

# A Tale of Two Careers

AFTER A LONG WASTEWATER CAREER IN THE PAPER INDUSTRY, BOB DAVIS TOOK A TURN ON THE MUNICIPAL SIDE AT A SOUTH CAROLINA RECYCLED WATER FACILITY

STORY: **Steve Frank**

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At the ripe old age of 19, Bob Davis answered a help wanted newspaper ad from the International Paper research center in Tuxedo, New York.

An aptitude test showed Davis to be pretty smart, and in the early 1970s, the company started him out in a pilot plant, a scaled-down version of paper mill equipment found in the field. He moved on to a succession of roles with increasing responsibility in that industry before making a career change to the wastewater treatment profession in 2009. Today, he is the recycled water supervisor at the Hilton Head Public Service District in South Carolina.

There he supervises a recycled water facility that delivers irrigation water to golf courses on an island with a population that swells with tourists every summer.

## TRAVELING TECHNICIAN

Davis' paper industry career spanned 36 years. After his first job with International Paper, he became a field service technician on a crew that went to paper mills across the country to help with upgrades, equipment changes and startups. From 1973-90, he did process control testing and related work at mills in Arkansas, Texas, Louisiana, Oregon, New York, Maine and elsewhere.

But traveling and spending months at a time in hotels soon lost its appeal. On a trip to the International Paper mill in Georgetown, South Carolina, he asked the environmental superintendent to keep him in mind if he ever had an opening. One soon came up.



The headquarters of the Hilton Head Public Service District. The wastewater treatment plant has 6.4 mgd design capacity.

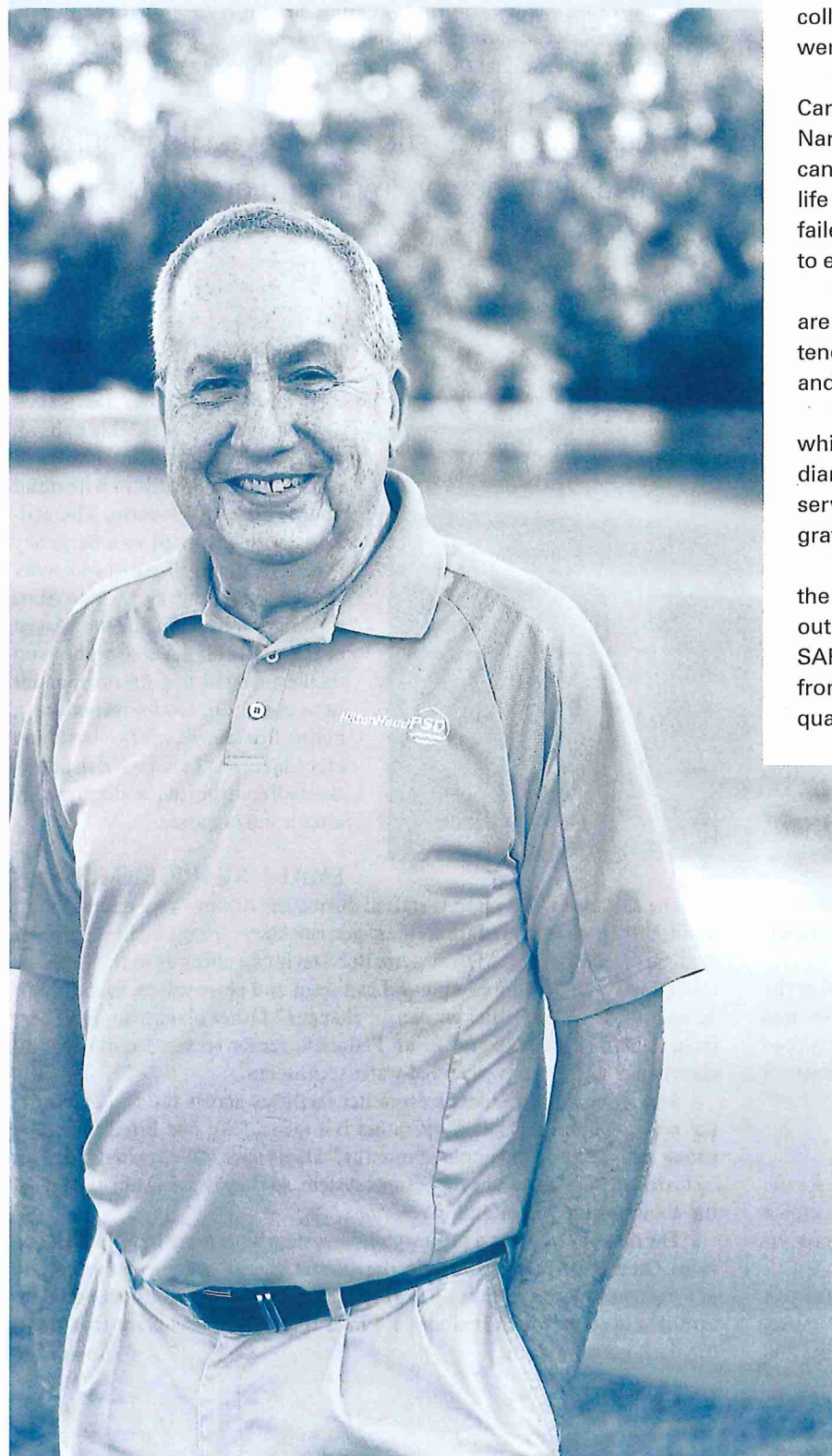
Davis began working in the lab at the Georgetown mill doing process control work, stack testing for air permit compliance and effluent testing at the mill's 28 mgd wastewater treatment plant, a large aerated lagoon system with a primary clarifier and multiple lagoons.

