

2018
ANNUAL REPORT



Cape Fear
Public Utility Authority

Stewardship. Sustainability. Service.



To our customers and stakeholders

Ten years ago, the City of Wilmington and New Hanover County realized the need to combine water utilities to better care for our community. Since that time, Cape Fear Public Utility Authority has celebrated a long list of accomplishments including:

- Our focus on continuous improvements helped reduce sanitary sewer overflows. Our significant gains in this area resulted in the Environmental Protection Agency (EPA) lifting the Consent Decree this year.
- We have implemented an award-winning design-build program, allowing CFPUA to manage capital projects collaboratively and efficiently.
- The staff has responded thoughtfully to news of unregulated contaminants in our source water. We studied new treatment technologies and shared our work locally, state-wide, and nationally.

Our most significant accomplishment is our partnership with the community. You also have much to celebrate. You have helped shape our success over the past decade. You've provided invaluable feedback. You've helped us advocate for stronger water quality regulations. CFPUA appreciates the work that individuals, local leaders, and our academic community bring to our effort.

At the heart of CFPUA is a dedicated and skilled staff. Every day, our professional employees approach their duties with thoughtfulness. Our work enhances the quality of life for our community through providing water services and first-class customer service.

There will come a day when CFPUA serves more than a quarter million people. As we face our next decade, it will certainly bring challenges like the hurricane we have just experienced. We cannot do it alone. It is a network of relationships that make us strong. It connects us as we work toward the same mission.

On behalf of our board members and the employees of the Cape Fear Public Utility Authority, we thank you for your support over the past decade and look forward to our continued partnership in the next.

Sincerely,



William Norris
Chair



James R. Flechtner
Executive Director

CFPUA Receives EPA Consent Decree Termination Order

Cape Fear Public Utility Authority (CFPUA) received notice from the United States Environmental Protection Agency (EPA) that we satisfied the agency's requirements under the consent decree.

CFPUA operated under an EPA consent decree since 2013 due to several sanitary sewer overflows that occurred before 2008.

CFPUA was formed with a singular focus: improving the overall management,

operation, and performance of the water and wastewater systems for the region and its customers. Stewardship, sustainability, and service were the foundation of the newly formed organization.

Stewardship, sustainability, and service

These principles guide the organization's significant investments in equipment, personnel, and capital resources. Improvements took many forms including:

- Increased capital investments in the systems.
- Improved communication with regulators and customers.
- Studies and condition assessments to focus resources.

As a result, over the past years, CFPUA staff worked diligently to improve sewer collection system operations. Their focused efforts on maintenance, rehabilitation, and repair activities significantly decreased the number of sanitary sewer overflows (SSOs).

CFPUA achieved this and many other improvements to our system by:

- Monitoring data in the field and acting upon warning signs to prevent SSOs.
- Responding to customer calls, reporting suspected SSOs, and reacting swiftly to stop the event or begin immediate actions to avert an SSO.
- Addressing more long-term problems, with aging infrastructure and capacity restricted areas, through the strategic capital planning processes. Capital process improvements included enhanced data analysis to prioritize projects better and improve the overall operation of the sewer system.
- Adopting and implementing an ISO 14001 Environmental Management System



(EMS) to test all aspects of the collections system systematically. These checks helped staff determine the vulnerabilities and strengths of the organization, and led to better resource allocation. The EMS model focused on staff communication. Front-line staff was empowered to address critical issues when they arose.

- Building an asset management program to enhance the ability to increase system reliability. There are several components to an asset management system: inventory, risk management and condition assessment, capital planning, operating plans, equipment maintenance plan, levels of service, and lifecycle management. Focused efforts in these areas ensure continuous improvement.

Most important to CFPUA's success is our emphasis on daily maintenance. Since CFPUA's start, the organization focused efforts on many projects such as increased routine line cleaning, utility manhole rehabilitation, pump station rehabilitation, gravity system defect analysis, and the improvement of closed-circuit television procedures in monitoring and managing the life of our pipeline infrastructure. These programs are included in the Capacity Management Operations and Maintenance Plan that was submitted to and approved by EPA. These documents acted as an initial roadmap to make improvements to the sewer system and meet all Clean Water Act requirements.

