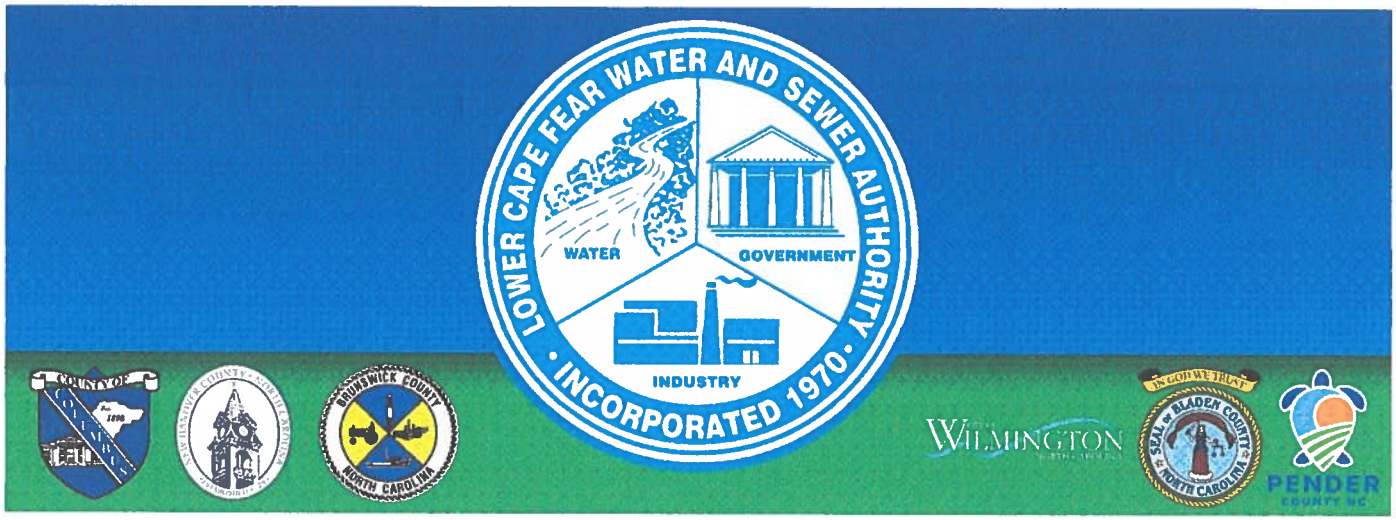


AGENDA
Lower Cape Fear Water & Sewer Authority
1107 New Pointe Boulevard, Suite # 17, Leland, North Carolina
9:00 a.m. – Regular Monthly Board Meeting
November 13, 2023

MEETING CALL TO ORDER: Chairman Blanchard

INVOCATION

PLEDGE OF ALLEGIANCE

APPROVAL OF CONSENT AGENDA

- **C1** – Minutes of October 9, 2023, Regular Board Meeting
- **C2** – Kings Bluff Monthly Operations and Maintenance Report
- **C3** – Bladen Bluffs Monthly Operations and Maintenance Reports

OLD BUSINESS

- **OB1** – Rate Study-Cost Share Methodology Presentation by Richard McClung
- **OB2** – Resolution of the Lower Cape Fear Water and Sewer Authority Board of Directors Adopting Recommendations of Water Rate Study Methodology as Sound Fiscal Policy
- **OB3** – Resolution of the Lower Cape Fear Water and Sewer Authority Board of Directors Adopting Recommendations of Cost Share Methodology as Generated by the Water Rate Study Sound Fiscal Policy
- **OB4** – Amendment to the Professional Services Agreement Between Willdan Financial and Lower Cape Fear Water and Sewer Authority

NEW BUSINESS

- **NB1** – Demand Automation Reduction Amendment
- **NB2** – Engineering Servies Proposal Ground Storage Reservoir Feasibility Evaluation
  - **A)** A Resolution of Lower Cape Fear Water & Sewer Authority Exempting Lower Cape Fear Water & Sewer Authority from The Provisions of N.C.G.S. §143-64.31
  - **B)** Accept the Proposal for Reservoir Feasibility Evaluation

ENGINEER'S COMMENTS

ATTORNEY COMMENTS

EXECUTIVE DIRECTOR REPORT

EDR1 – Comments on Customers' Water Usage and Raw Water Revenue for Fiscal Year to Date Ending October 31, 2023

EDR2 – Operating Budget Status, Ending September 30, 2023

EDR3 – Summary of Activities

DIRECTOR'S COMMENTS AND/OR FUTURE AGENDA ITEMS

PUBLIC COMMENT

ADJOURNMENT

The next board meeting of the Lower Cape Fear Water & Sewer Authority is scheduled for Monday, December 11th at 9:00 a.m. in the Authority's office located at 1107 New Pointe Boulevard, Suite 17, Leland, North Carolina.

Consent Agenda (CA)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: November 13, 2023

Re: Consent Agenda

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Please find enclosed the items of a routine nature for consideration and approval by the Board of Directors with one motion. However, that does not preclude a board member from selecting an item to be voted on individually, if so desired.

C1 – Minutes of October 9, 2023, Regular Board Meeting
C2 – Kings Bluff Monthly Operations and Maintenance Report
C3 – Bladen Bluffs Monthly Operations and Maintenance Reports

Action Requested: Motion to approve/disapprove Consent Agenda.

Lower Cape Fear Water & Sewer Authority
Regular Board Meeting Minutes
October 9th, 2023

Chairman Blanchard called to order the Authority meeting scheduled on October 9th, 2023, at 9:00 a.m. and welcomed everyone present. The meeting was held at the Authority's office located at 1107 New Pointe Boulevard, Suite 17, Leland, North Carolina. Director Leonard gave the invocation.

Roll Call by Chairman Blanchard:

Present: Norwood Blanchard, Patrick DeVane, Wayne Edge, Harry Knight, Al Leonard, Jackie Newton, Scott Phillips, Charlie Rivenbark, Chris Smith, Bill Sue, Phil Tripp, Frank Williams, and Rob Zapple

Present by Virtual Attendance: Frank Williams

Absent: Bill Saffo

Staff: Tim H. Holloman, Executive Director; Matthew Nichols, General Counsel; Tony Boahn P.E., McKim & Creed Sam Boswell, COG; Jess Powell P.E., McKim & Creed; and Danielle Hertzog, Financial Administration Assistant

Guests Present: John Nichols, Brunswick County Public Utilities Director; James Proctor, Pender County Utilities Deputy Director of Utilities; Ken Waldroup, Cape Fear Public Utility Authority Executive Director; Kristen Burden, Brunswick County Public Utilities Environmental Compliance Officer; Glenn Walker, Brunswick County Water Resources Manager; and Anthony Colon, Pender County Utilities Director of Utilities

Guests Virtual Attendance: Tom Hendrick, Pender County Utilities Water Treatment Plant Superintendent; and Benjamin Kearns, Cape Fear Public Utility Authority Water Recourses Manager Water Treatment

PLEDGE OF ALLEGIANCE: Chairman Blanchard led the Pledge of Allegiance.

APPROVAL OF CONSENT AGENDA

C1 – Minutes of September 9, 2023, Regular Board Meeting
C2 – Minutes of September 9, 2023, Personnel Committee Meeting
C3 – Kings Bluff Monthly Operations and Maintenance Report
C4 – Bladen Bluffs Monthly Operations and Maintenance Reports

Motion: Director DeVane **MOVED**; seconded by Director Phillips approval of the Consent Agenda Items C1-C4 as presented. Upon voting, the **MOTION CARRIED UNANIMOUSLY.**

Motion: Director Zapple **MOVED**; seconded by Director Rivenbark approval of excusing Director Saffo from the October 9th, 2023, Board Meeting. Upon voting, the **MOTION CARRIED UNANIMOUSLY.**

NEW BUSINESS

NB1 – Resolution Accepting the Lower Cape Fear Water and Sewer Authority Kings Bluff Regional Raw Water Supply Facilities FY 2023-2024 Annual Inspections Report (Tony Boahn, P.E., McKim and Creed)

As required by the Authority's authorizing bond order and water supply agreements with its customers, McKim & Creed conducted the annual inspection of the King Bluff Raw Water Pump Station (KBRWPB) and submitted the Lower Cape Fear Water & Sewer Authority Kings Bluff Regional Raw Water Supply Facilities FY 2023-2024 Annual Inspection Report. Mr. Powell provided a PowerPoint presentation of the King's Bluff annual report with an overview of the system, including intake and pier, pump station, electrical building, generator facilities, the three-million-gallon ground tank, the booster pump station, raw water main right of way, the 48-inch raw water main, and the 54-inch parallel raw water main. Mr. Powell commended Brunswick County for doing a magnificent job maintaining Kings Bluff due to only finding minor concerns during the inspections. Mr. Powell advised there is a leak on the check valve on pump number one. Director Newton questioned when the leak is going to be addressed, how long is it going to take and how extensive is the

estimate for the repair. Glenn Walker advised it is a leaky seal on the damper. Mr. Walker advised we have a spare one that is located at Underwood Pump Company, that is the old part from pump number five. There is no threat to this check valve going bad currently, this leak is just a nuisance leak. The cost for the repair will be between $25,000-30,000. A copy of the report is hereby incorporated as part of these minutes.

Motion: Director Edge **MOVED**; seconded by Director Newton, approval of the *Resolution Accepting the Lower Cape Fear Water & Sewer Authority Kings Bluff Regional Raw Water Supply Facilities FY 2023-2024 Annual Inspection Report* as presented. Upon voting, the **MOTION CARRIED UNANIMOUSLY.**

NB2 – Resolution Accepting the Lower Cape Fear Water and Sewer Authority Bladen Bluffs Regional Raw Water Supply Facilities FY 2023-2024 Annual Inspections Report (Tony Boahn, P.E., McKim and Creed)

The Authority's Special Facility Revenue Bond Series 2010 requires an annual inspection of the Bladen Bluffs Regional Surface Water Treatment facilities by a qualified engineer to report on readiness, identify deficiencies, and make recommendations on needed repairs and capital improvements. McKim & Creed conducted the inspection and submitted the report dated October 2023. Mr. Powell presented a PowerPoint presentation of the inspection's results and findings, including the intake and raw water pump station, treatment processes, residual basins, chemical systems, and administrative facilities. Mr. Powell concluded that the items identified in the report are minor maintenance items, and the facility is well maintained. There is no cause for concern from an operational standpoint. Director Zapple wanted to know if there is any testing being conducted on the sludge to confirm no PFAS. Executive Director Holloman advised he will check with Buddy to see if they are testing the sludge and if yes what are the results. Director Phillips questioned if it is applied under a state permit and if are we doing the required testing for said permit. Executive Director Holloman advised yes to both questions. Director Zapple wanted to know what the new filter for the GAC system. Jess Powell advised he will get the Bladen Bluffs staff and confirm the reason for changing the filter. Director Zapple questioned what is being recycled at the pump. Glenn Walker advised that is to recycle 10% of backwash, however as small as Bladen Bluffs it would not be economically significant. It would take twenty-five years to get payback. A copy of the report is hereby incorporated as part of these minutes.

Motion: Director Sue **MOVED**; seconded by Director Leonard, approval *of the Resolution Accepting the Lower Cape Fear Water & Sewer Authority Bladen Bluffs Regional Surface Water Treatment Facilities Fiscal Year 2023-2024 Annual Inspection Report* as presented. Upon voting, the **MOTION CARRIED UNANIMOUSLY**.

ENGINEER'S COMMENTS

Jess Powell updated the board on the Kings Bluff Raw Water Main Phase 2. The draft PER was submitted on September 22, 2023. The current estimated pricing is thirty-six million. Mr. Powell has been working with the Coastal Land Trust Board and their attorneys on the easement maps and appraisal for the new route. Director Rivenbark wanted to know the estimated savings for the new route. Mr. Powell advised around three million dollars. Executive Director Holloman advised that savings will be going to increase the pipe from 48 inches to 54 inches, therefore it will be a net savings of one million. Mr. Powell advised the Kings Bluff roof replacement project had a structural engineer complete a field visit to compare and verify the as built. Some discrepancies were captured, an advertisement for Bids will happen in November. Jess advised the air backwash walkway has completed the geotechnical field work and preliminary engineering report draft will be in November.

ATTORNEY COMMENTS

No comments

EXECUTIVE DIRECTOR REPORT

EDR1 – Comments on Customers' Water Usage and Raw Water Revenue for Fiscal Year to Date Ending August 31, 2023

Executive Director Holloman reported that during September 2023, Brunswick County and Pender County were above projections.

DIRECTOR'S COMMENTS AND/OR FUTURE AGENDA ITEMS

No comments

PUBLIC COMMENT

No comments

ADJOURNMENT

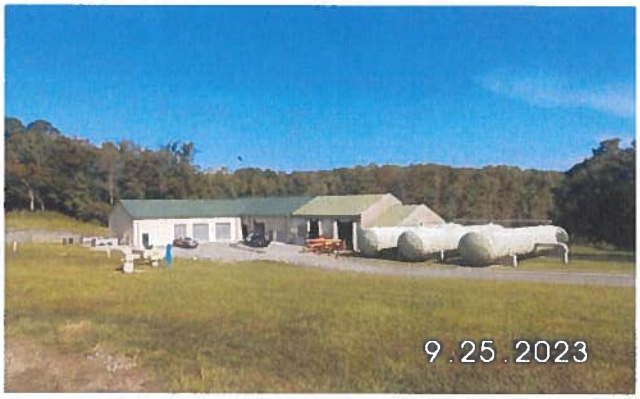
There being no further business, Chairman Blanchard adjourned the meeting at 9:35a.m.

Respectfully Submitted:

_____

Patrick DeVane Secretary

Lower Cape Fear Water & Sewer Authority
Kings Bluff Regional Raw Water Supply Facilities
FY 2023-2024 Annual Inspection Report



Kings Bluff Raw Water Pump Station

Interim Raw Water Booster Pump Station

Prepared by

McKIM&CREED

243 North Front Street
Wilmington North Carolina
F-1222

Prepared for

LOWER CAPE FEAR WATER AND SEWER AUTHORITY · INCORPORATED 1970 ·

NORTH CAROLINA PROFESSIONAL SEAL 046997 ENGINEER JESSE E. ROWELL

27 OCT 2023

October 2023

LOWER CAPE FEAR WATER AND SEWER AUTHORITY
KINGS BLUFF REGIONAL RAW WATER SUPPLY SYSTEM
ANNUAL INSPECTION REPORT
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FIGURES

APPENDICES

SECTION 1 - INTRODUCTION

1.1 FACILITIES

The Lower Cape Fear Water and Sewer Authority is a regional organization with sponsoring members that are comprised of Bladen, Brunswick, Columbus, New Hanover, and Pender Counties, and the City of Wilmington. The Authority was created to aid development of a water supply system for the sponsoring member governments, which are primarily located in southeastern North Carolina (Refer to Figure 1 for a map of the Authority's current service area). The Authority's current facilities at King's Bluff consist of the following:

- Two (2) Raw Water Intake Pipes and Associated Intake Screens
- Kings Bluff Raw Water Pumping Station
- Interim Booster Pumping Station
- Raw Water Transmission Main Piping
- Raw Water Storage Reservoir
- Miscellaneous items such as, SCADA, Metering Vaults, Air Release Valves, etc.
- Pump Station Standby Power (Kings Bluff Raw Water Pumping Station) consisting of Two Separately Housed Primary Diesel-Powered Generators with Automatic Transfer Switchgear.
- Two (2) oxidation catalysts installed on each primary standby generator.
- One Low-Duty Diesel Powered Generator
- Transmission Main Pigging Facilities
- Air Surge Tank System

The Authority obtains raw water from the Cape Fear River via two (2) raw water intake pipes (48-inch and 60-inch diameter) located just above Lock & Dam No. 1 in Bladen County. Raw water is conveyed by various raw water transmission mains to several governmental and industrial users in the region. The Authority's current customers are as follows:

- Brunswick County (governmental entity)
- Cape Fear Public Utility Authority (CFPUA - governmental entity)
- Pender County (governmental entity)
- Invista (private industry)
- Praxair Incorporated (private industry)

Phase I of the Authority's facilities, completed in 1984, consists of a 45 million gallon per day (MGD) raw water pumping station and intake structure, approximately 14 miles of 48-inch

transmission main, and a 3 million-gallon (MG) storage reservoir. Phase 2 extended the system approximately 10 miles to serve the industries of Invista and Praxair along US 421 and the City of Wilmington. This phase consisted of 60-inch and 48-inch transmission lines that were placed into service in April 1992. The Phase 1 and Phase 2 facilities are shown in Figure 1.

In December 2003, the two 3.0 Megawatt (MW) standby generators were placed into full-time operational status at the Kings Bluff Pumping Station. The generators are housed in a separate building co-located with the pumping facilities at the Kings Bluff site. Major components of the standby power facilities include (2) reconditioned generators, automatic electrical switchgear, and (2) 12,000-gallon capacity fuel tanks. In 2007 the Authority completed a major rebuild of both 3.0 MW standby generators.

In 2005 it was recommended that the Authority conduct pigging of the 48-inch raw water transmission main to clean the pipe of the sedimentation and sand accumulation that was reducing the output due to increased friction in the pipeline. This project included the installation of pig launch and retrieval facilities and the completion of four (4) 'pig' runs to scour the pipe interior. The pig launch facility is located near the Kings Bluff Pumping Station, while the pig retrieval facility is located at the storage reservoir site.

In 2009 a comprehensive expansion and upgrade to the Kings Bluff Pumping Station was completed that included the following major components:

- Three (3) new 1,600 HP vertical turbine raw water pumps
- Additional wet well expansion to accommodate a total of five (5) raw water pumps
- New electrical building housing three (3) variable frequency drives
- New operations office with restrooms, shower facilities, and overnight accommodations
- SCADA and telemetry upgrades
- Valving and raw water main piping modifications for future parallel raw water main connection
- Retention of two (2) existing 1,000 HP vertical turbine raw water pumps (note that both 1,000 HP pumps have recently been permanently removed from the facility)
- Additional air surge tank

In 2010, a new 60-inch diameter parallel raw water intake pipe and three (3) intake screens were constructed at the Kings Bluff Pumping Station. The 60-inch intake was placed into service in December 2010 and was constructed parallel to the existing 48-inch intake pipe. The 60-inch intake piping and existing 48-inch intake pipe were designed and constructed such that the station can be supplied raw water from either intake pipe or both simultaneously, thus providing ultimate operational flexibility at the Kings Bluff facility. In conjunction with the intake project, a new integrated air backwash system and building was constructed adjacent to the original air backwash building. The purpose of the backwash system is to allow for periodic

cleaning of silt and debris buildup at the intake screens via a pressurized air burst through the screen assemblies.

Primary components of the parallel 60-inch intake system are as follows:

- 1,100 feet of 60-inch ductile iron intake pipe
- Three (3) *Johnson* stainless steel intake screens rated at 27.5 MGD each
- New air backwash building
- *Johnson Hydro-burst* integrated air backwash system and 2,000 Gallon air tank

Interim Booster Pump Station

In 2013 the Authority completed construction of the Interim Booster Pump Station (IBPS), which is located at the 3 MG ground tank site. The IBPS provides a capacity of 29.1 MGD, as well as increased pressures, to customers on the US Highway 421 portion of the system, which are Pender County, Invista, Praxair, and CFPUA. The IBPS consists primarily of three (3) diesel driven pumps that deliver increased flow and pressure to meet peak summer demands for Authority customers. Originally, the IBPS pumps, fuel cells, and standby generator were provided under rental agreement to the Authority with *Mersino Pumps*. However, the Authority has since purchased this equipment and the IBPS is a now permanent facility completely owned and operated by the Authority.

Primary Components of the IBPS are as follows:

- Three (3) diesel-driven pumps
- Three (3) 500-gallon capacity diesel fuel storage tanks
- One (1) 45 KW diesel generator
- 265 feet of 24-inch ductile iron pipe
- 700 feet of 48-inch ductile iron pipe
- Piping, valves, miscellaneous appurtenances
- SCADA/Telemetry controls for operation of the IBS

Hurricane Matthew Raw Water Main Failure

On October 13, 2016, a significant failure of the LCFWSA's existing 48-inch PCCP raw water transmission main was identified by staff in the community of Riegelwood, Columbus County, NC. The failure occurred in a low topographical area that has limited drainage and is prone to flooding. Upon identification of the leak, a multi-organizational effort to repair and restore the pipeline was undertaken. The repair effort included extensive dewatering, a temporary access

road, a temporary repair band, a temporary by-pass pipe, and full replacement of the failed pipe sections with DIP.

Based on evaluation of the failed transmission pipeline, it was determined that the pipe bedding and foundation had been undermined and that the pipe had settled causing the joints to separate and leak. In review of events leading up to the pipe failure, it was determined that Hurricane Matthew had passed the area on October 8, 2016, delivering 8-inches of rain over a 24-hour period. After this event, the nearby Cape Fear River crested at approximately 28 feet on October 13th-14th, 2016 which directly coincided with the pipeline failure of October 13, 2016. It was surmised that the flooded conditions and the significant impacts attributed to Hurricane Matthew undermined the pipe bedding and foundation, causing settlement of the pipe, separation of the pipe joints, and failure of the pipeline.

Repair efforts included the following:

- Installation of approximately 1,000 linear feet of 36-inch HDPE bypass piping with two (2) wet taps on the existing 48-inch main.
- Removal of approximately 80 linear feet of 48-inch PCCP raw water main.
- Installation of approximately 80 linear feet of new 48" DIP raw water main.
- New in-line 48-inch gate valve
- New 48-inch Tee

The total project cost to repair the pipeline was $2,766,690, which was 100% reimbursed through FEMA disaster relief funds.

Pure Technologies SmartBall Inspection

As a result of the pipe failure and age of the existing 48-inch PCCP raw water main, the Authority contracted with *Pure Technologies* to perform a leak inspection of the 14-mile pipeline section from the Kings Bluff Raw Water Pump Station to the 3 MG Ground Tank. The inspection involved insertion of a "SmartBall" acoustic device in the pipeline for the length of pipe to be inspected. The "SmartBall" travels along the pipeline and utilizes acoustic methods to determine potential leaks along the pipeline. The field inspection of the pipeline was completed on May 18, 2017. Results from the inspection indicated no major leaks but did note a potential small leak near the 3 MGD Ground Tank. Based on the Pure *Technologies* report, the leak was likely the result of "bleed through" of the existing valve at the 3 MG ground tank and did not represent an actual leak from the pipe. No further action was taken upon completion of the report; however, McKim & Creed recommends that the existing valve at the 3 MG ground tank be monitored for potential leaks or other issues.

