

2019 ANNUAL REPORT



Cape Fear
Public Utility Authority

Stewardship. Sustainability. Service.

To Our Customers and Stakeholders

Certain qualities lie at the core of a successful organization.

It should concentrate on customer service. It should attract the best people and give them the best tools and training. It should carefully consider crucial decisions and act when sufficient information is available. No matter how successful, it should continuously seek to improve and learn from its experience. It should be focused on ensuring long-term sustainability and resilience.

This annual report highlights a number of important examples from 2019 of how Cape Fear Public Utility Authority continues to focus on these factors.

This year, our Board and staff embarked on one of CFPUA's most important undertakings since its inception in 2008: the Sweeney treatment enhancements project, which will significantly reduce PFAS in water sourced from the Cape Fear River. This followed two years of intense study, guided by experts, to understand the challenge the community faced and identify the best way to address it. So, after careful consideration, this winter we take concrete steps toward this long-term solution as construction begins on eight new deep-bed granular activated carbon filters.

Like most in our community, we started this year with memories of Hurricane Florence still top-of-mind. Even before the year began, CFPUA staff had begun a top-to-bottom review of our emergency plans, looking for ways to make our water and wastewater systems even more resilient to storms. These steps, including extra layers of fuel and power redundancy and an emergency alert system for our customers, already have been rolled out and were in place when Hurricane Dorian threatened.

The accomplishments you will read about in this year's Annual Report result from our employees' hard work and dedication to customers. Whether repairing broken water mains in the middle of the night or helping customers get the most from their service, the staff at CFPUA, some of whom you will meet in subsequent pages, deserve the credit for this year's accomplishments.

As an "annual" report, this publication focuses largely on our work this year. We are cognizant, however, that this work occurs in contexts spanning decades. CFPUA serves a coastal community, so we must consider risks posed by a changing climate and rising sea levels, not only how our vital infrastructure might be affected but also what we can do to lessen our impacts on the environment.

This year, CFPUA incorporated the qualities illustrated by the examples above into our Strategic Plan, a document that serves as our organizational DNA.

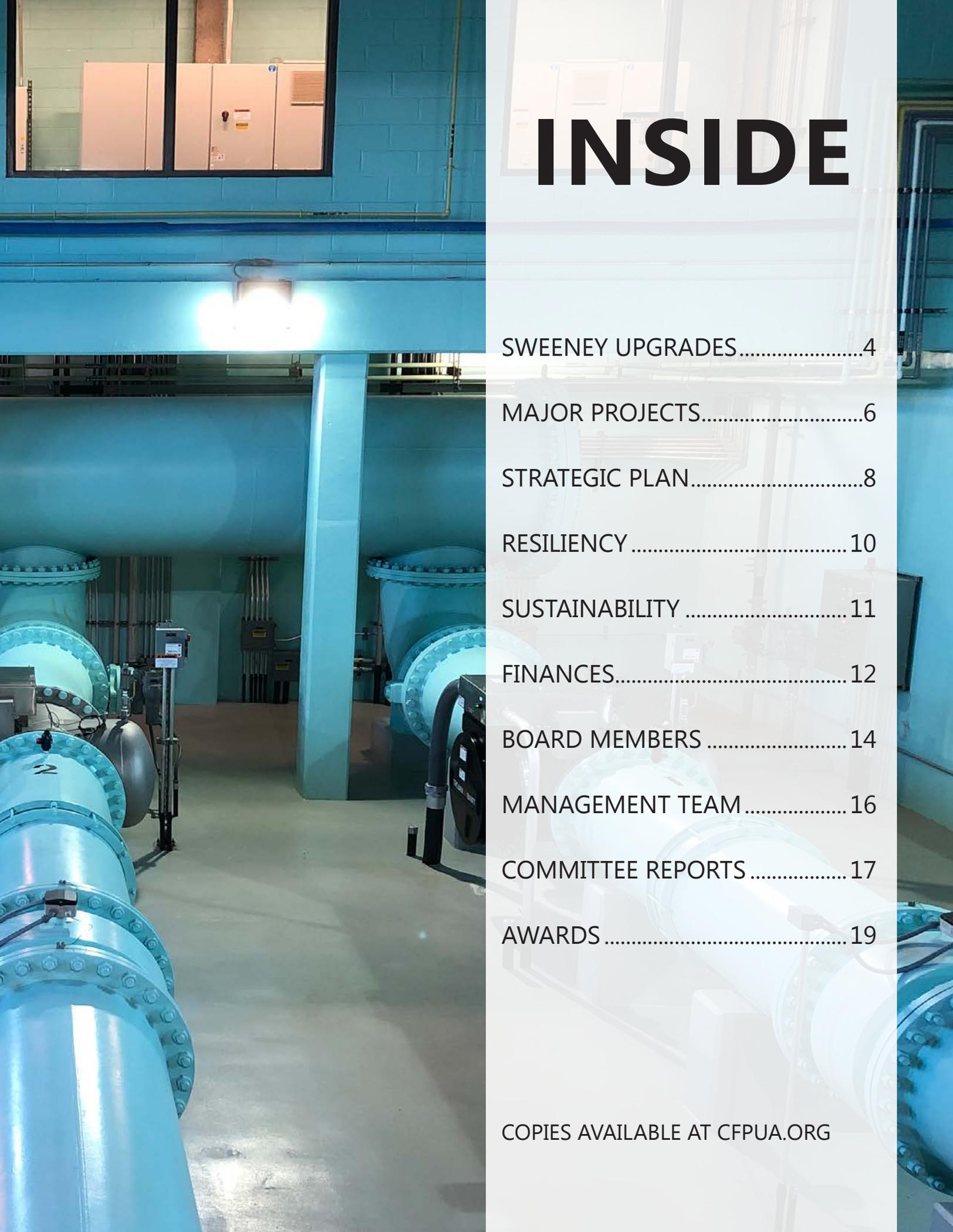
On behalf of our Board and our employees, we thank you for your continued support and invite you to explore our work in this report.



William Norris
Chairman



James R. Flechtner, PE
Executive Director

The background of the page is a photograph of a water treatment facility. It shows large, dark-colored pipes and machinery, likely part of a filtration or treatment system. The walls are a light, neutral color. The lighting is somewhat dim, with a bright light source visible in the upper left, creating a high-contrast scene. The overall tone is industrial and professional.

INSIDE

SWEENEY UPGRADES.....	4
MAJOR PROJECTS.....	6
STRATEGIC PLAN.....	8
RESILIENCY	10
SUSTAINABILITY	11
FINANCES.....	12
BOARD MEMBERS	14
MANAGEMENT TEAM.....	16
COMMITTEE REPORTS.....	17
AWARDS	19

COPIES AVAILABLE AT CFPUA.ORG

Sweeney Treatment Enhancements Project Underway



Construction-related work began in November on a \$43 million project to add eight new deep-bed granular activated carbon (GAC) filters at Sweeney Water Treatment Plant to address PFAS in water sourced from the Cape Fear River.