CFPUA maintains over 1,000 miles of wastewater pipe, and we are proud of the work we have done to rehabilitate our system—work that helps to protect public health and the environment.

SERVING OUR CUSTOMERS

This year, CFPUA embraced being a customer service organization that provides water utility services.

By viewing ourselves as primarily a customer service organization, CFPUA has made several changes:

- Began a customer service program to standardize customer interactions.
- Team meetings better provide customer service representatives with just-in-time news.
- Implemented new technology to enhance the customer experience.

We also began a three-part training

program. The first program, *Building Customer Relationships*, focuses on five areas:

- Communications,
- Diversity and inclusion,
- Listening skills,
- Customer service in action,
- And working with customers who have special circumstances.

Employees all across the organization have participated in the training. There has been positive feedback.

CFPUA values our customers and their feedback. We are continuously looking for ways to improve the customer experience and express our gratitude.

The second and third sections are *The Business of Customer Service* and *Utility Industry Operations*. We will offer these courses to the entire organization later this year.

Enhancing the customer service experience through technology is another customer service focus. One example is new Beacon software. Beacon is a part of the Advanced Metering Analytics (AMA) Meter Replacement project. Beacon provides many intuitive data tools that are beneficial to our internal and external customers. A few benefits of these tools are:



- Graphics and supporting information to help the customer understand their water consumption.
- Alerts of system exceptions such as Backflow, Continuous Flow, No Recent Flow, Tamper and Communication error.
- Early notification of leaks.

The analytics within Beacon have proven to be a very beneficial tool for the staff when reviewing accounts. As meter readings are collected, an alert is triggered if there is consistent water flow for every hour over a 24-hour period. Then billing staff contacts the customer by phone and follows up with a letter to alert them of a possible leak. This early notification allows the customer to make repairs quickly to avoid further water loss.

In addition, a data extraction file can be generated for a 90-day period. This data file provides a detailed listing of hourly water consumption by date and time for that 90-day period. This file can sometimes help the customer pinpoint when excessive water is being used at the property. Timely repairs to prevent water loss benefits the customer as well as CFPWA.



Heat Exchanger Replacement Project Receives Award

The Heat Exchanger Replacement project at the Southside Wastewater Treatment Plant has received the DBIA Southeast Best Rehabilitation Project award.

The Design-Build Institute of America – Southeast Region (DBIA Southeast) awards this recognition. DBIA Southeast advocates and advances single-source project delivery. They encourage collaborative work between engineering and construction. The southeast region includes North Carolina, South Carolina, and Georgia.