54-Inch Parallel Raw Water Main

In December of 2019, construction of a new parallel 54-inch raw water transmission main began and was placed into service in November of 2021. The project was subsequently completed in April of 2022 after installing strategic interconnections with the existing 48-inch pipeline. The new 14-mile pipeline now parallels the existing 48-inch raw water main from the Kings Bluff Raw Water Pump Station to the 3-million-gallon ground tank near the Brunswick County Northwest Water Treatment Plant. The pipe was constructed of welded steel with a cement mortar liner and exterior polyurethane coating. Cathodic protection for the new pipe was installed along the entire pipeline route. Four primary interconnections with the existing 48-inch raw water main were constructed to provide resiliency and operational flexibility for the conveyance system. With the completion of the new parallel pipeline, the Kings Bluff Raw Water Pump Station has a firm permitted capacity of 62 MGD.

Kings Bluff Raw Water Pump Station 4th Pump Design & Permitting

The Board of Directors authorized the design and permitting of a new 4th raw water pump for the Kings Bluff facility in July of 2020. The design was completed in the fall of 2020 and a permit modification was submitted to NCDEQ Public Water Supply to increase the station capacity to an anticipated 90 MGD. The modified permit was approved in February of 2021; however, the 54-inch parallel pipeline noted was not complete and operational at the time for the Authority to fully realize the increased capacity that would be available from the 4th pump; therefore, the project was put on hold until after completion of the pipeline. The Authority's master planning document outlines that the project will begin in fiscal year 2024 and will be complete and operational by fiscal year 2026.

48-Inch Raw Water Main Failure near DAK Industries Site

On November 3, 2021, a pressure spike in the raw water transmission main system resulted in a significant failure of the LCFWSA's existing 48-inch PCCP raw water transmission main. The failure was identified by Brunswick County staff in the area behind the DAK Industries site near the Cape Fear River. Upon identification of the leak, a multi-organizational effort to repair and restore the pipeline was undertaken as downstream customers (CFPUA, Pender, 421 Industries) were receiving reduced flows as a result of the failure in the pipeline.

Brunswick County utilized their emergency services contract with State Utilities to mobilize personnel and equipment to the project area and begin installation of bypass piping and repair of the damaged pipe sections (approximately 220 feet total). The repair of the section of 48" pipe was completed on January 15th, 2022 and the line was restored to service. The total cost to complete the emergency repair was $2,521,503.84.

Black Rock Rd. Raw Water Main Repair

In April of 2022 during a punch list inspection for the 54-inch raw water transmission main project, McKim & Creed staff observed water bubbling up from the ground along the 48-inch pipeline alignment near Black Rock Rd. With the new 54-inch pipeline in service, LCFWASA staff were able to isolate the section of pipeline to excavation and identify the leak. Brunswick County staff received bids to remove the two pipe segments on either side of the damaged joint and replace them with 48" ductile iron pipe the Authority had in storage. TA Loving was placed under contract to make the repairs and this work was completed in August of 2022. The total cost of the repair was $85,474.80.

New Access Walkway over Livingston Creek

In January of 2023 Intracoastal Marine completed the installation of a walkway connecting the 54" steel pipe access walkway to a new walkway spanning the aerial portion of the existing 48" PCCP pipe. This new structure will be used for future maintenance and inspections of the existing 48" PCCP pipe.

Also completed by Intracoastal Marine during the same time was a joint repair on the existing 48" PCCP elevated pipe where degradation of one of the existing joints had occurred. The contractor repaired the joint in accordance with specifications provided by the pipe manufacturer and at the direction of McKim & Creed's structural engineer. (See Photograph II)

1.2 BASIS OF ANNUAL INSPECTION

A condition of the authorizing Bond Order requires an annual inspection of all facilities by a qualified Engineer who shall report on their readiness, identify any deficiencies, and make recommendations on capital improvements.

1.3 OPERATING ARRANGEMENTS

The Authority maintains limited full-time staff, consisting of an Executive Director and an Administrative Assistant, for the administration of the Authority's programs and the coordination of water supply activities in the Region. The Authority contracts for operations and maintenance of the Regional Water Supply System with Brunswick County. The Brunswick County Utilities Department provides the personnel and resources to operate and maintain the Authority's raw water facilities and administers outside maintenance contracts as needed for effective operation of the system. Thus, Brunswick County is designated the "Contract Operator" of the system.

1.4 SCOPE OF WORK

The annual inspection program is comprised of several major focus points:

- Detailed in-the-field inspection of the Kings Bluff Pumping Station, pipeline route, air relief valve assemblies, line valves, metering stations, reservoir facilities and grounds, and general appurtenances throughout, to assess general level of maintenance and to identify the need for equipment replacement, repairs, or remedial activities.
- Review of Authority's operation and maintenance records, protocols, and processes to identify the level of maintenance and potential adjustment toward improved efficiency.
- The identification of capital improvements or major repairs that merit immediate attention or further investigation and definition.

The results and findings of this annual inspection are summarized in the following sections of this report. The FY 2023 - 2024 inspection of the Authority's facilities was conducted during September 2023.

SECTION 2 - KINGS BLUFF PUMPING STATION

2.1 GENERAL STATUS

The components of the Kings Bluff Pumping Station consist of:

- A 48-inch raw water intake pipe with three 15 MGD intake screens and air backwash system with a total rated capacity of 45 MGD
- A 60-inch raw water intake pipe with three 27.5 MGD intake screens and air backwash system with a total rated capacity of 82.5 MGD
- Three 1,600 HP vertical turbine pumps with variable frequency drives
- One light duty (480 Volt) generator
- Two 3.0 MW (medium Voltage) primary backup generators with oxidation catalysts
- Two 12,000-gallon concrete diesel fuel tanks
- Electrical building and operators control room
- SCADA and telemetry system for monitoring and control
- 24 miles of 48-inch and 60-inch raw water transmission main
- Three (3) air surge tanks
- Pig Launcher & Pig Retriever on 54" RWM
- 14 miles of 54-inch raw water transmission main
- 4- Interconnections between "48" RWM and 54" RWM
- 24" & "30" Pressure Reducing Valve Assemblies
- New Flow Meter Vault
- New Elevated Platform with ARV and piping over Livingston Creek for both 48" PCCP pipe and 54" STL pipe.

2.2 EQUIPMENT AND SYSTEM INSPECTION SUMMARY

An inspection of all major equipment was completed, and the findings are tabulated in *Appendix A*.

2.3 PUMP OPERATIONS

Power Sources

Primary power is purchased from Duke Energy Progress at Medium Voltage levels (4,160 Volts). The level of service provided enables the pumping station to be operated at its full rated capacity with two of the three 1,600 HP electrically driven pumps operating in parallel.

In the event of primary power interruption, the two 3.0 Mega Watt generators at the Kings Bluff pumping station energize automatically to provide dedicated, and reliable power to the pumping station. The generators allow the raw water pumps to be started and operated in order to meet the raw water demands of the Authority's customers. Overall, the generators were inspected and found to be in good operating condition.

In addition to providing emergency power to the station, LCFWSA entered into a power curtailment agreement (Demand Response Automation – DRA) with Duke Power. Under this agreement, the Authority's emergency power system was activated when requested by Duke causing the plant load to be shed from the main utility power system. For each activation, the Authority received compensation which was then used to offset the cost of operating the pump station. The generators are equipped with catalytic converters that meet required NCDEQ Air Quality Emissions standards to maintain participation in the DRA program. LCFWSA has a separate contract with PowerSecure to monitor the performance of the catalytic converters to ensure they are operating withing Air Quality constraints.

During this year's inspection, the station's generators were not started. Additionally minor items requiring correction were noted and are listed in Appendix A.

The Authority's SCADA system and main computers, upgraded in 2009 as part of the pump station expansion/upgrade, are sufficient for current operations.

Pumps & Electrical Facilities

During this year's inspection, the 1,600 HP vertical turbine pumps (installed as part of the 2009 expansion/upgrade of the Kings Bluff facility) were inspected and found to be in excellent condition and meeting the needs of the Authority's customers (See ***Appendix F -Photograph A***). Staff indicated that the scheduled service of Pump 5 was completed this year. During this visit, it was noted that the check valve on pump 1 was leaking significantly. Staff indicated that Underwood was in the process of rebuilding the check valve removed from 5 (noted above) for installation at pump 1 (See ***Appendix F - Photographs B***).

In June 2017, Pump 4 was removed from service due to an oil leak and was then repaired by Charles Underwood Pump Company. After the pump was placed back in service, the bearing was observed to be operating at a lower temperature, similar to Pumps 1 and 5 (or slightly

lower). A definitive answer was not provided by the pump manufacturer as to the reduction in bearing temperature, however, it has continually operated in a normal range since this repair and appears to be in satisfactory condition.

During the 2016 inspection staff suspected the Pump 4 had a cooling water leak in the upper bearing chamber that could be contributing to the high temperature. It was recommended that this be inspected and addressed immediately. The Authority staff did investigate this issue and no leak was found. As a protective measure, the Authority has purchased a spare cooling coil in the event of failure of a cooling coil on the 1600 HP pumps. The coil is interchangeable with each pump.

Noted in the 2014 inspection, Pumps 2 and 3 (1,000 HP each) have been permanently removed from the old pump station section. Openings have been capped and conductor conduits have been capped flush with the slab.

The 1,600 HP pumps are controlled by a separate electrical control room housing variable frequency drives and motor starters. During the 2016 inspection, it appeared that the masonry wall to wall joints located inside the new pump station electrical building had shifted producing cracked paint at the intersection of the walls. The most noticeable crack is located on the masonry wall joint located west of the western most roll up door. Since the 2016 inspection, Engineer reviewed the joints and found that the issue was not structurally detrimental; however, it was recommended that staff should continue to monitor the issue. During this inspection, visual observation indicated that the size of the separation did not appear to have increased (See ***Appendix F - Photographs C***). It is recommended that the wall separation continue to be monitored.

During a previous review, it was noted many items were being stored inside the electrical room creating a potential fire hazard and impeding access to exit doors. It was therefore recommended the room be cleared of excessive storage and those items that remain be moved so as to not obstruct exit from the building Staff has minimized the storage and obstruction as of this review (See ***Appendix F - Photographs D***).

Adjacent to the new electrical control room is an HVAC room housing the HVAC equipment (See ***Appendix F - Photographs E***). As noted during the last inspection, a new HVAC unit had been installed outside with an associated air handler inside. It was recommended then that the HVAC openings which allow duct work to pass between the HVAC room to the electrical room be sealed to prevent short circuiting of the unit and the unnecessary cooling of the HVAC room. As of this inspection, opening is still present, however staff indicated it was soon to be addressed (See ***Appendix F - Photographs F***). All exterior HVAC units were reviewed and were clear of any debris blocking the radiator coils. It was however noted that HVAC piping insulation outside had failed in a few areas and thus it is recommended it be addressed (See ***Appendix F - Photographs G***).

Pump Station Metering

The raw water pump station is provided with two flow meters that measure flow leaving the station. In the past, the flow meter readings at the station have been significantly different than

the sum of the customer flow meters. Historically, the summation of the customer meters has been generally within 1-2% of the station meter totals. Per our understanding, County staff has conducted field testing and determined that the customer flow meters appear to be within acceptable ranges; therefore, customer billing appears to be normal and generally accurate. It is recommended that the County and Authority continue to monitor the metering conditions for accuracy at the Kings Bluff Pump Station. No issues were reported as a result of this year's inspection. The flow meter vault was inspected and found to be in good condition ***Appendix F - Photographs H***).

2.4 EXTERNAL DIESEL FUEL TANKS

The two 3.0 Mega Watt standby generators are supplied fuel by (2) 12,000-gallon concrete fuel tanks, which are located adjacent to the generator building. The tanks were installed with a 110% secondary containment wall to capture overflow, ruptures, or spills of diesel fuel. The external fuel tanks were inspected and found to be in acceptable condition. Rainwater collects in the containment area and is drained by LCFWSA operator after each significant rain event. On both tanks, during past inspections, significant efflorescence was noted. Tanks were coated again last year; however, during this year's inspection one tank was again exhibiting efflorescence (See ***Appendix F – Photograph I***). The diesel storage tank 1 leak detection test button was found to be failed and needs to be addressed (***Appendix F - Photographs J***).

2.5 PUMP STATION BUILDINGS

The combined new and old buildings were inspected and found to be in good overall condition. Noted during the previous inspection, both Hellan Strainer backwash control panels had inoperable indicator lights that required replacement. As of this inspection, lights have been addressed.

During a previous inspection, cracks were found in the new pump station concrete flooring of the pump room. These cracks were analyzed and monitored and do not appear to be detrimental to operations. Both pump station piping galleries need to be cleaned for bugs, debris, etc. All observed issues detailed below are also noted in ***Appendix A***:

- During the time of the 2011-2012 inspection, O&M staff noted that the containment area provided in the new pump station building for storage of oil floods and then subsides with heavy rains. Staff has addressed this issue by installing a French drain outside of the facility. The drain was placed against the wall and appears to be reducing the hydrostatic water load against the wall. In addition, staff applied another layer of sealant to the interior face of the CMU wall. No water/moisture was present during the inspection and staff reported the drain and sealant appear to be working. During the 2019 inspection, staff indicated they had placed approximately 12 inches of concrete in

the pit area and recoated with sealant. No evidence of leaking was observed during this time. During this year's inspection, it was noted that both pump station piping rooms need to be cleaned out due to bugs and debris. With respect to the new pump station storage room, this room was found to be sustainably filled with stored items during the last inspection. Since then, items have been relocated/stored to not impede access to the exit door (See ***Appendix F – Photograph K***).

2.6 GROUNDS

The grounds consist of a paved access drive and parking area, and the grassed area surrounding the pumping station. During 2003 a new chain link security fence was installed around the complete pump station site. The new fence has an electronically controlled gate with a keypad entry system which was installed during the spring of 2003. The fence provides an enhanced level of security for the pumping station and the maintenance staff.

In recent years, sink holes have appeared behind the pump station, at the generator building transformers, and at the small generator. The Authority recently implemented repairs to a leaking storm drainpipe as well as capping an abandoned pipe that was suspected of contributing to the sink hole issues. During this inspection, sink holes or drainage issues were not observed or noted and appear to have been corrected.

During the 2018 inspection, it was noted that several valve operator wheels were broken. The handwheels were replaced with operator nuts, correcting the problem, as documented in the 2019 inspection.

2.7 AIR SURGE TANK SYSTEM

The air surge tank system consists of three tanks and provides for surge relief and protection from water 'hammer.' During the 2019 inspection, it was noted that the anchor bolts which secure the steel air tank piers to the concrete base footings had been replaced.

During the 2019 inspection, it was noted that all tanks had been painted and the fill line has been provided with heat tracing and insulation to prevent freezing as previously recommended. Additionally, surge tank 3 exterior air piping has been painted as previously recommended.

During the 2021 inspection, six (6) drain valves were observed to have been replaced. During this inspection, the tankage appears to be in good condition.

During this inspection, it was noted that the paint was failing in several areas especially on the tank drain valves and tank #3 (See ***Appendix F – Photograph L and M).*** Staff are in the process of addressing the situation.

During the last inspection and with regards to the surge tank control panels located inside the pump station, several indicator lights still required replacement. Lights have since been replaced as of this inspection. Also, during this inspection, surge tanks 1 and 2 had their respective controls turned on, however tank 3 controls were off (***See Appendix F – Photograph***

N). Please note that for proper operation and protection of the new force main, all 3 surge tanks are required to operate.

2.8 PIER

The pipe corridor of the 60-inch intake pipeline is located parallel and adjacent to the existing pier. A review of this area indicated that vegetative cover is established, and that the area is slightly flooded. (See ***Appendix F - Photograph O***).

During the 2018 inspection, it was observed that the pier and walkways to the air-backwash control buildings needed repair. Several deck boards and handrails were in poor shape. During the 2019 inspection, it was noted that some repairs had been made (stair and plank replacement); however, more are still required. Also noted in previous reports, several areas on the older building's wall panels are still showing signs of rot. As of this inspection, the dock remains in bad condition (See ***Appendix F - Photographs P***). The old backwash building remains in need of repair as wall boards are rotted. It is noted that the LCFWSA is currently under contract with McKim & Creed to design a replacement of the pier and air backwash buildings, however, it is recommended that the pier and buildings be maintained until such a time that project is completed.

2.9 GENERATOR BUILDING

The generator building was inspected, and findings are presented in ***Appendix B***. The facility was found to be in good condition. Staff noted that during the Duke Energy curtailments (and other events) excessive heat is generated inside the building even though all exhaust fans were running and the exterior roll up doors were open. Staff noted the excessive heat caused damage to the batteries adjacent to the generators.

To eliminate the battery damage issue, the staff has completed the installation of an air start system on the generators. In addition, the staff is currently working to replace the 84v pre-lube motors with 24v motors. Once completed, all deep cell batteries can be removed and replaced with two standard car batteries and thus the impact of the heat will be significantly diminished.

As previously noted during prior inspections, the building interior insulation surface appears to have been affected by the heat making it brittle. Because of this, surface repair tape will not attach thus making tear or rip repairs not possible. Replacement of the insulation should be investigated. The generator radiators were observed to be in good condition.

Also noted previously, the building personnel doors have rusted to such an extent that holes have appeared. Staff indicated new doors have been ordered and would be installed when they arrive. **(See *Appendix F – Photograph Q*).**

Also noted previously, it was observed that the breaker panel located in the generator room had an excessive amount of failed indicator lights and thus should be serviced. This issue has been addressed.

Generator radiators were reviewed during this inspection and were found to be in operable condition; however, rust was found to have advanced significantly on the underside fan shroud (See ***Appendix F – Photograph R).*** It is recommended staff monitor the area and plan to address the issue in the future.

The pneumericator panel located in the generator electrical room was found to be in alarm. It is recommended that staff address the issue.

2.10 LIGHT DUTY GENERATOR

The existing light duty generator located in front of the pump station is no longer functional. Staff brought in a portable generator and plan to connect the generator to the existing 480V panel located in the old pump station pump room. The portable generator being used at the pump station previously provided 480v power to the motor operated valve at the Booster Pump Station. As the staff now use the "spin doctor" to open and close the motor operated valve, the portable generator is no longer needed.

2.11 STAFFING

The Authority currently contracts with Brunswick County Utilities for O&M staffing for its raw water facilities and does not directly employ any O&M staff. Generally, the station is not manned 24-hours per day and on-site operator duties are shared by multiple County employees on staggered work shifts.

2.12 RADIO ANTENNA

The antenna, fencing, and support equipment appeared to be in good working order. The antenna was stuck by lightning over the past year and as a result was serviced. Due to the lightning strike, a new PLC was installed in the comm. cabinet. During this work, Staff installed a new empty 2-inch conduit from the antenna to the generator building for a future fiber optic connection to the tower.

2.13 ON SITE POTABLE WELL

In 2019, staff installed a water line (1-inch service) from a Bladen County water line tap to the pump station. The existing well system was switched over to County water thus mitigating the quality issue. There were no water quality issues noted in this year's inspection.

2.14 INTAKE SCREEN AND WARNING SIGNS

As of this inspection, there is no signage in the river to indicate the screen's locations and warn boaters. Staff indicated the sign was swept away by flooding due to Hurricane Matthew. During the 2019 inspection, Staff indicated that the automated system for backwashing the screens had been disabled and the operation is conducted manually at the backwash buildings. Staff indicated visuals checks of the river are performed prior to backwashing, thus replacement of the signage was unnecessary. Our recommendation is for signage to be placed on the bank as low water levels in the river could cause deep draft vessels to potentially damage the screens.

2.15 SEPTIC SYSTEM

The facility provides wastewater disposal via a small pump system with an on-site subsurface drain field. In 2019, Staff indicated the system grinder pump had been replaced recently and that the system was operating without issues. During this inspection, there was no indication of septic issues observed.

SECTION 3 - RESERVOIR & INTERIM BOOSTER STATION

3.1 GENERAL

The three-million-gallon raw water reservoir is located near Brunswick County's Northwest Water Treatment Plant and is surrounded by an earthen berm to hold any overflow which may arise from the storage tank. There is a small control building adjacent to the tank and the entire site is enclosed within a chain link fence. The reservoir is in good condition as are most of the other components at the reservoir site.

The reservoir is a pre-stressed concrete tank, coated with an external paint system for protection and appearance. There are several places where visible seams on the outside wall of the tank appear to have calcified due to leaks, but no visibly wet seams were noted (See ***Appendix F - Photograph R***). During the previous inspections, O&M staff indicated that the *Crom Corporation* (original tank manufacturer) had been contacted to evaluate the seams and provide recommendations for repair.

Interim Booster Pump Station

The interim booster station (IBS) was inspected and found to be in excellent condition and no issues were present that required corrective action. It is recommended that O&M staff periodically test the system for functionality and develop/modify protocols as required for maintenance and operation. It is also recommended that the IBS be exercised and tested under actual flow conditions to ensure proper operation when the IBS is required.

Interim Booster Pump Station Freeze Damage

In January 2017, the interim booster station sustained damage as a result of freezing temperatures. The pumps are equipped with drain valves and air release valves, which froze and burst because of abnormally low temperatures during this period. Additionally, damage was sustained to electronic controllers used for pump operation, likely a result of a lightning strike. As of the date of this report, all pumps have been repaired and are operational. Brunswick County staff are in process of conducting pump tests in conjunction with Pender County and CFPUA to verify operational viability of all components. It is our understanding that Brunswick County will also develop a Standard Operating Procedure to test the pumps periodically.

In November 2018, the Authority obtained bids to implement improvements to the facility to include a shelter-style cover, freeze protection, and additional lighting. Based on bids received, the Authority chose to delay the improvements to a future date.

SECTION 4 - PIPELINE

4.1 GENERAL

The Authority's initial pipeline (Phase I) was comprised of approximately 73,000 feet of 48-inch diameter pre-stressed concrete cylinder pipe. Air relief/vacuum valves are located at high points on the pipeline to allow trapped air to be vented from the pipeline and to allow the introduction of air into the pipeline in the event that 'vacuum' conditions occur. The Phase 2 raw water main extension was comprised of approximately 52,300 feet of 60-inch and 48-inch diameter pre-stressed concrete cylinder and ductile iron pipe. The Phase II pipeline is also similarly equipped with air relief/vacuum and isolation valves. No inspections were made of the underground sections of the raw water main, however, the pipes are safely within the expected useful life of their respective materials and no significant issues are anticipated with the raw water transmission system. The pipeline between the Kings Bluff station and the 3 MG ground tank was pigged in 2005. While not critical to current operations, a future pigging project should be considered to maintain maximum transmission capacity. The recent completion of the parallel 54" pipeline has added 74,000 feet of pipe to the system, paralleling the original Phase I pipeline.

4.2 RIGHT-OF-WAY

The pipeline right-of-way was inspected and found to be in good condition. Several wet areas are frequently inaccessible due to water levels in swampy areas and highly overgrown areas (See ***Appendix F - Photograph AA***). It is recommended that these areas be mowed/cleared when possible and inaccessible areas inspected. A substantial portion of the pipeline right-of-way includes a gravel/soil access road, and farmland or adjacent railroad right-of-way and is well maintained and in good condition. Much of the right-of-way is well maintained with adequate accessibility. The entire right-of-way width of 75' was cleared during the construction of the parallel 54" RWM. All areas of the right-of-way are in good condition. During the recent inspection, the pipeline right-of-way mowing was underway.

