

# Climate Resiliency Adaptation

Cape Fear Public Utility Authority

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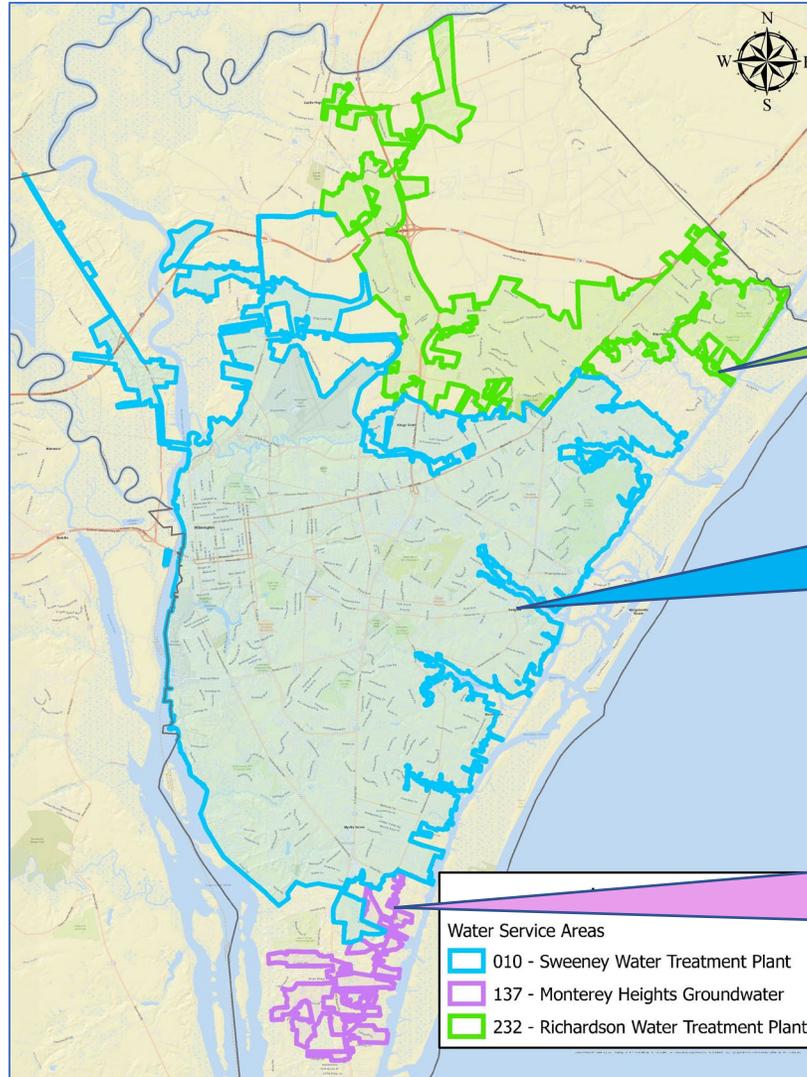


# About CFPUA

- ▶ Opened July 1, 2008
  - ▶ Merger of City of Wilmington and New Hanover County water and sewer services
- ▶ Public utility authority administered by an 11-member Authority Board
- ▶ Ratepayer-funded; not for profit
- ▶ FY 2023 Operating Budget: \$99 million
- ▶ 340+ employees
- ▶ Serve approximately 200,000 people in Wilmington and New Hanover County (some Pender County customers)
- ▶ Annually deliver 7 billion gallons of water
- ▶ Annually collect 6.6 billion gallons of wastewater
- ▶ Average water production: 19.2 million gallons per day



# Our Service Area



**Richardson Water Treatment Plant**  
(Groundwater)  
Approx. 15% of CFPUA customers

**Sweeney Water Treatment Plant**  
(Surface Water – Cape Fear River)  
Approx. 80% of CFPUA customers

**Monterey Heights System**  
(Groundwater)  
Approx. 5% of CFPUA customers

# Mission and Vision Statements

## **Our Mission:**

To provide quality water and wastewater services to our community.

