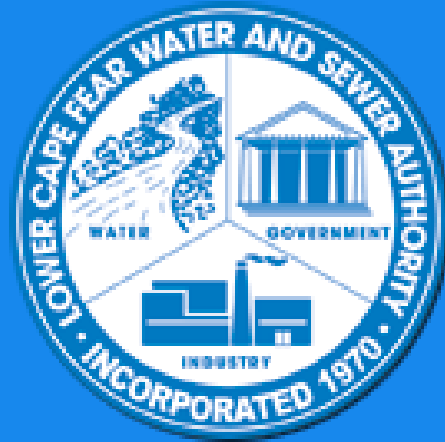


# Lower Cape Fear Water & Sewer Authority



Regional Water Systems

NC EMC- Water Allocation Committee

March 10, 2021



# THE HISTORY OF THE LOWER CAPE FEAR WATER AND SEWER AUTHORITY

**1970**

**Originally created as the Wilmington-New  
Hanover County Water & Sewer Authority**

**1971**

**Incorporation Amended to Change Name to  
Lower Cape Fear Water & Sewer Authority  
as a Regional Authority**

**1972**

**Bladen County, Columbus County, and  
Pender County Join as Members**



# THE HISTORY OF THE LOWER CAPE FEAR WATER AND SEWER AUTHORITY

**1977**

**Brunswick County Joins as a Member**

**1984**

**Kings Bluff Pump Station and Transmission  
System Completed and Placed into Service**

**1984**

**Brunswick County Signs on as First Raw  
Water Customer**



# THE HISTORY OF THE LOWER CAPE FEAR WATER AND SEWER AUTHORITY

**1991**

**421 Industries Becomes Water Customer**

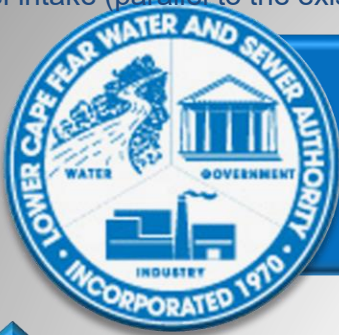
**1995**

**City of Wilmington Becomes Water Customer**

**2006**

**Pender County Becomes Water Customer**

installed a 60" parallel intake (parallel to the existing 48" intake) in 2011 that increased our intake capacity from 45 mgd to 127.5 mgd  
• installed a 60" parallel intake (parallel to the existing 48" intake) in 2011 that increased our intake capacity from 45 mgd to 127.5 mgd



## THE HISTORY OF THE LOWER CAPE FEAR WATER AND SEWER AUTHORITY

2008

Capacity of Kings Bluff Pump Station Expanded

2010

Bladen Bluffs Water Treatment Plant in Tar Heel  
Completed

2011

Installed a 60" Parallel Intake that increased  
intake capacity from 45 MGD to 127.5 MGD

2019

Bids Opened on 54" Parallel Transmission Main



## ONGOING EFFORTS OF THE LOWER CAPE FEAR WATER AND SEWER AUTHORITY

**2020**

**Construction of 54” Parallel Transmission Main**

**2020**

**Capital Improvement Plan Aligned with Rate Schedule**

**2022**

**Estimated Completion of 54” Parallel Transmission Main**



## ONGOING EFFORTS OF THE LOWER CAPE FEAR WATER AND SEWER AUTHORITY

2023

Installation of 4<sup>th</sup> Pump to increase the station capacity to 96 MGD

2023

Replace Screen Walkway/Arial Crossing Supports

2024

Generator Replacement



# LCFWASA – FACILITIES

## KINGS BLUFF PUMP STATION

- ❖ Kings Bluff Station is authorized to withdraw 106 MGD at Lock and Dam #1
- ❖ In its Current Configuration, the Station is Capable of Pumping 45 MGD to LCFWASA Customers
- ❖ Located Immediately Upstream of Lock and Dam No. 1 on the Cape Fear River in Bladen County
- ❖ Station is Operated By Brunswick County Under O & M Agreement