In 2005, all vaults and blow offs were marked in the right-of-way with high visibility 8-foot PVC pipe markers. However, it is noted that the orange paint has faded, and the PVC pipes show signs of deterioration (See ***Appendix F - Photograph BB***) and should be replaced and/or repainted. These measures have been successful in eliminating the majority of such encroachments and there have been no major problems.

The raw water main is also identified in the field by markers, which are blue in color with the Kings Bluff phone number stenciled in front. It also has "Lower Cape Fear Water & Sewer Authority" identified on the front of the marker with the phone number to the main office listed. This provides a visual notification of the approximate location of the pipeline and can help

avoid potential impacts from construction, etc. within the Authority's right-of-way. All blue markers need to be updated at roadway crossings throughout the pipeline corridor.

The 54-inch parallel pipeline which is recently completed provided "blue" utility markers to denote the location of new pipeline along the right-of-way corridor. The remainder of the Right-of-way should be reviewed, and marker posts replaced or added as needed. *(See Appendix F – Photograph CC)*

As previously noted, a valve manhole exists along the access road to "The Bluffs" development that is adjacent to the roadway. It is recommended that bollards be placed at this location to protect the manhole from a vehicular accident that could damage the manhole and/or the raw water transmission main.

4.3 AIR RELIEF VALVES

The air relief valves that exist on the raw water mains consist of a 6-inch main valve to expel air and a 2-inch air valve to allow air into the pipe when drained, thus preventing a vacuum. Periodic exercising and verification of "open condition" is necessary for these valves to protect the pipeline from excess air surges, and possible rupture. Similar to blow-off valves, it is recommended that these valves be exercised at least once per year to maintain operational viability. Additionally, there are 25 new air relief valves along the 54" RWM route. ***Appendix F - Photograph DD***) for photos of existing ARV and new ARV on the 54" RWM. See ***Appendix C*** for a list of inspected air relief valves.

4.4 BLOW-OFF VALVES

The blow-off valves located on the Phase I and II pipelines were inspected and appear to be in good condition. It is recommended the blow off valves be exercised at least once per year to ensure continued operability. Additionally, the blow-off valves should be repainted regularly, and new marker posts set on each side. See ***Appendix D*** for a comprehensive list of inspected blow-off valves on the 48" RWM. There are a total of 8 new blow-offs along the 54" RWM route. See ***Photographs GG*** of existing blow-off and new blow-offs on 54" RWM.

4.5 METER VAULTS

Metering facilities are installed at the customer connections at Brunswick County, Praxair Inc., Invista and the CFPUA. Standby power exists at all meters and allows the Authority to collect data during major power outages and minimizes the amount of non-billed water due to loss of commercial power. All meters were inspected and appear to be in good working condition. It is recommended that all piping be evaluated and routinely painted at each vault if required. A summary of the inspection of all meter vaults is provided in ***Appendix A***.

4.6 CHECK VALVES

The 48-inch check valve manholes were opened during annual inspection in October 2022. All check valves appear to be in good condition and no major problems were identified during the annual inspection (See ***Appendix E***). It is recommended that all valves be evaluated and routinely painted at each vault if required.

4.7 EMERGENCY CONNECTION – PREVIOUS DAK INDUSTRIES SITE

During repair of the pipeline that failed following Hurricane Matthew, Brunswick County installed an emergency connection to the existing raw water main near the former Dak Industries site. The connection consists of a tap on the main line, a valve, and an above ground connection pipe. The intent of this connection is to provide a potential emergency water source, whereby water could be withdrawn from the previous Dak Industries fire pond or possibly from the nearby Cape Fear River. Based on field inspection, this emergency connection is in good condition and requires no corrective action. It is recommended that the valve be periodically operated, and the external piping painted on a yearly basis. Additionally, with the closure of Dak Industries, the right of way in this area is not maintained and should be included in the recurring right of way maintenance. The connection is shown in (***Appendix F – Photograph EE.***)

4.8 NEW 54-INCH PARALLEL RAW WATER MAIN

Construction of the new 54-inch parallel raw water main was complete in April of 2022. Garney Construction has installed approximately 74,000 linear feet of 54-inch raw water transmission main pipe. The pipeline was placed into service in November of 2022 and the 48-inch PCCP raw water main was taken out of service to install strategic interconnections along the 14-mile alignment. There are a total of four interconnections between the 54-inch pipeline and the 48-inch pipeline between the pump station and the 3 MG tank. The interconnections are located at the flowing locations:

1.) Narrow Gap Road

2.) John Reigel Road

3.) Blue Banks Road

4.) Behind BC Northwest Water Treatment Plant adjacent to the new flow meter vault.

(See Appendix F – Photograph HH)

4.9 GENERAL

The Authority utilizes both electronic and manual record keeping monitoring the operation of its raw water facilities. The SCADA system provides indication of and continuously records vital operational statistics for the major mechanical components located at the pumping station, raw water storage reservoir and the metering vaults. The O&M staff have the capability to generate manual as well as electronic records reflecting the pumping station's normal operations. The current level of record keeping provides the O&M staff a means to review information for critical analysis of system performance and diagnostics for critical malfunctions.

4.10 ELECTRONIC RECORD KEEPING

The SCADA system provides the capability to expand the O&M staffs' electronic record keeping. Operators can utilize the SCADA system to create custom reports to reflect pumping station operations, log difficulties, maintain long-term records, and to provide 'trending' of the station operations. Internet access allows the operator to electronically receive and send files and provides efficient communication abilities. Operational trends for flow (total and specifically for each customer) can be easily obtained via the CITEK software that is utilized at the Kings Bluff Pumping Station. Thus, the Authority has instantaneous access to all relevant data collected by the SCADA system and the CITEK programming.

SECTION 5 - SUMMARY

5.1 READINESS

The Authority's Regional Water Supply System, consisting of the Kings Bluff Pumping Station, Interim Booster Pumping Station, standby generators, pipelines, metering vaults and the 3 MG raw water storage reservoir is in good condition and sufficient state of readiness. The facilities have been well maintained and are fully capable of providing a high level of service to its customers.

SUMMARY OF RECOMMENDED ACTION ITEMS

Items identified in this report that require attention or corrective actions are summarized as follows and detailed in the enclosed appendices. Items with a **(New)** designation are items that were observed during the current year inspection and all others are items that remain from the previous year inspection findings:

Kings Bluff Pump Station Facility, Raw Water Intakes & Air Backwash Systems

1. Continue to monitor bearing temperatures for all raw water pumps.
2. Continue to monitor meter accuracies at the Kings Bluff Pump Station.
3. Continue to Monitor storage containment area in pump building for leaks during rain events.
4. **(New)** Address emergency light battery failure alarm in the pipe gallery.
5. **(New)** Clean surge tank vessels periodically
6. **(New)** Replace overhead lights as required in the oil storage room.
7. **(New)** Repair overhead insulation in oil storage room.
8. **(New)** Replace thermostat in oil storage room.
9. **(New)** Verify proper operation of surge tank control systems.
10. Continue to maintain warning signage for the intake screens in the Cape Fear River and ensure that it is in readable and viewable condition.
11. Continue to monitor and replace broken deck boards and handrails on piers leading to air backwash buildings. Note that the CIP project has been identified to replace the walkway at a future date.
12. Evaluate older air backwash building for structural repairs due to visible signs of rot on exterior walls.
13. **(New)** Clean the old backwash building to remove debris and bugs.
14. **(New)** Replace the light inside of the old backwash building and clean the air valve of dirt and bugs.

15. Investigate surge tank system for proper configuration and operation.
16. Replace surge tank system indicator lights.
17. Monitor and repaint surge tank piping mounted to pump station exterior wall as required on a yearly basis.
18. Recommend yearly monitoring and painting of 1,000-gallon surge air tanks.

Generator Building

1. Evaluate generator building for replacement of failing insulation in conjunction with possible addition of exhaust fans to improve conditions in the generator building.
2. Monitor and repair diesel fuel storage tank coatings as required.

3 Million Gallon Ground Reservoir & Interim Booster Pump Station

1. Calcification present on exterior tank wall. O&M staff should continue to monitor the tank walls for any new cracks or leaks.
2. Recommend coordinating annual test of Interim Booster PS with CFPUA and Brunswick County.
3. **(New)** Recommend construction of future shelter or structure to improve protection of the station from freezing and sun damage (as currently identified in the Authority's Capital Improvements Plan).

Raw Water Main System

1. Mow/Clear overgrown areas along pipeline route.
2. Continue to monitor and evaluate need to paint manhole ring and covers and concrete flat-tops for manholes, valves, blow-offs where required.
3. Repaint, replace, or upgrade PVC pole markers or provide "Blue makers" as installed during 54" RWM project.
4. Exercise all valves and blow-offs annually.
5. Add bollards to protect manhole within "The Bluffs" development access drive.
6. Monitor and evaluate for repair the eroded pipe joint in the ARV manhole near Phelps Truck Sales on US-421.
7. Periodically operate the emergency connection at the Dak Industries (former) site.
8. Ensure that valves and ARV's can be properly operated with current valve box configuration. Noted that some valve boxes appeared to be out of plumb and could create issues with operations.

END OF REPORT

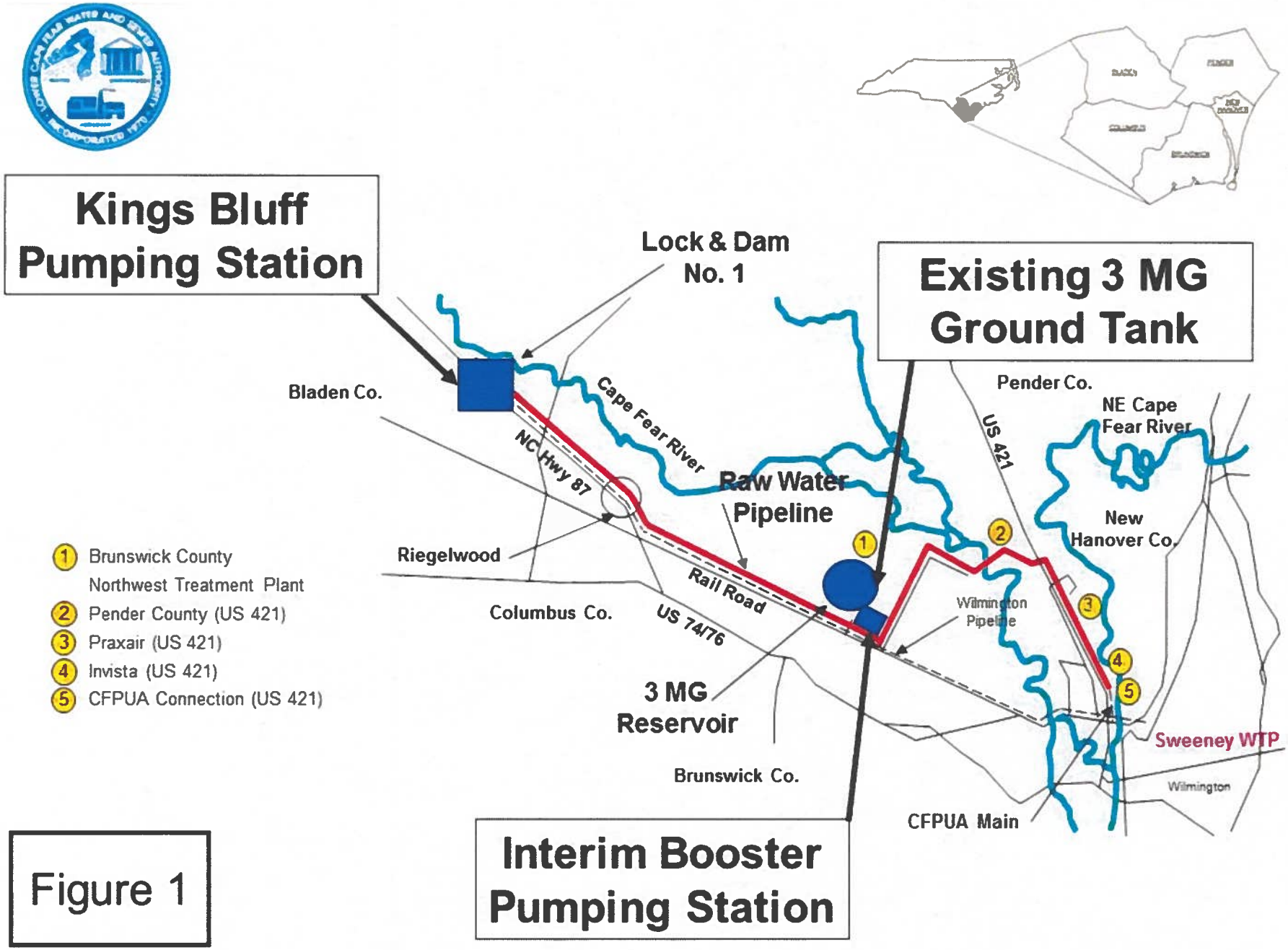

Kings Bluff Pumping Station
Lock & Dam No. 1
Existing 3 MG Ground Tank
Bladen Co.
Cape Fear River
NC Hwy 87
Raw Water Pipeline
Pender Co.
US 421
NE Cape Fear River
New Hanover Co.
Riegelwood
Rail Road
Columbus Co.
US 74/76
Wilmington Pipeline
3 MG Reservoir
Brunswick Co.
Sweeney WTP
Wilmington
CFPUA Main
Interim Booster Pumping Station
1 Brunswick County Northwest Treatment Plant
2 Pender County (US 421)
3 Praxair (US 421)
4 Invista (US 421)
5 CFPUA Connection (US 421)

Figure 1

Kings Bluff Pumping Station Annual Inspection

Lower Cape Fear Water and Sewer Authority

Appendix A – Pumping Station Facility, Ground Reservoir, Meter Vaults Annual Inspection

Equipment	Satisfactory	Needs Attention	Remarks
Grounds			
Septic Tank	X		
Pump Station	X		
Phone Line	X		
Drainage	X		
Fence	X		
Radio Tower	X		
Site	X		Trench needs to be filled in and sidewalk repaired on water side of pump station.
Valve Hand wheel Operators	X		
Original Pumping Station			
Structure	X		
Flooring	X		
Roofing	X		
Old Control Room			
Air Conditioning - Office	X		
Lights	X		
Plumbing	X		
Water Heater	X		

Equipment	Satisfactory	Needs Attention	Remarks
Well			N/A
Ceiling	X		
Service Sink	X		
Roof	X		Roof is fading and peeling. Voids can be seen inside break panels.
Bathroom	X		
Old Pump Room			
Lights	X		
Air Compressors #1	X		
Air Compressors #2	X		
Air Storage Tank #1	X		
Air Storage Tank #2	X		
Air Dryer	X		
Pump #1	X		
Pump #2 Slot	X		Pump removed and opening capped.
Pump #3 Slot	X		Pump removed and opening capped.
Light Duty Generator		X	Inoperable (see 2.10)
Surge Tank Air and Water Piping & Control System Piping	X		Evaluate operational requirements of the surge system.
Surge Tanks	X		Repaint as necessary
Original Pipe Gallery			
Structure	X		Clean for bugs, debris, etc.
Lights	X		
Piping	X		
Equipment	X		

Equipment	Satisfactory	Needs Attention	Remarks
Water Strainer		X	Hellan strainer motor conductor termination box leaking water- address and resolve as could be an electrical hazard
Heater	X		
Fan	X		
New Control Room			
Ceiling	X		
Flooring	X		
Structure	X		
Bathrooms	X		
Storage Room	X		
Break Room	X		
Oil Storage Room	X		
New Pump Room			
Pump #4	X		
Pump #5	X		
Structure	X		
Lights	X		
Piping	X		
Flooring	X		
HVAC	X		
New Pipe Gallery			
Structure	X		Needs to be cleaned due to bugs and leaves etc.
Lights	X		

Equipment	Satisfactory	Needs Attention	Remarks
Piping	X		
Water Strainer	X		
Station Flow Meters	X		Continue to monitor flow meter accuracy
New Electrical Room			
Electrical Equipment	X		
Ceiling	X		
Floors	X		
Walls	X		Continue to monitor wall separation.
Overhead Doors	X		
New HVAC Room and HVAC Equipment			
Ceiling	X		
Floors	X		
Walls	X		Duct penetration needs to be sealed
Equipment	X		
Pier			
Structure		X	Broken /Rotted walk boards and railing need to be replaced
Old Control Building		X	Evaluate building for replacement of rotten wall panels
New Control Building	X		
Intake Pipe Site Restoration	X		
Old Electrical			
Air Line	X		
Air Tank	X		

Equipment	Satisfactory	Needs Attention	Remarks
48-Inch Intake Screens			
Piping	X		
Air Backwash	X		
Controls	X		
New Electrical			
Air Line	X		
Air Tank	X		
60-Inch Intake Screens			
Air Backwash		X	Install warning signage in readable and observable condition on riverbank.
Controls	X		
1,000 Gallon Air Tank	X		
2,000 Gallon Air Tank	X		Air valve positions do not match position on control panel. Issue needs to be addressed.
Instrumentation			
SCADA	X		
3 Million Gallon Reservoir & Interim Booster Pump Station			
Ground Storage Tank	X		Calcification remain on outside of tank
Interim Booster Pump Station System Testing	X		.
Grounds	X		
Control Building	X		
Tower	X		
Instrumentation	X		
Pig Launcher	X		

Equipment	Satisfactory	Needs Attention	Remarks
Meter Vaults			
Brunswick Northwest			
Meter	X		
Piping	X		
Sump Pump	X		
Grounds	X		
Praxair			
Meter	X		
Piping	X		
Sump Pump	X		
Grounds	X		
Structure	X		
Invista			
Meter	X		
Piping	X		
Sump Pump	X		
Grounds	X		
Structure	X		
CFPUA			
Meter	X		
Piping	X		
Sump Pump	X		
Grounds			
Structure	X		
54" RWM Meter Vault			

Equipment	Satisfactory	Needs Attention	Remarks
Meter	X		New Flow Meter not operational until Water Plant Expansion completed
Piping	X		
Sump Pump	X		
Grounds	X		
Structure	X		

Kings Bluff Pumping Station
Lower Cape Fear Water and Sewer Authority
Appendix B – Generator Building Annual Inspection

Equipment	Satisfactory	Needs Attention	Remarks
Grounds			
Fencing	X		
Driveway Entrance	X		
Building		X	Exterior doors exhibit rust – corrective action underway
Fuel Tank Area			
Exterior Piping	X		Piping needs labeling
Containment	X		
Tank #1	X		Efflorescence exposed on tank surface
Tank #2	X		Tank sensor test button in operable.
Tank Signage	X		
Diesel Tank Piping	X		
Generator Radiator	X		Significant rusting observed on underside-attention will be required in future
Garage Area			
Storage Area	X		
Flooring	X		
Generator Room			
Generators and Piping		X	Label all radiator piping
Air Start System	X		
Lights	X		
MCC	X		
Floors	X		Flooring needs to be cleaning due to presence of dead bugs and other.
Ceiling/Roof		X	Insulation failing in several locations.
Electrical Room	X		
Roll-Up Doors	X		
Walls		X	Paint failing in one section. Repair/repaint.
Flooring	X		Flooring needs to be cleaning due to presence of dead bugs and other.

Kings Bluff Pumping Station

Lower Cape Fear Water and Sewer Authority

Appendix C – Summary Air Relief Valve Annual Inspection

48" RWM Air Relief Valve No.	Station	Conditions/Remarks
1.	4+00	At Entrance Road to Kings Bluff Pump Station – Good Condition
2.	37+65	Black Rock Road- Good Condition – Access is through a locked gate.
3.	97+50	Waterline Way – Off N.C. Hwy 11- Good Condition
4.	175+80	Narrow Gap Road- Good Condition.
5.	228+60	Carroll Johnson Farm- Good Condition
6.	268+50	Good Condition- Good condition "Big Field"
7.	293+15	Riegel Course Road (SR 1816) – Good condition
8.	322+60	Entrance to Federal Paper /IP (off Warren Ln.)
9.	383+00	At Livingston Creek on Elevated Pipe-
10.	394+50	Behind Momentive Chemicals (Neil's Eddy Rd at Bethel Baptist Church) - OK.
11.	416+00	Ellis Farm Road - Good condition-
12.	426+80	In the field off 410 Ellis Farm Road.
13.	463+73	Mills Trail – Good condition. Off Port Royal Road
14.	529+55	Off access road adjacent to 5028 Gooseneck Road- Good condition.
15.	566+00	Off Vernon Rd.- In Pasture- Did not access MH structure
16.	617+00	Off Northwest Road (SR1423) - (Peterson Land) -Good condition
17.	651+50	Between Rattlesnake Branch and Hood Creed, did not cross Hood Creek due to high water.
18.	730+00	LCFWSA- Near 3 MG Raw Tank- Ground water present, underwater.