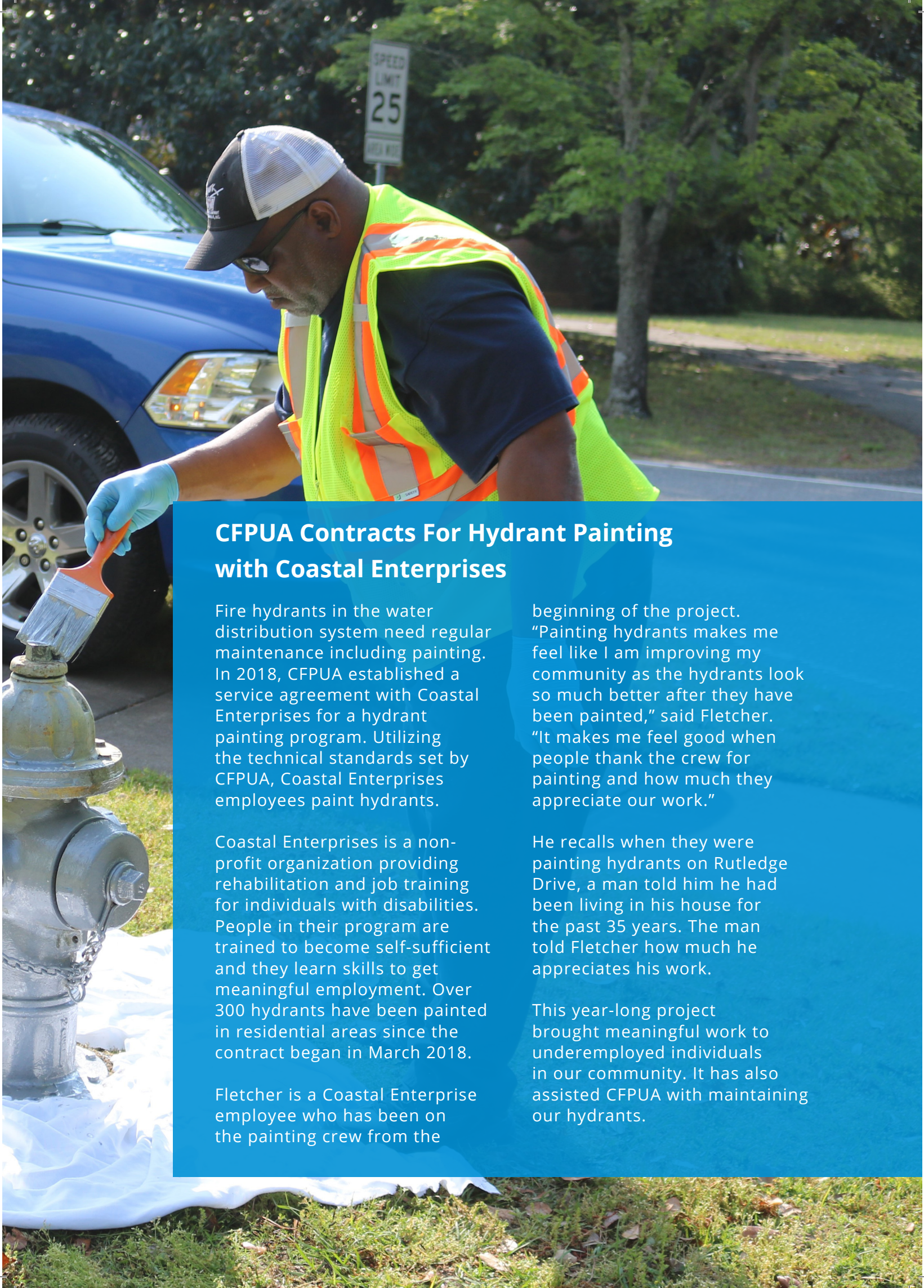
The Heat Exchanger Replacement project design-build team consisted of CFPUA, Crowder Construction Company, and Hazen and Sawyer. This project was one of the first design-build projects implemented by CFPUA. The award highlights the talent within Engineering, Operations, and Procurement. As a team, they successfully applied DBIA Southeast's integrated project delivery method.



The Authority's design-build program is one of the leading programs in the state for water and wastewater utilities. Authority staff has presented its design-build program at State conferences. We have also served on expert forums and assisted other water and wastewater utilities with design-build process and documentation.







CFPUA Contracts For Hydrant Painting with Coastal Enterprises

Fire hydrants in the water distribution system need regular maintenance including painting. In 2018, CFPUA established a service agreement with Coastal Enterprises for a hydrant painting program. Utilizing the technical standards set by CFPUA, Coastal Enterprises employees paint hydrants.

Coastal Enterprises is a non-profit organization providing rehabilitation and job training for individuals with disabilities. People in their program are trained to become self-sufficient and they learn skills to get meaningful employment. Over 300 hydrants have been painted in residential areas since the contract began in March 2018.

Fletcher is a Coastal Enterprise employee who has been on the painting crew from the

beginning of the project. "Painting hydrants makes me feel like I am improving my community as the hydrants look so much better after they have been painted," said Fletcher. "It makes me feel good when people thank the crew for painting and how much they appreciate our work."

He recalls when they were painting hydrants on Rutledge Drive, a man told him he had been living in his house for the past 35 years. The man told Fletcher how much he appreciates his work.

This year-long project brought meaningful work to underemployed individuals in our community. It has also assisted CFPUA with maintaining our hydrants.

Emerging Contaminants

Over the past year, CFPUA has continued to address the issue of emerging contaminants.