The Cape Fear Public Utility Authority Board in September awarded a \$35.9 million construction contract to Adams-Robinson Enterprises Inc. for the project. The board also approved the sale of 25-year revenue bonds, which were sold in October, raising \$107.3 million. Of the amount received from the sale, \$43 million will fund the Sweeney treatment enhancements project. This amount includes a \$3 million contract with Black & Veatch for construction-phase support related to the project.

The bond proceeds also provide \$15.4 million to pay CFPUA's portion of construction costs for an additional pipeline to convey raw water from the Cape Fear River to

Sweeney [See Page 6]. In addition, \$48.2 million of the bond proceeds will be used to refinance certain outstanding debt – which, based on current market conditions, is expected to save customers approximately \$4.2 million over the life of the bonds – and about \$650,000 will pay for costs to issue the bonds.

The new filters are expected to begin operating in 2022 and enable Sweeney to reduce PFAS concentrations in water from the Cape Fear by an average of 90 percent. The GAC filters emerged as the best option for Sweeney following an extensive pilot study that also examined reverse osmosis and ion-exchange media [See Page 7].

The bid by Adams-Robinson for construction of the Sweeney enhancement project was the lowest of the three bids submitted.

Repaying bondholders will result in a total increase, begin-

ning in July 2020, of \$5.57 per bimonthly bill for the average CFPUA residential customer. That includes \$4.42 for the Sweeney project and \$1.58 for the second raw water line, as well as a savings of \$0.43 resulting from the refinance of prior debt.

To reduce PFAS compounds in the interim before the enhancements come online, CFPUA staff has implemented a program to replace media in existing filters at Sweeney. These interim steps have resulted in some reductions but are unsuited as a long-term solution. This temporary measure will continue until the new deep-bed contactors become operational.

The PFAS that continues to be detected in CFPUA's regular monitoring is largely the consequence of decades of releases into the river by Chemours and DuPont, who have operated a chemical manufacturing plant upriver from Wilmington.

CFPUA has filed a federal lawsuit against Chemours and DuPont to recover costs and damages. Although the outcome of this lawsuit remains uncertain, a plan under consideration would place any monetary award to CFPUA in a trust to fully or partially fund payoff of the bonds, which would allow CFPUA to reduce customers' rates proportionately.

A scheduling order from the federal district court for the Eastern District of North Carolina lays out the following deadlines for the lawsuit:

- Summer 2020: Fact discovery complete.
- August 17, 2020: Mediation must be complete.
- Fall 2020: Expert witness reports complete.
- Spring 2021: Expert witness discovery complete.
- Summer 2021: Actions regarding summary judgment complete.
- Fall 2021: Expected trial date.

SWEENEY PROJECT TIMELINE

COMPLETED

- **September 11, 2019:** CFPUA Board awards \$35.9 million contract to Adams-Robinson Enterprises Inc. for the construction of eight new deep-bed granular activated carbon (GAC) filters. The board also approved the sale of bonds to fund the project.
- **October 1, 2019:** The North Carolina Local Government Commission approves bond sale.
- **October 17, 2019:** Bonds sold to fund the project.
- **November 4, 2019:** Contractor receives notice to proceed on construction.

ANTICIPATED

- **February 2022:** The new filters come online as the project reaches substantial completion.
- **May 2022:** Project reaches final completion.

Get the latest updates on the project at www.cfpua.org/sweeney-upgrades

Frequently Asked Questions

WHAT IS GRANULAR ACTIVATED CARBON OR GAC?

Granular activated carbon consists of tiny particles of carbon. It works through a process called adsorption, with a “d” as opposed to the more commonly known absorption, with a “b.” Absorption is how a sponge works: Compounds you want to remove are distributed throughout the absorbing material. In adsorption, the compounds you want to remove bind to the surface molecules of the adsorbing material. And GAC offers an astounding amount of surface area: One pound of GAC has more than 35 acres of surface – almost 100 football fields’ worth.

WHY GRANULAR ACTIVATED CARBON? WHY NOT REVERSE OSMOSIS?

To find the best overall long-term solution to filter PFAS, CFPUA worked with Black & Veatch, a world-class engineering firm, to conduct pilot studies on three technologies: granular activated carbon, ion exchange, and reverse osmosis.

Early in the study, reverse osmosis was set aside for several reasons, including:

Synergies with Sweeney’s current filters: With technologies such as ozone, ultraviolet, and biofiltration, Sweeney already is considered one of the best water treatment plants in North Carolina. The water treatment processes at Sweeney have been harmonized to effectively filter constituents such as disinfection byproducts and 1,4-dioxane and to prevent leaching of lead in older pipes in the homes and businesses of our customers. The GAC filters offered an option that reduces PFAS while further enhancing the water quality produced at Sweeney.

Water use: CFPUA has a limited allocation of water it can draw from the river. Reverse osmosis typically uses more raw water than other filter technologies to produce same amount of drinking water. Adding reverse osmosis to Sweeney could have limited its ability to meet our long-term water needs.

Expense: Building reverse osmosis filtration would cost more than three times as much as the GAC upgrades, and annual operating costs would increase by more than 60 percent.

Ion-exchange proved to be too targeted – effective at removing some PFAS, but not a broad range like GAC.

In the end, GAC emerged as the best long-term solution for CFPUA and its customers, offering reduction of a broad range of PFAS, flexibility, and cost-effectiveness.

CFPUA HAS A LAWSUIT AGAINST CHEMOURS — WHY NOT WAIT TO SEE WHAT HAPPENS?

The outcome of any lawsuit against Chemours is uncertain, from the verdict to any potential award. Resolution also may take a significant time, likely several years. Moving forward is the right decision for the community, now and in the future, regardless of what may happen with the lawsuit. We are building these upgrades to reduce PFAS compounds that are in water we withdraw from the Cape Fear River. Those PFAS compounds are likely to remain in the river for years to come.

Research into human health effects from PFAS has been limited, focused mainly on older compounds such as PFOA and PFOS. For those, scientists have sufficient data to state they pose a number of risks to human health, including effects on the liver, development, and immune system, and they may be carcinogenic.

Less data exists for “short-chain” PFAS such as GenX and the other PFAS tied to Chemours and DuPont, but the volume of data grows daily and leads researchers to believe these may pose similar health risks to humans.

Dr. Jamie Dewitt, an associate professor in the Department of Pharmacology & Toxicology at East Carolina University, has said: “Taking steps now to reduce exposure to all PFAS as much as possible will reduce the probability of health effects from long-term exposures.”



Major projects begun, com

From Kings Bluff in Bladen County to our Southside Wastewater Treatment Plant off River Road, CFPUA staff and our contractors worked throughout 2019 to upgrade, improve, and expand the infrastructure that provides quality water and wastewater services to our customers. In 2019, more than \$87 million projects were put out to bid. Below are some of the many projects that were started, ongoing, or completed this year.

U.S. Highway 421 Water and Sewer Expansion

WHAT: A project in cooperation with New Hanover County to extend CFPUA water and wastewater services along the U.S. 421 Corridor to the Pender County line to support current and future development.