## **Our Vision:**

To achieve excellence in all we do while enhancing our community's quality of life.



# Strategic Plan

**Stewardship:** Managing our organizational, community, and environmental resources responsibly.

**Sustainability:** Making decisions today to meet the needs of current and future generations.

**Service:** Providing professional, timely services while contributing to the welfare of our community.

**Safety:** Making the safety of our staff and the community is our highest priority.

**Excellence:** Exhibiting ownership and pride by continuously improving in all we do.



# CFPUA is committed to:



**Customer Satisfaction & Stakeholder Understanding**



**Infrastructure Reliability & Product Quality**



**Environmental Stewardship & Protection**



**Employee & Leadership Development**



**Financial Viability**

# Facts and Figures

- ▶ 3 water systems: Sweeney, Richardson, Monterey Heights
- ▶ 2 water treatment plants
- ▶ 10 water towers; one additional ground tank
- ▶ 292 water sampling stations
- ▶ 2 wastewater treatment plants
- ▶ 151 sewer pump stations
- ▶ 1,078 miles of sewer mains
- ▶ 1,100+ miles of water mains



# Facts and Figures

## Each Year We:

- ▶ Make **300+** water line repairs
- ▶ Process **5,100** field work orders and **18,200** line locate tickets
- ▶ Install **2,200** meters at new homes or businesses
- ▶ Review approx. **80** plans for new construction (94% requiring multiple reviews)

## Each Month We:

- ▶ Read approx. **80,000** meters
- ▶ Send approx. **71,500** bills
- ▶ Have **9,000-14,000** customer interactions
- ▶ Complete **2,490** laboratory tests to ensure water quality
- ▶ ...And another **1,300** tests to ensure proper wastewater treatment



# Building a Resilient Utility

## Driving forces:

- ▶ Coastal community
- ▶ Must be able to provide continuous service
- ▶ Data-driven, smart planning using models
- ▶ Protecting critical assets



# Hurricane Florence



# During the Storm - Power Supply

- ▶ All facilities lost commercial power
- ▶ After the storm passed contacted emergency fuel supplier to refuel generators
  - ▶ Unable to deliver
  - ▶ Most generators had been running over 48 hours
- ▶ New fuel supply secured in Raleigh
  - ▶ Unable to deliver due to road closures
- ▶ Issued press release regarding fuel status
- ▶ NHC Airport Authority identified a potential source of fuel
- ▶ Refueling began 4 days after many generators started
- ▶ Commercial power restored to treatment plants on day 6

Facility	Fuel Storage	Approximate Run-time
Sweeney WTP	20,000 gallons	6 days
Richardson WTP	10,600 gallons	5 days
Well sites	Varies	3 days
Northside WWTP	16,000 gallons	5 days
Southside WWTP	1,000 gallons	3 days
Pump Stations (148)	Varies	3 days

