

Saving Money By Converting To A Non-Potable Water Source

The Everglades Club
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Issue

The Everglades Club in Palm Beach, Florida, faced rising costs for purchasing potable water from the City of West Palm Beach for golf course irrigation. The club was buying water at a cost of \$3.50 per 100 cubic feet (748 gallons) and that price was certain to increase. In addition, the club was vulnerable to water use restrictions during times of drought. Water use restrictions were mandated by the South Florida Water Management District and could range anywhere from a 15-45 percent reduction in the amount of water available for course irrigation. The Everglades Club needed a more sustainable water source. Unfortunately, because the club is located on a barrier island, an alternative source of clean irrigation water was not available.

Action

The solution was building a reverse osmosis (RO) plant to desalinate the brackish ground water. Desalinated ground water would be significantly less expensive than potable water, and it would not be subject to water use restrictions. Implementing the plan required working with an engineer to conduct a feasibility study and then design a system that met the club's specific needs. A bidding process followed and finally the RO water treatment plant was built.

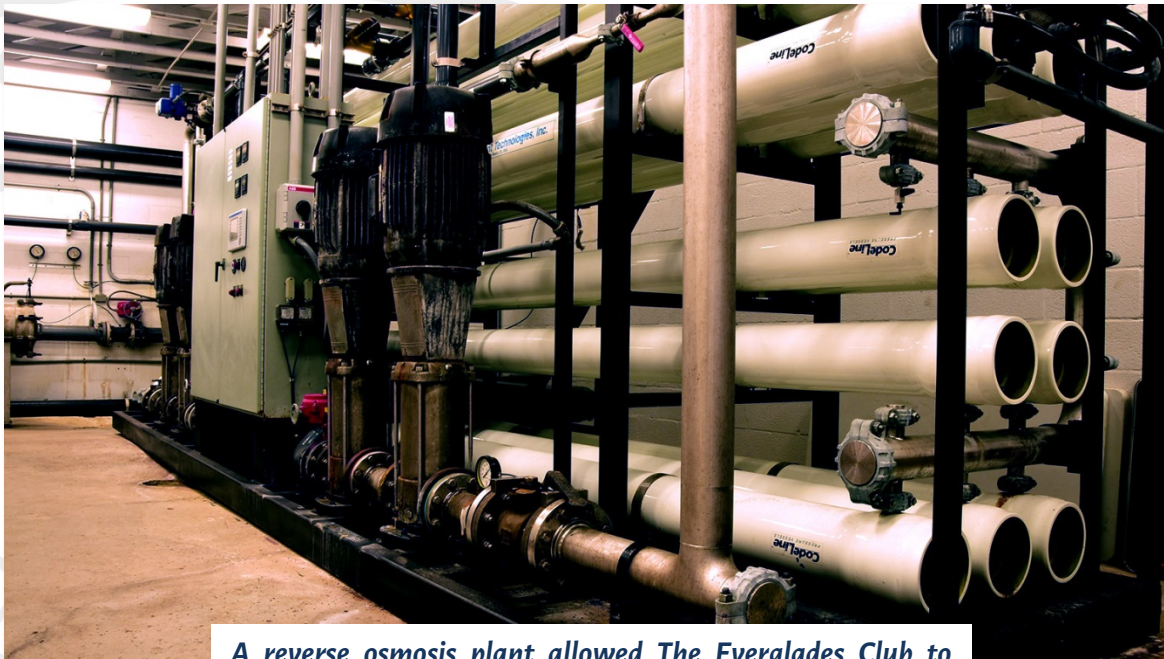
Results

The benefits of having the RO system have been numerous. First, the water quality is excellent. The system produces water of the desired quality by cleaning all salts from the brackish ground water and then injecting nutrients as part of the fertility management program.

There have also been significant cost savings since the project started in 1996. Prior to the project, the cost of irrigating with potable water was \$3.50 per 100 cubic feet of water. Since the project's completion, the cost for purchasing potable water has risen to \$6.65 per 100 cubic feet, with more increases expected in the future. In 2014, The Everglades Club used 80 million gallons of irrigation water; if they had purchased potable water it would have cost \$727,000. Instead, the total operating cost of the RO plant was \$74,000, a savings of \$653,000. The cost of building the RO system has been fully recouped by the savings since it was put into operation.

The main challenge encountered during this project was working through the initial permitting process because it involved three government agencies, the Town of Palm Beach,

the South Florida Water Management District and the Florida Department of Environmental Protection. In spite of those challenges, the club is totally satisfied with the project and would not change a thing about the process.



A reverse osmosis plant allowed The Everglades Club to desalinate brackish groundwater and use it for irrigation.