Featuring Flexibility

New York municipal complex replaced outdated pump stations with more flexible ones to increase irrigation coverage

BY FRANK H. ANDORKA JR., MANAGING EDITOR

Thanks to sufficient pump stations, New York's municipal golf fairways finally receive irrigation.

Problem

Outdated irrigation systems with insufficient pump stations plagued New York's 12 municipal golf courses. Any new system needed to combine flexibility with cost-efficiency.

Solution

Flowtronex's pump stations allowed each of the 12 courses to customize their pump stations, which helped meet their individual needs.

John Dillon, superintendent at the 36-hole Pelham/Split Rock GC in New York, says summers routinely proved brutal to the city's 12 municipal golf courses before 1999. The city last installed new irrigation systems on its courses in the 1940s and 1950s, consisting of a motley collection of mainlines and quick couplers that only covered tees and greens. Consequently, the pump stations were designed for a low water flow. When the systems needed minor upgrades, the superintendents could only patch repairs to the old systems.

"During hot summers, the fairways turned brown because they weren't getting water," Dillon says. "The courses wouldn't necessarily lose turf, but the grass would creep into dormancy. It wasn't pretty."

Sol Cohen, partner in Wesler-Cohen Associates, a landscape architecture and design firm, says the systems were completely inadequate because the city never had enough money to upgrade the golf courses — until 1999. "[That's when] New York received a $12 million grant from the state's Department of Environmental Protection, and Mayor Rudolph Giuliani decided to upgrade the city's golf courses," Cohen says.

The problem

Diagnosing the problem of inadequate and horribly outdated irrigation systems was easy. Finding equipment flexible enough to adapt to each individual course's water sources was difficult.

"We weren't working with an unlimited budget," says Cohen, whose firm designed and oversaw the installation of the new systems. "If you break down the grant over the 12 courses they wanted to remodel, it's about $1 million per course. We had to find new systems that would meet the city's specifications, but wouldn't break the bank."

The challenge for Cohen lay in the city's specifications for the standard flow rate and the variety of water sources.

On the golf courses, superintendents have some combination of three potential water sources, Dillon says. The courses can either receive water from the city, dig irrigation lakes to hold water or dig wells to provide irrigation, Dillon says. At Pelham/Split Rock, for example, the soil is too rocky to drill wells, so Dillon depends on a combination of city water and irrigation lakes.

"Since you frequently have two or more sources, you need a variety of pumps to get the water from point A to point B," Dillon says. "It

can get fairly complicated, and you need a system to handle the complexity."

Cohen says the irrigation pumps at the golf courses needed to boost the normal flow from the city water to a flow rate of 800 gallons per minute, far faster than the city's pumps could manage.

The solution

As he designed the irrigation systems, Cohen decided to go with a specific pipe system and software package, but he still wasn't sure which pump stations to specify because of the high volumes they had to handle.

Cohen investigated pump station manufacturers to determine which would work most effectively with the pipe system he chose. When he consulted with the system manufacturer, it recommended Flowtronex PSI, a Dallas-based irrigation pump station manufacturer. Cohen says the ability of Flowtronex to adjust to the project's special requirements impressed him.

Dave Talboo, golf sales director for Flowtronex, says the company developed a reputation for flexibility by installing irrigation pump stations at desert courses in the West and Southwest.

"The variety of topography and geography in those areas always presents you with challenges to overcome," Talboo says. "When Cohen called about his challenges in New York, we thought we could overcome them based on our previous experience."

In all, Cohen installed 26 pump stations, including four prefabricated FloBoy systems, on 12 courses. Cohen designed pump stations that housed three 40 horsepower motors and three pumps. Two pumps work anytime the system is on, with the third pump idle in case of a breakdown. Each course's system, however, included subtle changes adapted to its individual needs.

For some courses Cohen installed lake-lift pumps to move water from irrigation lakes through the system. For others, a reliable link to the city water supply or a well was more important. All the courses required Cohen to combine these technologies in some form, and the Flowtronex system allowed him to do it easily and effectively.

"The pumps can pull the water from wells one day, and the next day you can pull the water from the city supply, depending on what will suit your purposes most effectively," Cohen says. "The superintendents liked that feature in particular because it put them in control."

New York's 12 municipal golf courses have a choice of three different water sources: city water, irrigation lakes and wells.

Cohen says superintendents also liked the simplicity of the pump station's Web-based operating system, the PumpLog 2000. Its interface allows superintendents to control the pump stations from anywhere they have access to the Web. "Superintendents don't have to crawl out of bed and go to the course to turn on their pump stations because they can do it from their computers at home," Cohen says.

The technology can also tell a pump station to lower water pressure if no programs are operating, which saves time, energy and maintenance costs, Talboo says.

"We understand the need to keep the system simple to operate and simple to fix," Talboo says. "After all, you don't want to spend huge sums of money to fix them because they're breaking down all the time. That's not cost-efficient."

Outcome

Dillon, for one, is thrilled with his system. His course installed four new pump stations that allow him to combine city water and lake use. He says the system is easy to use and it performed well this past summer, although he didn't get a chance to put it through its paces because the summer was cool and wet.

"The system will really get a workout when we experience a drought," Dillon says. "Based on what I've seen, I'm convinced that everything will work well. It's going to radically change the way I'm able to maintain my course." ■

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