48" RWM Air Relief Valve No.	Station	Conditions/Remarks
19.	57+88	The Bluffs Entrance Road- Good Condition- Ground water present
20.	145+00	In landscaping along entrance road to "The Bluffs - Good condition
21.	235+86	CF River at 90-degree bend behind DAK Industries/ DuPont- OK
22.	248+90	DAK Industries/ DuPont at Hill- Good Condition
23.	295+57	DAK Industries- At Test Well # 11- Good Condition
24.	369+10	Behind PCU-WTP - Entrance gained via Pender County Water Treatment Facility – Ground water present - Good condition
25.	446+97	5400 US Hwy 421 North-Billy Phelps Trucking. Steel visible at coupling at pipe joint, New concrete collar may need to be poured. Flat-top is deteriorating and has rebar showing. Mowers /bush-hog hitting top of MH breaking off concrete
54" RWM Air Relief Valve No.	**Station**	**Conditions / Remarks**
1	101+75	Good Condition – Behind Generator Building
2	141+50	Good Condition – East of Macon Property- MH R/C bolted down by Garney Const from Warranty Inspection
3	200+25	Good Condition – Along Waterline Way
4	225+00	Good Condition – West side of Weyman Creek
5	279+56	Good Condition – Traynham Gate
6	321+25	Good Condition – Eastside of Double Branch
7	332+55	Good Condition – Woodburn Property
8	397+12	Good Condition – East of Reigel Course Road
9	425+81	Good Condition – Off John Reigel Road
10	468+25	Good Condition – Behind IP
11	477+50	Good Condition – Behind IP
12	488+66	Good Condition – Livingston Creek

48" RWM Air Relief Valve No.	Station	Conditions/Remarks
13	500+10	Good Condition – East side of Livingston Creek
14	526+54	Good Condition – East side of Neils Eddy Road
15	534+25	Good Condition – Ellis Farm
16	568+79	Good Condition – Off Mills Trail / Port Royal Road
17	600+30	Good Condition -East side of Grice Property
18	634+86	Good Condition – Goose Neck Road
19	658+75	Good Condition – Carroll Farm
20	722+21	Good Condition – Peterson Farm
21	750+90	Good Condition – Duke Energy Easement- Did not access
22	755+87	Good Condition – East side of Duke Easement- Did not access
23	774+50	Good Condition – West side of Hood Creek – Did not access
24	792+75	Good Condition – East side of Hood Creek
25	800+83	Good Condition – Behind NW Water Plant

Summary of Recommended Action Items:

1. All concrete vaults appear to be in good condition. Recommend repainting all existing manhole ring and covers and concrete flat-tops. Repaint all existing air relief valves, blow-offs, check valves, butterfly valves and piping should be repainted "blue".
2. Blow-Off Valves and Air Release Valves need to be exercised on an annual basis. It was discussed with staff that some of the valve boxes are not plumb so getting to the top nut on the valve may be difficult. Recommend County review and ensure that valves can be accessed and operated as required to maintain the system.
3. New signage is needed along the entire right-of-way route and at edge of NCDOT right-of-way where LCFWSA raw water transmission main crosses roadways. Also provide painted 2-inch PVC poles painted "orange" to mark each Air Release Manhole structure. Previous poles were installed by LCFWSA Operators. All these poles and markers have degraded or are missing from the LCFWSA right-of-way. All poles and markers are recommended to be updated and painted in the upcoming fiscal year.
4. The mowing contract is currently under review, right-of-way has been easily accessed due to recent construction of new 54" RWM. LCFWSA / BC personnel are currently working to provide closer cutting and clearing to allow better access to all MH or vault structures.
5. Recommend new marker signs for raw water main routes adjacent to all roadways and along Hwy 421 North to show waterline route and throughout pipeline corridor.
6. Repair concrete diaper at ARV near Phelps Truck Sales on US 421. The concrete flat-top of structure has been degraded by bush-hogging and mowers cutting ROW.
7. Install bollards for protection at the ARV manhole located along the entrance to "The Bluffs" development.

Pipeline Annual Inspection

Lower Cape Fear Water and Sewer Authority

Appendix D – Summary 12" Existing Blow-Off Valves Annual Inspection

12" Blow Off Valves on 48" RWM	Station	Conditions/Remarks
1.	70+00	Blanks Farm- OK -
2.	122+00	N.C. Hwy 11 / Weyman Creek- Good condition
3.	221+00	"Big Field" - Good condition
4.	358+00	At International Paper – Good condition.
5.	439+00	Off Ellis Farm Road - Good condition
6.	487+00	Gooseneck Road- Good condition
7.	685+80	Hood Creek, Behind NWWTP - Good condition

12" Blow Off Valves on 54" RWM	Station	Conditions/Remarks
1.	175+40	Beaver Dam Creek – Good Condition
2.	228+30	Weyman Creek- Good condition
3.	323+25	Woodburn Farm - "Big Field" - Good condition
4.	506+90	Mills Creek – Good condition.
5.	543+50	Ellis Farm - Good condition
6.	588+02	Bear Branch Road- Good condition
7.	749+50	Rattlesnake Branch - Good condition
8.	789+65	Hood Creek – Good condition

Summary of Recommended Action Items:

1. Recommend operation of blow-offs on an annual basis.
2. Recommend painted 2-inch PVC poles painted "orange" to mark each blow-off structure.
3. Recommend all blow-off structures on 48" RWM to be re-painted "blue" as paint has faded and deteriorated.
4. Brush/ Grass from all structures needs to be cut.

Kings Bluff Pumping Station

Lower Cape Fear Water and Sewer Authority

Appendix E – Summary Check Valves, Butterfly Valves - Annual Inspection

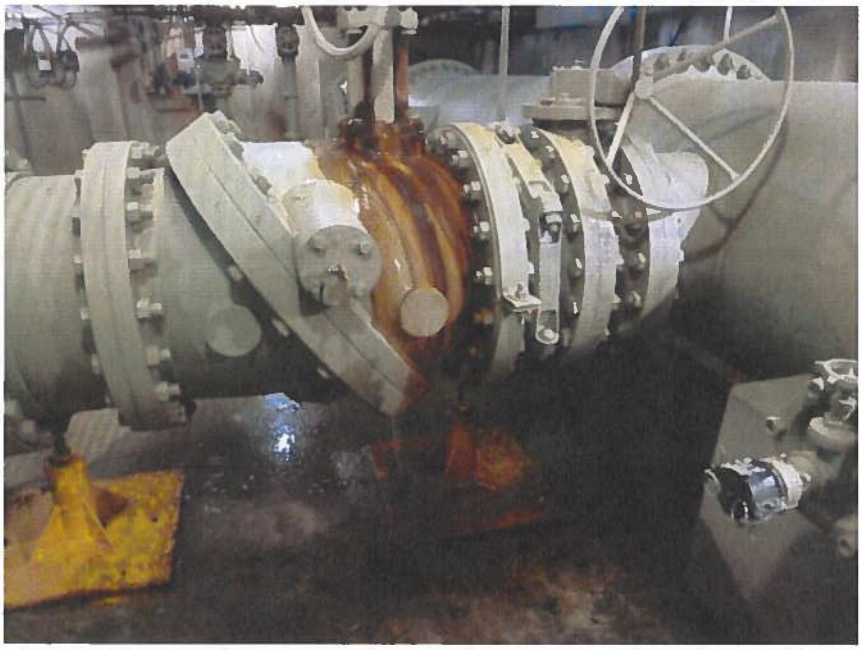
48" Check Valves	Station	Conditions/Remarks
1.	730+00	At LCFWSA 3MG Raw Tank- Good condition, some rust present. Underwater during inspection.
2.	56+06	At Railroad Tracks on Green Loop Road. Good condition
3.	126+60	The Bluffs Entrance- Ground water present. Good condition
4.	236+50	Behind DAK - Good condition
48" Butterfly Valves or Gate Valves	**Station**	**Conditions/Remarks**
1.	310+25	Gate Valve is located just west of John L. Riegel Road. Good condition – new valve recently installed during repair of the leak after Hurricane Matthew. Currently inside fenced area for new Interconnect location.
2.	369+85	Butterfly Valve behind PCU WTP Facility. Good condition. New risers have been installed due to recent flooding from Hurricane Florence.
2.	235+50	Butterfly Valve behind DuPont/DAK. Has hand wheel. At Cape Fear River at 90-degree bend- Good condition – Groundwater present.

Summary of Recommended Action Items:

1. Recommend painted 2" PVC poles painted "orange" to mark each valve structure.
2. Recommend all valve structures to be re-painted "blue".
3. Additional markers are needed to mark valve locations.

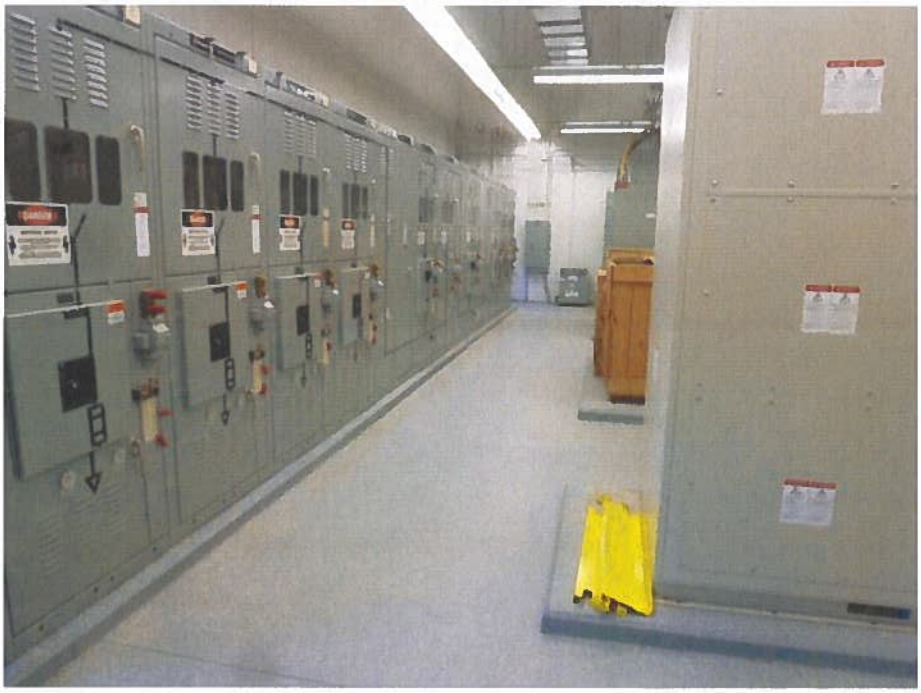
Appendix F – Photographs

Photograph A – Pump #4 and #5

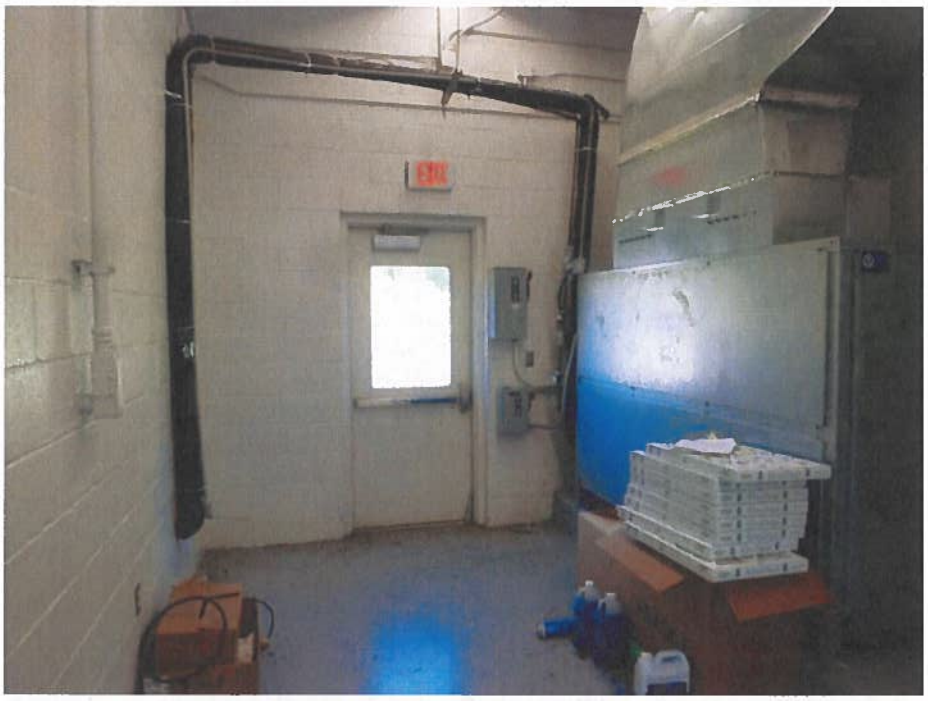


Photograph B – Check Valve on Pump #1 Leaking

Photograph C – Existing Crack in Electrical Building Wall



Photograph D –Electrical Room



Photograph E –HVAC Room

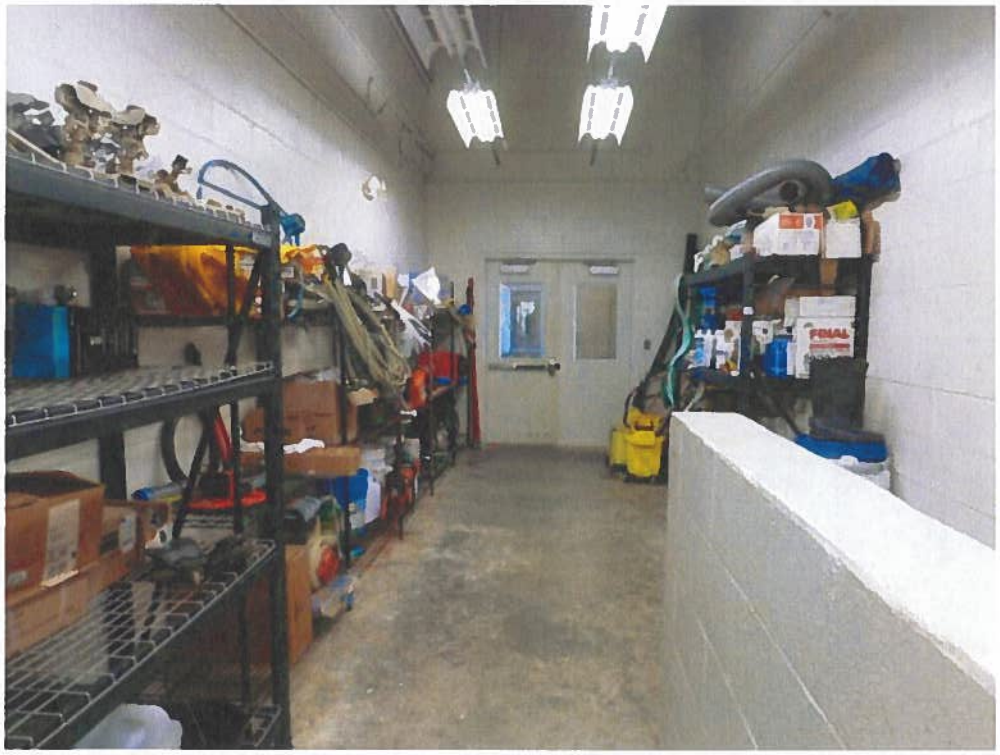
Photograph F –HVAC Penetration into Electrical Room

Photograph G – Failing HVAC Coolant Insulation

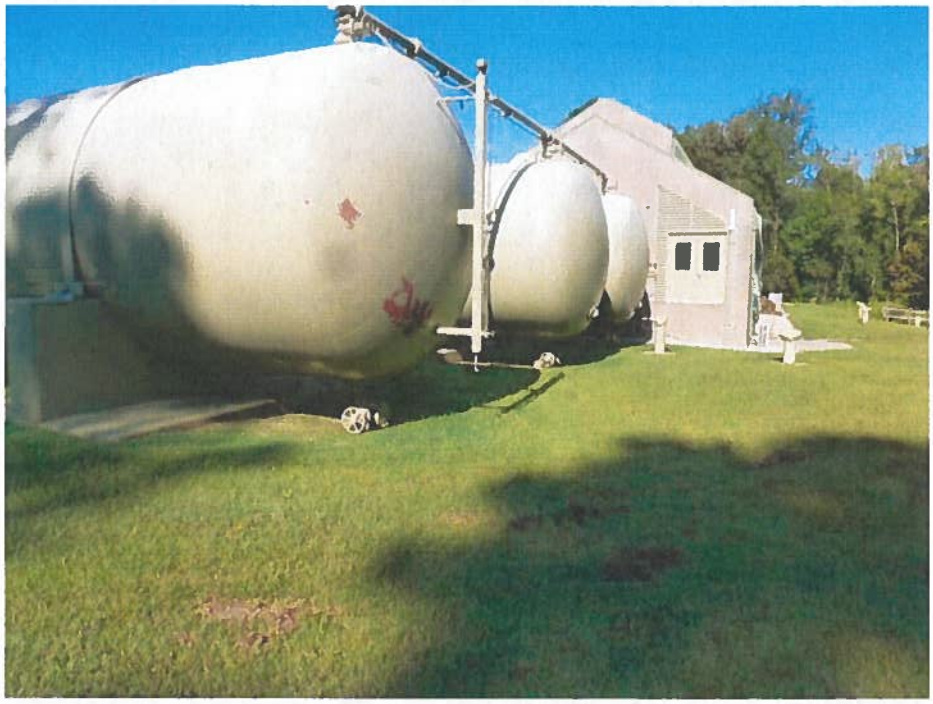
Photograph H –Pump Station Effluent Flow Meter

Photograph I – Diesel Storage Taank Efflorescence

Photograph J – Diesel Tank with Failed Leak Sensor Panel

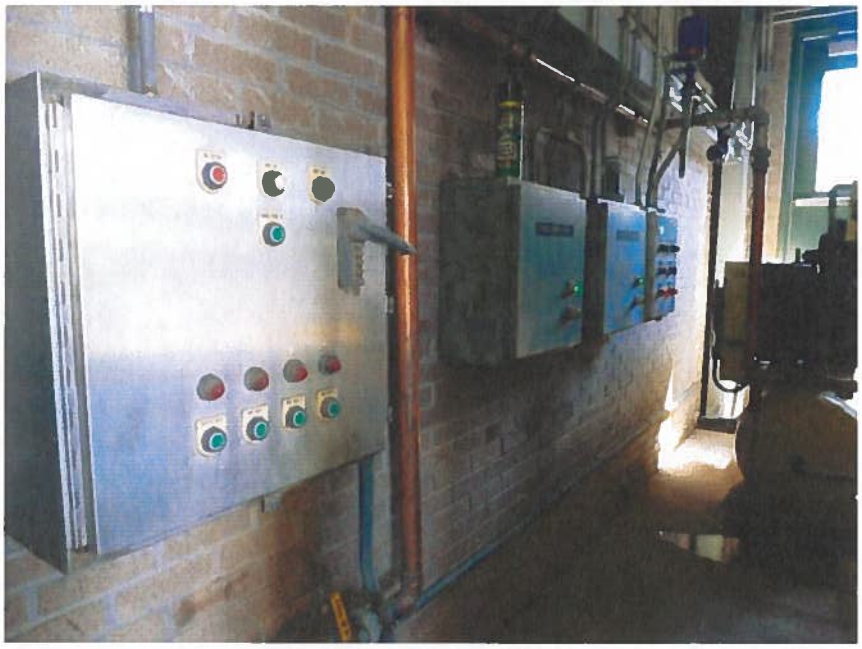


Photograph K –Storage Room Access



Photograph L- Surge Tank 3 Paint Pealing

Photograph M- Surge Tank Valves Paint Pealing



Photograph N- Surge Tank Control Panels

Photograph O – 60-inch Intake Pipeline Corridor

Photograph P – Distressed Air Backwash Pier Access

Photograph Q –Generator Building Corroded Doors

Photograph R – Corroded Radiator Fan Shroud

Photograph S – Interim Booster Station

Photograph AA – Overgrown Area along Right-of-Way

Photograph BB – Orange Painted Structure Marker Deterioration

Photograph CC – New Blue Marker Post from 54" RWM project.

Photograph DD – Old ARV on 48″ RWM and New ARV on 54″ RWM

Photograph EE- Emergency Intake Pipe Adjacent to Pond behind DAK / DuPont

Photograph FF- Right-of-Way at US Hwy 421 from 2019 - 48" RWM Relocation Project

Photograph GG- Old Blow-off on 48" RWM and new Blow-off on 54" RWM

Photograph HH- Interconnect off Blue Banks Road

Photograph II- Walkway Access across Livingston Creek on Existing 48" PCCP pipe

Lower Cape Fear Water & Sewer Authority

Bladen Bluffs Regional Surface Water Treatment Facilities

FY 2023-2024 Annual Inspection Report

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Prepared For
Lower Cape Fear Water and Sewer Authority

LOWER CAPE FEAR WATER AND SEWER AUTHORITY · INCORPORATED 1970 · WATER GOVERNMENT INDUSTRY

NORTH CAROLINA PROFESSIONAL SEAL 046997 ENGINEER JESSE E. POWELL

27 OCT 2023

October 2023

LOWER CAPE FEAR WATER AND SEWER AUTHORITY
BLADEN BLUFFS REGIONAL SURFACE WATER TREATMENT FACILITY
ANNUAL INSPECTION REPORT
TABLE OF CONTENTS

SECTION 1 - INTRODUCTION

1.1 FACILITIES

The Lower Cape Fear Water and Sewer Authority is a regional organization with sponsoring members that are comprised of Bladen, Brunswick, Columbus, New Hanover, and Pender Counties, as well as the City of Wilmington. The Authority was created to aid development of a water supply system for the sponsoring member governments, which are primarily located in southeastern North Carolina. The Authority currently owns and operates, in partnership with Smithfield Farmland Corporation, the Bladen Bluffs Regional Surface Water Treatment Facility (BBRSWTF), which sources its raw water supply from the Cape Fear River. The facility is a 6.0 Million Gallon per Day (MGD) drinking water facility located near the Town of Tarheel in Bladen County, approximately opposite the Smithfield Farmland Corporation Facility on NC Highway 87. Construction was completed March 1, 2012 and the facility was placed into service on April 1, 2012. Primary components of the facility include:

- 30 MGD Raw Water Intake
- 12 MGD (Current Maximum Pumping Capacity) Raw Water Pumping Station & Raw Water Pipeline. The Raw Water Pumping Station includes two (2) - 6 MGD pumps, with a slot for a third future pump.
- Four (4) Sand Filters
- Flocculation and Settling Tanks
- Two (2) - 1.7 MG Residuals Basins
- Two (2) Standby Generators
- Four (4) Granular Activated Carbon Tanks
- Chemical Building
- Administration Building
- Two (2) - 2 MGD Clear Wells (Owned by Smithfield Farmland Corporation)

The Bladen Bluffs facility currently only supplies treated water to Smithfield Farmland Corporation, as there are currently no other customers served by BBRSWTF.

1.2 BASIS OF ANNUAL INSPECTION & SCOPE OF WORK

A condition of the authorizing Bond Order requires the following shall be provided by an independent engineering firm:

- Inspect the project at least once each fiscal year
- Prepare a report that sets forth:

- ✓ Whether the properties or facilities have been maintained in good repair, working order, and condition
- ✓ Whether they have been operated efficiently and economically

- Recommendations with respect to maintenance, repair, and operation of the facility during the ensuing Fiscal Year, and an estimate of the appropriations that should be made for such purposes
- The insurance to be carried for the facility per the bond requirements
- Extensions, improvements, renewals, and replacements that should be made during the ensuing fiscal year
- Any necessary or advisable revisions to the service charges

The results and findings of this annual inspection are summarized in the following sections of this report. The FY 2023-2024 inspection of the Authority's facilities was conducted in September 2023.

1.3 OPERATING ARRANGEMENTS

The Authority maintains limited full-time staff, consisting of an Executive Director and an Administrative Assistant, for the administration of the Authority's programs and the coordination of water supply activities in the Region. The Authority contracts for operations and maintenance of BBRSWTF with Smithfield Farmland Corporation. Smithfield Farmland Corporation provides the personnel and resources to operate and maintain the Authority's water treatment facility and administers outside maintenance contracts as needed for effective operation of the system. Thus, Smithfield Farmland Corporation is designated the "Contract Operator" of the system. Currently, BBRSWTF generally operates on a 5-day work week (Sunday through Thursday) and the treatment process is in shut-down mode over most weekends. This schedule varies depending upon the production requirements of the Smithfield Farmland Corporation facility.