While working in the lab from 1990-97, he passed the certification license exams, D through A, for South Carolina biological wastewater operators. Along the way, he has acquired almost every water and wastewater cer-



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## HELP WITH HOOKUP COSTS

One reason the South Carolina Rural Water Association recognized the Hilton Head Public Service District as Wastewater System of the Year was a charitable campaign called Project SAFE (Sewer Access For Everyone).

Project SAFE is a fund of the Community Foundation of the Lowcountry that provides sewer connection grants for low- to moderate-income homeowners. The fund raised \$3 million as part of a recent effort on Hilton Head Island to install sewer collector mains in previously unserved neighborhoods that were relying on septic systems.

“Septic systems can be problematic here in the South Carolina Lowcountry because of our soil types,” says Pete Nardi, general manager. “Unfortunately, a failing septic system can represent a public health risk and diminishes the quality of life for homeowners who can’t use their plumbing because of a failed septic system. Our community really embraced the effort to extend the public sanitary sewer system.”

“A lot of the people whose families have been here forever are not very wealthy,” says Bob Davis, recycled water superintendent. Most of the homes are small. “The water table is high, and that causes problems with their septic systems.”

The district provides both gravity and low-pressure sewers, which feature a grinder unit buried on the property and small-diameter pipe. The low-pressure systems help provide sewer service without the neighborhood disruption of trenching for gravity sewers and related road rebuilding.

The connection cost of about \$2,000 per home is offset by the Project SAFE campaign. Recipients need only to come in, fill out some paperwork and verify their income level. “Project SAFE has had a lot of success converting hundreds of homes from septic to sewer,” Davis says. “Improving our customers’ quality of life is the focus of our work. Everybody wins.”

### Bob Davis, Hilton Head (South Carolina) Public Service District

POSITION:

**Recycled water supervisor**

EXPERIENCE:

**46 years in paper industry and municipal wastewater**

RESPONSIBILITIES:

**Manage 6.4 mgd (design) recycled water plant**

EDUCATION:

**Associate of Science degree, Horry-Georgetown Technical College; bachelor’s degree in biology, Coastal Carolina University**

CERTIFICATIONS:

**Multiple waste and wastewater credentials**

AWARDS:

**2019 William D. Hatfield Award, Water Environment Association of South Carolina**



tification the state offers, including the highest certifications for water system operators in the state.