# After-Action Items

## CFPUA - Hurricane Florence



## After Action Report

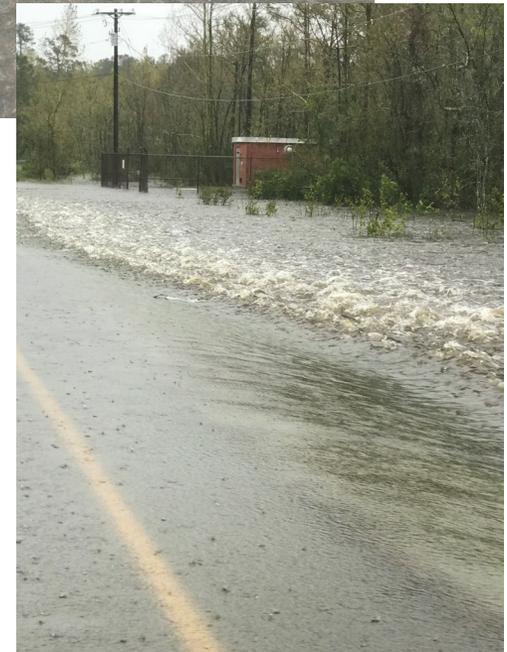
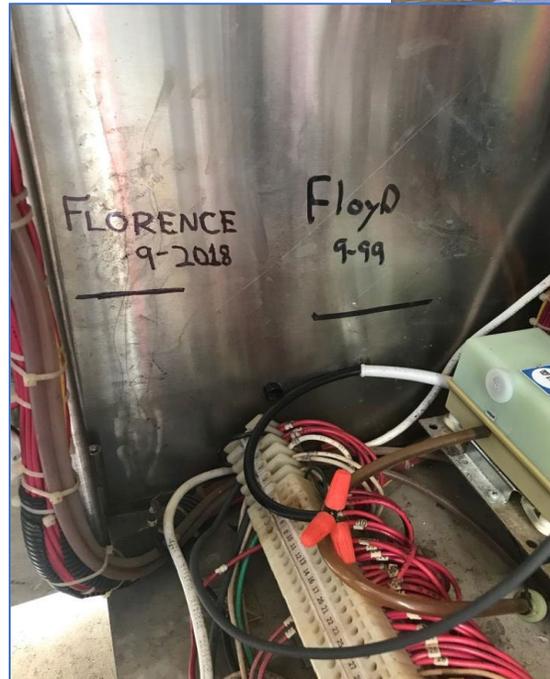
After Action Report / Improvement Plan

November 20, 2018

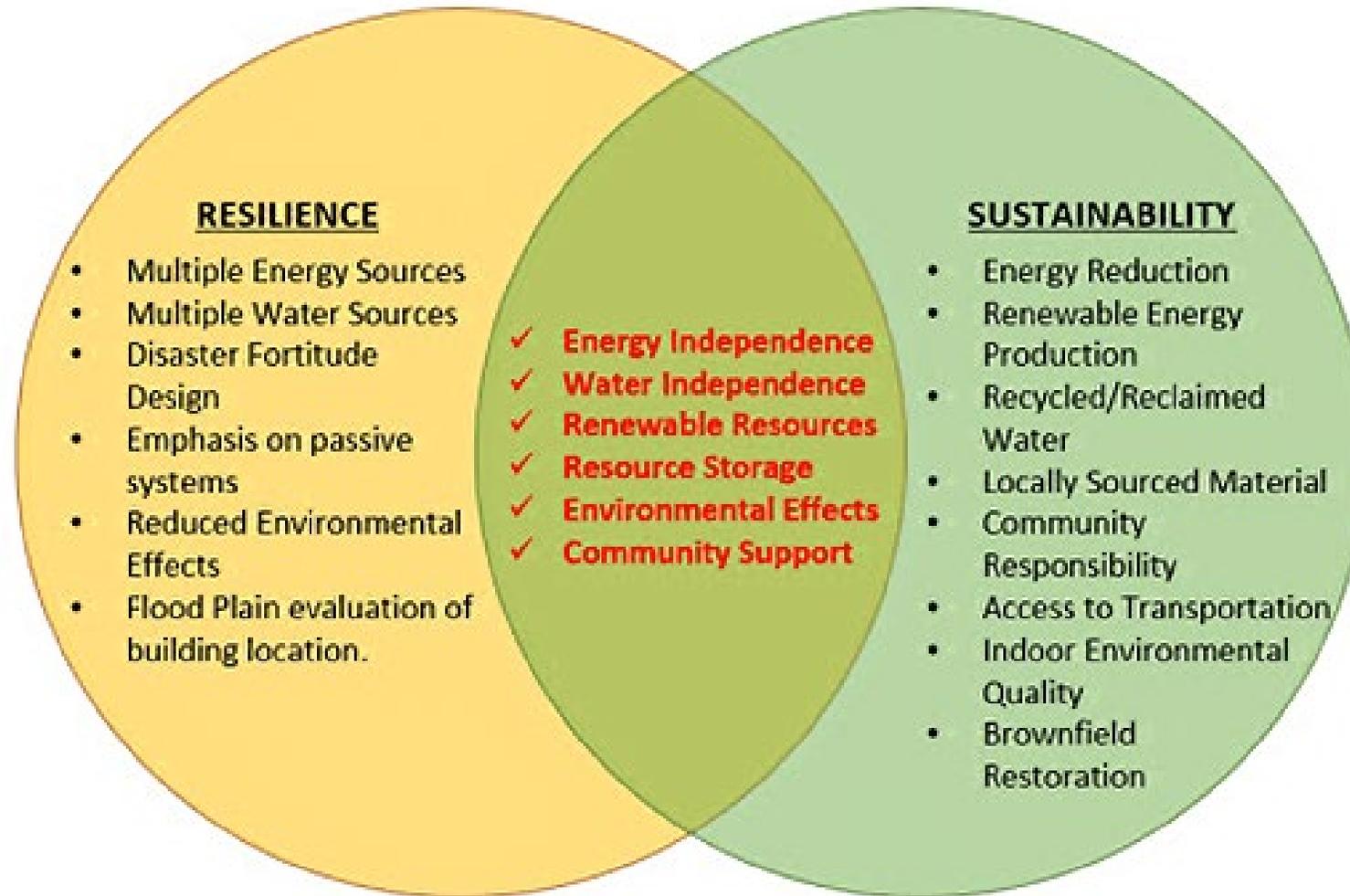
- ▶ Strengthen emergency fuel supply resiliency - contract details with suppliers; increase on-site storage capacity; establish delivery capability redundancy.
- ▶ Southside WWTP Generator – replace existing generator; increase fuel storage.
- ▶ Policy Improvements – essential employee/extended shift roster; sheltering; employee check-in; payroll; food service; preparing for extended operations.
- ▶ Spare parts - increase inventory of key spare parts.

