



Tim Moraghan, principal, ASPIRE Golf (tmoraghan@aspire-golf.com). Follow Tim's blog, Golf Course Confidential at <http://www.aspire-golf.com/buzz.html> or on Twitter @TimMoraghan

AN OPEN CASE FOR SUSTAINABILITY

The USGA chose to hold this year's U.S. Open Championship at Merion Golf Club outside of Philadelphia because it's a wonderful, classic course, the kind we don't build anymore. But besides providing a terrific test of golf for the best players in the world, Merion is a living laboratory for sustainability, which is the theme of this issue.

And since "inside the ropes" is the theme of this column, I recently spent a day with Merion's superintendent, Matt Shaffer, to see first-hand how he treats the course. Even before the Open was coming to Merion, Matt was using methods that have important and proven benefits for both the environment and golfers. And while this is Merion — "we have the means to try different things," as Matt puts it — he is quick to say that, "the practices I have implemented can be done in some form or fashion at other clubs around the country."

In preparing for the Open, "We aren't doing too much different than we do on a daily basis, except we're ramping it up a bit," Matt explains. That starts with water.

"I find it hard to reduce water use here because I don't water at all," he said with a grin. The members want the course to play firm and fast, and are fine with a brown look because "they want a links feel to their golf course." So he waters, if at all, only when moisture sensors tell him it is absolutely necessary. And he doesn't irrigate at night, preferring to wait until morning when he can first check tee, fairway, and green dew patterns.

He also sprays as little as possible. "I go at least 200 days a year without spraying. I hate to spray anything. As an industry, we've been conditioned and trained to spray something every 14 to 21 days whether we need to or not. I'm opposed to this."

One of the most interesting techniques Matt employs is also one of the most basic: walking. Whenever possible, he and his crew walk the course rather than ride. This started after he noticed something unusual on the fairway of the sixth hole, located at the far corner of the property, which is narrow and tight.

"The guys would take equipment out to number six, park, and ride the putting green roller up the fairway to the green. I noticed there was much less dollar spot in the swath of grass within the roller track in the fairway leading up to green." This caused Matt to wonder, "What if I rolled all

down on disease concerns. Also he noted there is less thatch in the upper soil profile. In conjunction with a sand-top-dressing program for fairways, the insect population also has been reduced. Furthermore, height-of-cut can be maintained at a healthier level. And less abrasion on the leaf blade reduces the need for preventative/curative fungicides as temperatures rise.

Walking has other benefits. "It takes utility vehicles off the golf course, reducing the number of cart and equipment trails on the property, making Merion look more natural. Given the small size of this property, tracks and

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my fairways? Would dollar spot be reduced?" If it were, he realized there would be other advantages, including less emission from mowing and the need for less pesticide.

So in the late summer of 2009 just after The Walker Cup, Matt asked mechanic Jay Rehr to rig something up, and Jay fabricated a five-gang, one-ton fairway roller. Once the crew started rolling fairways, dollar spot was drastically reduced throughout the course.

But the jerry-rigged equipment was large, cumbersome, and hard to maneuver. So Matt turned to an old friend Sal Rizzo, owner of Salsco Rollers, who created a riding greens roller that is now commercially available. Merion uses two of these Tranz-Former fairways and greens rollers, which can roll four and a half acres an hour.

According to Matt, rolling reduces moisture on the plant, which cuts

trails tend to be more noticeable."

More walking also means greens and bunker surrounds are hand-mowed. The crew collects and bags all clippings, reducing cutworm populations and creating a compost source that is used off-property and this year in U.S. Open reforestation areas such as spectator drop-offs, tent pads and parking areas.

Matt regards insecticides as he does water: Less is better. He believes the new products are so good, and the prolonged residual effects so effective, that fewer sprayings are needed. "I researched the pests found on our golf course to figure out their lifespan, reproductive and egg hatching processes and apply accordingly only when necessary." Fewer pests require fewer, and less frequent, applications.

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One product he likes is sand, and he has increased top-dressing programs for tees, fairways, and putting greens. A lot of sand has been used to get the course dry and firm. Matt thinks this also has allowed him to cut back the use of pre-emergent herbicides, as there's been less weed germination.

