Sports turf management sustainability in the transition zone

SUSTAINABILITY in sports turf management is a topic that covers a vast amount of territory, and can be as complex as an in-house biodiesel production facility or as simple as recycling cardboard. Both are steps in the right direction, but how can we improve?

Certainly the public is looking at all areas of industry and demanding more environmentally friendly methods of doing business. Ironically, many environmental activists have targeted the turf industry, especially golf, as enemies of the environment. However, as sports turf managers, this push toward sustainability is an opportunity for us to promote our industry and show that we were green before Green was cool.

For example, the October issue of *SportsTurf* magazine had in informative section on storm water management. A simple shift in perspective could view sports turf managers as protecting 2.8 million acres of *filter media* rather than contributing to 2.8 million acres of runoff-producing development.

One of the hottest topics in the world of sustainable agriculture/turf is water usage. Unfortunately, many people in the transition zone have come to view a green field during the summer as quite possibly a bad thing because of the water required to maintain that field. The reality is that the water used to maintain a field is paying dividends by providing erosion control (as mentioned above), a carbon diox-

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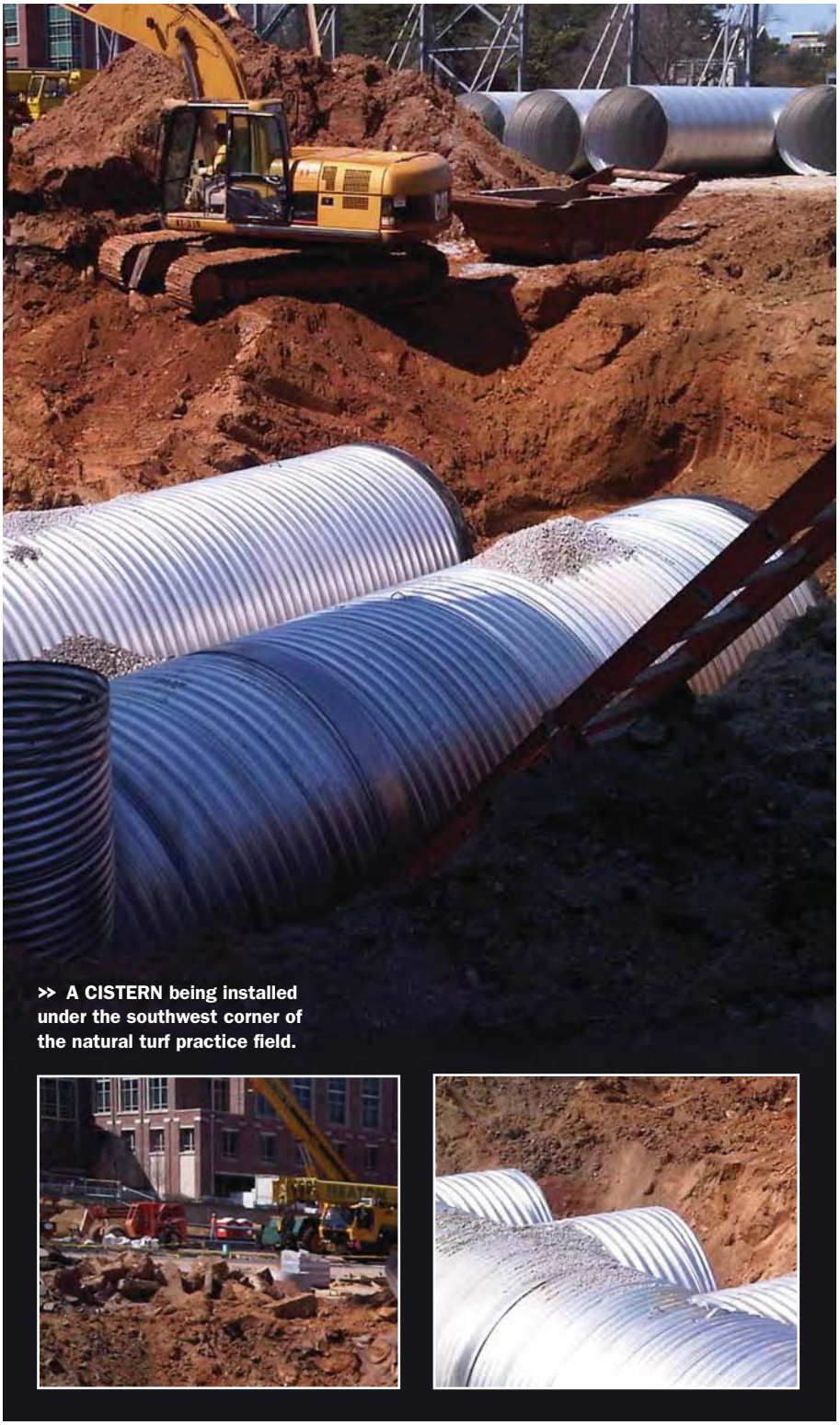

>> A CISTERN being installed under the southwest corner of the natural turf practice field.

ide scrubber, an oxygen producer, and last, but not least, a venue for entertainment.

That being said, there are things that we as an industry can do to become even better stewards of the environment, and hopefully begin to change public sentiment about what we do. Start by following BMPs for water management. Also, consider reducing the input to common areas and some fields that may not be your highest profile sites. Install basic controls that stop irrigation due to rain. This last one should be a no brainer at this point, but recently I witnessed an athletic site being irrigated in the rain. Ouch. Consider stepping up to a central control type system that can both help you water most efficiently and also closely monitor usage.