PROJECT START: February 2018

PROJECT COMPLETE: November 2019

COST: \$15.5 million

DETAILS: Project encompasses 34,580 feet of water mains and 36,940 feet of wastewater force mains, portions of which required drilling horizontally under the Cape Fear River. Provides water and sewer service to more than 982 undeveloped acres, as well as to previously unserved existing businesses.



Northern Water Mains

WHAT: Installation of a new 16-inch water main along a 4.6-mile route to improve fire protection and increase available water capacity in parts of Northern New Hanover County.

PROJECT START: September 2019

PROJECT COMPLETE: July 2020

COST: \$4.6 million

DETAILS: The new water main is expected to increase water capacity in the area by 2 million gallons per day (MGD). In addition, under an interlocal agreement, New Hanover County is providing approximately \$158,000 for the installation of 26 new fire hydrants.

Additional Raw Water Transmission Line/ Kings Bluff Pump Station Upgrade

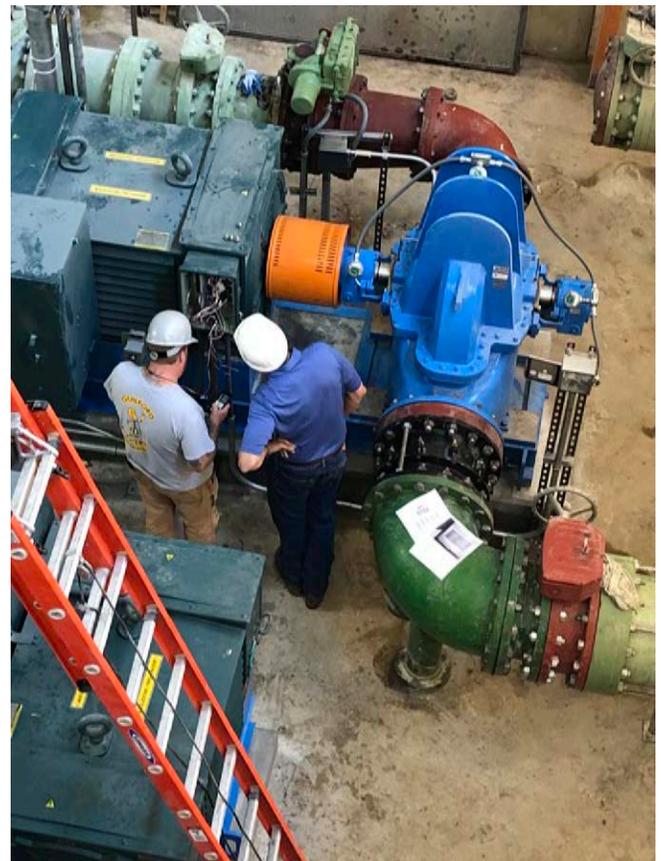
WHAT: Joint project with Brunswick County to construct 14 miles of 54-inch pipeline from Lower Cape Fear Water and Sewer Authority's (LCFWASA) Kings Bluff Pump Station in Bladen County to LCFWASA's storage tank near the Town of Northwest. The new raw water line will supplement existing lines providing raw water to CFPUA and Brunswick. Separately, CFPUA completed a planned replacement of pump motors and electrical components at its own Kings Bluff Pump Station.

PROJECT START: December 2019 for additional raw water line; November 2018 for CFPUA's Kings Bluff Pump Station.

PROJECT COMPLETE: June 2022 for additional raw water line; May 2019 for CFPUA pump station.

COST: The total project cost for the additional raw water line is \$44 million, of which CFPUA is paying \$16.1 million. The cost for the pump station upgrade was \$2.9 million.

DETAILS: CFPUA currently is allocated 23 MGD of raw Cape Fear River water from LCFWASA. CFPUA also has the capacity to withdraw 10 MGD using its own Kings Bluff Pump Station. Once complete, the additional raw water line will add another 15 MGD, for a total CFPUA raw water capacity of 48 MGD.



pleted, or ongoing in 2019

Pump Station Upgrades

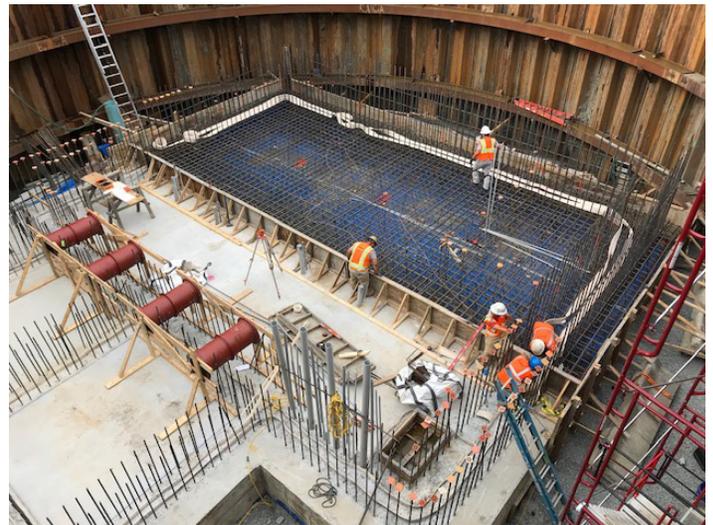
WHAT: Pump Station 10 (PS 10) is the largest capacity station for CFPUA and has been in service since 1967. In addition, six existing pump stations and associated force mains were replaced.

PROJECT START: February 2019

PROJECT COMPLETE: October 2020 for PS 10; May 2021 for the other six.

COST: \$8.9 million for PS 10; \$5.4 million for the six. State matching grants provided 50 percent of the total funding.

DETAILS: The PS 10 project consist of a constructing a new pump station with four new dry-pit submersible pumps, backup generator, electrical controls, monorail hoist, piping, valves, and associated equipment. The station will also include a diesel bypass system, odor control, headworks, flow meter, and junction box. Work on the others consists of replacing six aging pump stations and the force mains.



Southside Wastewater Treatment Plant Ultraviolet Disinfection Project

WHAT: Replace chlorine gas with ultraviolet (UV) light as a disinfection treatment process.

PROJECT START: February 2019

PROJECT COMPLETE: January 2020

COST: \$2.4 million

DETAILS: The team of Garney Construction/McKim & Creed Design Build was selected to convert the existing gaseous chlorine disinfection system to UV disinfection. The project includes installing two UV system trains in the existing chlorine contact structure as well as all associated equipment.



Water Meter Replacement Program

WHAT: Project is part of CFPUA's effort to upgrade its technology and ensure its services meet or exceed industry standards.

PROJECT START: August 2016

PROJECT COMPLETE: August 2020

COST: \$17.3 million to date

DETAILS: Project involves replacing or retrofitting more than 70,000 water meters. The new meters allow CFPUA to record consumption with greater accuracy and efficiency than with previous equipment. New meters use automatic meter reading technology to transmit readings to handheld and mobile devices, reducing the likelihood of billing errors while improving employee safety and reducing staff time.





Customer Service Representative

Customer Service

18 years, 9 months

If you've ever called CFPUA's call center, chances are you've spoken to Wanda Johnson.