SECTION 2 - BLADEN BLUFFS SURFACE WATER TREATMENT FACILITIES – INSPECTION AND FINDINGS

A summary of the findings and recommendations, based on inspection of the Bladen Bluffs Surface Water Treatment Facility, is provided in ***Appendix A***. Detailed findings for each primary process or facility are summarized as follows.

2.1 RAW WATER PUMP STATION

A) Intake Screen

The intake screen system is submerged in the Cape Fear River (See ***Appendix B – Photograph A***). The raw water intake system is comprised of three (3) submerged screens, each with individual stainless-steel air backwash piping. Screen markers installed during previous repairs to the airlines in 2016 were removed by subsequent hurricanes. To date, markers have not been replaced. Additionally, the shoreline sign denoting the existence of the screens was damaged during Hurricanes Mathew and Florence but has since been replaced and was noted in good shape during the 2023 inspection. Also, in the Fall of 2018 Hurricane Florence impacted river air backwash piping and a significant portion of the shoreline eroded. This erosion exposed a portion of the stainless-steel backwash air piping. As a result of the erosion, LCFWSA applied for and was granted FEMA funding to restore the eroded bank. The restoration project, *Bladen Bluffs Regional Surface Water Treatment Facility Cape Fear Riverbank Restoration Project* was completed in 2020 and successfully restored the bank to its original condition. The project integrated a mixture of bioengineering techniques and rip rap to provide protection from future erosion along the riverbank. As of the date of the previous report, erosion had re-occurred along the restored bank due to several high-water events. The bulk of the erosion had occurred on the upstream portion of the bank according to plant staff. The eroded area was repaired and replanted by a contractor. Due to the growth of vegetation along the slope, pictures of the erosion were difficult to attain; however, during this inspection what could be observed did not indicate any further erosion has occurred. (See ***Appendix B – Photograph B***).

B) Grounds

The grounds at the Raw Water Pump Station and the 400-foot-long intake screen access boardwalk were noted to be in good condition. All deck and handrail boards were replaced in 2020 and most are still in good condition. The area inside the fence and around the boardwalk has been weeded and the grass has been cut since the last inspection. Recently boardwalk lights were added along with security cameras for the pump station and surrounding area (See ***Appendix B – Photograph C and D***).

C) Wet Well and Pumps

The wet well and associated piping were reviewed during the inspection and found to be in good working order. (See ***Appendix B – Photograph E and F***).

D) Electrical Building

Building and electrical devices are in good condition (See ***Appendix B – Photograph G***). Bug infestation prevention measures installed three years ago by staff are working; however, during this inspection there were a few dead bugs observed in the fixtures. The lighting circuit junction box on the East wall noted in the prior inspection that required a cover to be NEC compliant has been provided a cover.

E) Generator and Automatic Transfer Switch

During the field inspection, staff indicated that the generator and transfer switch are being exercised on a regular basis. No issues were noted that would require corrective action. Cleaning of the interior of the generator enclosure is recommended. (See ***Appendix B – Photograph H***).

F) Access Road to Pump Station

Overall, the road is in great shape. Areas along the access road that were previously being eroded during heavy rain events were addressed by raising the road elevation to prevent water from spilling across the road. Other areas that were suffering erosion have been stabilized with rip rap and stone infill. (See ***Appendix B – Photograph I***).

G) Air Backwash Compressor Skid

Staff indicated that all appears to function correctly. Skid framing corrosion previously noted was addressed in 2020 and appears to be holding up. (See ***Appendix B – Photograph J***).

2.2 INFLUENT FLOW METER VAULT

During the inspection, the vault was found to be in good condition and all exposed instrument displays were covered properly. Since the last inspection, the staff has instituted a policy of pumping out vaults on a regular basis using a mobile sump pump system. It was noted during this visit that the flow meter display box which is made of fiberglass is deteriorating and should be replaced in the near future. (See ***Appendix B- Photograph K and L)***.

2.3 FLOCCULATORS & RAPID MIX BASIN

The flocculators consist of two (2), four-part flocculation chambers with four (4) 1 horsepower mixers in each flocculator. This facility appeared to be operating properly and without issue.

The rapid mix basin equipment consists of the rapid mix structure and two (2) - 10 horsepower mixers. No issues were observed for this facility during the inspection.

2.4 SEDIMENTATION BASINS

There are two (2) basins equipped with air operated sludge pumps and each basin is emptied and washed quarterly (See ***Appendix B – Photograph M***). The sludge from the basins is pumped directly into tanker trucks and is then hauled off for land application disposal utilizing a subcontractor. No issues were observed requiring corrective action for this facility during the inspection.

2.5 FILTERS

The facility is equipped with four (4) sand filters, which are currently backwashed every 96 hours. All filters were in good working order.

2.6 FILTER PIPE AND VALVE GALLERY

A) Concrete Structure Walls

As during previous inspections, several calcified non-leaking cracks were observed during inspection. This type of crack is common in heavy cast-in-place concrete construction. During this inspection, cracks appeared to be as active as before. During the previous visit, humidity was an issue in the area, however during this visit it was low. (See ***Appendix B – Photographs N).*** During this visit, a small leak was observed coming from behind the transformer located in the "additional" filter area. It is recommended that the staff monitor this leak and address it if it worsens. (See ***Appendix B – Photographs O).***

2.7 TRANSFER PUMP STATION AND VAULT

A) Pump Station

The pump station interior/exterior and control were reviewed and found to be in good condition and operating properly. It was noted during the inspection that the Level Indicating Instrument (LIT) was not provided a cover for protection from the sun. It is recommended this display be covered to prevent UV degradation (See ***Appendix B - Photograph*** P). Additionally, it was found that a hatch safety grate hinge was broken and requires replacement.

B) Pump Station Valve Vault

The valve vault was reviewed and found to be in good working order, however a minor amount of water covered the floor (See ***Appendix B – Photograph Q)***.

C) Transfer Pump Station Check Valve Vault

During inspection, the valve vault was found to be flooded and the sump pump for the vault was not energized. It is recommended the sump pump be repaired, vault dewatered and inspected for any issues. **(See *Appendix B - Photograph* R).**

2.8 GRANULAR ACTIVATED CARBON VESSELS

Per the previous report, the GAC vessels have been placed back in operation at the request of the State. The vessels were filled with a new type of granular activated carbon recommended by Calgon (See ***Appendix B – Photograph S***). Corrosion of vessel supports was noted during a previous inspection and has since been addressed as of this inspection.

Mag-flow meters used to meter the flow through the filters appear to be in good condition and fully functional. It was noted in the 2020 inspection that the flow meter displays for the mag meters were missing covers to prevent deterioration from the sun. Covers were in place as of this inspection.

Vessel air release and vacuum air release valves (VARV) noted to be leaking during previous reviews were replaced with new and have been provided with drain pans to not allow leaking water to run down and stain vessels, which contributes to support frame rusting. During this inspection, the vacuum portion of the Air Release Vacuum Valves (ARVs) atop the tanks were leaking. Staff indicated this was probably a result of the vessel liquid elevation being at or near that of the storage tanks causing the ball seats not to be tight, thus allowing leakage.

Staff indicated last year that the vessel anti-siphon piping VARVs were replaced with a new type which is advertised to close with less pressure. This was done in an effort to resolve air being drawn into the discharge piping which causes discharge meter issues. It was also observed last year that these new type VARVs were introduced at two discharge pipe locations, also to reduce entrapped air.

Staff indicated that the GAC tank VARVs were going to be replaced with the new type this coming year.

2.9 CHEMICAL ROOM

A) Chemical Tanks, Pumps, and Electrical

The Facility was reviewed in its entirety and no issues were found. During a previous year inspection, staff indicated they had entered into a maintenance agreement for their chemical pumps. During this year's inspection, it was clear the agreement was providing a benefit to Owner.

B) Building

During this inspection, the structure was reviewed, and one issue was found. The water piping along the west wall was found to be dripping onto a column base plate causing significant rust (See ***Appendix B – Photograph T***). It is recommended this issue be addressed. Other than the one issue, the building was in good condition. The Electrical room was also reviewed and, although a lot of materials were being stored within the room, the room appeared to be in good condition and A/C was functioning properly. (See ***Appendix B – Photograph U***).

C) Chemical Carrier Water

Previously, staff changed the chemical carrier water from the Bladen County system to increase reliability and reduce cost. In the process of doing so, the staff added a backflow preventer (RPZ) which is currently mounted in the caustic chemical containment area. In the unlikely event that the caustic tanks ruptured, caustic would have the potential to submerge the RPZ, thus preventing the RPZ from functioning as intended. It is recommended that Smithfield address the RPZ installation location with PWS (Public Water Supply) to verify there is no issue with its location from a regulatory standpoint. As of this review, the RPZ remains in its original location.

2.10 ADMINISTRATION BUILDING

No issues were noted in the administration building at the time of the inspection.

2.11 RESIDUALS BASINS

During the inspection, the basins were observed to be in good condition (See ***Appendix B – Photograph V***).

Previously, staff noted a tear in the liner at an outfall connection slab. The staff had a specialist review the issue and make recommendations for correction. To date, the repair has not been made but is scheduled to be conducted in the future when the basin is out of service.

2.12 BBRSWTF EMERGENCY POWER

A) Generator

The generator was inspected and found to be in good working condition. No corrective actions are required.

B) Diesel Storage Tank Leak Detection Panel

During a previous inspection, the diesel tank level and leak detection panel were found to be inoperable due to a lack of power. It was recommended that this be corrected. As of this review, the panel has been corrected.

2.13 NPDES METER VAULT

This vault and associated chemical injection vault serve to condition the discharge water for both pH adjustment and de-chlorination before entering the river. During this inspection, the meter vault was in good condition (See ***Appendix B- Photograph W***).

2.14 RECYCLE PUMP STATION/METER VAULT

During previous inspections, the recycle system was reviewed; however, according to staff information, the system was not in use due to economic reasons. Staff indicated at that time that they were supporting other instruments by utilizing parts from instruments that were no longer functional that were associated with that system. No further inspection of this facility was made.

2.15 SCADA – TELEMETRY SYSTEM

Based on conversations with Staff and cursory review of the SCADA system, there are no known issues that were identified for corrective measures at the time of the inspection. Staff previously incorporated a new VT Scada software which provides redundancy within their server system. In case there is an issue with one of their SCADA systems, there is now a standby system that can be utilized if required.

2.16 OPERATION OF FACILITY

Based upon observation of the facility and procedures currently employed by Staff, it is the opinion of McKim & Creed that the facility has been operated efficiently and effectively.

2.17 FISCAL YEAR APPROPRIATIONS

No major appropriations for the upcoming fiscal year are anticipated beyond the contracted operations and maintenance agreement responsibilities.

SECTION 3 - INSURANCE PROVISIONS AND SERVICE CHARGES

3.1 INSURANCE PROVISIONS

A cursory review of the Authority's fiscal year 2022/2023 insurance coverage was conducted and was noted to be similar to that of the previous year. At the time of this report, the coverage was deemed to be sufficient, and no major changes are recommended.

3.2 SERVICE CHARGES

At the time of this report, Smithfield Farmland Corporation is the only customer currently provided treated water from BBSWTF. Therefore, no changes to the current service charges are applicable.

Appendix A – Summary of Inspection Items

Bladen Bluffs Surface Water Treatment Facility - Annual Inspection

Lower Cape Fear Water and Sewer Authority

Facility	Satisfactory	Needs Attention	Remarks
Raw Water Pump Station			
Intake Screens	X		
Grounds	X		
Wet Well	X		
Dock	X		
Electrical Building	X		
Generator and ATS	X		Clean interior of structure
Valve Vault	X		
Rapid Mix Basin			
Influent Flow Meter	X		
Structure	X		
Mixers	X		
Flocculators			
Flocculation Chambers	X		
Mixers	X		
Sedimentation Basins			
Basins	X		
Air Operated Sludge Pumps	X		Not Used
Filters			
Filters 1, 2 and 3	X		
Filter 4	X		Monitor wall leaks
Filter Pipe and Valve Gallery			
Structure Walls	X		Crack leakage needs to be monitored.
Structure Floors	X		
Environment	X		
Transfer Pump Station & Vault			
Pump Station Valve Vault	X		

Granular Activated Carbon Vessels			
Vessel Exteriors	X		
Chemical Room			
Chemical Tanks	X		
RPZ Location	X		
Building		X	Address column corrosion
Administration Building			
Building	X		Clean blower room
Residuals Basins			
Basins	X		Make liner repair as time allows
BBRSWTF Emergency Power			
Generator and ATS	X		
Diesel Storage Tank Panel	X		
Effluent Flow Meter Vault			
Meter Digital Display	X		
NPDES Meter Vault			
Meter Digital Displays	X		
Recycle Pump Station			
Meters and Displays	X		
Instrumentation			
SCADA & Telemetry	X		

Appendix B – Photographs

Photograph A – Intake Location

Photograph B – Cape Fear Riverbank Restoration Project Area

Photograph C – River Access Walkway

Photograph D – River Access Walkway

Photograph E – Raw Water Pump Station Level Display and Panels

Photograph F - Raw Water Pump Station Wet Well

Photograph G – Pump Station Electrical Room

Photograph H – Influent Pump Station Generator Enclosure

Photograph I – Access Road

Photograph J - Restored air compressor skid support framing

Photograph K -Influent Flow Meter Vault

Photograph L – Influent Flow Meter Vault Instrument Display

Photograph M – Sedimentation Basins

Photograph N – Filter Gallery

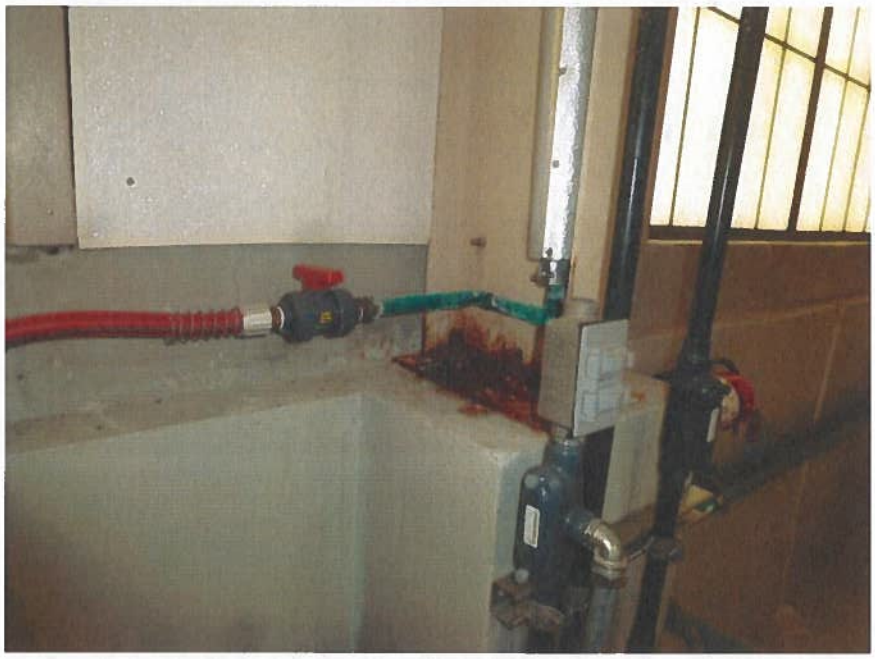
Photograph O – Filter Gallery Leak

Photograph P – Transfer Pump Station

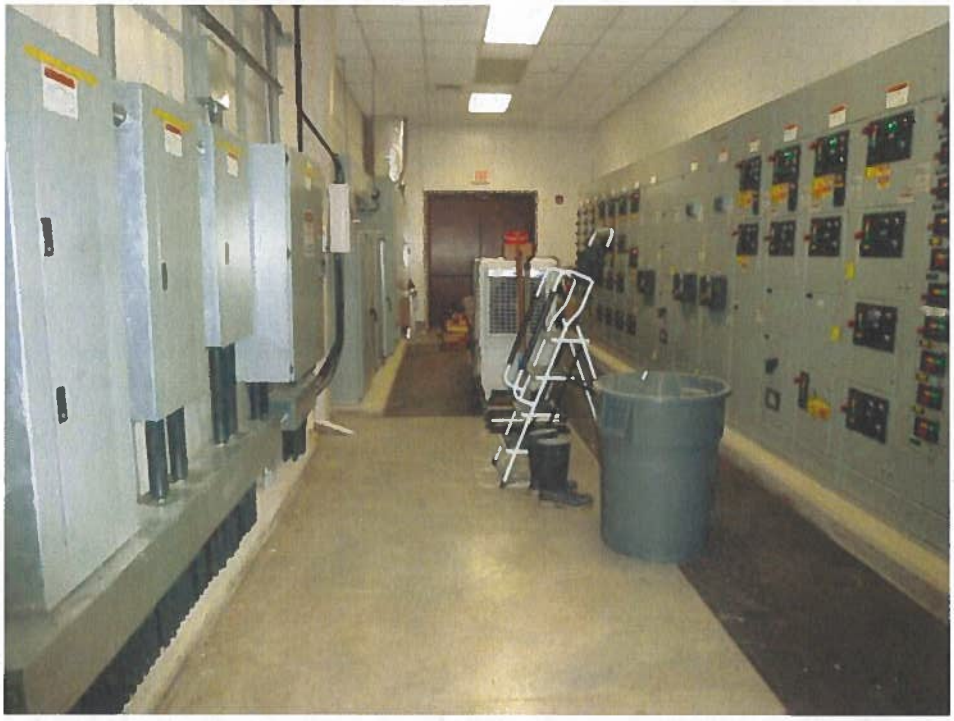
Photograph Q – Transfer Pump Station Valve Vault

Photograph R – Transfer Pumps Station Check Valve Vault

Photograph S –GAC Filters



Photograph T –Chemical Building Corroding Column



Photograph U –Chemical Building Electrical Room

Photograph V –Residuals Basins

Photograph W –NPDES Meter Vault

COUNTY OF BRUNSWICK
PUBLIC UTILITIES DEPARTMENT
Kings Bluff Pump Station

246 Private Road
Riegelwood, NC 28456
(910) 655-4799 Office
(910) 655-4798 FAX

TO: Tim Holloman

FROM: Greg Lazorchak

DATE: 11/01/2023

SUBJECT: Monthly maintenance report for October 2023

Mr. Holloman,

The Maintenance and Operations of the king's bluff facility for the month of October were performed as prescribed in the station SOP'S and other items are as follows.
The diesel drive booster pumps along with the standby SCADA generator located at the raw tank and the SCADA generator located at INVISTA / CFPUA vaults off HWY 421 were run and tested weekly and verified standby ready.
KB personnel completed all locates issued by the 811 system.
KB personnel cleaned and power washed generator building and air storage tank.
KB personnel assisted HCA asset management at Kings Bluff, Raw Tank, & Rt. 421.
KB personnel installed new waterline markers along R.O.W.
KB personnel cleaned inside motor base on pumps 1 & 4 of oil and grease build up.
KB personnel replaced old boards along walkway at river.
KB personnel painted air storage tanks at river.
KB personnel aided I & E with installation of new sonde exo BGA/CHL meter.
KB personnel painted surge tank for preventative maintenance.

Contractors:
Power Secure came for quarterly checks on EMD generators.
HCA went to plant, raw tank, & rt. 421 for insurance appraisal.
Pursuit Cleaning came to Kings Bluff office for weekly cleaning.
LJ's Landscaping began cutting R.O.W at DAK.
Pridgen Bros. came to fix gap at vent in VFD room.
Energy Solutions went to generator building to give quote on new insulation.
I&E installed new Sonde meter at Kings Bluff.

Thank you,
Gregory Lazorchak

Smithfield®

To: Tim Holloman - LCFWASA

From: James Kern – Bladen Bluffs SWTP ORC

Date: 11/2/23

Subject: October 2023 Operations

During the month of October, Bladen Bluffs SWTP operated a total of 18 days, treating 45.39 million gallons of water.

We used:

28,033 lbs. of aluminum sulfate (Alum)

7,464 lbs. of sodium hydroxide (Caustic)

1,274 lbs. of sodium hypochlorite (2,558 gallons of 6% Chlorine Bleach)

James Kern
Water Treatment Plant Supervisor

Smithfield
Good food. Responsibly.®

(910) 862-3114
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(910) 733-0016 mobile
jkern@smithfield.com

Bladen Bluffs Surface Water Treatment Plant
17014 Highway 87 West
Tar Heel, NC 28392
www.smithfieldfoods.com

Bladen Bluffs SWTP Maintenance Report

Date: 11/2/2023

ISSUE:	PLAN OF ACTION:
Air on finished water line (from GAC)	All valves installed
All PLC need updated	Getting quotes
Vault intrusion electrical needs sealed	Quote approved
Chlorine Pump #1 flow meter broken	FIXED
Chlorine Pump #2 leaking around pump	FIXED
Main generator has radiator leak	Quote approved, parts ordered
Clearwell #1 level indictor issue	Scheduled
Previously installed labels already fading	REPLACED
Front gate issue	IN PROGRESS
Caustic Pump #2 clogged	Troubleshooting
Caustic Pump #1 valve leaking	FIXED
Need to do full chemical pump PM	Getting Parts - Tencarva
Replacing carbon in GAC #1	COMPLETE
Rapid Mix faucet in lab clogged	FIXED
CFE CL17 needs replacement	COMPLETE – need to update software on new

Monthly Operating Reports (MORs) Summary

(No user data entry – all values are auto-populated.)

Year: 2023 **PWS Name:** Bladen Bluffs Water System **PWSID# :** NC5009012
Month: October **Facility Name:** Bladen Bluff

Combined Filter Effluent (CFE)Turbidity

Samples exceeding 1 NTU (count):	0	Number of samples required:	96
Samples exceeding .3 NTU (count):	0	Number of samples taken:	96
Samples exceeding .3 NTU (pct):	0.0%	Highest single turbidity reading NTU:	0.140
		Monthly average turbidity NTU:	0.064

Individual Filter Effluent (IFE) Turbidity

1)	Was each filter continuously monitored for turbidity?	Yes	X	No	
2)	Was each filter's monitoring results recorded every 15 minutes?	Yes	X	No	
3)	Was there a failure of the continuous turbidity monitoring equipment?	Yes		No	X
4)	Was any individual filter turbidity level > 1.0 NTU in two consecutive measurements ?	Yes		No	X
5)	Was any individual filter turbidity level > 0.5 NTU in two consecutive measurements at the end of 4 hours of operation after the filter has been backwashed or otherwise taken offline ?	Yes		No	X
6)	Was any individual filter turbidity level > 1.0 NTU in two consecutive measurements in each 3 consecutive months ?	Yes		No	X
7)	Was any individual filter turbidity level > 2.0 NTU in two consecutive measurements in 2 consecutive months ?	Yes		No	X

Entry Point Residual Disinfectant Concentration (EPRD)

Disinfectant Used	Chlorine	Number of samples required	96
Minimum EPRD concentration	0.6000	Number of samples taken	96

Distribution Residual Disinfectant Concentration

Number of samples under 0.010 mg/L (without any detectable) excluding where HPC is ≤ 500/mL: 0

Contact Time (CT) Ratio

Lowest CT ratio reading	18.20	Number of CT ratios required	18
Number of CT ratios below 1.0	0	Number of CT ratios calculated	18

Remarks From General Info Worksheet

☑ By checking this box, the ORC certifies that the requirements of 15A NCAC 18C .1301 "General Requirements", .1302 "Tests, Forms, and Reporting", and .1303 "Facility Oversight" have been met for the month of October, 2023 and that records documenting compliance with this rule are maintained on the premises and available for inspection upon request.

