



Wastewater undergoes biological treatment in large tanks at Sarasota County's Bee Ridge Water Reclamation Facility. One of the first steps in wastewater treatment occurs in these tanks where desirable bacteria is added to sewage to consume waste and organic materials. The facility is in the process of upgrading to Advanced Water Treatment standards with a daily capacity of 18 million gallons. HERALD-TRIBUNE ARCHIVE PHOTO

# Pipe dreams

Sarasota County, city of North Port contemplate costs of septic to sewer

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SARASOTA COUNTY – Every year almost 242 tons of nitrogen pollution flows into area waterways, and, eventually, the Gulf of Mexico from the nearly 50,000 septic tanks across Sarasota County – pollution that scientists say can help fuel red tide outbreaks like the

## Inside

Engineer touts use of organic carbon to reduce nitrates in wastewater. **2A**

one that has plagued Florida's west coastline for the past few months.

The blooms have prompted cleanups of dead fish from area beaches and ca-

nals and dredged up unpleasant memories of an 18-month-long bloom of red tide and blue green algae that plagued southwest Florida in 2017-18.

Reducing that pollution – mainly the nutrients nitrogen and phosphorus that can help feed toxic algae growth – is considered a key strategy to limit the

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number and severity of red tide outbreaks.

The state Clean Waterways Act, signed into law in June 2020, was heavily influenced by the heightened awareness of that time frame, specifically the impact of blue green algae and red tide.

The law calls for a reduction of nutrients in state waterways. While it transfers regulation of septic tanks from the state Department of Health to the Florida Department of Environmental Protection it stops short of requiring local governments to take specific steps – such as hooking septic systems into central sewers.

Meanwhile DEP must adopt rules regarding the installation of new septic tanks by July 1, 2022. Its goal is to remediate septic systems in water bodies that are categorized as impaired, based on a variety of contaminants, including excess nutrients.

But simply hooking septic systems into central sewer can be problematic, too.

Currently only the sewer treatment plants in the cities of Sarasota and Venice are cleaning wastewater with advanced wastewater treatment processes, or AWT for short, that prompts the nitrates to be converted into nitrogen

gas and dissipates into the atmosphere.

Without that upgrade, county sewer plants aren't even as effective as septic systems in cleaning wastewater that is now typically used for irrigation and ultimately finds its way into Sarasota Bay and the Gulf of Mexico.

With recent red tides prompting a heightened awareness of the role human-induced nutrients play in feeding the blooms, Sarasota County is offering residents an update on its ongoing efforts to reduce nutrients with a virtual update scheduled for 11 a.m. to 12:30 p.m., Oct. 18.

The discussion builds on the 2019 Water Quality Summit, hosted by Sarasota County in the aftermath of that persistent 2017-18 red tide bloom that crippled tourism-related businesses and fouled beaches on Southwest Florida Gulf coast

The online discussion will feature County Commissioner Christian Ziegler, as well as county staff, representatives of the University of Florida Institute of Food and Agricultural Sciences Extension Program, as well as the Sarasota Bay Estuary Program and the **Gulf Coast Community Foundation** of Venice, which commissioned the **Community Playbook for Healthy Waterways**.

The forum will include tips on things homeowners can do around their own homes and yards to reduce their impact on area waterways.

## Plenty of septic tanks

In response to the Clean Waterways Act and motivated by the potential availability of multi-million dollar grants from the state and federal government in coming years, Sarasota County and the city of North Port are considering how to eventually get more than 40,000 septic systems hooked into central sewers.

In April, Sarasota County started a year-long study to create a septic system replacement plan. That study should be completed by April 2022 and submitted to the Sarasota County Commission next July.

Sarasota County is already in the midst of a decades-long project to hook roughly 16,000 septic systems in the Phillippi Creek watershed to the county central sewer. So far, more than 9,900 septic systems have been hooked into county sewers.

There are a total of 47,864 septic systems within Sarasota County. About 49% of them, or 23,633, are in areas served by county utilities.

About 35%, or 16,961, are in the city of North Port, and 12%, or 5,660, outside areas with public water and sewer systems.

The Englewood Water District is home to 3% of the county's septic systems, or 1,342.

The city of Sarasota has 339 septic systems and Venice 29.

In North Port, in addition to the 16,961 existing septic systems, there are 28,322 undeveloped 80-foot by 120-foot lots originally laid out by General Development Corp. that are grandfathered in for well-and-septic service, should the owners choose to build there.

In May, the North Port City Commission, on a split 3-2 vote, approved a \$474,796 design contract with Kimley Horn & Associates to design the first phase of an expansion plan designed by Englewood-based consultant Giffels-Webster.

But at that same May meeting, board members expressed no appetite to implement a plan if it's too costly for residents to hook up.

The main purpose of the exercise was to get a head start on shovel-ready projects as a precursor to applying for state and federal grants.

The planning is still in the early stages and it could take years before any tanks are removed. Cost estimates still have to be worked out but it would likely be in the tens of millions of dollars.

Costs to individual homeowners would depend on those federal grants, but could be expensive, meaning opposition from homeowners would be likely.

In the case of the existing Phillippi Creek hookups, the construction cost worked out to \$14,500 per connection.

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# Septic

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Remaining Phillippi Creek connections could cost \$20,000 each.

Homeowners with septic tanks are already pushing back against the idea, even though nothing concrete has been formulated.

Still, experts say addressing septic tank pollution is key to the area's water quality,

## Designed for bacteria and pathogens

Traditionally, wastewater plants were designed to remove harmful bacteria, pathogens and solids from treated water. But that also left a fluid that's rich in phosphorous and nitrates – essentially liquid fertilizer.

