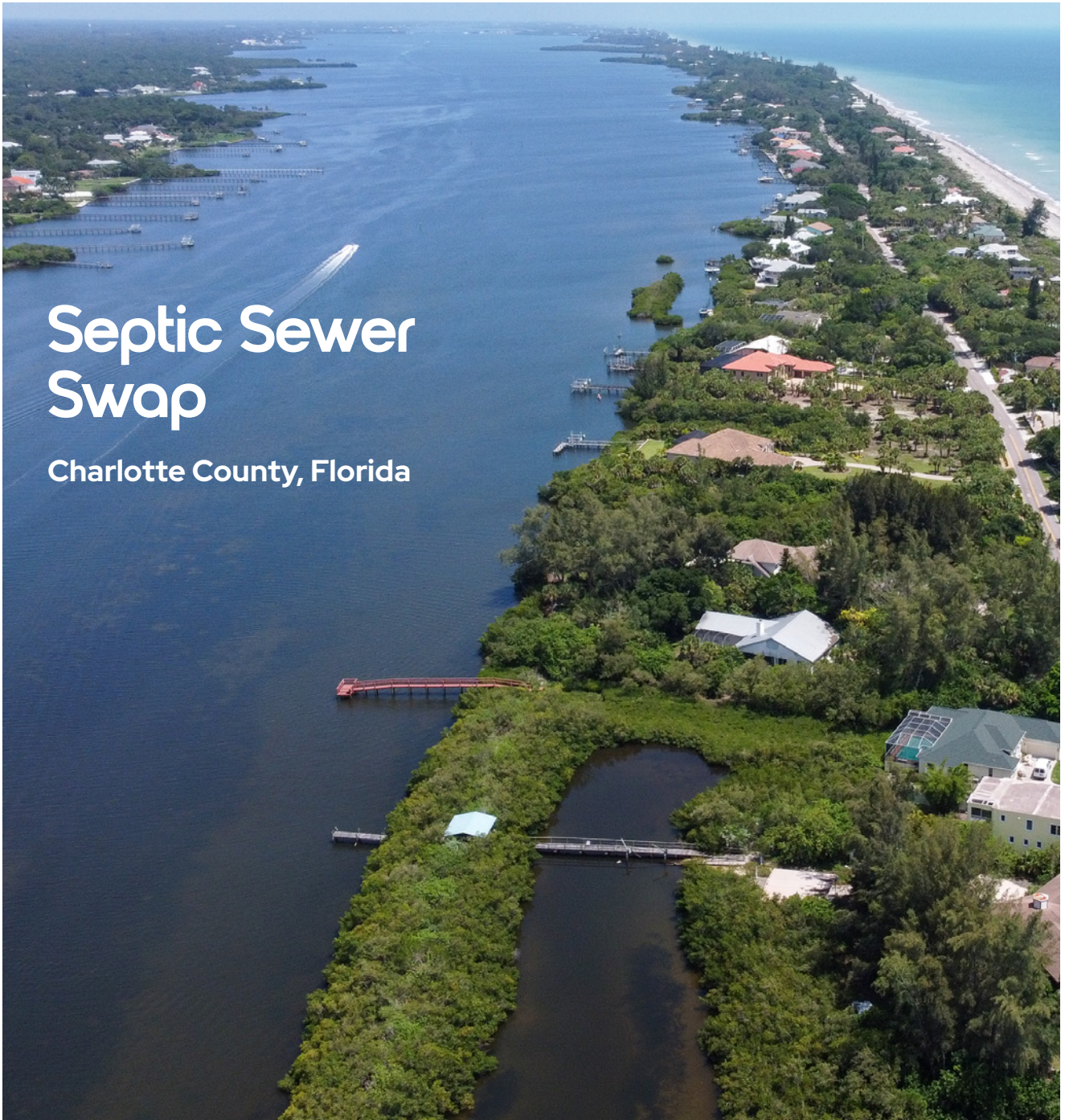




Case Study

Septic Sewer Swap

Charlotte County, Florida



This is an excerpt taken from the article “Septic Sewer Swap” published in *Water & Wastes Digest* April 2017. The entire article can be downloaded from this page. Southwest Florida has two popular attractions: golf and the Gulf of Mexico. The warm Florida climate and dozens of beautiful courses make it a prime destination for golfers from across the country. Sun-seekers love the beaches and anglers appreciate the wide variety of sport fishing available.

The Challenge

The resources of the region also have made it popular for developers who have, over the past 50 years, built businesses and homes in the counties along the Gulf of Mexico north of the Everglades. An eight-county region stretching from Manatee County in the north to Collier County in the south has shown a population growth of more than 20% over the past decade alone; that is nearly a half-million people. Problems, however, sometimes follow explosive growth. In the case of southwest Florida, so many new people in such a relatively confined area have created a water pollution problem that real estate developers in the 1950’s and 1960’s likely never considered: sewage. Many of the waterfront communities in the region have relied on septic systems to treat wastewater. Septic tanks worked fine until population density began to increase dramatically in the 1970s and 1980s. Mother Nature could not handle so many small home lots with septic systems, especially considering a geography of flat, sandy terrain with a high-water table.

“Quarter-acre lots at sea level with septic tanks are bound to create issues,” said Gary Hubbard, P.E., utilities director for Charlotte County, Fla. “The tide affects the groundwater, so when sewage is present in groundwater, the tide takes some of it out into the canals and the bay.”

Charlotte County has more than 162,000 residents, many of whom have septic systems and live near rivers or canals, or adjacent to Charlotte Harbor. Sewage seeping into local

waterways led the Florida Department of Environmental Protection to declare Charlotte Harbor and the nearby Peace River to be “impaired waters.” High levels of nitrogen affect marine life and water sports, as well as property values. “From an economic standpoint, Charlotte Harbor is the lifeblood of the community; we have to protect it,” Hubbard said.

The Solution

What can the property owners in Charlotte County expect for their investment?

“We have to protect our resources,” Cole said. “If we lose our water quality, we’re done. I can say that the water around Englewood is much better these days. I think Sarasota County and Englewood both did the right thing by installing vacuum sewers. Whenever you do something new, people will be tentative and a little concerned. I’m pleased that in hindsight, vacuum sewers were the right decision for Englewood and Sarasota County, and I think it’s the right decision for Charlotte County now.



Vacuum stations cover a relatively small footprint, are odor free and can be designed to blend into the neighborhood.



Key Features

After approximately 20 years of staged construction, the Englewood vacuum sewer system is now virtually complete, with seven vacuum systems serving 8,500 houses. Sarasota County is in its 14th year of staged construction, with two more vacuum sewer systems to be installed over the next few years. Cole said that over that time, his firm has designed and installed approximately 1.5 million ft of vacuum line and 19 vacuum stations in the Englewood and Sarasota county areas, as well as other Florida communities.

"Vacuum sewer technology has really taken off

in this part of the country," Cole said. "We've done [Airvac] systems in Sarasota County, Martin County, Jacksonville and Tarpon Springs. The Englewood system has approximately 9,000 connections, so it is quite large. We've sort of specialized in vacuum sewers for the past 20 years."

That work is helpful for the communities of southwest Florida, where the experience of Giffels-Webster is reassuring to both community leaders and taxpayers. It is a long-term effort; construction on the new sewers in Charlotte County began in 2009 and it will likely take several more years before the project is completed.



Vacuum stations are a safer, cleaner environment for public works employees.

Additional Information



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