NCDENR/DEH
PWSS
Version: V02.10-00

COMPLETED BY: James Kern

CERTIFICATE GRADE: A - Surface CERTIFICATE NUMBER: 120147

OLD BUSINESS (OB1)	**Lower Cape Fear Water & Sewer Authority**

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: November 13, 2023

Re: Rate Study and Cost Share Methodology Presentation

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Background: The Authority has been working since 2021 on adjusting rates to become financially sound and have the ability to accrue debt for essential projects.

Action Requested: For Information purposes for OB2 and OB3

Lower Cape Fear WASA

Water Rate Study

R&R and Enterprise Capital Fund Allocation of Contributions

November 13, 2023

Willdan Financial Services

- Rick McClung, MBA, Principal Consultant

WILLDAN

Presentation Objectives

- The primary goals and objectives of this presentation include:
  - Allocation of R&R and Enterprise Capital Fund Contributions for those Projects that are Allocated to All Partners
  - Allocation of R&R and Capital Costs by Partner for those Projects that are Allocated to All Partners
  - Determination of Accumulated R&R and Capital Fund Balances After Capital Expenditures (By Partner)

WILLDAN FINANCIAL SERVICES

Rate Differential Analysis

- The 1.50 Rate Differential for Praxair & Stephan Beginning in FY2025 and Continuing Through the Projection Period is Estimated to Generate More Than Enough Revenues to Pay for Known Capital Projects as Allocated to Stephan and Praxair
- As Discussed at the Last Board Meeting, Staff Will Budget/Track the Differential Revenue to Pay Stephan and Praxair's Estimated Portion of Capital Projects

WILLDAN FINANCIAL SERVICES

Projected Water Billing Summary/Percent of Total

	Test Year	Projected For Fiscal Years Ending June 30,								
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Usage (in Gallons)										
Brunswick County	4,314,412	4,745,853	4,827,482	4,910,515	4,994,975	5,080,889	5,168,280	5,257,175	5,347,598	5,439,577
Stephan	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Praxair, Inc.	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
CFPUA	4,131,405	4,172,719	4,214,446	4,256,591	4,299,157	4,342,148	4,385,570	4,429,425	4,473,720	4,518,457
Pender	585,400	597,108	609,050	621,231	633,656	646,329	659,255	672,441	685,889	699,607
Total	**9,301,217**	**9,785,680**	**9,920,978**	**10,058,336**	**10,197,788**	**10,339,366**	**10,483,105**	**10,629,041**	**10,777,207**	**10,927,641**
Annual Change	**(2,184,587)**	**484,463**	**135,298**	**137,358**	**139,451**	**141,578**	**143,739**	**145,935**	**148,166**	**150,434**
Percent of Total										
Brunswick County	47.77%	49.87%	50.02%	50.17%	50.31%	50.46%	50.60%	50.75%	50.89%	51.04%
Stephan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Praxair, Inc.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CFPUA	45.75%	43.85%	43.67%	43.49%	43.30%	43.12%	42.94%	42.76%	42.58%	42.40%
Pender	6.48%	6.27%	6.31%	6.35%	6.38%	6.42%	6.45%	6.49%	6.53%	6.56%

WILLDAN FINANCIAL SERVICES

Projected Water Billing Summary/Percent of Total

	Projected For Fiscal Years Ending June 30,									
	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Usage (in Gallons)										
Brunswick County	5,533,138	5,628,307	5,725,114	5,823,586	5,923,752	6,025,641	6,129,282	6,234,705	6,341,942	6,451,024
Stephan	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Praxair, Inc.	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
CFPUA	4,563,641	4,609,278	4,655,371	4,701,924	4,748,944	4,796,433	4,844,397	4,892,841	4,941,770	4,991,187
Pender	713,599	727,871	742,429	757,277	772,423	787,871	803,629	819,701	836,095	852,817
Total	**11,080,378**	**11,235,457**	**11,392,914**	**11,552,788**	**11,715,118**	**11,879,945**	**12,047,308**	**12,217,248**	**12,389,807**	**12,565,028**
Annual Change	**152,737**	**155,078**	**157,457**	**159,874**	**162,330**	**164,826**	**167,363**	**169,940**	**172,559**	**175,221**
Percent of Total										
Brunswick County	51.18%	51.33%	51.47%	51.61%	51.76%	51.90%	52.04%	52.19%	52.33%	52.47%
Stephan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Praxair, Inc.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CFPUA	42.22%	42.03%	41.85%	41.67%	41.49%	41.31%	41.13%	40.95%	40.77%	40.60%
Pender	6.60%	6.64%	6.67%	6.71%	6.75%	6.79%	6.82%	6.86%	6.90%	6.94%

WILLDAN FINANCIAL SERVICES

Capital Improvement Plan (Allocated to All)

		Test Year	Projected For Fiscal Years Ending June 30,								
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Project Costs (Escalated to Future $)											
New 4th Pump @ King's Bluff PS	ECF	$ 0	$ 3,569,750	$1,258,950	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
New 4th Pump @ King's Bluff PS	ECF	225,000	0	0	0	0	0	0	0	0	0
Rebuild High Service Pump Motors	R&R	0	0	0	0	0	0	0	0	0	0
New Generators	R&R	0	0	0	0	0	0	0	0	0	0
Pig 48" Water Main (KBPS to 3 MG Tank)	R&R	0	0	0	0	0	0	0	0	0	0
Pig Future 54" Water Main	R&R	0	0	0	0	0	0	0	0	0	0
Walkway & Air Backwash Building Rplcmt	R&R	0	2,180,000	0	0	0	0	0	0	0	0
Walkway & Air Backwash Building Rplcmt	R&R	226,360	0	0	0	0	0	0	0	0	0
Replace Raw Water Pumps 1, 4, 5	ECF	0	0	0	0	0	4,589,676	0	0	0	0
New Surge Tank at KBPS	ECF	0	0	0	0	0	0	0	0	0	0
5 ROW Acquisitions	ECF	100,000	109,000	0	0	0	0	0	0	0	0
48-Inch PCCP Inspect. and Pig - Grd Tank	R&R	0	0	2,632,350	210,302	0	0	0	0	0	0
48-Inch PCCP Repairs	R&R	0	327,000	0	0	0	0	0	0	0	0
Operating Capital (FY 23/24)	Oper	735,000	0	0	0	0	0	0	0	0	0
TOTAL PROJECTS (ALLOCATED TO ALL)		**$ 1,286,360**	**$ 6,185,750**	**$3,891,300**	**$ 210,302**	**$ 0**	**$4,589,676**	**$ 0**	**$ 0**	**$ 0**	**$ 0**
Funding Sources											
Pay-Go Capital		$ 1,286,360	$ 436,000	$2,632,350	$ 210,302	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Debt Service		$ 0	$ 5,749,750	$1,258,950	$ 0	$ 0	$4,589,676	$ 0	$ 0	$ 0	$ 0

WILLDAN FINANCIAL SERVICES

Capital Improvement Plan (Allocated to All)

		Projected For Fiscal Years Ending June 30,									
		2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Project Costs (Escalated to Future $)											
New 4th Pump @ King's Bluff PS	ECF	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
New 4th Pump @ King's Bluff PS	ECF	0	0	0	0	0	0	0	0	0	0
Rebuild High Service Pump Motors	R&R	0	456,693	0	0	0	0	0	0	0	0
New Generators	R&R	2,216,955	19,333,328	0	0	0	0	0	0	0	0
Pig 48" Water Main (KBPS to 3 MG Tank)	R&R	0	0	0	0	0	0	2,117,728	0	0	0
Pig Future 54" Water Main	R&R	1,773,564	0	0	0	0	0	0	0	0	0
Walkway & Air Backwash Building Rplcmt	R&R	0	0	0	0	0	0	0	0	0	0
Walkway & Air Backwash Building Rplcmt	R&R	0	0	0	0	0	0	0	0	0	0
Replace Raw Water Pumps 1, 4, 5	ECF	5,320,693	0	0	5,814,064	0	0	0	0	0	0
New Surge Tank at KBPS	ECF	0	0	0	0	0	0	0	0	0	1,253,470
5 ROW Acquisitions	ECF	0	0	0	0	0	0	0	0	0	0
48-Inch PCCP Inspect. and Pig - Grd Tank	R&R	0	0	0	0	0	0	0	0	0	0
48-Inch PCCP Repairs	R&R	0	0	0	0	0	0	0	0	0	0
Operating Capital (FY 23/24)	Oper	0	0	0	0	0	0	0	0	0	0
TOTAL PROJECTS (ALLOCATED TO ALL)		**$ 9,311,212**	**$19,790,021**	**$ 0**	**$5,814,064**	**$ 0**	**$ 0**	**$2,117,728**	**$ 0**	**$ 0**	**$1,253,470**
Funding Sources											
Pay-Go Capital		$ 1,773,564	$ 456,693	$ 0	$ 0	$ 0	$ 0	$2,117,728	$ 0	$ 0	$1,253,470
Debt Service		$ 7,537,648	$19,333,328	$ 0	$5,814,064	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0

WILLDAN FINANCIAL SERVICES

Capital Improvement Plan (Cost Share)

		Test Year	Projected For Fiscal Years Ending June 30,								
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Project Costs (Escalated to Future $)											
Intermediate Booster PS Shelter (Option 5A)	ECF	$ 0	$ 926,500	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Intermediate Booster PS Upgrade (Option 5A)	R&R	0	0	0	0	0	0	0	0	0	1,578,415
New 5th Pump at King's Bluff (Option 5B)	ECF	0	0	0	0	0	0	0	0	0	0
20 MG Ground Tank (Option 6)	ECF	0	0	0	0	0	0	0	0	0	0
7-Mile 48" Parallel Raw Water Main	ECF	15,000,000	16,350,000	17,247,615	0	0	0	0	0	0	0
3-Mile 48" Parallel Raw Water Main	ECF	0	0	0	15,021,563	15,472,209	0	0	0	0	0
100 MGD Reservoir (Possible Grant Funding)	ECF	0	0	0	0	0	0	0	8,115,312	47,366,374	0
TOTAL PROJECTS (COST SHARING)		**$15,000,000**	**$17,276,500**	**$17,247,615**	**$15,021,563**	**$15,472,209**	**$ 0**	**$ 0**	**$ 8,115,312**	**$47,366,374**	**$ 1,578,415**
Funding Sources											
LCFWSA		$ 0	$ 92,650	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 157,841
Brunswick		0	0	0	0	0	0	0	0	0	0
CFPUA		0	730,361	0	0	0	0	0	0	0	1,244,267
Pender		0	103,489	0	0	0	0	0	0	0	176,307
Stephan		0	0	0	0	0	0	0	0	0	0
Praxair		0	0	0	0	0	0	0	0	0	0
Debt Service		0	0	0	0	0	0	0	0	0	0
Grants/ARPA		0	0	0	15,021,563	15,472,209	0	0	8,115,312	47,366,374	0
Already Funded		15,000,000	16,350,000	17,247,615	0	0	0	0	0	0	0

WILLDAN FINANCIAL SERVICES

Capital Improvement Plan (Cost Share)

		Projected For Fiscal Years Ending June 30,									
		2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Project Costs (Escalated to Future $)											
Intermediate Booster PS Shelter (Option 5A)	ECF	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Intermediate Booster PS Upgrade (Option 5A)	R&R	11,084,776	0	0	0	0	0	0	0	0	0
New 5th Pump at King's Bluff (Option 5B)	ECF	0	0	0	0	0	0	0	0	0	0
20 MG Ground Tank (Option 6)	ECF	0	0	5,487,925	18,249,702	0	0	0	0	0	0
7-Mile 48" Parallel Raw Water Main	ECF	0	0	0	0	0	0	0	0	0	0
3-Mile 48" Parallel Raw Water Main	ECF	0	0	0	0	0	0	0	0	0	0
100 MGD Reservoir (Possible Grant Funding)	ECF	0	0	0	0	0	0	0	0	0	0
TOTAL PROJECTS (COST SHARING)		**$11,084,776**	**$ 0**	**$ 5,487,925**	**$18,249,702**	**$ 0**	**$ 0**	**$ 0**	**$ 0**	**$ 0**	**$ 0**
Funding Sources											
LCFWSA		$ 1,108,478	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Brunswick		0	0	2,133,891	7,096,101	0	0	0	0	0	0
CFPUA		8,738,146	0	2,897,307	9,634,787	0	0	0	0	0	0
Pender		1,238,153	0	456,727	1,518,814	0	0	0	0	0	0
Stephan		0	0	0	0	0	0	0	0	0	0
Praxair		0	0	0	0	0	0	0	0	0	0
Debt Service		0	0	0	0	0	0	0	0	0	0
Grants/ARPA		0	0	0	0	0	0	0	0	0	0
Already Funded		0	0	0	0	0	0	0	0	0	0

WILLDAN FINANCIAL SERVICES

Revised Projected Operating Results With Allocation of R&R and ECF Contributions and Expenditures

- The following 2 slides show the revised Projected Operating Results and additional slides that show the allocation of R&R and Enterprise Capital Fund (ECF) Contributions, Expenditures and Remaining Balances by Partner in each fund <u>for those projects in the M&C CIP that are allocated to All Partners</u>

- The allocation of capital costs under the various Cost Share options have negligible impact on the Projected Operating Results in the Rate Study analysis.

- *The Rate Study Analysis/Methodology and Cost Share Methodology should be addressed and approved separately.*

Projected Operating Results Summary

	Test Year	Projected For Fiscal Years Ending June 30,								
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Total Water Charge Revenue	$ 3,720,487	$ 4,365,099	$ 4,826,870	$ 5,300,535	$ 5,786,361	$ 6,284,620	$ 6,795,587	$ 7,319,548	$ 7,747,667	$ 8,186,354
Proposed Water Rate Increase	*$ 0.04*	*$ 0.04*	*$ 0.04*	*$ 0.04*	*$ 0.04*	*$ 0.04*	*$ 0.04*	*$ 0.04*	*$ 0.03*	*$ 0.03*
Effective Increase In Revenues	*11.1%*	*11.5%*	*9.1%*	*8.3%*	*7.7%*	*7.1%*	*6.7%*	*6.3%*	*4.4%*	*4.2%*
Total Other/Non Oper. Revenues	$ 314,718	$ 330,422	$ 346,353	$ 358,670	$ 367,824	$ 377,320	$ 387,152	$ 397,349	$ 407,935	$ 418,909
TOTAL REVENUES	$ 4,035,205	$ 4,695,521	$ 5,173,222	$ 5,659,205	$ 6,154,186	$ 6,661,940	$ 7,182,740	$ 7,716,896	$ 8,155,602	$ 8,605,263
Operating/Administration Expenses	$ 2,551,317	$ 2,728,290	$ 2,895,010	$ 3,034,740	$ 3,145,690	$ 3,261,130	$ 3,381,170	$ 3,506,040	$ 3,635,990	$ 3,771,210
Income Available for Debt Service	$ 1,483,887	$ 1,967,231	$ 2,278,212	$ 2,624,465	$ 3,008,496	$ 3,400,810	$ 3,801,570	$ 4,210,856	$ 4,519,612	$ 4,834,053
Debt Service	$ -	$ 281,198	$ 562,396	$ 562,396	$ 562,396	$ 746,540	$ 930,684	$ 930,684	$ 930,684	$ 930,684
Debt Service Coverage	*N/A*	*7.00*	*4.05*	*4.67*	*5.35*	*4.56*	*4.08*	*4.52*	*4.86*	*5.19*
Total Other Expenses/Transfers	$ (1,480,000)	$ (1,642,650)	$ (1,700,000)	$ (2,050,000)	$ (2,425,000)	$ (2,400,000)	$ (2,700,000)	$ (3,050,000)	$ (3,250,000)	$ (3,657,841)
Net Income	$ 3,887	$ 43,383	$ 15,816	$ 12,069	$ 21,099	$ 254,270	$ 170,886	$ 230,173	$ 338,928	$ 245,528
Total Funds Available-Operating Fund	$ 2,903,887	$ 2,947,270	$ 2,963,086	$ 2,975,155	$ 2,996,254	$ 3,250,524	$ 3,421,410	$ 3,651,583	$ 3,990,511	$ 4,236,039
Working Capital in Enterprise Fund	*15.00*	*14.00*	*13.00*	*13.00*	*12.00*	*13.00*	*13.00*	*14.00*	*14.00*	*15.00*
Total Funds Available-R&R Fund	$ 536,951	$ 1,559,951	$ 377,601	$ 1,367,299	$ 2,967,299	$ 4,167,299	$ 5,167,299	$ 5,467,299	$ 5,467,299	$ 5,467,299
Total Funds Available-Ent. Cap.Fund	$ 381,406	$ 472,406	$ 722,406	$ 1,572,406	$ 2,397,406	$ 3,597,406	$ 5,297,406	$ 8,047,406	$ 11,297,406	$ 14,797,406
Total R&R and Capital Funds	$ 918,357	$ 2,032,357	$ 1,100,007	$ 2,939,705	$ 5,364,705	$ 7,764,705	$ 10,464,705	$ 13,514,705	$ 16,764,705	$ 20,264,705
Working Capital (R&R/Capital Funds)	*5.00*	*10.00*	*5.00*	*13.00*	*22.00*	*31.00*	*41.00*	*51.00*	*60.00*	*70.00*

WILLDAN FINANCIAL SERVICES

Projected Operating Results Summary

	Projected For Fiscal Years Ending June 30,									
	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Total Water Charge Revenue	$ 8,635,841	$ 9,096,365	$ 9,568,168	$ 10,051,498	$ 10,546,605	$ 11,053,749	$ 11,451,369	$ 11,858,158	$ 12,274,311	$ 12,700,028
Proposed Water Rate Increase	*$ 0.03*	*$ 0.03*	*$ 0.03*	*$ 0.03*	*$ 0.03*	*$ 0.03*	*$ 0.02*	*$ 0.02*	*$ 0.02*	*$ 0.02*
Effective Increase In Revenues	*4.1%*	*3.9%*	*3.8%*	*3.6%*	*3.5%*	*3.4%*	*2.2%*	*2.1%*	*2.1%*	*2.0%*
Total Other/Non Oper. Revenues	$ 430,293	$ 442,089	$ 454,330	$ 467,030	$ 480,206	$ 493,873	$ 508,059	$ 522,772	$ 538,036	$ 553,883
TOTAL REVENUES	$ 9,066,134	$ 9,538,454	$ 10,022,499	$ 10,518,527	$ 11,026,811	$ 11,547,623	$ 11,959,428	$ 12,380,930	$ 12,812,347	$ 13,253,911
Operating/Administration Expenses	$ 3,911,890	$ 4,058,270	$ 4,210,630	$ 4,369,210	$ 4,534,290	$ 4,706,100	$ 4,884,970	$ 5,071,210	$ 5,265,140	$ 5,467,100
Income Available for Debt Service	$ 5,154,244	$ 5,480,184	$ 5,811,869	$ 6,149,317	$ 6,492,521	$ 6,841,523	$ 7,074,458	$ 7,309,720	$ 7,547,207	$ 7,786,811
Debt Service	$ 2,008,782	$ 3,086,880	$ 3,086,880	$ 3,320,148	$ 3,553,416	$ 3,553,416	$ 3,553,416	$ 3,553,416	$ 3,553,416	$ 3,553,416
Debt Service Coverage	*2.57*	*1.78*	*1.88*	*1.85*	*1.83*	*1.93*	*1.99*	*2.06*	*2.12*	*2.19*
Total Other Expenses/Transfers	$ (2,958,478)	$ (2,250,000)	$ (2,550,000)	$ (2,650,000)	$ (2,700,000)	$ (2,950,000)	$ (3,300,000)	$ (3,550,000)	$ (3,750,000)	$ (4,000,000)
Net Income	$ 186,984	$ 143,304	$ 174,988	$ 179,169	$ 239,105	$ 338,107	$ 221,042	$ 206,304	$ 243,791	$ 233,395
Total Funds Available-Operating Fund	$ 4,423,023	$ 4,566,327	$ 4,741,315	$ 4,920,484	$ 5,159,590	$ 5,497,696	$ 5,718,738	$ 5,925,042	$ 6,168,833	$ 6,402,228
Working Capital in Enterprise Fund	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*
Total Funds Available-R&R Fund	$ 4,093,735	$ 4,637,042	$ 4,887,042	$ 5,137,042	$ 6,337,042	$ 6,587,042	$ 5,569,314	$ 6,719,314	$ 8,219,314	$ 9,219,314
Total Funds Available-Ent. Cap.Fund	$16,247,406	$17,497,406	$ 19,797,406	$ 22,197,406	$ 23,697,406	$ 26,397,406	$ 28,597,406	$ 30,997,406	$ 33,247,406	$ 34,993,936
Total R&R and Capital Funds	$20,341,141	$22,134,448	$ 24,684,448	$ 27,334,448	$ 30,034,448	$ 32,984,448	$ 34,166,720	$ 37,716,720	$ 41,466,720	$ 44,213,249
Working Capital (R&R/Capital Funds)	*68.00*	*71.00*	*77.00*	*82.00*	*87.00*	*92.00*	*92.00*	*97.00*	*103.00*	*106.00*

WILLDAN FINANCIAL SERVICES

Allocation of R&R Contributions and Expenditures

	Test Year	Projected For Fiscal Years Ending June 30,								
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
R&R Contributions/Expenditures										
Annual Contributions Allocated by Annual Usage										
Brunswick County	$ 364,651	$ 673,299	$ 725,299	$ 602,004	$ 805,009	$ 605,507	$ 506,044	$ 152,249	$ -	$ -
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 349,183	$ 591,988	$ 633,195	$ 521,836	$ 692,868	$ 517,468	$ 429,406	$ 128,277	$ -	$ -
Pender	$ 49,478	$ 84,712	$ 91,506	$ 76,160	$ 102,122	$ 77,025	$ 64,550	$ 19,474	$ -	$ -
Total	$ 763,311	$ 1,350,000	$ 1,450,000	$ 1,200,000	$ 1,600,000	$ 1,200,000	$ 1,000,000	$ 300,000	$ -	$ -
Allocation of R&R Project Costs by Annual Usage										
Brunswick County	$ 108,137	$ 163,088	$ 1,316,719	$ 105,502	$ -	$ -	$ -	$ -	$ -	$ -
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 103,550	$ 143,393	$ 1,149,510	$ 91,453	$ -	$ -	$ -	$ -	$ -	$ -
Pender	$ 14,673	$ 20,519	$ 166,121	$ 13,347	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 226,360	$ 327,000	$ 2,632,350	$ 210,302	$ -	$ -	$ -	$ -	$ -	$ -
Cumulative R&R Contributions Less R&R Expenses										
Brunswick County	$ 256,513	$ 766,725	$ 175,306	$ 671,807	$ 1,476,817	$ 2,082,323	$ 2,588,367	$ 2,740,616	$ 2,740,616	$ 2,740,616
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 245,633	$ 694,228	$ 177,913	$ 608,296	$ 1,301,165	$ 1,818,633	$ 2,248,039	$ 2,376,316	$ 2,376,316	$ 2,376,316
Pender	$ 34,805	$ 98,998	$ 24,383	$ 87,195	$ 189,318	$ 266,343	$ 330,893	$ 350,367	$ 350,367	$ 350,367
Total	$ 536,951	$ 1,559,951	$ 377,601	$ 1,367,299	$ 2,967,299	$ 4,167,299	$ 5,167,299	$ 5,467,299	$ 5,467,299	$ 5,467,299