That can be remedied through an additional process, advanced wastewater treatment, that prompts the nitrate to be converted into nitrogen gas and dissipate into the atmosphere.

Currently there are seven major wastewater treatment facilities and 22 minor ones that operate within Sarasota County.

The wastewater plants operated by the cities of Sarasota and Venice already treat wastewater to AWT standards.

The city of Sarasota plant was converted to AWT in 1989; the Venice plant was built for AWT in 1991.

The two plants operated by the city of North Port and three plants operated by Sarasota County are not AWT.

In neighboring Manatee County, the city of Bradenton operates an AWT plant, while Manatee County's plants are not.

Much of this, as well as other strategies to reduce nutrient pollution in Sarasota Bay and area waterways is detailed in the [Community Playbook for Healthy Waterways, a document funded by the Gulf Coast Community Foundation](#) as a response to the heightened awareness of water quality issues that resulted from the extended red tide bloom of 2017-18.

[The latest efforts by Sarasota County to improve water quality are designed to align with several strategies in the playbook.](#)

Sarasota County started the push to upgrade its three wastewater treatment plants in 2019, partly in response to suits filed by clean water advocates over the discharge of more than 800,000 gallons of reclaimed water from over-tasked storage ponds at the Bee Ridge Wastewater Treatment Facility without a permit, as well as a Florida Department of Environmental Protection consent order.

Expansion of the Bee Ridge plant from its current capacity of 12 million gallons per day to an 18-million-gallon AWT facility started in late February 2020.

The expanded plant, which has an estimated cost of \$157 million, is anticipated to be operational in 2025.

In July, the County Commission approved plans to design an expansion and upgrade to AWT standards of



**City of Sarasota workers clean up fish killed in August by red tide on public city shorelines and canals.** JESSE MENDOZA/HERALD-TRIBUNE

the Venice Gardens plant in the 2022-23 fiscal year, with an eye toward having that finished by 2026. On Oct. 12, the commission approved \$1.4 million to improve piping at Venice Gardens.

Next on the upgrade list will be the Central Sarasota County Wastewater Treatment system.

The projected cost of those two expansions come in at an additional \$224 million in capital costs, as well as a projected \$14.1 million in debt service and an incremental increase in operation and maintenance costs of the plants estimated at \$3.5 million.

Commission Chairman Alan Maio noted in July that any plans to hook septic systems into county sewer would occur only after those plants are upgraded to AWT, to reap the benefit of the nitrogen removal.

County water and sewer customers are paying for the improvement, in part, through higher rates.

## Philippi Creek first

Realistically, the first septic systems Sarasota County will likely address through the creation of shovel-ready projects that will be pitched for state and federal grants are the roughly 6,000 systems still not hooked into the Bee Ridge wastewater treatment plant. Stipulations of federal funding establish a time frame that may call for the money to be spent by 2026 noted Sarasota Utilities Engineering Manager Greg Rouse.

“Right now, we have two areas of Phillippi Creek designed but not funded,” he added.

As for the remaining septic systems – including more than 13,000 in south Sarasota County – that timetable will be determined once the replacement plan is completed and approved in July 2022.

“It has not officially expanded beyond Phillippi Creek,” Rouse stressed. “That's the point of our study, to look countywide, to determine where the septic tanks fit. “Our goal is to find them and then classify them and then there maybe develop a plan as to the county making improvements.”

All that comes at a cost. In the case of the existing Phillippi Creek hookups, the construction cost worked out to \$14,500 per connection. Remaining Phillippi Creek connections could cost \$20,000 each.

Connections for the overall county expansion could cost \$36,000 a piece.

Not including transmission infrastructure and improvements such as water mains, paving, stormwater improvements and sidewalks, county officials are estimating a project cost between \$472 million and \$851 million for Sarasota County alone.

Rouse points out that those are “high-level” numbers that will be refined as the study develops.

“That's really where the elected officials start doing the magic that they do, they'll start discussing what areas should be targeted, how costs should be apportioned,” Rouse said. “That kind of conversation starts in a year.

“Then we can really start defining the costs in individual neighborhoods,” he added.

## Double septic systems per capita

North Port has more than double the number of septic systems per capita, compared to the state average.

In May, when the North Port City Commission gave its blessing to the Kimley-Horn contract to design a first phase of the extension plan, which would cover the area north of Blue Ridge Park north along Salford Boulevard, it was with the hope that it would be a shovel-read project that could qualify for federal or state funding.

At that meeting, Terri Lowery, senior vice president and managing director of Gainesville, Florida-based Jones, Edmunds & Associates, noted the state has already earmarked money for water quality issues.

On top of that \$500 million of the state's share of American Rescue Plan funds will be allocated to water and sewer projects. At that same meeting, Dan Beilman, a North Port resident who has been rallying opposition to the prospect of the city replacing septic systems with city sewer hookups thought the city was taking action prematurely, and the Clean Waterways Act would first impact the sources of blue-green algae.

Beilman also has major concerns with the projected cost of hooking existing septic systems into city sewer.

City commissioners have approached Kimley-Horn design plan as a way to establish costs, with an eye towards shelving that until a funding model is developed and in addition to state and federal grants, were eyeing funds raise through the one-percent surtax – which must be extended through a countywide referendum in 2022 – as one likely funding source.

Sarasota County used surtax to offset the cost of the Phillippi Creek project.

Water that flows through the Myakkahatchee Creek and the city's 80 miles of canals and waterways ultimately drains into Charlotte Harbor.

North Port officials are working with Charlotte County to determine exactly what impact septic systems in the city has on the harbor.

Specifically, the city is testing runoff from the Coplum Waterway for a variety of nutrients, as well as the manmade sweetener sucralose, to which is seen as a control to determine septic tank runoff.

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