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RETHINKING IRRIGATION

Have we have gone overboard on expensive irrigation systems?

In my 33 years as a golf course architect, the irrigation industry has striven to reliably deliver enough water to golf turf. Ironically, they perfected this just in time for the era of environmental awareness, water restrictions, and economic austerity, which has us rethinking "more is better" golf irrigation.

While the USGA says, "Brown is the new green," most clubs are really asking, "Can we be a little less green while using a lot less water?" I believe part of the solution is reducing the capacity of new and replacement irrigation systems.

Irrigation systems have gone up faster than other construction costs. Where irrigation systems once comprised 20-25 percent of construction budgets, they now consume over 30 percent, sometimes leaving only enough money to build a not quite satisfactory 16 holes! Thus, reducing irrigation is as critical to affordability as it is water conservation. Current conditions should have the industry rethinking the need for Cadillac systems that are golf's version of designing the church parking lot for Christmas and Easter.

Previous generations of superintendents were forced to work with lesser irrigation capacity, accepting some risk of turf browning or even damage in extreme conditions. Long time superintendent Stan Wreyford remembers watering on those 100 plus degree days with his old "Texas Two Row" systems. He found it easy to water around the few brave souls playing on those hot days. "The biggest risk," he says, "was that they might strip down and run naked through the sprinklers."

Then, the labor and management costs and/or lost revenue on these few days were considered good tradeoffs to the annual debt cost of an extra $250,000 in irrigation piping. In theory, more control could equal less capacity, but newer systems often provide both, and can't help but encourage overwatering.

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Newer systems have trended towards shorter water windows – six hours has replaced eight to 10 hour water windows – and delivery of maximum ET, rather than average ET, as a safety factor for the driest conditions. This has nearly doubled typical pump station capacity and increased mainline piping, in an effort to provide total irrigation in the hottest weeks of the year.

Do we need to deliver full ET in a shorter water window? Some data from soil sensors show the need may be far less, as do legions of superintendents who have watered far less with satisfactory results. One designer told me he designs as if the superintendent will have very shallow roots. I know some conditions prevent deep rooting, but in many cases, overwatering causes it. In other words, is this like offering Twinkies to a dieter?

Many superintendents use longer water windows, starting their systems a half hour after the last tee time and programming the watering to follow golfers around the course to extend their water windows because they have older systems that force them to do that. Others extend their watering into the next day in the hottest weather. With drought water restrictions now typical, will these systems ever be allowed to run at full capacity?

Another common reason given for big irrigation systems is to "avoid hand watering." As far as I can tell, good superintendents still hand water. The new water conservation mind-set means few superintendents will choose irrigating 20,000 sq. ft. with sprinklers over hand watering the 20 sq. ft. that is actually dry.

I will insert a few disclaimers here, to cover myself, while basically suggesting that irrigation designers are doing too much of the same. Every situation is different, and this column does not replace the need for a good irrigation consultant. I also know too many superintendents already have inadequate systems and are forced to implement these ideas, like it or not! But, if you are considering an irrigation system, it may be wise to rethink the "more is better" paradigm that guided irrigation design in the last decade. **GCI**