## Raw Water Transmission Line

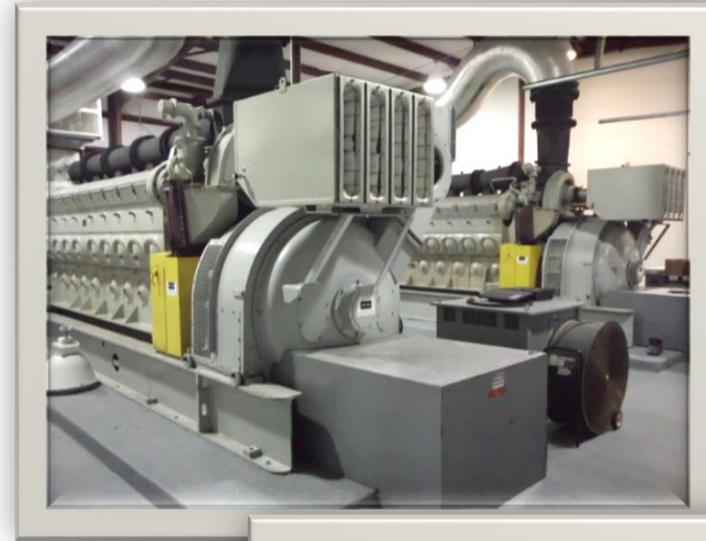
- ❖ 24 Miles of 48” Concrete Pipe
- ❖ 3 Million Gallon Water Storage Tank
- ❖ Booster Pump Station