Of course, too much sand can lead to leaf surface abrasion and disease, which would require spraying. So Matt doesn't top-dress any playing feature when it's hot because when the turf isn't growing it's more susceptible to injury and sand is abrasive.

Here are a few other sustainable practices in use at Merion:

Cultivation. Solid tine aeration is preferred over hollow core cultivations.

Fertilizer. Once again, less is more, since a fat, happy plant invites disease. Matt monitors growth habits, clipping rates, temperature, soil moisture content, and humidity before deciding to fertilize, apply pesticide, and irrigate.

Tees. Increased top-dressing makes tees firm, which means fewer divots and less over-seeding. Tees are mown with a solid front roller on the mower, not grooved rollers that can waste seed from divot mix by throwing it back into the mower bucket. This practice also preserves seed already on the tee.

Approaches. The greatest increase in top-dressing has been in approaches. Firming up the turf in front of greens enhances Merion's signature bump-and-run shots, but just as important, the golf course is drier and healthier, and the use of chemicals reduced. Using Tri-plex riding mowers reduces labor and the heavier equipment helps keep the approaches firm.

Bunkers. Merion's bunkers are all hand-raked. The crew does very little edging and does not mow bunker edges. They simply trim the seed heads.

Fairways. Starting this past winter, members were asked to hit off little green artificial mats, similar to those used on the Old Course at St. Andrews. Using mats, which attach to members' bags, reduced the number of fairway divots at a time of year when nothing was growing. The mats also helped preserve the turf within specified Open landing zones, which were roped off. The mats were a big success and will likely become club policy for winter play going forward.

Greens. Roll more, mow less. And to promote smoothness and better grooming, the club uses imported (and expensive) yak-hair brooms.

Matt Shaffer is doing some fascinating things at Merion, and I agree with him that most of his practices – except perhaps for the yaks – can succeed at courses throughout the U.S.

Superintendents should tell their green committees and other members to watch this year's U.S. Open very carefully. Besides the stellar play we've all come to expect at our national championship, they will see a great old course in prime condition thanks to a sincere and all-in commitment to sustainability. **GCI**

(IRRIGATION continued from page 46)

- Doing long range and capital planning for replacing irrigation components and doing preventive maintenance to keep pace with technology enhancements that better utilize limited resources.

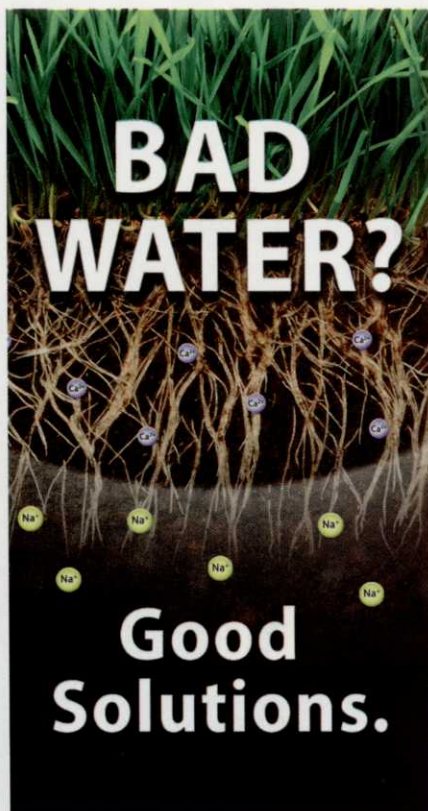
- Investing in more sprinklers to provide more control. More control gives you the opportunity to use less water and provide better conditions with fewer inputs.

- Installing a green roof on your pump house or other out buildings.

- Scheduling your pump station on a daily basis just like you schedule your irrigation system by selecting what pumps can come on, how much energy can be used and what the discharge pressure should be at each hour of the day.

- The list could go on and on, but the general gist is to maintain your irrigation and pump systems while maximizing their abilities and efficiencies.

The term "sustainability" is being way over used in today's society, but it is not going away. You need to understand what it involves in terms of your overall golf course operations and not just the irrigation system. You also need to be able to tout your sustainable initiatives and to recognize where you are not being sustainable. Good luck! **GCI**



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