Our multi-faceted approach to managing the topic includes:

- Upgrades to treatment technology.
- Research collaboration with partners at local, state and national levels.
- Active communication with state agencies, both the North Carolina Department of Environmental Quality and the North Carolina Department of Health and Human Services.
- Public communication.
- Legal action.

In May, the Board authorized staff to begin the design selection process. Since that time, CFPUA selected an engineering firm – Black & Veatch – to design the Sweeney Water Treatment Plant upgrades.

The decision to move forward with the design phase was informed by pilot study testing conducted at the plant. The pilot study investigated various treatment technologies. It assessed each technology's potential to

remove compounds like GenX from the drinking water. Our data showed that granular activated carbon is effective in reducing levels of these compounds in drinking water. An extra benefit is that it allows us to take advantage of previous investments made in the plant to help keep costs down.

Upgrades to our treatment technology do not stop with the Sweeney Water Treatment Plant. The North Carolina General Assembly allocated CFPUA \$450,000 to conduct a pilot study at our Aquifer Storage and Recovery site. This study measures the effectiveness of mobile treatment options. Specifically, the study will review granular activated carbon and ion exchange modules. It will assess their ability to remove per-fluorinated compounds from groundwater. Once CFPUA has analyzed the data, we will share it with the public as the community collectively works to address this issue.

The challenge of emerging contaminants is faced by drinking water providers around the world. We recognize that it is critical to



acknowledge this as we move forward with designing treatment upgrades. It is essential to remain up-to-date on the latest research and regulatory action and also share our experience with others.

Carel Vandermeiden, director of engineering, presented at an Environmental Protection Agency (EPA) summit. The PFAS National Leadership Summit and Engagement was in Washington, DC in May 2018. Attendees at the summit included representatives from state and federal government, the non-profit sector, and industry groups. CFPUA was the sole water utility given an opportunity to present. Carel discussed our experiences with perfluorinated compounds.

CFPUA's continued collaboration includes local and state partner universities: University of North Carolina Wilmington, North Carolina State University, and East Carolina University.

Each university continues to work towards identifying other perfluorinated compounds in the water. Some are studying their potential health impacts. To assist their work, CFPUA contributes water samples, historical

information, and treatment data. Supporting their ongoing research will bring to light new and vital information on these compounds.

As CFPUA and others work to address this problem, we must remember that the most effective solution is source control. We continue to advocate for effective, enforceable controls on perfluorinated compounds discharge.

CFPUA also responds to calls, emails, and letters from concerned members of our community. We continue to build our customer outreach and communication efforts so that the public remains informed on the issue. Our efforts include:

- Each week, CFPUA releases an update through the NotifyMe! program on the subject of water quality and emerging contaminants. CFPUA sends the update to 1,500+ subscribed customers and the media.
- We have two new web pages on water quality. One provides the history of the issue. On the other page, CFPUA posts current testing results and a variety of presentations and publications with information on our actions.
- A customer survey was conducted in June 2018 to receive feedback from the community regarding their concerns, priorities, and suggestions related to this topic. The findings were presented to the Board the following August.

Finally, treatment upgrades are expensive. They take years to design and construct. CFPUA does not believe that our ratepayers should bear the costs of treating water for chemicals that should not be in the water in the first place. CFPUA continues litigation with Chemours and Dupont to recover costs associated with treatment upgrades. While the legal action can often take years to conclude, CFPUA will continue to update the public as our lawsuit moves forward.



As CFPUA continues to make progress, we keep our community and our local, state, and national partners up-to-date. CFPUA remains committed to proving the highest quality drinking water for our customers.

Weathering the Storm

Hurricane Florence was one of the worst storms to strike North Carolina and the Cape Fear region. We experienced record-breaking wind gusts, significant rainfall, flash flooding, tornadoes, and isolation. Flood waters inundated major highways into Wilmington. Ninety percent of New Hanover County and Wilmington lost commercial power. It may have been the costliest storm in North Carolina's history.

CFPUA staff were fully prepared for a storm of this magnitude. CFPUA uses the National Incident management System (NIMS) model, and our emergency planning program provided a framework to meet the storm's challenges. CFPUA kept employee safety and the continuity of services at the forefront before, during, and after the storm.

