what is the first flower to bloom in the spring? What is the earliest nuisance weed you witness pop up along the curbside or south facing slopes? What is the first food source for our pollinators?

Think about this. Each spring hibernating native honeybees, wasps and other insects break their winter dormancy and search for food. At one time there was an infinite amount of dandelion to provide this population of beneficial creatures a food source for the first two weeks of their foraging. Today, our dandelion populations are dwindling, and in turn our bees are starving to death.

Planting summer flowers isn't going to cut it when your bees have starved weeks earlier. Crabapples are a crapshoot and most flower too late to balance out for the loss of early spring pollinating flowers…even if they are considered weeds.

In my studies I have learned that in our thoroughness to keep properties clean and weed free we have had an impact upon the bee and pollinator population. The challenge isn't about creating more bee colonies, although the Bee Squad from the UMN have set up camp at Town and Country Club and Somerset, it is all about providing every pollinator a food source throughout the spring, summer and into the fall.

What can golf do about the issue? Consider some tolerance for the pretty yellow flowers so often damned for their three-week burst of pre-peak season color and which prompt the charging of the sprayer with its 20 foot boom. No, not wall-to-wall primrose, rather buffer strips well out of play where the dandelions are allowed to grow with no mowing until after they have bloomed. Even the most retentive green grass purest could give up a small piece of their 150-acre playground to enhance the habitat for our pollinators.

Could golf make a difference? Ponder this equation: 500 golf destinations allow five 20 foot wide by 600 foot long sections of their course go "to yellow" each spring would create almost 700 acres, spread across the state, of prime pollinator forage. Would you consider that making a difference? I sure would!

Players love the blue bird trails, bat and wood duck houses, mallard hen tubes and bird feeders placed upon their course. Why not a section for bee habitat too? It is such a small thing to ask for such an incredible employee, our worker bees.

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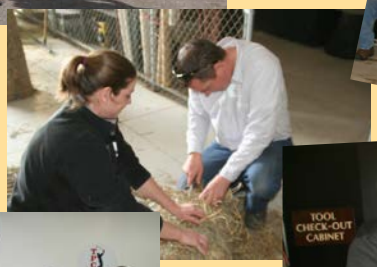







Taking Your Pulse; Maintaining the Heart of Your Golf

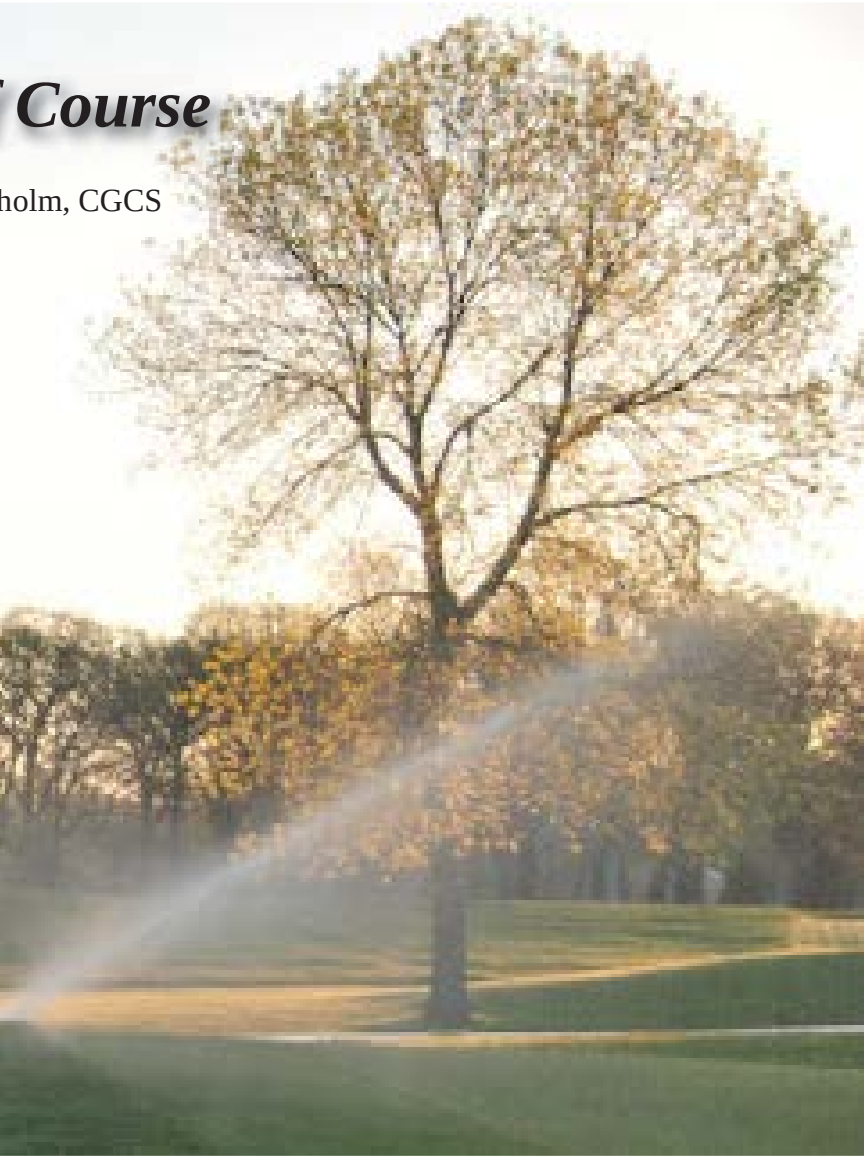
By E. Paul Eckl

In previous articles we have looked at the underground sections of the irrigation system and the things that influence the performance of those parts. In this article we will be looking the control system. If the pump station is the heart and the pipe and sprinklers are the body, the control system is the brains of the operation.