WILLDAN FINANCIAL SERVICES

Allocation of R&R Contributions and Expenditures

R&R Contributions/Expenditures	Projected For Fiscal Years Ending June 30, 2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Annual Contributions Allocated by Annual Usage										
Brunswick County	$ 204,734	$ 513,276	$ 128,678	$ 129,037	$ 621,095	$ 129,752	$ 572,475	$ 600,131	$ 784,906	$ 524,686
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 168,861	$ 420,345	$ 104,635	$ 104,184	$ 497,918	$ 103,283	$ 452,466	$ 470,968	$ 611,615	$ 405,952
Pender	$ 26,404	$ 66,379	$ 16,687	$ 16,779	$ 80,987	$ 16,965	$ 75,059	$ 78,902	$ 103,479	$ 69,363
Total	$ 400,000	$ 1,000,000	$ 250,000	$ 250,000	$ 1,200,000	$ 250,000	$ 1,100,000	$ 1,150,000	$ 1,500,000	$ 1,000,000
Allocation of R&R Project Costs by Annual Usage										
Brunswick County	$ 907,773	$ 234,410	$ -	$ -	$ -	$ -	$ 1,102,133	$ -	$ -	$ -
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 748,717	$ 191,969	$ -	$ -	$ -	$ -	$ 871,092	$ -	$ -	$ -
Pender	$ 117,074	$ 30,315	$ -	$ -	$ -	$ -	$ 144,504	$ -	$ -	$ -
Total	$ 1,773,564	$ 456,693	$ -	$ -	$ -	$ -	$ 2,117,728	$ -	$ -	$ -
Cumulative R&R Contributions Less R&R Expenses										
Brunswick County	$ 2,037,577	$ 2,316,443	$ 2,445,122	$ 2,574,159	$ 3,195,253	$ 3,325,005	$ 2,795,347	$ 3,395,478	$ 4,180,384	$ 4,705,070
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 1,796,461	$ 2,024,838	$ 2,129,472	$ 2,233,656	$ 2,731,574	$ 2,834,857	$ 2,416,231	$ 2,887,199	$ 3,498,814	$ 3,904,766
Pender	$ 259,697	$ 295,761	$ 312,448	$ 329,228	$ 410,215	$ 427,180	$ 357,735	$ 436,637	$ 540,115	$ 609,478
Total	$ 4,093,735	$ 4,637,042	$ 4,887,042	$ 5,137,042	$ 6,337,042	$ 6,587,042	$ 5,569,314	$ 6,719,314	$ 8,219,314	$ 9,219,314

WILLDAN FINANCIAL SERVICES

Allocation of ECF Contributions and Expenditures

	Test Year	Projected For Fiscal Years Ending June 30,								
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Enterprise Cap. Fund Contributions/Expenditures										
Annual Contributions Allocated by Annual Usage										
Brunswick County	$ 337,466	$ 99,748	$ 125,052	$ 426,419	$ 415,083	$ 605,507	$ 860,275	$ 1,395,615	$ 1,654,074	$ 1,786,373
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 323,151	$ 87,702	$ 109,171	$ 369,634	$ 357,260	$ 517,468	$ 729,990	$ 1,175,873	$ 1,383,773	$ 1,483,874
Pender	$ 45,789	$ 12,550	$ 15,777	$ 53,946	$ 52,657	$ 77,025	$ 109,735	$ 178,512	$ 212,153	$ 229,753
Total	$ 706,406	$ 200,000	$ 250,000	$ 850,000	$ 825,000	$ 1,200,000	$ 1,700,000	$ 2,750,000	$ 3,250,000	$ 3,500,000
Allocation of ECF Project Costs by Annual Usage										
Brunswick County	$ 155,260	$ 54,363	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 148,674	$ 47,798	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Pender	$ 21,066	$ 6,840	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 325,000	$ 109,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Cumulative ECF Contributions Less ECF Expenses										
Brunswick County	$ 182,206	$ 227,591	$ 352,643	$ 779,063	$ 1,194,145	$ 1,799,652	$ 2,659,927	$ 4,055,541	$ 5,709,615	$ 7,495,988
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 174,477	$ 214,382	$ 323,553	$ 693,187	$ 1,050,447	$ 1,567,916	$ 2,297,906	$ 3,473,779	$ 4,857,552	$ 6,341,427
Pender	$ 24,723	$ 30,433	$ 46,210	$ 100,156	$ 152,813	$ 229,838	$ 339,573	$ 518,085	$ 730,239	$ 959,992
Total	$ 381,406	$ 472,406	$ 722,406	$ 1,572,406	$ 2,397,406	$ 3,597,406	$ 5,297,406	$ 8,047,406	$ 11,297,406	$ 14,797,406

WILLDAN FINANCIAL SERVICES

Allocation of ECF Contributions and Expenditures

	Projected For Fiscal Years Ending June 30,									
	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Enterprise Cap. Fund Contributions/Expenditures										
Annual Contributions Allocated by Annual Usage										
Brunswick County	$ 742,162	$ 641,595	$ 1,183,841	$ 1,238,755	$ 776,368	$ 1,401,318	$ 1,144,949	$ 1,252,447	$ 1,177,359	$ 1,574,057
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 612,123	$ 525,432	$ 962,639	$ 1,000,162	$ 622,398	$ 1,115,455	$ 904,933	$ 982,889	$ 917,422	$ 1,217,855
Pender	$ 95,715	$ 82,973	$ 153,520	$ 161,083	$ 101,234	$ 183,227	$ 150,118	$ 164,664	$ 155,218	$ 208,088
Total	$ 1,450,000	$ 1,250,000	$ 2,300,000	$ 2,400,000	$ 1,500,000	$ 2,700,000	$ 2,200,000	$ 2,400,000	$ 2,250,000	$ 3,000,000
Allocation of ECF Project Costs by Annual Usage										
Brunswick County	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 657,678
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 508,848
Pender	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 86,944
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,253,470
Cumulative ECF Contributions Less ECF Expenses										
Brunswick County	$ 8,238,150	$ 8,879,745	$ 10,063,586	$ 11,302,341	$ 12,078,709	$ 13,480,027	$ 14,624,977	$ 15,877,424	$ 17,054,783	$ 17,971,162
Stephan	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Praxair, Inc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CFPUA	$ 6,953,550	$ 7,478,981	$ 8,441,620	$ 9,441,783	$ 10,064,180	$ 11,179,635	$ 12,084,568	$ 13,067,457	$ 13,984,879	$ 14,693,886
Pender	$ 1,055,707	$ 1,138,680	$ 1,292,200	$ 1,453,283	$ 1,554,517	$ 1,737,743	$ 1,887,861	$ 2,052,525	$ 2,207,744	$ 2,328,888
Total	$ 16,247,406	$ 17,497,406	$ 19,797,406	$ 22,197,406	$ 23,697,406	$ 26,397,406	$ 28,597,406	$ 30,997,406	$ 33,247,406	$ 34,993,936

WILLDAN FINANCIAL SERVICES

Review of Cost Share Methodology Options**

- Cost Share Projects – Allocations Analyzed:
  - *Option 1: Allocation Based on Annual Usage (All Partners)*
  - *Option 2: Allocation Based on Capacity (All Partners)*
  - Option 3: Allocation Based on Annual Usage (Without Praxair/Stephan)
  - Option 4: Allocation Based on Capacity (Without Praxair/Stephan)
  - Option 5A: Allocation Based on Annual Usage (Excluding BC, Praxair, Stephan. With LCFWASA)
  - Option 5B: Allocation Based on Annual Usage (All Partners Except Praxair/Stephan. With LCFWASA)
  - Option 6: Based on McKim & Creed Method based on Capacity- Excludes Praxair & Stephan

*** Cost Sharing of Projects Would Only be Needed Until Authority Becomes Self-Sufficient (Monies Set Aside in R&R and Enterprise Capital Funds*

WILLDAN FINANCIAL SERVICES

Summary of Cost Share Project Allocations (%)

Description	Total	Brunswick	CFPUA	Pender	Praxair	Stephan	LCFWASA
Allocation Percentages by Option							
Option 1 (Annual Usage - All Partners)	100.00%	46.39%	44.42%	6.29%	0.22%	2.69%	0.00%
Option 2 (Capacity - All Partners)	100.00%	52.08%	39.58%	6.25%	1.04%	1.04%	0.00%
Option 3 (Annual Usage - No Praxair/Stephan)	100.00%	47.77%	45.75%	6.48%	0.00%	0.00%	0.00%
Option 4 (Capacity - No Praxair/Stephan)	100.00%	53.19%	40.43%	6.38%	0.00%	0.00%	0.00%
Option 5A (Annual Usage - With LCFWASA & Without Brunswick)	100.00%	0.00%	78.83%	11.17%	0.00%	0.00%	10.00%
Option 5B (Annual Usage - With LCFWASA & Brunswick)	100.00%	42.99%	41.18%	5.83%	0.00%	0.00%	10.00%
Option 6 (M&C Utilization Method Based on Capacity)	100.00%	38.88%	52.79%	8.32%	0.00%	0.00%	0.00%

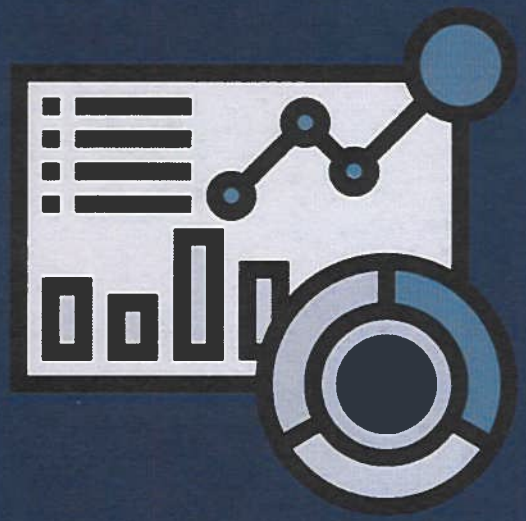
WILLDAN FINANCIAL SERVICES

Summary of Cost Share Options ($)

Description	Total	Brunswick	CFPUA	Pender	Praxair	Stephan	LCFWASA
Allocated Project Costs by Cost Share Option							
Intermediate Booster PS Shelter (Option 5A)							
Option 1 (Annual Usage - All Partners)	$ 926,528	$ 429,757	$ 411,533	$ 58,277	$ 2,038	$ 24,923	$ -
Option 2 (Capacity - All Partners)	$ 926,500	$ 482,549	$ 366,736	$ 57,906	$ 9,654	$ 9,654	$ -
Option 3 (Annual Usage - No Praxair/Stephan)	$ 926,500	$ 442,589	$ 423,874	$ 60,037	$ -	$ -	$ -
Option 4 (Capacity - No Praxair/Stephan)	$ 926,500	$ 492,805	$ 374,584	$ 59,111	$ -	$ -	$ -
Option 5A (Annual Usage - With LCFWASA & Without Brunswick)	$ 926,500	$ -	$ 730,361	$ 103,489	$ -	$ -	$ 92,650
Option 5B (Annual Usage - With LCFWASA & With Brunswick)	$ 926,500	$ 398,330	$ 381,486	$ 54,033	$ -	$ -	$ 92,650
Option 6 (M&C Utilization Method Based on Capacity)	$ 926,500	$ 360,255	$ 489,138	$ 77,107	$ -	$ -	$ -
Intermediate Booster PS Upgrade (Option 5A)							
Option 1 (Annual Usage - All Partners)	$ 12,663,571	$ 5,873,821	$ 5,624,736	$ 796,515	$ 27,859	$ 340,640	$ -
Option 2 (Capacity - All Partners)	$ 12,663,191	$ 6,595,370	$ 5,012,471	$ 791,449	$ 131,950	$ 131,950	$ -
Option 3 (Annual Usage - No Praxair/Stephan)	$ 12,663,191	$ 6,049,206	$ 5,793,410	$ 820,575	$ -	$ -	$ -
Option 4 (Capacity - No Praxair/Stephan)	$ 12,663,191	$ 6,735,551	$ 5,119,728	$ 807,912	$ -	$ -	$ -
Option 5A (Annual Usage - With LCFWASA & Without Brunswick)	$ 12,663,191	$ -	$ 9,982,413	$ 1,414,459	$ -	$ -	$ 1,266,319
Option 5B (Annual Usage - With LCFWASA & With Brunswick)	$ 12,663,191	$ 5,444,286	$ 5,214,069	$ 738,517	$ -	$ -	$ 1,266,319
Option 6 (M&C Utilization Method Based on Capacity)	$ 12,663,191	$ 4,923,877	$ 6,685,432	$ 1,053,882	$ -	$ -	$ -
20 MG Ground Tank (Option 5B)							
Option 1 (Annual Usage - All Partners)	$ 23,738,339	$ 11,010,698	$ 10,543,779	$ 1,493,097	$ 52,223	$ 638,542	$ -
Option 2 (Capacity - All Partners)	$ 23,737,627	$ 12,363,268	$ 9,396,065	$ 1,483,602	$ 247,346	$ 247,346	$ -
Option 3 (Annual Usage - No Praxair/Stephan)	$ 23,737,627	$ 11,339,465	$ 10,859,965	$ 1,538,198	$ -	$ -	$ -
Option 4 (Capacity - No Praxair/Stephan)	$ 23,737,627	$ 12,626,044	$ 9,597,123	$ 1,514,461	$ -	$ -	$ -
Option 5A (Annual Usage - With LCFWASA & Without Brunswick)	$ 23,737,627	$ -	$ 18,712,407	$ 2,651,457	$ -	$ -	$ 2,373,763
Option 5B (Annual Usage - With LCFWASA & With Brunswick)	$ 23,737,627	$ 10,205,518	$ 9,773,968	$ 1,384,378	$ -	$ -	$ 2,373,763
Option 6 (M&C Utilization Method Based on Capacity)	$ 23,737,627	$ 9,229,992	$ 12,532,094	$ 1,975,542	$ -	$ -	$ -

WILLDAN FINANCIAL SERVICES

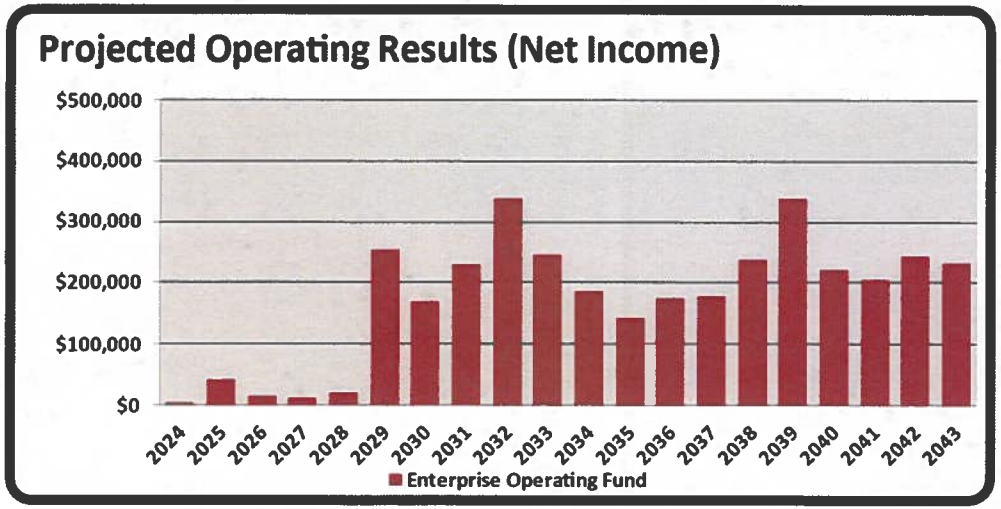
Revised Financial Dashboards

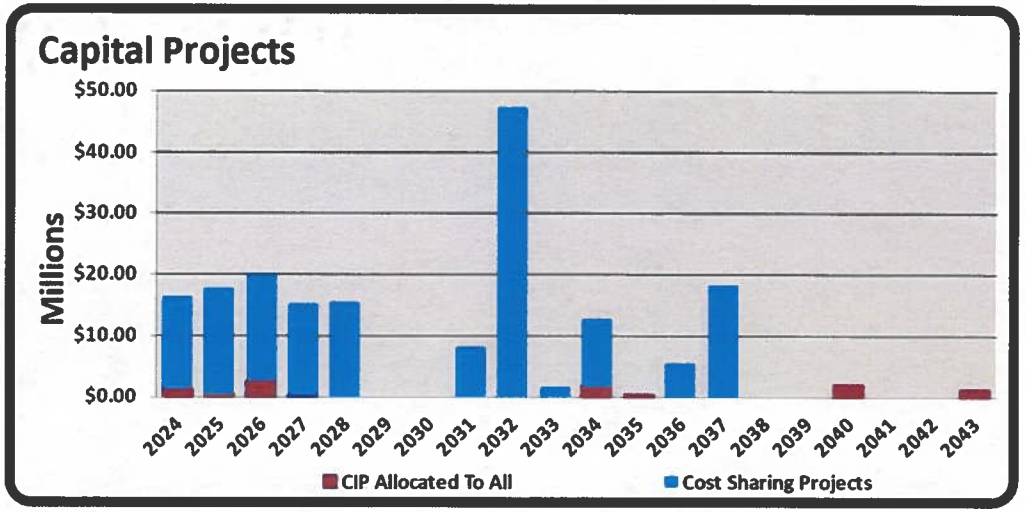


- The Dashboard illustrates multiple Key Performance Indicators & Other Pertinent Information Including:
  - Annual Capital Expenditures
  - Projected Operating Results or Net Income (Revenues less O&M, Debt Service & Transfers)
  - Calculated Debt Service Coverage vs. Required & Targeted Levels (Liquidity)
  - Operating, R&R and Enterprise Capital Fund Balances Over Time (Months Cash on Hand or Liquidity)

WILLDAN FINANCIAL SERVICES

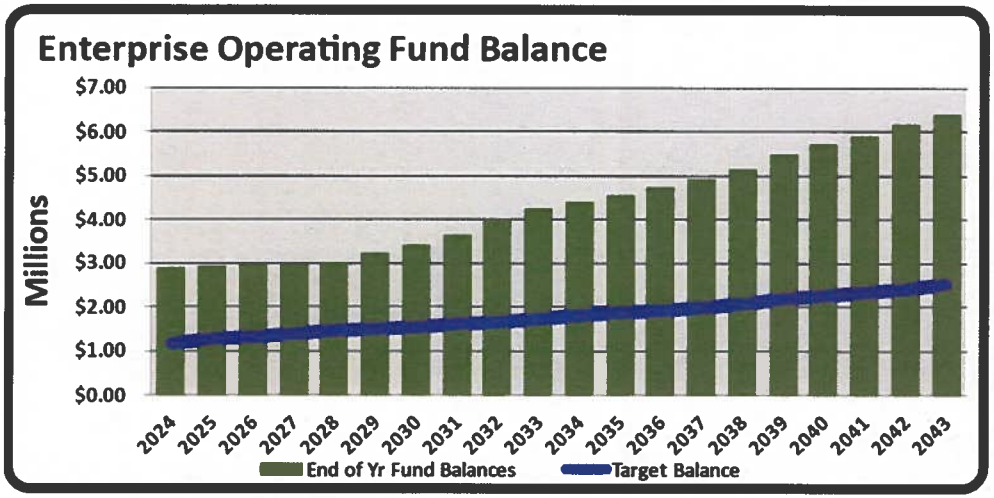
Water System Dashboard

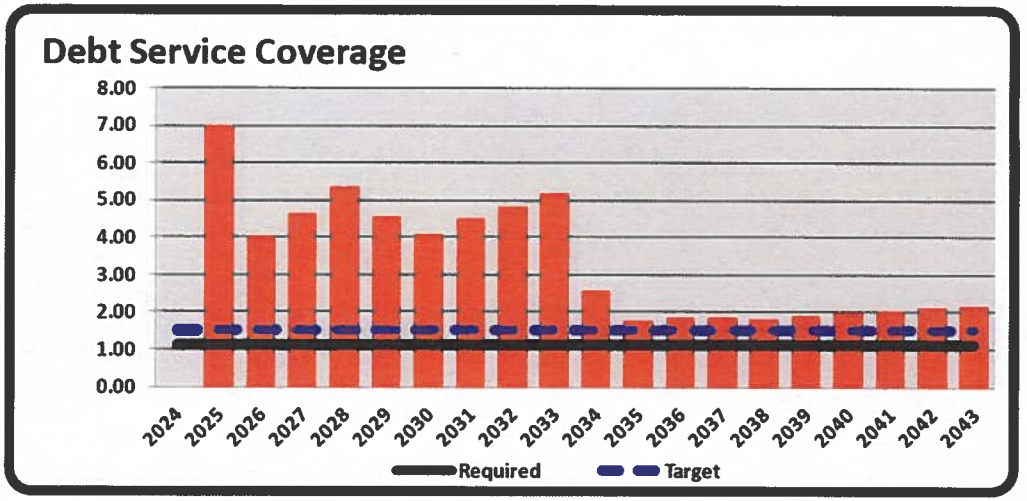




WILLDAN FINANCIAL SERVICES

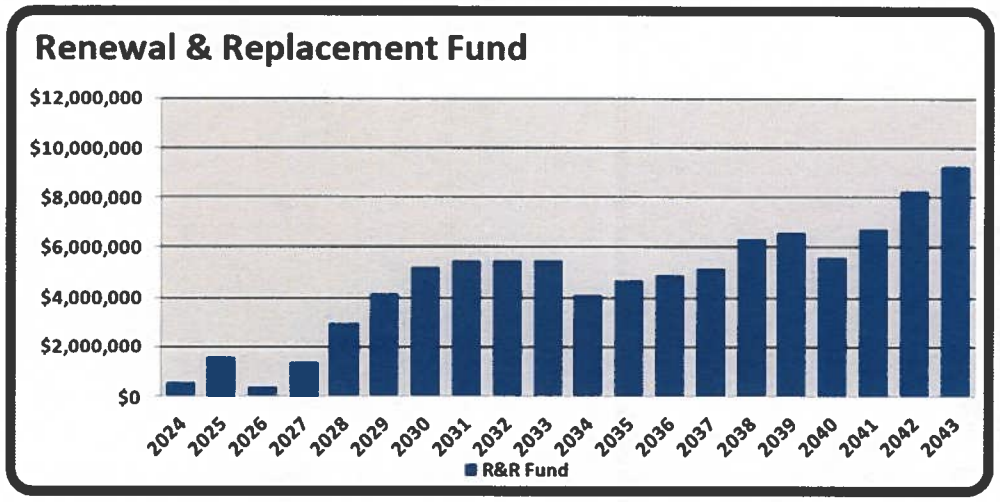
Water System Dashboard

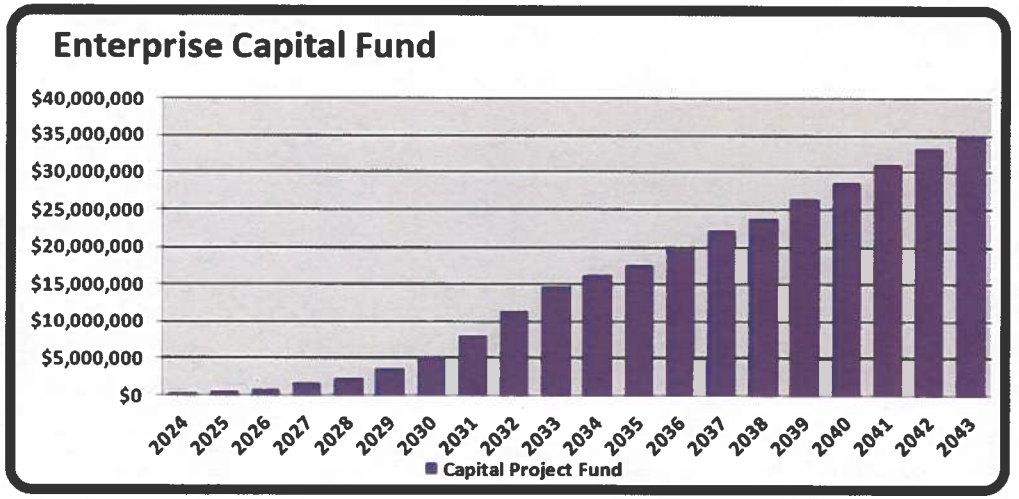




WILLDAN FINANCIAL SERVICES

Water System Dashboard





WILLDAN FINANCIAL SERVICES

Future Steps Following This Study

- Continue to Apply for State/Federal Grants & Matching Funds.
- Continue to Apply for State Revolving Loans with Lower Interest Costs Than Revenue Bonds.
- Hire a Municipal Advisor to Assist in Future Debt Issuances (FY 2024)
- Continue to Monitor Annually/Bi-Annually Future Costs of Capital Projects & Update Rate Study Analysis as Needed
- Allowing for Direct Individual Invoicing to LCFWASA Reducing O&M Overhead and Allowing Authority to Realize Sales Tax Receipts. This is the Same Methodology Used for Bladens Bluff.