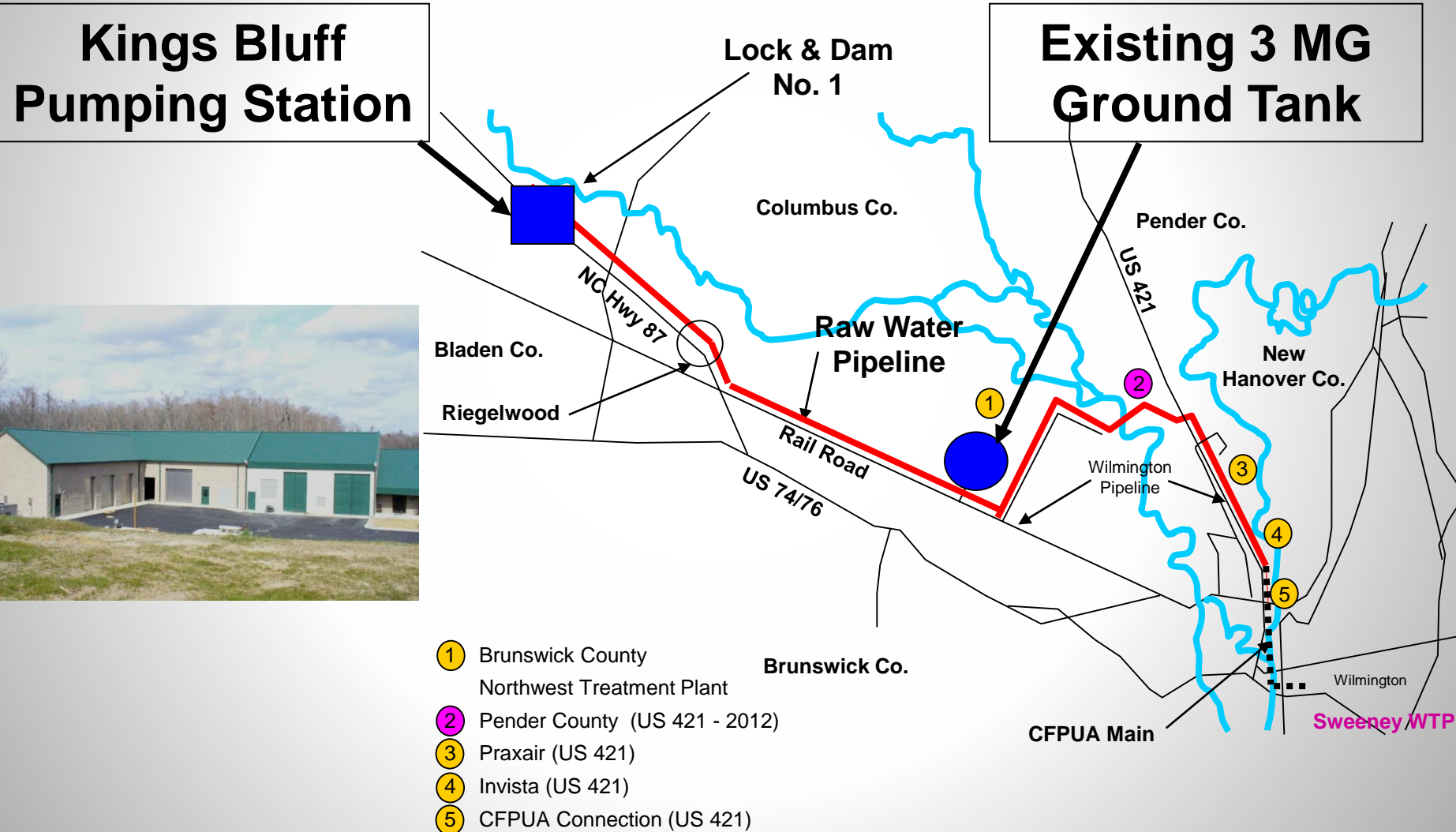
# Kings Bluff Raw Water Pump Station



# Kings Bluff Raw Water Pump Station



# Kings Bluff Pump Station Regional System Overview



- ① Brunswick County Northwest Treatment Plant
- ② Pender County (US 421 - 2012)
- ③ Praxair (US 421)
- ④ Invista (US 421)
- ⑤ CFPUA Connection (US 421)



# LCFWASA – FACILITIES

## BLADEN BLUFFS REGIONAL SURFACE WATER TREATMENT PLANT

- ❖ Located in Tar Heel Adjacent to the Cape Fear River
- ❖ Designed to Treat 6 MGD and is Expandable to 8 MGD
- ❖ Serves Smithfield Foods Plant in Tar Heel
- ❖ Operated by Smithfield Under an O & M Agreement
- ❖ All Costs Including Debt Service and Operating Costs Paid by Smithfield Foods

# Bladen Bluffs Regional Surface Water System



**Bladen Bluffs Regional Surface Water System**  
Tarheel, NC (Operations Center WTP)

# Demand Projections – Per Preliminary Design Memorandum of May, 2018 For New 14-Mile Raw Water Main Constructed Parallel To The Existing 48-Inch Raw Water Main

Customer	2015 Peak Demand (MGD)	2025 Peak Demands (MGD)	2035 Peak Demands (MGD)	2045 Peak Demands (MGD)	2055 Peak Demands (MGD)	2062 Peak Demands (MGD)
* <b>CFPUA</b>	10.4	13.5	20.5	28.66	34.3	38.2
<b>Brunswick County</b>	19.7	25.1	30.6	36.67	43.89	49.8
<b>Hwy 421</b>	2.0	2.0	2.0	2.0	2.0	2.0
<b>Pender County</b>	1.1	2.4	4.8	6.0	6.0	6.0
<b>Totals</b>	<b>33.2</b>	<b>43.01</b>	<b>57.9</b>	<b>73.27</b>	<b>87.55</b>	<b>96.0</b>

Note: Demands provided are peak demands

\* CFPUA has direct access to the Cape Fear River for 10 MGD through its own pump station and 23 mile transmission main.