The Roman philosopher Seneca is said to have observed: "Luck is what happens when preparation meets opportunity." For Davis, that happened in 1997 when the operator in charge of the wastewater treatment plant and his supervisor became ill and had to leave work.

"I had the training, licenses and experience, and I became the supervisor," he says. He rose from lab technician to plant supervisor overnight because he had the A-level biological operator certification the state required for the position.

### A ROLE MODEL

Education was a key to his progress. While living and working in New York, he started college at night, but his progress was unsteady. His frequent travels as a member of the field service team forced him to keep dropping courses.

After he moved to South Carolina and settled in, his wife, Susan, and father-in-law encouraged him to go back to college and complete his degree. Over the years, he earned his Associate of Science degree from Horry-Georgetown Technical College and his bachelor's degree in biology from Coastal Carolina University, graduating in 2002.

"Going to school at night, you miss out on some family things," he says, but the degree gave him opportunities he otherwise would not have had. "I became the wastewater supervisor because I had the A-level biological certification. After I finished my bachelor's degree,

recycled water service for the north and middle areas of Hilton Head Island, a popular resort destination.

The wastewater treatment plant is a 6.4 mgd (design) return activated sludge plant with deep-bed gravity filters for tertiary treatment. "In summer, we average treating about 3.5 mgd; and in winter, it's about 2.5 mgd," Davis says. The facility discharges nothing to bodies of water; all effluent is sold to golf courses for irrigation or used to nourish interior wetland habitats.

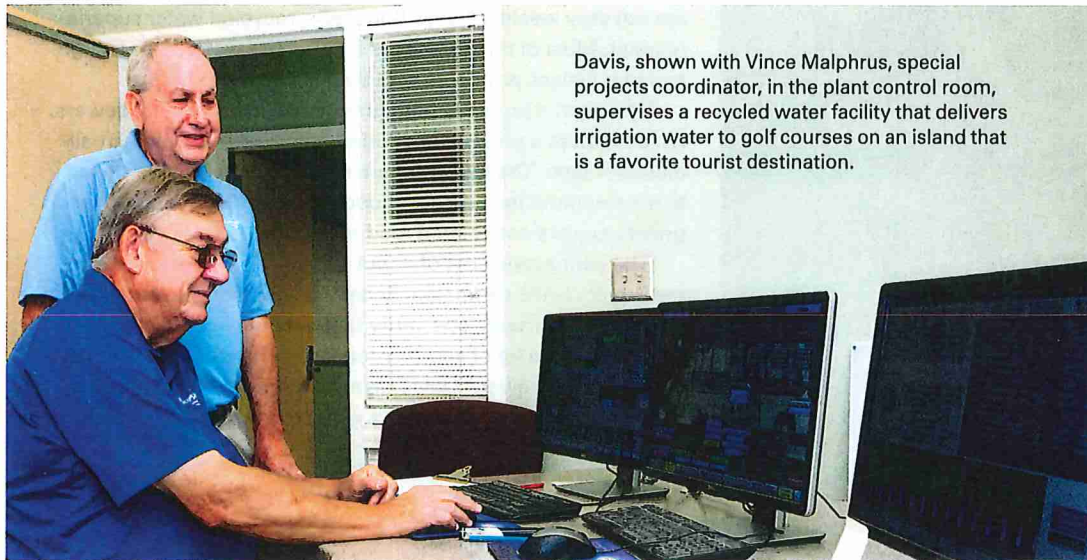
### COPING WITH STORMS

The excess capacity and effluent storage facilities help the district cope with storms: Hilton Head is in the Atlantic hurricane zone, and the district is a first-responder agency for hurricanes. "We have a 2 million-gallon effluent storage tank at the plant, and behind the plant, there are three storage ponds totaling 20 million gallons," Davis says. An additional 1 million-gallon storage tank is located at a country club golf course.