In a typical day Wanda answers approximately 60 calls, responds to customer email inquiries, and notates customer accounts. CFPUA's call center averages 595 calls per day and each call is typically handled in six minutes or less. When a customer is upset, Wanda simply listens and stays focused so they can solve the problem together. Wanda's years of experience help her guide customers through all types of concerns.

Wanda said one of her greatest accomplishments is being honest with herself, her coworkers and customers, regardless of the circumstances. "I enjoy my co-workers and working with my customers."

CFPUA Strategic Plan

This year, the CFPUA board adopted a new strategic plan for the organization. The document outlines the mission, values, and primary goals of CFPUA and identifies strategies to meet those goals. To ensure the organization is dedicating adequate resources to this end, CFPUA is creating an online dashboard that will allow board members, customers, and other stakeholders and partners to track our progress.

The dashboard will allow users to identify the programs and projects designed to achieve our workforce, environmental, and operational goals. Users will be able to track programs and read summaries of the work involved. This new tool will allow customers to follow how their money is being used to improve the water and wastewater systems of the community and to learn more about the variety of work CFPUA employees perform throughout the year.

Goal 1 Understand and respond to the community's current and future needs.

- 1.1. Understand, anticipate, and respond to our customers' and our community's needs in a professional, prompt, and efficient manner.
- 1.2. Maintain a stable financial position that balances rates, affordability, the environment, and the organization's long-term capital and operating needs.
- 1.3. Identify partnerships, develop alliances, and encourage participation with both public and private community stakeholders.
- 1.4. Recruit and retain a well-qualified and motivated workforce that reflects the diversity of the community we serve.
- 1.5. Develop and communicate CFPUA service standards to ensure we operate a responsive and cost-effective collection, treatment, and distribution system.

Goal 2 Championing a positive customer service culture.

- 2.1. Remain committed to a vision of customer service delivery that understands our community's needs, increases our partnership, and ensures that our customers get the right help and support – while enjoying a consistent, positive experience.
- 2.2. Promote customer self-reliance through a range of online services that can be easily accessed from any device; and support those who need individual service.
- 2.3. Develop process improvement initiatives that are cost-effective, compliant, and address the needs of our customers and the organization.
- 2.4. Provide and promote a framework to keep customers informed and up-to-date using their preferred communication method.

CFPUA 2019 TIMELINE

Significant events from the year

January 11: CFPUA offers courtesy adjustments for late fees and other financial arrangements for federal employees affected by the U.S. government shutdown.

January 15: CFPUA staff, university scientists, and engineering contractors begin work on a state-funded project to determine the effectiveness of granular activated carbon and ion exchange

media at removing PFAS compounds from groundwater in the Westbrook Aquifer Storage and Recovery (ASR) well.

January 31: In a letter to the U.S. Environmental Protection Agency, CFPUA Board Chairman William Norris urges the agency to begin setting enforceable limits on PFAS compounds in drinking water.

February 12: PFAS compounds, nearly all of them typically found only downstream of Chemours' Fayetteville Works chemical

plant where GenX originates, are detected in CFPUA's ASR well and eight other wells.

February 20: The North Carolina Department of Environmental Quality (NCDEQ) releases a revised consent order regarding ongoing releases of PFAS compounds from Chemours' chemical plant that have affected the Cape Fear River and downstream water users. The order includes steps requiring Chemours to analyze river sediment and implement plans to address

(cont'd next page)



**Water Treatment Operations
Supervisor**

**Treatment/Engineering
Department**

2 years

James Hunnicutt oversees field services projects and groundwater operations at the Richardson Water Treatment Plant and the well field. James and his crew test, service, and maintain more than 50 wells and well sites. James also reviews daily lab results and water production, and helps coordinate projects.

Managing numerous well sites spread over a large area can be challenging. Sometimes, such as in the aftermath of a hurricane, staff must quickly assess each site, from one end of the county to the other.

Asked what he likes most about his job, James said, "I like performing a public service. It's satisfying knowing that my work has a direct impact on the community."

PFAS compounds resulting from decades of discharges by Chemours and DuPont.

April 10: The Cape Fear Public Utility Authority board unanimously approves a resolution authorizing CFPUA staff to move forward on key steps toward building upgrades at Sweeney Water Treatment Plant to filter GenX and other PFAS compounds. The resolution authorizes CFPUA Executive Director Jim Flechtner to complete design and permitting steps for the

(cont'd next page)

**Goal
3**

Providing exemplary leadership in protecting natural resources.

- 3.1. Consistently maintain and operate the utility and all its human and physical assets in a manner that optimizes the care and use of water and other natural resources.
- 3.2. Build a culture of sustainability by creating new energy-reducing goals and challenging existing ones.
- 3.3. Comply with and many times surpass federal, state, county, city, and industry standards.
- 3.4. Continue and enhance community education around current programming, environmental stewardship, and CFPUA's role in protecting the environment
- 3.5. Advocate for water quality protection and related issues.
- 3.6. Explore the use of highly treated wastewater for potable or other non-potable applications.

**Goal
4**

Cultivating community ownership and advancing relationships.

- 4.1. Develop and share compelling content to deepen CFPUA's relationship with customers and inspire positive engagement.
- 4.2. Partner with the community and media to carry a credible brand message to CFPUA's customers and to a broader audience.
- 4.3. Shift organizational messaging from CFPUA as an organization to focus on the people who provide water service.

**Goal
5**

Fostering an engaged and forward-thinking workforce.

- 5.1. Adopt state-of-the-art tools, systems, and processes that prepare CFPUA for future technological advancements.
- 5.2. Establish best practices around a culture of talent management and employee development to ensure employees are trained and ready to advance.
- 5.3. Implement leadership and communication best practices to grow employee morale, engagement, and productivity.
- 5.4. Acquire and implement technologies and tools that allow for enhanced interdepartmental collaboration, enterprise-wide sharing of information, and operational efficiencies.

PFAS contamination of the Cape Fear River from the Chemours' site and groundwater beneath it.

February 25: A Bladen County Superior Court Judge approves the consent order between NCDEQ and Chemours.

March 20: The CFPUA board approves a special temporary bulk water rate to be available to provide a supplemental water source to Wrightsville Beach following the discovery this year of PFAS compounds

in the Town's Well Number 11. The rate covers CFPUA's costs to provide the water during the Town's tourist season and includes only the provision of water to the Town. The Town will continue to have the same costs it had before, including operating and maintaining its system.

March 25: CFPUA announces that the State Water Infrastructure Authority denied its application for a \$46.9 million grant to fund upgrades at Sweeney Water Treatment Plant to filter GenX and other



Collections Equipment Operator Foreman
Operations/Collections Systems
11 years, 8 months

Love brought Louis to Wilmington from Washington, D.C., in the late 1990s. Unfortunately, the love didn't last, but Louis, who operated his own contracting business, decided to stay in Wilmington.

Now working as Collections Equipment Operator Foreman, Louis oversees 10 employees and five trucks. A typical day for Louis begins with meeting with collections supervisors and pump station crews to find out if they'll need assistance. He then meets with his crew and distributes assignments.