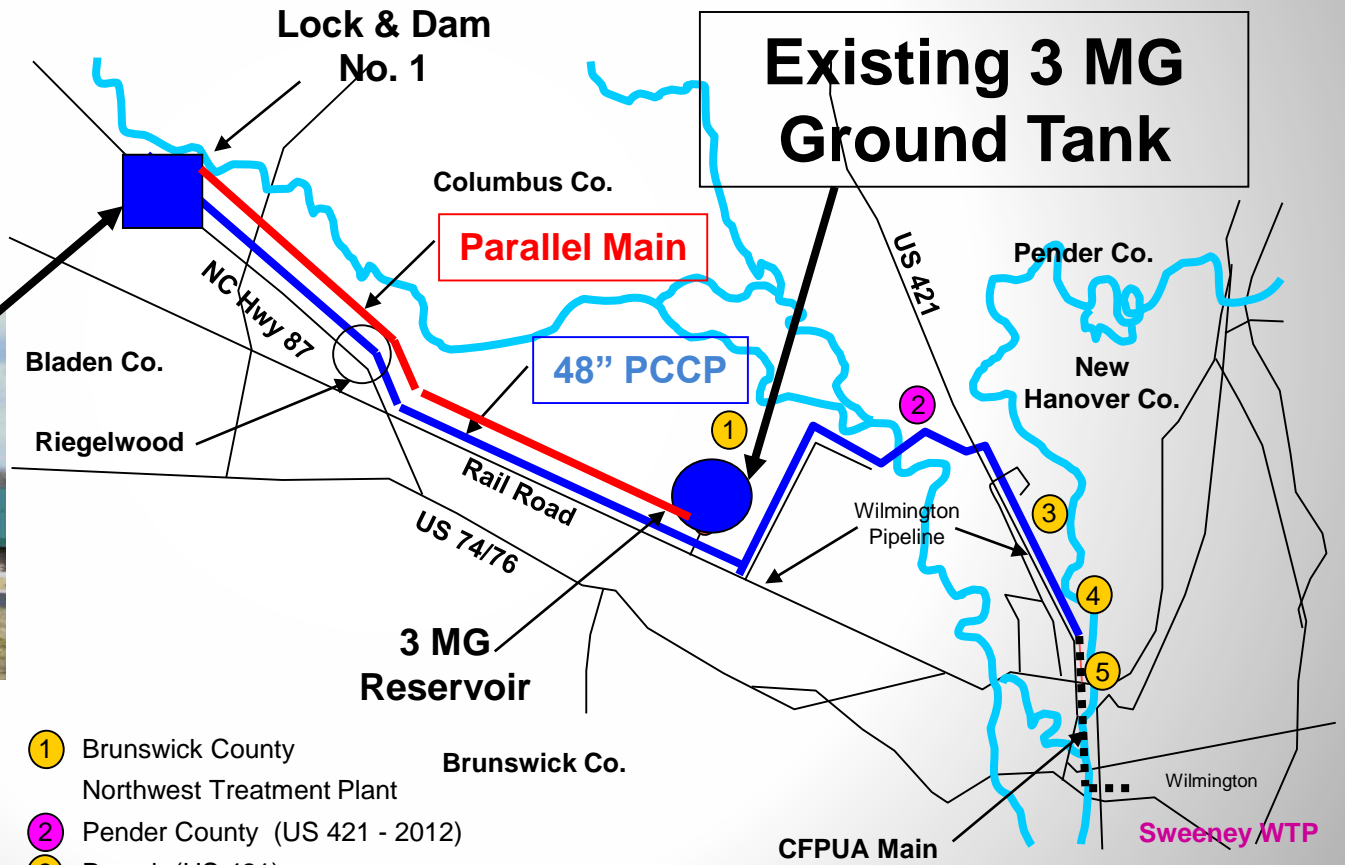
# LCFWASA – ALLOCATED CAPACITY IN KINGS BLUFF SYSTEM

<b>CUSTOMER</b>	<b>CURRENT CAPACITY</b>	<b>CAPACITY WITH PARALLEL PIPE</b>
<b>BRUNSWICK COUNTY</b>	<b>24 MGD</b>	<b>50 MGD</b>
<b>CFPUA</b>	<b>23 MGD</b>	<b>38 MGD</b>
<b>PENDER COUNTY</b>	<b>6 MGD</b>	<b>6 MGD</b>
<b>LCFWASA (INDUSTIRAL)</b>	<b>2 MGD</b>	<b>2 MGD</b>
<b>TOTAL CAPACITY</b>	<b>55 MGD</b>	<b>96 MGD</b>



# Parallel Raw Water Main

**Kings Bluff Pumping Station**



**Existing 3 MG Ground Tank**

- ① Brunswick County Northwest Treatment Plant
- ② Pender County (US 421 - 2012)
- ③ Praxair (US 421)
- ④ Invista (US 421)
- ⑤ CFPUA Connection (US 421)







# LCFWASA - CRISES

## Hurricane Florence-HWY 421 Erosion





# LCFWASA - CRISES

## Hurricane Matthew-Reigelwood Broken Main





# LCFWASA - CRISES

## Hurricane Matthew-Reigelwood Broken Main





# LCFWASA - CRISES

## Hurricane Matthew-Reigelwood Broken Main





# LCFWASA - CRISES

## Hurricane Matthew-Cresting of River





## LCFWASA - CURRENT AND FUTURE ISSUES

**Lock and Dam and Water  
Quality Issues**

**Economic Development/Rates**

**Next Phase of Parallel Transmission  
Line**