When Davis knows a storm is coming, he can reduce the inventory of treated wastewater in storage at the plant by sending it to the recycled water wetlands, or he can adjust the transfer rate so the treatment basins are hold-

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Davis, shown with Vince Malphrus, special projects coordinator, in the plant control room, supervises a recycled water facility that delivers irrigation water to golf courses on an island that is a favorite tourist destination.

I wound up becoming the lab supervisor and the solid waste/hazardous waste supervisor, as well as the wastewater supervisor. I got a lot more responsibility, and more compensation, by finishing my degree."

He praised his wife for her support (their two children were small at the time) and his father-in-law for being a role model: "My father-in-law was born in the Bronx (New York). He went to Hunter College in the daytime and worked on the railroad at night. He went on to complete his master's degree at Cornell."

### SECOND CAREER

Davis retired from International Paper in 2009 and went to work for the Georgetown County Water and Sewer District, just north of the Georgetown International Paper Mill where he worked and about 35 miles south of Myrtle Beach.

He worked with the district until April 2016, when the opportunity at Hilton Head opened up. He has had a good run there. With 35 employees, the 20,000-customer utility provides water, sewer, wastewater treatment and

ing less water as well. "When a storm is coming, we make sure we have room for the extra water," Davis says.

Team members are able to bunk at the utility's hurricane-hardened facility, which is built to withstand up to a Category 3 storm. The utility is closely linked to emergency management and other first-responder agencies. During Hurricane Matthew in October 2016, the staff stayed at the plant for several nights and then evacuated to a first-responder base camp on the mainland with police, firefighters, medical staff and other agencies. This approach allows the district to begin recovery quickly after a storm passes.

### SMALL STAFF, BIG JOB

The recycled water plant is staffed during the day by three operators. At night, Bill Davis, the operations manager, can check things on his computer at home via a robust SCADA system. Bob Davis can check as well: "I can see the whole system on my computer. I can open and close valves, turn pumps on and off, and make other corrective changes." Other plant team members include Daniel Schrock and Brian Federick, senior recycled water technician, and Victor Adams, recycled water technician.

As with many water and wastewater facilities across the U.S., training the next generation of plant operators is a focus. "We just hired four new, young guys in the last couple of months," Davis says. "We started them off by learning the wastewater collections system, so they're going out and learning about pumps, pipes and lift stations."

The district operates a sanitary sewer system with more than 130 lift stations. On the drinking water side, the district sees an average daily demand of 6 mgd and summer peaks up to 11 mgd. Ten employees monitor and maintain that system, which includes a 4 mgd reverse osmosis plant that treats brackish groundwater. *(continued)*





At Hilton Head, Davis is part of a 35-member team that provides water, sewer, wastewater treatment and recycled water services to some 20,000 customers.

Drinking water sources include fresh groundwater wells, water purchased wholesale from the mainland utility, and an aquifer storage and recovery facility tapped for high-demand periods.

The Hilton Head district has won South Carolina Department of Health and Environmental Control's Facility Excellence awards for three consecutive years. Its wastewater treatment plant site has also been certified by Audubon International as an Audubon Cooperative Sanctuary Program.

In addition, the utility was named the 2018 Wastewater System of the Year by the South Carolina Rural Water Association. The award recognized the district for building two regional lift stations using South Carolina Clean Water Revolving Fund financing of \$1.5 million for 20 years at 1.9%. That kept costs to customers low and added 9 miles of sewer mains under a partnership with the island's municipal government.

Complementing the recognition from the district, Davis' professional colleagues honored him in 2019 with a Water Environment Federation William D. Hatfield Award. It recognizes outstanding performance and professionalism; it's clear Davis has earned it. tpo

Bob Davis, front, recycled water supervisor, with team members, from left, Brian Fedorick and Daniel Schrock, senior recycled water technicians, and Victor Adams, recycled water technician.