# Pump Station Elevation Study

- ▶ New Hanover County is one of the lowest-lying areas in NC
  - ▶ Highest point 89 feet above sea level
  - ▶ Lowest point 33 feet below sea level
- ▶ Pump Station Vulnerability
  - ▶ Typically, in low lying areas
  - ▶ Critical Infrastructure
- ▶ Staff Identified 19 "At Risk" Stations



# Resiliency Report



# Resiliency Report

## Coastal communities should expect:

- ▶ More frequent extreme weather events
- ▶ More intense precipitation events
- ▶ Sealevel rise and saltwater intrusion
- ▶ Nuisance flooding
- ▶ Temperature increases



# Win-Win Opportunities



COST SAVINGS



PARTNERSHIPS



INNOVATION



OPTIMIZATION

# Resiliency Report

## News:

- ▶ Pump Station Vulnerability Study
- ▶ Raw Water management Partnership with CLFWASA
- ▶ Lightbulb Replacement Project
- ▶ UV Treatment at SSWWTP
- ▶ Preserving Green Space
- ▶ Replanting Trees
- ▶ 2020 Source Water Risk and Resiliency Plan
- ▶ Extreme Heat Polic Recommendations
- ▶ Telecommuting Policy
- ▶ Integrating Environmental Awareness into Policies
- ▶ Revising Waste Diversion

## Looking Ahead:

- ▶ Maintain Land as a Carbon Sink
- ▶ Allocate Funding for EV and Charging Infrastructure
- ▶ Conduct Employee Survey on Climate Science
- ▶ Establish Green Accounting Standards
- ▶ NC DEQ Source Water Protection Plan
- ▶ Greenhouse Gas Emissions Reduction Goals

# Questions?