As with the other parts of the system, there are many different types and levels of control out in the field in our area. All of these systems can work well if the operator knows how they work and takes the time to maximize the efficiencies. Let's start with a description of the control types.

Quick Couplers:

When attached to an impact sprinkler, these were the first advancement from pulling hoses to specific areas. This type of a system requires a person installing the Quick Coupler into the system and timing how long it is at a specific spot. It also requires the operator to know how many sprinklers can be operated at a specific time without overtaxing the piping system.



Many of these types of systems have a "night water man" who operates the system throughout the night.

Electromechanical clocks:

These were the first attempts to automate the irrigation system. Clocks, much like the ones used to turn on Christmas tree lighting, are connected to the valves in the ground to turn on the sprinkler at a predetermined time. These systems eliminate the labor of actually turning on the individual sprinklers. The systems initially did not

photo: Rainbird online

have any type of central control and were operated as a number of individual stand alone units.

This required the Superintendent to manage the system water flow through calculations and knowledge of how many and of what type of heads could be operated at a time. Central control eliminated the need for the Superintendent to go to each location for programming, but still requires the operator to know how many

and which type of sprinklers can be operated at a time. These systems are quite reliable and really are only subject to failure through power outages and wear over time.

Solid State Control:

The next evolution required the field controllers to move into the solid state era. This put a computer chip into the field boxes. This was a transitional stage for the industry as they technology advanced. With solid state field controls the systems would eventually be able to be moved to electronic control from other locations. The controllers would then be able act in either a stand alone or central control configuration. This meant that each field box could hold a number of programs and operate independently.

photo: Rainbird online

photo: Toro online

Computer Control:

Originally these first computers were used to replace the electro-mechanical central control, while the clocks in the field remained. This gave the system the ability to start to think about flow control. Granted these early systems were large, expensive and honestly just fancy starters. Eventually the field clocks were also computerized so that communication between the central and the field became more effective and efficient.

Today's systems have the ability to not only start and stop the sprinklers, but determine which heads should come on and when, to maximize the flow capacity of the system. Additionally, as the software became more and more advanced, things like ET, soil moisture and other factors

began to be figured into the equations used by the system to more fully automate the irrigation cycles.

Goals of Control

As control systems evolve they become not only more complicated but easier to use. This would seem like an oxymoron, but it is not. As I alluded to above, the first systems provided a computer controlled switch to turn things on and off. As large computers turned to personal computers the user interface became more of an issue. Manufacturers need the user to be able to easily do what they wanted to do. These systems continue to evolve today and manufacturers continually try to make it easier for the user.

In the background of the software operation, however, the systems get ever more complicated. As I mentioned the first ones were a fancy switch. The latest software is able to consider so many factors that it seems almost incomprehensible. For example some of the factors that now are able to be factored into the software are pipe system sizing and the actual piping tree; soil types, head type, nozzle size, spacing, ET, soil moisture data, weather station data, pump station data and much more. The goal of all of this data is to more ac-

curately put the water where it is supposed to go and in the quantity that is needed. Along with that the systems are designed to maximize the system without breaking it. By this I mean that the computer is trying to match the pipe size and piping tree to turn on as many heads as the pipe will allow without affecting head performance. While it is doing this it is also trying to maximize the pump station output so that the pumps do not cycle on and off, thus shortening the motor life and using more electricity. All of this is taking place within the software to maximize efficiency, shorten the irrigation cycle and put down the proper water in the proper place.

The problem with these systems is the same as with all computers: garbage in, garbage out. All of the new computer systems are designed to operate with some efficiency with minimal data input. While certainly better than anything achievable without central control, there is so much more can be done if a person is willing to take the time to input all of the data the system can handle to give you the best control, and efficiency. Programming of new systems is getting easier all of the time, but filling in spreadsheet after spreadsheet can be a long and boring proposition, best done with a clear head and lots of caffeine available.

Even though many people feel that these systems will eventually be able to run themselves that seems unlikely. In the end, turf systems are a living and respirating thing, that will always require a human hand to oversee the machines.

E. Paul Eckholm, CGCS, is a former golf course superintendent with over 25 years of experience in golf course management and is currently an irrigation specialist at Yamaha Golf and Utility. Paul has been working with numerous manufacturers of irrigation products for the past 15 years on product development related to water use reductions. Paul currently holds a number of certifications in irrigation technologies.

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Four Things You Should Know About the Affordable Care Act

By Patrick McGuiness, Esquire

The ACA is an extremely complex piece of legislation, and many of the administrative rules are still being drafted. The following is an overview of important facts about the ACA, and how it will generally function. Every business is unique and has their own set of circumstances, so it is important to seek qualified assistance in determining how the ACA will affect your business.

1. Businesses with 50 or more Full Time Equivalent Employees are Considered 'Large Employers' and Must Offer Health Care to Employees or Pay Penalties.

Generally speaking, large employers must provide health coverage to their employees. If a business has 50 or more FTE employees then coverage must be provided or penalties must be paid. Calculating if an employee is FTE requires a look back at their hours for the previous year. If the employee averaged more than 30 hours per week, then they are considered FTE. Alternatively, if an employee averages more than 130 hours in a calendar month (even if it isn't 30+ hours per week), they will be considered a FTE.

In order to calculate how your part time employees factor into the FTE count, you must do the following equation. Add together all of the hours worked by part time employees in the past calendar year. Divide that number by 12 to get the average total number of part time hours per month. Then, take that average and divide it by 120. The result is the number of FTEs that your part time employees must be counted as. For example:

If you have 20 part time employees whose total hours in the last calendar year was 21,600 hours;

21,600/12 = 1800 total average hours per month