When asked what he likes most about working at CFPUA, Louis quickly replied, "The people." He added, "Working here is like working on a sitcom ... everyone has a starring role."

\$43 million project as well as obtain revenue bond funding and construction bids.

April 15: Drinking water distributed by the Richardson Water Treatment Plant continues to show no detections of PFAS compounds, according to CFPUA monitoring. PFAS was found in two wells that provide water to Richardson and an emergency well that is not in service. Richardson WTP contains state-of-the-art membrane technology recognized as one of the best available filter options.

Applying Lessons from Hurricane Florence, Weathering Threats from Dorian

As the 2019 hurricane season approached, CFPUA staff put into place a number of measures to ensure the resiliency of our water and wastewater systems against storm damage.

This year, we launched an emergency alert system for customers: CivicReady, powered by Regroup. CivicReady allows customers to sign up for customizable alerts in the event of an emergency that may affect their services. Alerts can be delivered by email, text message, and voice telephone call. They also can be delivered in one of several languages.

The service is free and can be modified or canceled at any time. Sign up today at: CFPUA.org/CivicReady.

In 2018, Hurricane Florence caused major damage and disruption in Southeastern North Carolina, dumping more than 23 inches of rain in the Wilmington area and leaving the community essentially isolated. Many residents lost commercial electrical power for days. Several ran out of gasoline.

Even so, only a few CFPUA customers were without water or wastewater service, despite some close calls involving access to fuel for backup generators and a washout of U.S. Highway 421 in northwestern New Hanover County that threatened a raw water line. Significant flooding from Florence contributed in a number of sanitary sewer overflows.

May 8: CFPUA Board members adopt a 10-year capital improvement plan laying out \$257.5 million in investments in the community's water and wastewater systems. The plan for FY20 encompasses 27 projects and amounts to \$84.9 million, CFPUA's largest ever. Most of that amount will be spent on new GAC filters at Sweeney and CFPUA's contribution to construct an additional raw water main to provide water from the Cape Fear River.

May 9: The North Carolina Department



Major steps taken by CFPUA this year include:

Increasing fuel self-sufficiency

CFPUA purchased its own 2,800-gallon fuel truck, added saddle tanks to trucks, and increased onsite storage capacity at strategic locations. Just at treatment plants, CFPUA expanded its fuel storage capability by 20 percent to 60,000 gallons. Other storage is in place for pump stations and well sites. CFPUA staff have been certified to operate the fuel truck. In addition, our emergency fuel supply contract stipulates that the contractor must have an onsite backup generator to provide power in the event commercial power is lost.

Replacing generators at the Southside Wastewater Treatment Plant (SSWTP)

During Florence, the failure of generators at the SSWTP resulted in the bypass of partially treated wastewater to the plant's outfall. Those generators were replaced this year. These measures were in place in September, as Hurricane Dorian threatened our area. CFPUA staff monitored Dorian's progress from our Emergency Operations Center at Sweeney Water Treatment Plant. Our infrastructure weathered Dorian with no disruptions.

of Environmental Quality says it plans to begin testing groundwater in New Hanover County for the presence of PFAS compounds. This action came after CFPUA staff presented results of recent testing of its wells to NCDEQ showing detections of PFAS compounds in six of 25 wells that provide water to the Richardson Water Treatment Plant.

May 21: For a 12th consecutive year, NC-DEQ recognizes Sweeney WTP for treating
(cont'd next page)

CFPUA Continues Its Commitment to Sustainability

During more than 10 years of operation, CFPUA has made environmental stewardship a priority. Sanitary sewer overflows have fallen drastically. Many operations are certified by the ISO 14001 Environmental Management standard. Facilities have a robust recycling program that allows us to reduce waste going to landfill. Major 2019 initiatives include:

Sustainability Committee

In October, the CFPUA Board added a Sustainability Committee, which will help CFPUA continue to reduce greenhouse gas emissions, protect the area's natural resources, and prepare for impacts from climate change. Dr. Jessica Cannon, County Commissioner Rob Zapple, and Jennifer Adams will serve as members.

Energy Team

Water and wastewater treatment are inherently energy-demanding processes. The coastal geography of CFPUA's service area only adds to our energy requirements. CFPUA systems require the operation of approximately 150 pump stations, four treatment plants, and multiple administrative facilities. As a result, the systems' energy requirements are more demanding than those of typical water and wastewater systems. A recent analysis found that our wastewater systems consume more energy than 75 percent of our peers in

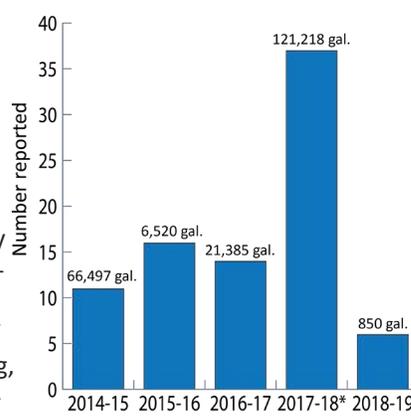
the Southeast.

Fortunately, utilities can reduce their environmental impact and save customers money by implementing programs that prioritize energy-saving technology and renewable energy. At CFPUA, an Energy Team with staff from the Engineering, Environmental Management, and Public and Environmental Policy departments meets monthly. The Energy Team has created a new database to organize, share, and analyze CFPUA energy use. This tool will help staff identify opportunities for energy savings and track our progress in reducing our impact on the environment.

EPA Resiliency Assessment

As a result of our extensive risk assessment and management work, CFPUA has been chosen by the U.S. Environmental Protection Agency (EPA) to participate in a case study to test how

Sanitary Sewer Overflows



Dates recorded from Oct. 1 to Sept. 30.
*Includes overflows related to Hurricane Florence

EPA web tools can be used to better prepare utilities for risks. Those tools are the Vulnerability Self-Assessment Tool (VSAT) and the Climate Resilience and Awareness Tool (CREAT). Throughout fall 2019, CFPUA and EPA staff will work to identify risks to our systems associated with natural and manmade events. We will practice using these tools to build potential adaptation and mitigation strategy packages. Our work will be published in EPA literature and used to educate other utilities.

EMPLOYEE SPOTLIGHT

Stephanie Coffel



Microbiology Lab Technician

Environmental Services

6 years

A native of Albemarle, Stephanie came to Wilmington after enrolling in CFCC's Marine Tech program. She soon discovered that the lab-based classes were her favorite and knew she wanted to work in a laboratory upon graduation.

CFPUA's lab staff collect and test more than 200 water and wastewater samples each month. Water samples are collected every day from customers' homes, businesses, sampling stations, CFPUA's plants, and the distribution system.

All testing is subject to strict state and federal guidelines. Stephanie hopes customers understand the amount of testing and work involved in making sure our drinking water and wastewater meets all required standards and is safe for consumption and the environment.

drinking water to a higher standard in 2018 than required by federal and state regulations. Sweeney is the largest of CFPUA's three drinking water systems, treating about 80 percent of the drinking water CFPUA provides to the community.