The road to resiliency for CFPUA was ten years of planning, training, and responding to past storms and events. Our exercises of past responses helped to:

- Build a capable emergency operations center (EOC).
- Develop essential employee policies and shift rosters.
- Establish multi-level communication capabilities.
- Institute essential procedures such as purchasing, tracking costs, emergency vendor contacts, and items (food, cots, double-shifts)

to sustain continued operations around the clock.

Forging strong relationships with local, state, and federal response partners also paid dividends. During Florence, we had continuous communications with all agencies. We utilized our partnerships to our full advantage to find fuel and conduct damage assessments. We kept them informed of our ready status throughout the storm. When fuel became critical for all county first responders, the hospital, and local care centers, the County EOC and CFPUA came together. In doing so, they worked to divert fuel intended for the Richardson Water Treatment Plant to an assisted living facility that was critically low.

When the County EOC was activated, CFPUA Engineering Department staffed the ESF #3 Public Works and Engineering Desk. This expanded our situational awareness and increased the ability to coordinate resource requests throughout the county. Staff took raw data from road closure reports and created a graphic map, which helped all first responders see what was being reported. ESF #3 was vital to communicating our fuel needs to proper channels in real-time, and priorities were appropriately conveyed.

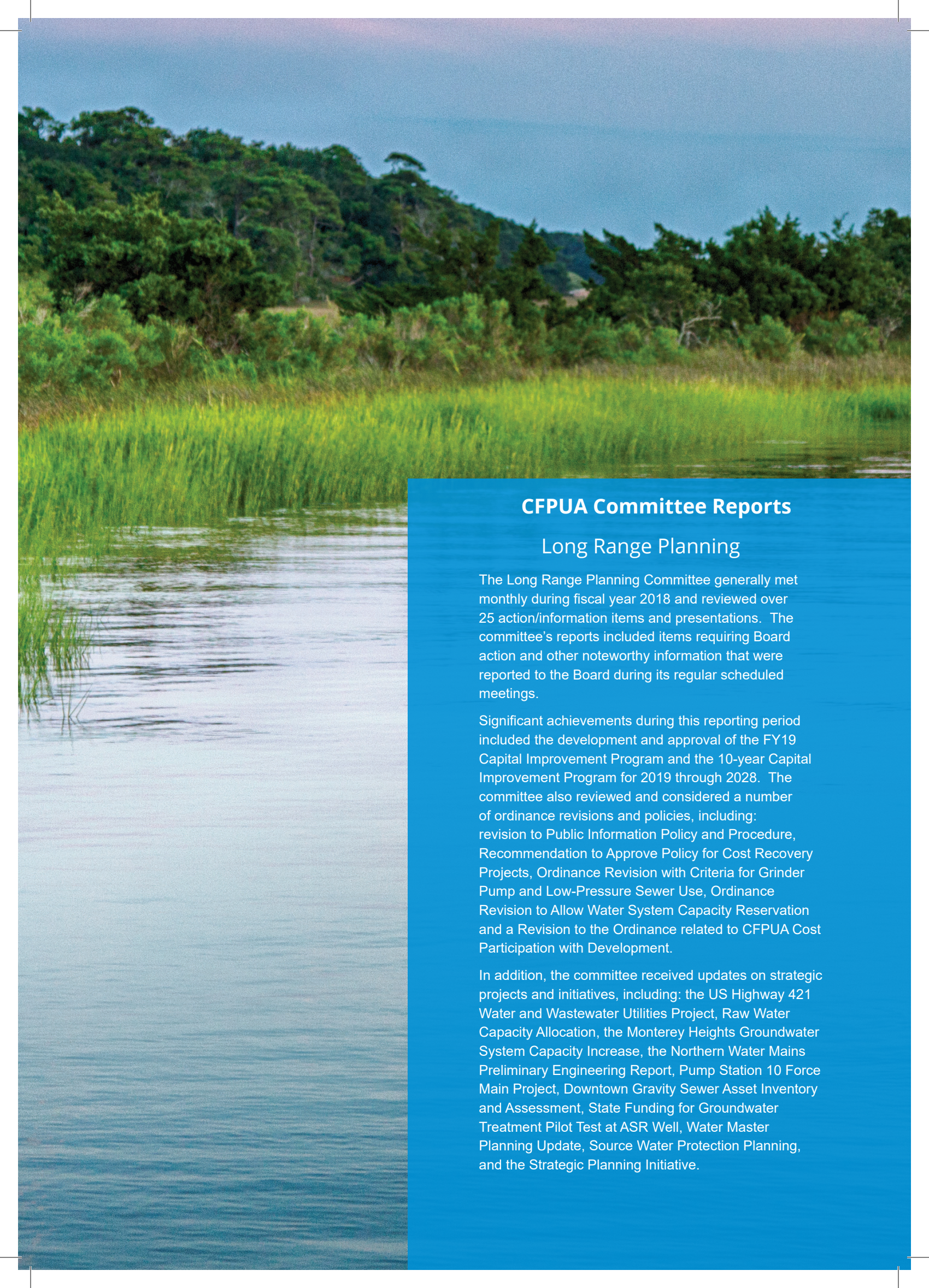
Use of government software such as HURREVAC assisted us in business preparations. It informed our decisions of when we needed to

