

# Irrigation Innovation at a Lower Cost Advancements Help Manage Capital Costs and Conserve Environment

BY **TONY WHELAN**

**ANYONE ASSOCIATED WITH GOLF DEVELOPMENT, MANAGEMENT, OR MAINTENANCE IS AWARE THAT WE ARE NOT IMMUNE TO THE CURRENT ECONOMIC SITUATION.**

The credit market crunch has contributed to the severe decline in new course developments and construction in America.

Consequently, many golf courses are evaluating areas to reduce operating and capital costs. One specific area that can have significant impact in both of these crucial measures is the age of the irrigation system.

A recent American Society of Golf Course Architects' publication qualifies the life of an irrigation system somewhere between 10 – 30 years. If we take this information and pair it up with statistics from the National Golf Foundation (NGF) quantifying that there were on average 200 new golf courses built in America each year between 1985 and 2002, we know that there are many private and public golf course directors and owners that will, or are currently, looking at updating their irrigation system.

This decision is a significant one, which requires large capital costs.

A well-intentioned and appropriate trend towards increased water conservation and water management has created a dramatic increase in the overall cost of a golf course irrigation system over the past few decades. It's been suggested that an irrigation system

used to be 10 percent of the total cost of a new golf course; today it is closer to 30 percent.

Three main drivers have contributed to this increase: "tighter" sprinkler spacing, the desire for individual sprinkler head control, and the increase in raw materials cost (specifically pipe and wire).

We should recognize that these increases in irrigation system capital cost have created significant benefits to improved water conservation, lower cost of ownership, and reductions in yearly operating costs of an irrigation system.

Closer sprinkler spacing has measurably increased watering uniformity and efficiency but has increased the sprinklers per acre, requiring larger pump stations and bigger piping networks. Individual sprinkler head control has increased the level of water management and flexibility but has also resulted in significantly more control wire and additional in-field satellite controllers.

These two well-intentioned factors have been identified as key contributors to improved water conservation and have placed the golf irrigation market segment as leaders in irrigation efficiency. At two separate events this year industry experts and academics have stated that golf is recognized as the "most efficient irrigators" of all irrigation markets (versus agricultural, commercial and residential landscapes).

As an industry, we should all feel very good about our efforts to improve water stewardship, but should also examine the unintended consequences of our actions (capital cost increase). During the golf boom of the 1990s to recently, these costs were manageable as a lower percentage of total golf course construction.

Today, all costs, capital or operational, are being scrutinized and challenged. The result is the highlighted degree of apprehension compared to the once passive irrigation system cost. Regardless of the water conservation benefits of the system, capital costs cannot be overlooked.

This capital cost increase has created a demand for a more intuitive, flexible irrigation system's to better manage capital and installation costs and support the management of an efficient golf irrigation system.

Recently a completely new underground control system was launched to the golf market. Developed by Rain Bird® this new system called Integrated Control System™, has the ability to help address cost challenges while maintaining and enhancing these much needed water management practices.

The new IC System introduction has stimulated much interest, both in its innovative integration of the whole irrigation system, and with the overall reduction in materials required to complete an efficient irrigation system.

This new system is completely underground and eliminates most of the wire, resulting in a flexible, aesthetically appealing system that is easier to install and manage. The intelligence of the IC System allows the sprinklers to be connected directly to the central control interface through a simple underground wire path, eliminating the need for costly satellites and decoders.

The amount of wire needed is dramatically reduced, provides individual sprinkler head control as well as enhanced water management features. The reduction of materials and labor costs has considerable environmental benefits.

There are significant environmental benefits too by saving up to 90 percent of the wire used in a traditional satellite system. An open pit ore mine in Utah is reported to mine ore at a concentration of 0.2 percent. At this rate, 500 pounds

of ore would have to be mined to get one pound of copper.

If we consider an average satellite controlled irrigation system uses over one million feet of wire (14 gauge copper wire weighs 14 pounds per 1000 ft), the mine in Utah would need to excavate and process seven million pounds of ore to make enough wire for our satellite controlled irrigation system.

If that's not enough motivation, think of the additional diesel and/or electrical power needed to run all the equipment used to mine the ore and the water used to process it. One more environmental aspect that I'd like to add is that the one million feet of wire has 6,000 pounds of PCV coating. All of this is reduced by up to 90 percent with the new control system.

Recently at the Golf Course Builders Association of America summer meet-

ing, a golf architect panel was fielding questions from the audience. When asked about new product introductions one panel member responded that what is needed is "innovation at a lower cost." **BR**

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