

Improved Water Storage Yields More Consistent Playing Conditions

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Issue

Until 2012, Wilmington Country Club relied upon an irrigation reservoir that could hold 12-15 million gallons of water for both of its 18-hole golf courses. The reservoir was recharged by runoff from the surrounding area and by transferring water from an off-site pond when needed. During severe droughts, the recharge sources could not keep pace with water use and there was only enough water to hand water putting greens and tees; fairway and rough irrigation was entirely suspended. The club incurred significant revenue losses during droughts because the amount of rounds played dropped as a result of poor playing conditions. Restoring dead and damaged turf areas after each drought was also costly. Wilmington Country Club needed an improved water supply to deliver more consistent playing conditions during periods of drought.

Action

After reviewing several options it was decided that an additional reservoir would be built adjacent to the existing reservoir, increasing the facility's total water storage capacity to approximately 35 million gallons. Construction started during the summer of 2011 and finished in early 2012.

Water is transferred from the new reservoir to the distribution reservoir by an 8-inch HDPE pipe that is connected to a pump mounted on a custom platform at the bottom of the new reservoir. When the pump requires service, an air compressor is connected to a valve on the transfer line to force all of the water from the pipe. This causes the pipe and pump to float to the surface where service can be performed.

A project of this scale was not completed without challenges. Issues experienced during construction included rock formations that were not detected during pre-construction tests and a natural spring that was discovered near the bottom of the new reservoir. Both issues required adjustments that slightly reduced the new reservoir's holding capacity.



A new irrigation reservoir allowed Wilmington Country Club to store enough water to properly irrigate both of its golf courses, even during extended dry periods.

Results

More than doubling the water storage at Wilmington Country Club provided ample water for both golf courses. However, the fact that more water is available does not mean the agronomic team has changed their water management strategy. Playability remains the top priority when making irrigation decisions, not aesthetics.

The 2016 golf season certainly tested the capabilities of the new reservoir. Prolonged periods of minimal rainfall were combined with above-average temperatures that persisted into November. These conditions meant that the golf courses required more-frequent irrigation for more of the year than normal. The improved water storage meant that irrigation did not have to be suspended on either golf course like in previous drought years.

The new reservoir also makes it possible for the original reservoir, which is a strategic feature on both golf courses, to remain full throughout the season. A consistent water level is maintained by transferring water from the new reservoir to the original reservoir as water is used to irrigate both golf courses. Having the original reservoir remain full throughout the season is considerably more attractive than watching it slowly empty.

Improving water storage may not excite golfers in the same way that a bunker renovation might, but the benefits of an adequate water supply cannot be overstated. Playing conditions are significantly improved during periods of drought and there is much less risk of serious turf damage and lost revenue.