staff our EOC, and when hurricane force winds would diminish so we could begin repair and damage assessments. USGS and the National Weather Service deployed Rapid River Gauges, which depicted current and forecasted river flooding. Using this technology was crucial in our decision to evacuate personnel at Kings Bluff Pump Station.

We did not lose communications at any point during the hurricane. Embedding the Communications Unit (IT Department) into our EOC, a first, was a great success. Maintaining internet connectivity and keeping our network and communication with facilities and systems running throughout was identified as a best practice. Implementing these actions resulted in our ability to communicate with our customers throughout the entirety of the storm.

Driven by CFPUA's ongoing commitment to continuous improvement, we will identify areas where we can improve. Hurricane Florence was unprecedented in its approach to North Carolina, and the length of time sustained hurricane force winds affected our area. Our all-hazards planning was a success. The importance of adopting the NIMS framework is crucial to being flexible and meeting whatever natural or man-made challenges come our way.





CFPUA Committee Reports

Long Range Planning

The Long Range Planning Committee generally met monthly during fiscal year 2018 and reviewed over 25 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 scheduled meetings.

Significant achievements during this reporting period included the development and approval of the FY19 Capital Improvement Program and the 10-year Capital Improvement Program for 2019 through 2028. The committee also reviewed and considered a number of ordinance revisions and policies, including: revision to Public Information Policy and Procedure, Recommendation to Approve Policy for Cost Recovery Projects, Ordinance Revision with Criteria for Grinder Pump and Low-Pressure Sewer Use, Ordinance Revision to Allow Water System Capacity Reservation and a Revision to the Ordinance related to CFPUA Cost Participation with Development.

In addition, the committee received updates on strategic projects and initiatives, including: the US Highway 421 Water and Wastewater Utilities Project, Raw Water Capacity Allocation, the Monterey Heights Groundwater System Capacity Increase, the Northern Water Mains Preliminary Engineering Report, Pump Station 10 Force Main Project, Downtown Gravity Sewer Asset Inventory and Assessment, State Funding for Groundwater Treatment Pilot Test at ASR Well, Water Master Planning Update, Source Water Protection Planning, and the Strategic Planning Initiative.



Executive

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 reviewed 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.

Communications

The Communications Committee provides guidance about CFPUA's strategies to deliver vital information to our customers and other key stakeholders in a timely manner. The Communications Committee meets quarterly to review efforts to inform ratepayers, stakeholders, and the media. The committee also reviews communication and public relations strategies. Achievements during this period included a complete website redesign. Their review and input enable staff to better develop and implement plans to inform our audience about how CFPUA provides essential public services.

Finance

The Finance Committee meets monthly to review financial reports, significant contracts, budgets, and other finance-related matters to make recommendations to the Board. The Authority's Treasurer serves as Finance Committee Chair.