May 22: CFPUA announces that it will continue landfilling biosolids during the next fiscal year while staff examine health, environmental, financial, and other implications of various options for managing biosolids, with the goal of developing

a long-term, sustainable strategy for the community. Biosolids, material that remains from wastewater after treatment at the community's wastewater plants, typically are applied to fields where farmers grow crops not intended for human consumption. CFPUA subsequently adopts landfilling for the long term.

June 1: Stage 1 water restrictions are expanded to include all CFPUA customers as continued lack of significant rain and hot weather drive record demand on all

three of CFPUA's drinking-water systems. In late May, restrictions were enacted for customers served by the Richardson Water Treatment Plant in Northern New Hanover County and those in the Middle Sound area.

June 12: An \$85.6 million budget for Fiscal Year 2020 is approved by the CFPUA board. Customers rates remain unchanged under the budget, which covers operations from July 1, 2019, to June 30, 2020.

(cont'd next page)



**Meter Reader
 Customer Service/Meter
 Services
 1 year, 8 months**

Ted spent most of his career as a welder in the manufacturing industry and had hoped for something different when he relocated from Wisconsin nine years ago. He finally found that about two years ago when he was offered a Meter Reader position with CFPUA.

A typical day of work for Ted involves much more than just reading meters. Ted's additional tasks include data entry, consumption investigations, checking for leaks, replacing broken meters, turning meters on or off, and maintaining equipment.

"We are you," Ted said. "Our families live here. We live here. I can honestly say that CFPUA employees give 110 percent to make this the cleanest, most efficient water and wastewater system."

2019 Finances

During Fiscal Year 2019, CFPUA's net position increased by \$23.7 million compared with the prior fiscal year. Current year revenues, including \$77.4 million in service charges, allowed the Authority to pay down \$13.2 million in debt.

Statement of Net Position*

Date: June 30, 2019

ASSETS

Current assets	\$126,789,173
Capital assets	\$736,730,114
Total assets	\$863,519,287

DEFERRED OUTFLOWS OF RESOURCES

\$19,458,107

LIABILITIES

Current liabilities	\$34,742,234
Noncurrent liabilities	\$280,723,346
Total liabilities	\$315,465,580

DEFERRED OUTFLOWS OF RESOURCES

\$983,399

NET POSITION

Net investment in capital assets	\$468,755,415
Restricted	\$21,388,218
Unrestricted	\$76,384,783
Total net position	\$566,528,416

This statement shows the Authority's net position – the extent to which the Authority's assets exceed its liabilities. This statement categorizes net position into three types:

- 1) Net investment in capital assets is equal to the depreciated value of the Authority's capital investment in water and sewer infrastructure less any outstanding amount of debt used to acquire or construct those assets. These amounts are not available to fund the Authority's ongoing operations.
- 2) Restricted net position represents assets and liabilities that are restricted by law, Board action, or outside parties. For the Authority, the amounts in this category are restricted to pay principal and interest on outstanding debt and to pay for certain capital projects
- 3) Unrestricted net position is the portion of total net position that is available to fund the Authority's ongoing operations. A relatively high amount of unrestricted net position is an indication of financial health and resilience.

* Information contained on this page is unaudited. CFPUA maintained Aa1 and AA+ credit ratings from Moody's and S&P, respectively. Both ratings are just one notch below the highest-possible rating.

June 13: More seasonable weather and conservation efforts by customers allow CFPUA to lift Stage 1 water restrictions. Customers are urged to continue to use water wisely, as New Hanover County remains in a moderate drought, with rainfall year-to-date about 8 inches below the total normally received by this date.

June 21: The latest results from CFPUA's weekly monitoring of water drawn from Cape Fear River for the Sweeney Water Treatment Plant indicate the highest

concentration of total PFAS compounds measured since September 2018. The variability of PFAS concentrations in river water could be tied to a number of factors, including river flows. Lower river flows appear to result in higher total PFAS concentrations.

July 31: CFPUA notes that it is consulting with state regulators regarding test results that showed 1,4-dioxane at 2.2 parts per billion in raw water from the Cape Fear River sampled earlier in the month. The

results are the highest detected at Sweeney Water Treatment Plant since 2015. Unlike many other water plants, Sweeney's treatment process includes technology that allows it to reduce levels of the industrial solvent by about 67 percent.

August 20: Bids to construct the eight new GAC filters at Sweeney are opened. Adams-Robinson Enterprises Inc., with a bid of \$35.9 million, is the lowest among three bidders for the project.

(cont'd next page)

Statement of Revenues, Expenses, and Changes in Net Position*

Fiscal year ended: June 30, 2019

REVENUES

Operating revenues	
Charges for services	\$77,413,386
System development charges	\$5,222,171
Other operating revenues	\$3,334,896
Nonoperating revenues	
Investment earnings	\$2,204,682
Grants	\$5,433,834
Other nonoperating revenues	\$756,444
Total revenues	\$94,365,413

EXPENSES

Operating expenses	\$50,926,381
Depreciation and amortization	\$22,863,858
Nonoperating expenses	\$8,660,674
Total expenses	\$82,450,913

Increase in net position before capital contributions	\$11,914,500
Capital contributions	\$11,762,442
Increase in net position	\$23,676,942
Net position, July 1, as restated	\$542,851,474
Net position, June 30	\$566,528,416

This statement shows how the Authority's net position changed from the prior fiscal year. The Authority's net position increased by \$23.7 million due to the following:

- 1) CFPUA paid down \$13.2 million in debt with current year revenues.
- 2) Investments in CFPUA's water and wastewater system funded with current year revenues exceeded depreciation by \$6.9 million.
- 3) The remaining revenues exceeded operating expenses (other than depreciation) by \$3.6 million largely due to customer growth and consumption per customer that exceeded estimates.

The improvement in CFPUA's net position is directly attributable to policy revisions aimed at funding more of the investment in the water and wastewater system with rate revenues as opposed to debt. Because of these policies, CFPUA has limited the amount of debt used to fund capital investments. This means that there is relatively more revenue to fund these investments, which improves our financial position. The excess of revenues over operating expenses will be used to fund capital projects that are planned to be funded with debt. This will save ratepayers in the future through reduced interest costs.

EMPLOYEE SPOTLIGHT Lorraine Furr



Customer Liaison Engineering/Development Services

17 years, 4 months

Lorraine's area of expertise is customer service. As a Customer Liaison, Lorraine assists customers such as builders, developers, and plumbers with the documentation that is needed for water and sewer service connections and county building permits.

Lorraine and coworker Lelia Hankins have spent hundreds of hours organizing the department's map room and filing and scanning thousands of documents. An accomplishment and a challenge, the daunting task was completed this year.

"CFPUA employees truly do care about the citizens," Lorraine said. "They do their best to provide safe water and really be stewards of the community."

September 6: Work begins on the \$4.6 million Northern Water Mains Project to install a new 16-inch water main to improve fire protection and increase available water capacity in Northern New Hanover County. Completion is expected in July 2020.

