to water based on ET. Every day is a game-time decision as to what to water and how much.

**Do you pay for water?** Yes. Water costs account for a large part of the annual budget and the cost of water is only going to continue to increase in Las Vegas and most other areas. The electricity to pump that water is also expensive and is significant, but not as large a part of the budget.

**In addition to Water Policy you also have a GIS background. What is GIS and how to you utilize it in your irrigation practices?** Geographical Information Sciences is the background and Geographical Information Systems is the practical use of the science. I am in the process of using a soil moisture meter to create soil moisture profile distribution uniformity maps on a GIS platform. I am concentrating on fairways and rough because they are the larger water users and larger areas. Mapping something as small as a green requires a very

fine scale and very good equipment. There is too much hand watering and very subtle differences in the topography of greens, so the data is too inconsistent. Fairways and roughs are more normalized and it is easier to see trends.

I will use these maps to adjust stations and reduce runtimes. I map hot spots also. I am also mapping irrigation components and trouble areas and creating plans to fix the trouble spots. This will include adjusting sprinkler heads, maybe amending the soils and changing nozzles.

By mapping all the dead spots late last summer, I was able to sod those areas earlier this year to give the Bermuda a chance to grow all summer. It also provides a data and a record for historical perspective. I will also map the electrical conductivity and generate soil type maps and use those to create management zones. For each of the management zones I hope to develop specific irrigation and fertility schedules. I am expecting very good results from the GIS efforts I am undertaking.