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SHOW ME THE SAVINGS

The most common question our firm gets regarding irrigation renovations is, “Can you show the facility’s true cost savings?” The answer is more detailed than most people expect, but we always start by stating that, in most cases, you can’t turn your irrigation system into a profit center...not directly anyway.

Anyone who claims an irrigation system renovation will show up in black ink on a spreadsheet atop the general manager’s desk most likely is misleading you. That being said, a renovation will dramatically and very efficiently improve course conditions expected in today’s competitive market. Great conditions are what bring people back to your course, and an irrigation system is without question one of the most important tools for cultivating quality turf.

An irrigation system is not a panacea. But it is your primary and most effective tool for maintaining a quality playing condition on any course. So, we could argue it’s actually a revenue producer – it maintains members and attracts new players.

This argument is further supported by golf courses that don’t invest in their infrastructure and offer poor playing conditions, which ultimately hurts rounds and encourages golfers to shop out their experience.

Below are some efficiencies-of-scale as they relate to true savings realized from specific irrigation renovations:

- Central control upgrade with ET-based, on-site weather station(s)..... 5-10%
- Open architecture pump station logic, VFD drives & water treatment10-15%
- Sprinkler & piping network (heads with 1.1 SC’s & DU’s of 80% or better) with proper spacing..... 15-20%

- Soil & turf GIS profile mapping with moisture sensors10-15%
- TOTAL.....40-60%*

*Depending on region, these efficiencies could represent from tens of thousands to hundreds of thousands of dollars in savings.

TDR & SOIL GIS MAPPING

The map above shows soil-moisture distribution across several fairways on an upper-Midwest course in mid-summer. Soil-moisture data were collected by TDR (time domain reflectometry) using an on-site mobile sampling system. Data analysis and mapping were done using GIS software.

The soil-moisture patterns reveal three important characteristics related to irrigation and water management. First is the significant variability in moisture across the six fairways shown, caused by soil and topography differences. Finer textured soils and flat or depressed areas collect and hold more soil moisture, while slopes, high points and coarser soils hold less moisture and are drier. The patterns indicate three distinct irrigation-management zones from wet to dry across the sample fairways.

The main irrigation objective is to achieve as uniform a distribution of soil moisture as possible. To this end, each of the three zones requires varying amounts of water. The maps allow specific heads in each zone to be controlled to match site conditions and create more soil-moisture uniformity. This zoned method of irrigation has shown that improved conditions and turf quality can be achieved using less water.

The second soil-moisture-data application is evaluating irrigation system performance. The map reveals



a distinct relationship between specific sprinkler heads and wet and dry areas in the fairways. The map also identifies possible issues with individual head performance. Addressing these specific problems is essential for improving overall distribution uniformity and, ultimately, playing conditions.

The third useful site characteristic revealed in the map is the precise definition of areas that could benefit from subsurface drainage.

I can say definitively that facilities we’ve recently renovated have realized substantial net increases in newly generated rounds and memberships compared to the cost of improved irrigation performance.

I should note that irrigation upgrades are interrelated by nature, so to improve one component without the other will not maximize efficiency or course playability; irrigation system improvements are based on applying specific sprinkler and site data at a high level of accuracy. If one does not take advantage of system features and applications, savings will not be realized.

In the end, it’s a win-win for the facility and the golfing community – the club or golf course boosts revenues, and the community enjoys true cost savings and dramatically improved playing conditions. **GCI**