September 11: CFPUA Board awards a \$35.9 million contract to Adams-Robinson Enterprises Inc. for the construction of eight new deep-bed granular activated carbon (GAC) filters. The board also approved the sale of bonds to fund the Sweeney upgrades, as well as to pay

CFPUA's share of to build a new raw water transmission line and refinance existing debt to save ratepayers money.

September 25: CFPUA temporarily ceases withdrawals of raw water from the Cape Fear River and begins regular water monitoring after regulators report that an unknown amount of a substance had spilled at the Fayetteville Works industrial site, which is owned by Chemours. Plant officials later stated that about 30 gallons of a plasticizer had leaked from Kuraray Americas, a tenant at the site. Raw water

withdrawals resumed after about seven hours following consistent test results show no abnormalities.

October 9: Board approves new raw water line from Bladen County.

October 17: CFPUA sells approximately \$107 million in revenue bonds, in part to fund the Sweeney upgrade project.

November: Construction begins on new GAC filters at Sweeney. The filters are expected to go online in 2022.

Board Members



William Norris
Chairman

Appointed by City of Wilmington
Seated 2013
Term ends 2021
Committees: Executive, Finance



Wesley P. Corder
Vice-Chairman

Jointly appointed by City of Wilmington
and New Hanover County
Seated 2017
Term ends 2020
Committees: Communications, Executive,
Finance



Deans Hackney
Secretary

Appointed by City of Wilmington
Seated 2018
Term ends 2022
Committees: Executive, Finance, Human
Resources



Jennifer Adams
Treasurer

Appointed by New Hanover County
Seated 2016
Term ends 2022
Committees: Executive, Finance, Sustain-
ability



Hollis B. Briggs, Jr.
Member

Appointed by New Hanover County
Seated 2019
Term ends 2022
Committees: Long Range Planning



Jessica Cannon
Member

Appointed by City of Wilmington
Seated 2019
Term ends 2020
Committees: Long Range Planning, Sus-
tainability



Pat Kusek

Member

Appointed by New Hanover County

Seated 2011

Term ends 2019

Committees: Communications, Human Resources



Kevin O'Grady

Member

Appointed by City of Wilmington

Seated 2014

Term ends 2022

Committees: Communications, Human Resources



Charlie Rivenbark

Member

Appointed by City of Wilmington

Seated 2010

Term ends 2021

Committees: Long Range Planning



Larry Sneed

Member

Appointed by New Hanover County

Seated 2012

Term ends 2020

Committees: Long Range Planning



Rob Zapple

Member

Appointed by New Hanover County

Seated 2019

Term ends 2019

Committees: Finance, Long Range Planning, Sustainability



Donna S. Pope

Clerk to the Board

Management Team



James R. Flechtner, PE
Executive Director



Frank C. Styers, PE
Deputy Executive Director,
Linear Assets



Carel Vandermeijden, PE
Deputy Executive Director,
Treatment/Engineering



Beth Eckert
Environmental Management
Director



Cord Ellison
Chief Information Officer



Vaughn Hagerty
Public Information Officer



Lindsey Hallock
Public and Environmental
Policy Director



Kristi Irick
Customer Services Director



Denise Matroni
Human Resources Director



John McLean, CPA
Chief Financial Officer

CFPUA Committee Reports

Executive Committee

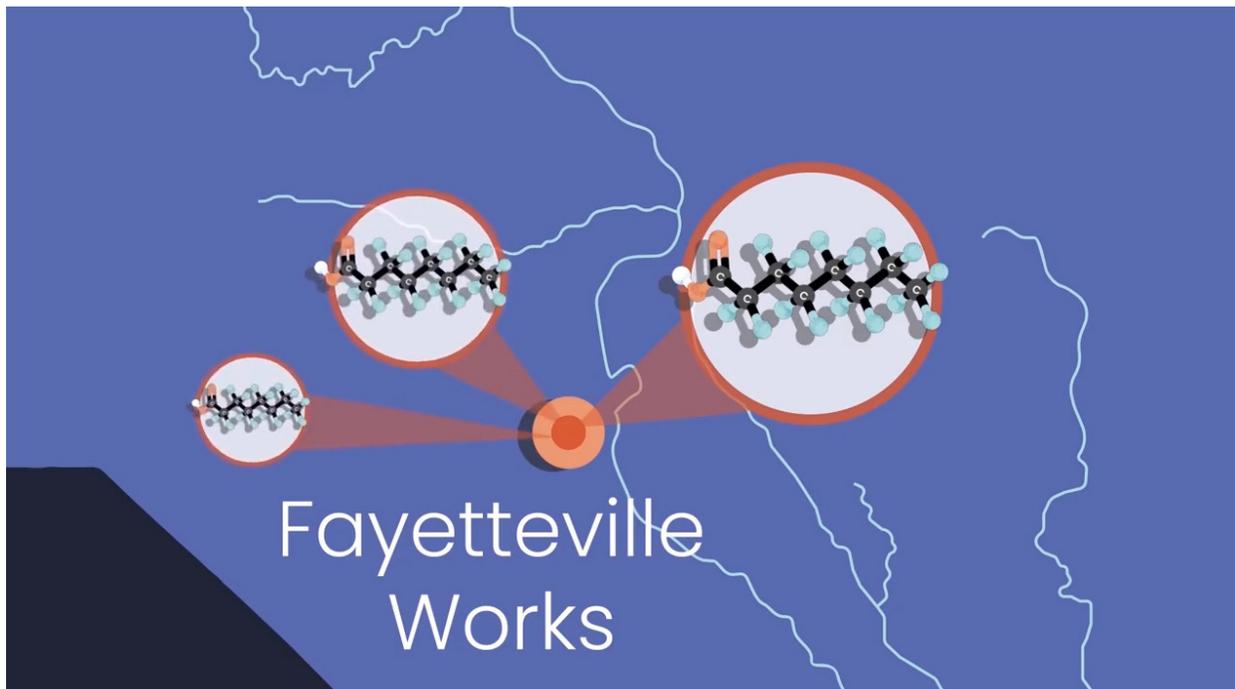
The Executive Committee, which comprises officers of the Board, met monthly to review board meeting schedules and agendas, appoint committee members, and receive legal advice.

The Executive Committee also reviews legal issues that affect CFPUA. The committee consults with other members of the Board who have expertise or interest in certain areas and solicits input from the public. Members oversee and monitor the performance of the Executive Director.

Human Resources Committee

The Human Resources Committee is a standing committee that meets on an as-needed basis. The committee reviews, advises, and recommends actions on matters that involve CFPUA employees or matters designated by the Board.

The Human Resources Committee met periodically during the fiscal year. Items considered at the meetings were a review and approval of additional updates to the Employee Policy and Procedure Manual and review and approval of the Fiscal Year 2019 pay plan and compensation adjustments and closed sessions to discuss personnel matters.



Communications Committee

The Communications Committee provides guidance about CFPUA's strategies to deliver information to our customers and other key stakeholders in a timely manner. The Communications Committee meets quarterly to review efforts to inform customers, stakeholders, and the media. The committee also reviews communication and public relations strategies.