During fiscal year 2018, the Committee reviewed and recommended more than 100 agenda items relating to a variety of financial issues. The committee deliberated and recommended changes to the Authority's revenue policies with the goal of ensuring that CFPUA's budgets continue to be structurally balanced. The Committee approved the refunding of \$29.8 million of outstanding revenue bonds resulting in a gross savings to customers of \$3.3 million through fiscal year 2037. The committee reviewed, discussed, and recommended a fiscal year 2019 budget that provides for expanded investment in the water and wastewater system with only a 2.16% increase in the average residential water and sewer bill. The committee received and discussed the Comprehensive Annual Financial Report (CAFR) for the fiscal year ended June 30, 2017 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.

Human Resources

The Human Resources Committee is a standing committee that meets on an as needed basis. The function of the committee is to review, advise, and recommend action as it relates to matters that involve CFPUA employees, and other matters as designated by the Board.

The Human Resources Committee met three times during fiscal year 18. Items considered at the meetings were: review and approval of the updates to the Employee Personnel and Policy Manual; review and approval of the fiscal year 18 pay plan and employee compensation adjustments; review of equity adjustments, review of employee benefit changes and premiums for calendar year 2018; and closed session to discuss personnel matters.



CFPUA Management Team

James R. Flechtner, PE
Executive Director

Frank C. Styers, PE
*Chief Operations Officer &
Deputy Executive Director*

Beth Eckert
*Environmental & Safety
Management Director*

Cord Ellison
Information Technology Director

Lindsey Hallock
*Environmental & Public Policy
Director*

Peg Hall Williams, APR
Chief Communications Officer

Kristi Irick
Customer Services Director

Denise Matroni
Human Resources Director

John McLean, CPA
Chief Financial Officer

Carel Vandermeijden, PE
Engineering Director

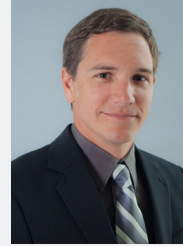
2018 Officers and Board



CHAIRMAN

William Norris

*Appointed by the City of Wilmington
Seated in 2013 | Term ends in 2021
Committees: Executive & Finance*



VICE CHAIR

Wesley P. Corder

*Jointly appointed by the City of
Wilmington & New Hanover County
Seated in 2017 | Term ends in 2020
Committees: Executive & Finance*



SECRETARY

Jennifer Adams

*Appointed by New Hanover County
Seated in 2016 | Term ends in 2019
Committees: Executive & Finance*



TREASURER

Michael C. Brown, III

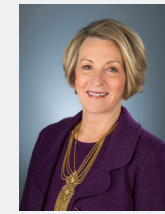
*Appointed by New Hanover County
Seated in 2010 | Term ends in 2019
Committees: Executive & Finance*



MEMBER

Deans Hackney

*Appointed by the City of Wilmington
Seated in 2018 | Term ends in 2019
Committees: Long Range Planning &
Human Resources*



COMMISSIONER

Pat Kusek

*Appointed by New Hanover County
Seated in 2011 | Term ends in 2018
Committees: Communications*



COUNCILMAN

Kevin O'Grady

*Appointed by the City of Wilmington
Seated in 2014 | Term ends in 2019
Committees: Human Resources &
Communications*



COUNCILMAN

Charlie Rivenbark

*Appointed by the City of Wilmington
Seated in 2010 | Term ends in 2021
Committees: Long Range Planning*



MEMBER

Larry Sneed

*Appointed by New Hanover County
Seated in 2012 | Term ends in 2020
Committees: Finance & Long Range
Planning*



COMMISSIONER

Skip Watkins

*Appointed by New Hanover County
Seated in 2017 | Term ends in 2018
Committees: Finance*



MEMBER

Cindee Wolf

*Appointed by the City of Wilmington
Seated in 2011 | Term ends in 2020
Committees: Long Range Planning,
Human Resources, & Communications*



CLERK TO THE BOARD

Donna S. Pope

**CAPE FEAR PUBLIC
UTILITY AUTHORITY**

235 Government Center Drive
Phone 910-332-6550

www.cfpua.org