Another idea is to incorporate plant growth regulators (PGRs), specifically trinexapac-ethyl, into your maintenance program. The use of PGRs is widespread in the golf community; however, there has been more hesitancy to embrace this family of chemicals in the sports turf world. This is certainly understandable as wear patterns in golf and sports are vastly different. Further complicate this with tiny grow-in windows (specifically from overseeding stress/damage) and the idea to use something that "slows" the plant down is counterintuitive.

The reality is that trinexapac-ethyl reduces the plants' vertical growth and elongation while promoting turf density and turf quality by stimulating growth of other plant parts such as stolons, rhizomes, tillers and roots. These deeper roots and denser turf can reduce water usage by up to 25%.

A growing trend among colleges and some school sites is to build water retention sites that collect water from a variety of sources including air conditioning condensate. Last summer at Georgia Tech we installed a third such system on our athletic properties. The campus has also installed several cistern systems and plans to expand the use and installation of them as part of the Institute's larger initiative to strive for LEED certification on all new construction. The concept is quite simple in that a site collects water in anything from tanks to ponds and then uses a pump to irrigate with the collected water.

The system installed at Georgia Tech's practice field in the summer of 2011 is 280,000 gallons and collects water from the 93,000-square foot roof of the Brock indoor practice facility, the 75,000-square foot natural grass practice field adjacent to the building, and the surrounding hardscape (see photo). Interestingly, the cistern at this site is also tied to a campus cistern that collects condensate water from the Ford Environmental Science & Technology Building. Due to this cistern's central location, it is able to provide irrigation water for the track, practice football, and baseball fields. The other two cistern systems are located at Grant Field (stadium football) and the Shirley Clements Mewborn softball field.

Although the water retention concept is quite simple, the reality is a bit more complex. If your facility is looking at installing a cistern system, be prepared to do some homework and provide some data about your specific needs to the system designers. Some obstacles to potentially overcome is how to provide water for small volumes from either a garden hose or small ornamental spray zone all the way up to a multiple rotor zone with heads capable of irrigating at 25gpm+ each.

Also, prepare for the inevitable—running out of water and/or system failure—in which case you will want a readily available back up water source. Be aware that any weakness in your current system may be quickly exposed when dealing with fluctuations with pump driven water if previously on a city source. Do not forget to alert your user groups to the change over from city water to city cistern water, which should be generally good public relations.

Obviously, there are multiple benefits from a cistern system, but it will not be without expense and some of your time as well. They do bear some monitoring compared to a city supply. This is especially true as you are learning/debugging the system, but eventually this will level out. In the long run it is likely that your initial installation expense and maintenance expenses will be offset by the savings in city water.

CARBON FOOTPRINT

If water usage is a hot topic in the world of sustainability, then fuel usage and carbon footprint is certainly a close second. There is only a limited amount we as sports turf managers can do about this until more advanced technology is available. In the meantime, we can make sure our equipment is properly maintained and running efficiently. Once again, consider the use of PGRs. As mentioned above, the water savings from improved rooting and density could be enough to encourage the use of a PGR, but what PGRs are really most known for is their ability to reduce mowing. There is the po-

>> THE NEW INDOOR FACILITY, the baseball field, Rosebowl football practice field and, in the far back behind the blue wall, the track. All of these can now be watered from the cistern system.

tential for a substantial amount of savings in both labor and fuel by mowing 2-3 times a week rather than daily, to say nothing of the reduction in emissions.

From personal experience, we were having some stress on our fields due to clean-up passes occurring with regular daily mowing. When we got on a Primo program, it allowed us to skip some clean up passes and thereby reduce the mechanical stress on the turf caused by frequent mowing. I will also admit that I was skeptical at first of using a PGR, but have now incorporated them into our agronomic program. Finally, consider ways to potentially reduce the maintenance to non-essential or common areas.

A much more dramatic approach to the fuel and emissions issue is to use bio-diesel. Many equipment manufacturers are offering machines that are bio-diesel ready, making it easier to transition into this fuel source. Westminster Schools here in Atlanta has taken bio-diesel use to the next level by producing their own fuel from cafeteria waste oil. Not everyone will have the capability or even a cafeteria on their site from which to make fuel, but it is a sign of the good things that are happening in our industry to make our green industry greener.

My personal favorite sustainable turf management practice is to simply recycle all the cardboard I come in contact with, even if it was not generated by me or my department. Sure it takes a few more minutes to break down a box and transport it to a recycling area especially when the convenience of a dumpster is all around, but it is the right thing to do. I like to follow a similar practice with pallets. More than likely, there is someone in your area in a ratty truck that will gladly collect them. Not only will you have recycled your pallets, you will have provided for someone willing to go out and do some work. Another idea is to collect your pallets in-house and take them in on a rainy day. Divvy up the money among the crew or have a pizza party, whatever. Recycling triple-rinsed empty 2.5g containers is yet another simple but helpful and smart sustainable way to practice sports turf management.

These last ideas are neither radical nor glamorous, but they do make and impact and most importantly, anyone can do them. Ultimately, to practice sustainable turf management does not require a fancy cistern watering system or a bio-diesel producing facility. It does require some common sense and a little effort. ■

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