Key projects reviewed by the Communications Committee in 2019 include the launch of CivicReady, CFPUA's new emergency alert system for customers, and the production of a video to help customers understand how and why PFAS substances have affected water we withdraw from the Cape Fear River and what CFPUA is doing to address them.

Finance Committee

The Finance Committee met monthly to review financial reports, significant contracts, budgets, policies, and other finance-related matters to make recommendations to the Board.

The Authority’s Treasurer serves as Finance Committee Chair. During fiscal year 2019, the Committee reviewed and recommended agenda items relating to a variety of capital projects and financial issues.

The Finance Committee also discussed how to finance treatment enhancements to the Sweeney Water Treatment Plant to reduce PFAS in finished water. These deliberations resulted in the issuance of revenue bonds, raising approximately \$107 million. The proceeds will be used to finance the Sweeney Water Treatment Plant enhancements, to construct a new raw water transmission main in partnership with Brunswick County, and to refund some of CFPUA’s outstanding debt to achieve future interest savings for customers.

The committee received and discussed the Comprehensive Annual Financial Report (CAFR) for the fiscal year ended June 30, 2018, prepared by CFPUA staff. The auditor presented a “clean” opinion on this report, which also received the Government Financial Officers Association’s Certificate of Achievement for Excellence in Financial Reporting.

Long Range Planning Committee

The Long Range Planning Committee generally met monthly during fiscal year 2019, and reviewed more than 15 action/information items and presentations. The committee’s reports included items requiring Board action and other noteworthy information that were reported to the Board during its regular meetings.

Significant achievements during this reporting period included the development and approval of the FY20 Capital Improvement Program and the 10-year Capital Improvement Program for 2020 through 2029.

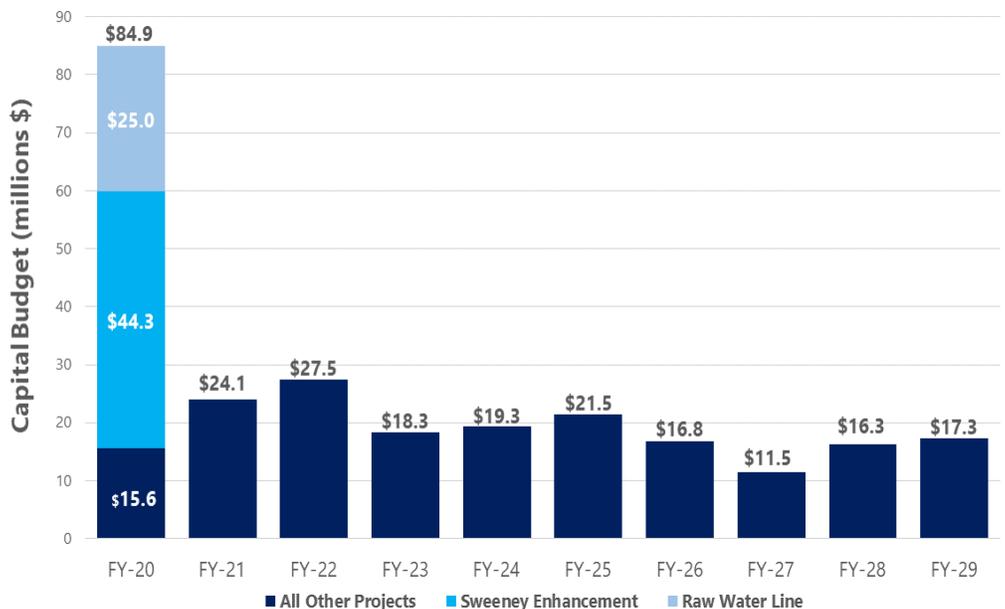
The committee also reviewed and considered several ordinance revisions and policies, including:

- An ordinance revision to master meter account holder requirements.
- Ordinance revisions allowing variance to general sewer system extensions.
- An update on the Environmental and Safety policy.
- Adding low-pressure sewer policy and standards in the Authority’s Technical Standards.

In addition, the committee received updates on strategic projects and initiatives, including:

- Providing water and sewer utilities to Blake Tracts.
- Find-It Fix-it gravity sewer rehabilitation.
- The interim solution for PFAS reduction at the Sweeney Water Treatment Plant.
- Aquifer storage and recovery well pilot treatment test.
- Master planning evaluation of direct potable reuse under current North Carolina law.
- Peak water demand versus available capacity during May of 2019.

10-Year FY-2020 to FY-2029 Capital Improvement Plan



CFPUA 2019 Awards

- Administrative Services: N.C. Department of Labor (DOL) Achievement in Outstanding Safety and Health – **Ninth consecutive year. GOLD**
- Centralized Maintenance: N.C. DOL Achievement in Outstanding Safety and Health – **Third consecutive year. SILVER**
- Customer Service, Meter Services: N.C. DOL Achievement in Outstanding Safety and Health – **First year. SILVER**
- Engineering: N.C. DOL Achievement in Outstanding Safety and Health – **Eighth consecutive year. GOLD**
- Environmental Management Community Compliance: N.C. DOL Achievement in Outstanding Safety and Health – **Tenth consecutive year. GOLD**
- Environmental Management Laboratory Services: N.C. DOL Achievement in Outstanding Safety and Health – **Fourth year. GOLD**
- Government Finance Officers Association’s Certificate of Achievement for Excellence in Financial Reporting – **Eighth consecutive year.**
- Government Finance Officers Association’s Distinguished Budget Presentation Award – **Fifth consecutive year.**
- Sweeney Water Treatment Plant: 2018 N.C. Area-Wide Optimization Program (AWOP) – Certificate of Facility Optimization, Turbidity Removal. **Twelfth year Optimized.**
- Utility Services, Collection System Operations & Maintenance: N.C. DOL Achievement in Outstanding Safety and Health – **Seventh consecutive year. SILVER**
- Utility Services, Pump Station Maintenance: N.C. DOL Achievement in Outstanding Safety and Health – **First year. SILVER**
- Utility Services, Water Quality and Locate Services: N.C. DOL Achievement in Outstanding Safety and Health – **First year. SILVER**
- Utility Services – Water/Sewer Construction: N.C. DOL Achievement in Outstanding Safety and Health – **Third consecutive year. SILVER**
- Wastewater Treatment, James A. Loughlin Wastewater Treatment Plant: N.C. DOL Achievement in Outstanding Safety and Health – **First year. SILVER**
- Wastewater Treatment, M’Kean Maffitt Wastewater Treatment Plant: N.C. DOL Achievement in Outstanding Safety and Health – **Second consecutive year. GOLD**
- Water Treatment, Nano Filtration Plant: N.C. DOL Achievement in Outstanding Safety and Health – **Tenth consecutive year. GOLD**
- Water Treatment, Sweeney Water Treatment Plant: N.C. DOL Achievement in Outstanding Safety and Health – **Second consecutive year. GOLD**

Service Awards



5
years



10
years



15
years



20
years



30
years



**CAPE FEAR PUBLIC
UTILITY AUTHORITY**

235 Government Center Drive
Wilmington, NC 28403

www.cfpua.org
(910) 332-6550