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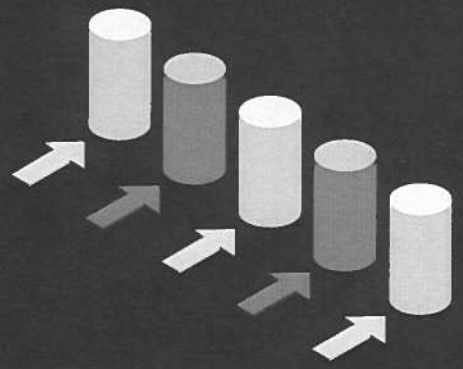
Questions & Next Steps



- Questions?

WILLDAN FINANCIAL SERVICES

Rate Study Assumptions

- Customer Usage Growth as Set Forth Herein (Subject to Change with Future Study Updates)
- Capital Escalations of 9% for FY 2025 and 5% for FY 2026 based on Inflation and then 5% for the Remainder of Projection Period based on Industry Standards
- Future Debt Service Assumptions (Recommend Hiring FA, Especially Prior to Any Debt Issuances):
  - 5% Interest Rate
  - 20-Year Amortization Period
  - Half-Year Payment Year 1 and Full Payment Starting Year 2

WILLDAN FINANCIAL SERVICES

List of Cost Share Allocation Options Analyzed

- Cost Share Projects – Allocations Analyzed:
  - Option 1: Allocation Based on Annual Usage (All Partners)
  - Option 2: Allocation Based on Capacity (All Partners)
  - Option 3: Allocation Based on Annual Usage (Without Praxair/Stephan)
  - Option 4: Allocation Based on Capacity (Without Praxair/Stephan)
  - Option 5A: Allocation Based on Annual Usage (Excluding BC, Praxair, Stephan. With LCFWASA)
  - Option 5B: Allocation Based on Annual Usage (All Partners Except Praxair/Stephan. With LCFWASA)
  - Option 6: Based on McKim & Creed Method (Capacity)

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Anticipated New Debt Issuances

Allocated to All	
New 4th Pump @ King's Bluff PS	$ 4,828,700
Walkway & Air Backwash Building Rplcmt	$ 2,180,000
New Generators	$ 25,085,210
Replace Raw Water Pump 1	$ 4,769,647
Replace Raw Water Pump 4	$ 6,087,412
Replace Raw Water Pump 5	$ 7,046,940
Cost Share Project	
100 MGD Reservoir (Possible Grant Funding)	$ 60,911,367

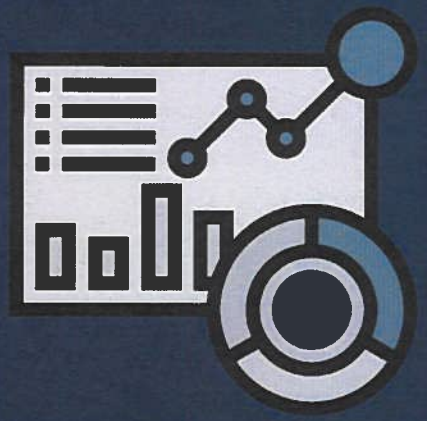
WILLDAN FINANCIAL SERVICES

Specific Changes to Assumptions

- Assumed the 100 MGD Reservoir is Grant Funded
- Lowered Labor Escalator from 5% to 4% Beginning in FY 2028
- Lowered General Inflation Factor from 5% to 3% Beginning in FY 2028
- Lowered Chemical & Electric Cost Escalator from 7% to 4% Beginning in FY 2028
- Adjusted Consumption for Praxair and Stephan for Budget Year 2024 and Later Years based on Prior Year's Consumption
- Praxair & Stephan Not Part of Recommended Cost Share Options But Rather Charge Them a Differential Rate

WILLDAN FINANCIAL SERVICES

LCFWSA Funds and Target Levels to Achieve



- Enterprise Operating Fund:
  - Maintain Positive Ending Annual Balance from Operations and in EOF
- R&R Fund:
  - Build Up Balance to Approx. $3 Million by Year 5 (FY 2029) and $5 Million by Year 10 (FY 2034)
  - By Maintaining Higher R&R Balances, It Will Reduce & Eventually Eliminate the Need to Ask Members for Periodic Financial Contributions for Ongoing R&R/Emergency Expenditures When Required
- Enterprise Capital Fund:
  - Build Up Balance to Approx. $10 Million by Year 10 (FY 2034) to Enable LCFWASA to Fund Upfront Engineering and Project Costs

WILLDAN FINANCIAL SERVICES

Lower Cape Fear Water & Sewer Authority
Rate Study-Cost Share Methodology Meeting
October 23rd, 2023

The meeting was held at the Authority's office located at 1107 New Pointe Boulevard, Suite 17, Leland, North Carolina.

Present: Norwood Blanchard, Patrick DeVane, Chris Smith, Frank Williams, and Rob Zapple

Present by Virtual Attendance: Charlie Rivenbark

Staff: Tim H. Holloman, Executive Director; Matthew Nichols, General Counsel; and Danielle Hertzog, Financial Administration Assistant

Guests Present: John Nichols, Brunswick County Public Utilities Director; Aaron Smith, Brunswick County Director of Fiscal Operations; Anthony Colon, Pender County Utilities Director of Utilities; James Proctor, Pender County Utilities Deputy Director of Utilities; and Ken Waldroup, Cape Fear Public Utility Authority Executive Director

Guests Virtual Attendance: Jess Powell P.E., McKim & Creed and Richard McClung, Willdan Financial Services

Rate Study-Cost Share Methodology Presentation by Richard McClung

The presentation is attached to the minutes.

Executive Director Holloman advised that every three to five years, we review current rates and the rate study to see if any adjustments need to be made. Per request of the board, in November 2023, the LCFWASA Board Meeting will have two resolutions to consider, the first being to approve the Rate Study Methodology, and the second will be the cost-study methodology. This resolution will not bind the board at any rate each year. It is just stating the board agrees this is a good policy to follow. Option 6 (Based on McKim & Creed Method based on Capacity- Excluding Praxair & Stephan) was agreed on for Cost Sharing Projects. For Renewal and Replacement projects, John Nichols would like option 6 with a ledger breakdown of how collected funds will be split.

Brunswick County Utilities Comments

Aaron Smith would like an annual analysis of Praxair and Stepan to confirm the rate they are being charged is enough to cover their share of the capital projects. Frank Williams communicated that we might need an operating agreement if the partners want to pay it upfront or as required. John Nichols stated if we have an operating agreement or memorandum of understanding, we use the McKim & Creeds utilization approach. John Nichols advised Brunswick County that the best way for methodology is with the utilization rate if it is applied to every part of the rate study.

Cape Fear Public Utilities Authority Comments

Ken Waldroup advised he sees this plan as a tariff from Duke Progress. All partners are paying their share to maintain the infrastructure that serves all. Ken stated that for common infrastructure, he thinks it is preferred to appropriate cost based on how much water individuals' partners use. CPFUA has customers two miles from the water treatment plant and twenty miles from it, but they pay the same amount since they both benefit from it. Mr. Waldroup advised that Brunswick County has the most utilization currently, but CFPUA infrastructure is an aging system, and therefore, their utilization will increase. Director Rob Zapple stated we get our power as a collaboration as a regional authority, and he remembers back in 2016, when LCFWASA did not have the money after Hurricane Matthew, Executive Director Betz came to New Hanover County to ask for money to complete repairs need after the hurricane. Director Zapple does not want LCFWASA back in the same situation again. Ken advised that we revisit the rate study annually for the first few years and then go to every ten years.

Pender County Utilities Comments

Anthony Colon wants to confirm that once this rate study is approved, LCFWASA will not come back asking for additional money to cover expenses. Mr. Colon advised that after Ken's statement about the CFPUA statement, where all customers benefit from the water treatment plant, he completely agrees with that statement. Anthony also agreed with annual reviews but would like a full review every five years.

Exhibit 2
Lower Cape Fear WASA
2023 Rate Study
Annual Flows & Revenues

	Historical For Fiscal Years Ended June 30,										Estimated
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Usage (in Kgals)											
Brunswick County	4,104,862	4,085,693	4,138,451	4,236,976	4,502,325	4,818,150	5,157,008	5,095,815	5,246,138	5,510,004	5,710,245
Stephan	531,090	453,240	212,043	182,598	122,460	150,961	287,950	202,660	119,574	306,850	397,941
Praxair, Inc.	13,890	18,363	15,346	15,317	15,171	13,671	10,685	8,137	7,686	7,586	15,581
CFPUA	4,038,823	3,846,216	4,004,487	3,970,821	4,055,680	4,406,808	4,601,557	3,834,778	4,058,426	4,011,323	4,793,236
Pender	242,710	356,715	377,767	425,444	436,477	498,699	570,200	583,988	580,928	574,595	568,801
Total	**8,931,374**	**8,760,227**	**8,748,093**	**8,831,157**	**9,132,113**	**9,888,288**	**10,627,400**	**9,725,379**	**10,012,751**	**10,410,358**	**11,485,804**
Annual Change (Gals)	***N/A***	***(171,148)***	***(12,133)***	***83,063***	***300,957***	***756,175***	***739,111***	***(902,020)***	***287,372***	***397,606***	***1,075,446***
Annual Change (%)		***-1.9%***	***-0.1%***	***0.9%***	***3.4%***	***8.3%***	***7.5%***	***-8.5%***	***3.0%***	***4.0%***	***10.3%***
Annual % Change											**5-Yr CAGR**
Brunswick County	-	-0.47%	1.29%	2.38%	6.26%	7.01%	7.03%	-1.19%	2.95%	5.03%	***2.72%***
Stephan	-	-14.66%	-53.22%	-13.89%	-32.93%	23.27%	90.75%	-29.62%	-41.00%	156.62%	***0.00%***
Praxair, Inc.	-	32.20%	-16.43%	-0.19%	-0.95%	-9.89%	-21.84%	-23.84%	-5.55%	-1.31%	***0.00%***
CFPUA	-	-4.77%	4.11%	-0.84%	2.14%	8.66%	4.42%	-16.66%	5.83%	-1.16%	***-1.86%***
Pender	-	46.97%	5.90%	12.62%	2.59%	14.26%	14.34%	2.42%	-0.52%	-1.09%	***2.87%***
Total	-	**-1.92%**	**-0.14%**	**0.95%**	**3.41%**	**8.28%**	**7.47%**	**-8.49%**	**2.95%**	**3.97%**	***1.03%***
Rate											
Brunswick County	$ 0.2617	$ 0.2617	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.3300	$ 0.3600
Stephan	$ 0.2617	$ 0.2617	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.3300	$ 0.3600
Praxair, Inc.	$ 0.2617	$ 0.2617	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.3300	$ 0.3600
CFPUA	$ 0.2617	$ 0.2617	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.3300	$ 0.3600
Pender	$ 0.2617	$ 0.2617	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.2717	$ 0.3300	$ 0.3600
Billed Revenue											
Brunswick County	$ 1,074,242	$ 1,069,226	$ 1,124,417	$ 1,151,187	$ 1,223,282	$ 1,309,091	$ 1,401,159	$ 1,384,533	$ 1,425,376	$ 1,818,301	$ 2,055,688
Stephan	$ 138,986	$ 118,613	$ 57,612	$ 49,612	$ 33,272	$ 41,016	$ 78,236	$ 55,063	$ 32,488	$ 101,260	$ 143,259
Praxair, Inc.	$ 3,635	$ 4,805	$ 4,170	$ 4,162	$ 4,122	$ 3,714	$ 2,903	$ 2,211	$ 2,088	$ 2,503	$ 5,609
CFPUA	$ 1,056,960	$ 1,006,555	$ 1,088,019	$ 1,078,872	$ 1,101,928	$ 1,197,330	$ 1,250,243	$ 1,041,909	$ 1,102,674	$ 1,323,736	$ 1,725,565
Pender	$ 63,517	$ 93,352	$ 102,639	$ 115,593	$ 118,591	$ 135,496	$ 154,923	$ 158,670	$ 157,838	$ 189,616	$ 204,768
Total	**$ 2,337,341**	**$ 2,292,551**	**$ 2,376,857**	**$ 2,399,425**	**$ 2,481,195**	**$ 2,686,648**	**$ 2,887,464**	**$ 2,642,386**	**$ 2,720,464**	**$ 3,435,418**	**$ 4,134,889**
Percent of Total Revenue (Excluding Praxair & Stephan)											
Brunswick County											
Stephan											
Praxair, Inc.											
CFPUA											
Pender											
Total											

Exhibit 2
Lower Cape Fear WASA
2023 Rate Study
Annual Flows & Revenues

	Test Year	Projected For Fiscal Years Ending June 30,								
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Usage (In Kgals)	Input from Budget									
Brunswick County	4,314,412	4,745,853	4,827,482	4,910,515	4,994,975	5,080,889	5,168,280	5,257,175	5,347,598	5,439,577
Stephan	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Praxair, Inc.	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
CFPUA	4,131,405	4,172,719	4,214,446	4,256,591	4,299,157	4,342,148	4,385,570	4,429,425	4,473,720	4,518,457
Pender	585,400	597,108	609,050	621,231	633,656	646,329	659,255	672,441	685,889	699,607
Total	9,301,217	9,785,680	9,920,978	10,058,336	10,197,788	10,339,366	10,483,105	10,629,041	10,777,207	10,927,641
Annual Change (Gals)	(2,184,587)	484,463	135,298	137,358	139,451	141,578	143,739	145,935	148,166	150,434
Annual Change (%)	-19.0%	5.2%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
Annual % Change										
Brunswick County	0.00%	10.00%	1.72%	1.72%	1.72%	1.72%	1.72%	1.72%	1.72%	1.72%
Stephan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Praxair, Inc.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CFPUA	0.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Pender	0.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Total	-19.02%	5.21%	1.38%	1.38%	1.39%	1.39%	1.39%	1.39%	1.39%	1.40%
Rate										
Brunswick County	$ 0.4000	$ 0.4400	$ 0.4800	$ 0.5200	$ 0.5600	$ 0.6000	$ 0.6400	$ 0.6800	$ 0.7100	$ 0.7400
Stephan	$ 0.4000	$ 0.6600	$ 0.7200	$ 0.7800	$ 0.8400	$ 0.9000	$ 0.9600	$ 1.0200	$ 1.0650	$ 1.1100
Praxair, Inc.	$ 0.4000	$ 0.6600	$ 0.7200	$ 0.7800	$ 0.8400	$ 0.9000	$ 0.9600	$ 1.0200	$ 1.0650	$ 1.1100
CFPUA	$ 0.4000	$ 0.4400	$ 0.4800	$ 0.5200	$ 0.5600	$ 0.6000	$ 0.6400	$ 0.6800	$ 0.7100	$ 0.7400
Pender	$ 0.4000	$ 0.4400	$ 0.4800	$ 0.5200	$ 0.5600	$ 0.6000	$ 0.6400	$ 0.6800	$ 0.7100	$ 0.7400
Billed Revenue										
Brunswick County	$ 1,725,765	$ 2,088,175	$ 2,317,191	$ 2,553,468	$ 2,797,186	$ 3,048,533	$ 3,307,699	$ 3,574,879	$ 3,796,795	$ 4,025,287
Stephan	$ 100,000	$ 165,000	$ 180,000	$ 195,000	$ 210,000	$ 225,000	$ 240,000	$ 255,000	$ 266,250	$ 277,500
Praxair, Inc.	$ 8,000	$ 13,200	$ 14,400	$ 15,600	$ 16,800	$ 18,000	$ 19,200	$ 20,400	$ 21,300	$ 22,200
CFPUA	$ 1,652,562	$ 1,835,996	$ 2,022,934	$ 2,213,427	$ 2,407,528	$ 2,605,289	$ 2,806,765	$ 3,012,009	$ 3,176,341	$ 3,343,658
Pender	$ 234,160	$ 262,728	$ 292,344	$ 323,040	$ 354,847	$ 387,797	$ 421,924	$ 457,260	$ 486,981	$ 517,709
Total	$ 3,720,487	$ 4,365,099	$ 4,826,870	$ 5,300,535	$ 5,786,361	$ 6,284,620	$ 6,795,587	$ 7,319,548	$ 7,747,667	$ 8,186,354
Percent of Total Revenue (Excluding Praxair & Stephan)										
Brunswick County	47.77%	49.87%	50.02%	50.17%	50.31%	50.46%	50.60%	50.75%	50.89%	51.04%
Stephan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Praxair, Inc.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CFPUA	45.75%	43.85%	43.67%	43.49%	43.30%	43.12%	42.94%	42.76%	42.58%	42.40%
Pender	6.48%	6.27%	6.31%	6.35%	6.38%	6.42%	6.45%	6.49%	6.53%	6.56%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Exhibit 2
Lower Cape Fear WASA
2023 Rate Study
Annual Flows & Revenues

	Projected For Fiscal Years Ending June 30,									
	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Usage (In Kgals)										
Brunswick County	5,533,138	5,628,307	5,725,114	5,823,586	5,923,752	6,025,641	6,129,282	6,234,705	6,341,942	6,451,024
Stephan	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Praxair, Inc.	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
CFPUA	4,563,641	4,609,278	4,655,371	4,701,924	4,748,944	4,796,433	4,844,397	4,892,841	4,941,770	4,991,187
Pender	713,599	727,871	742,429	757,277	772,423	787,871	803,629	819,701	836,095	852,817
Total	**11,080,378**	**11,235,457**	**11,392,914**	**11,552,788**	**11,715,118**	**11,879,945**	**12,047,308**	**12,217,248**	**12,389,807**	**12,565,028**
Annual Change (Gals)	**152,737**	**155,078**	**157,457**	**159,874**	**162,330**	**164,826**	**167,363**	**169,940**	**172,559**	**175,221**
Annual Change (%)	**1.4%**	**1.4%**	**1.4%**	**1.4%**	**1.4%**	**1.4%**	**1.4%**	**1.4%**	**1.4%**	**1.4%**
Annual % Change										
Brunswick County	1.72%	1.72%	1.72%	1.72%	1.72%	1.72%	1.72%	1.72%	1.72%	1.72%
Stephan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Praxair, Inc.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CFPUA	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Pender	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Total	**1.40%**	**1.40%**	**1.40%**	**1.40%**	**1.41%**	**1.41%**	**1.41%**	**1.41%**	**1.41%**	**1.41%**
Rate										
Brunswick County	$ 0.7700	$ 0.8000	$ 0.8300	$ 0.8600	$ 0.8900	$ 0.9200	$ 0.9400	$ 0.9600	$ 0.9800	$ 1.0000
Stephan	$ 1.1550	$ 1.2000	$ 1.2450	$ 1.2900	$ 1.3350	$ 1.3800	$ 1.4100	$ 1.4400	$ 1.4700	$ 1.5000
Praxair, Inc.	$ 1.1550	$ 1.2000	$ 1.2450	$ 1.2900	$ 1.3350	$ 1.3800	$ 1.4100	$ 1.4400	$ 1.4700	$ 1.5000
CFPUA	$ 0.7700	$ 0.8000	$ 0.8300	$ 0.8600	$ 0.8900	$ 0.9200	$ 0.9400	$ 0.9600	$ 0.9800	$ 1.0000
Pender	$ 0.7700	$ 0.8000	$ 0.8300	$ 0.8600	$ 0.8900	$ 0.9200	$ 0.9400	$ 0.9600	$ 0.9800	$ 1.0000
Billed Revenue										
Brunswick County	$ 4,260,516	$ 4,502,646	$ 4,751,845	$ 5,008,284	$ 5,272,139	$ 5,543,589	$ 5,761,525	$ 5,985,317	$ 6,215,103	$ 6,451,024
Stephan	$ 288,750	$ 300,000	$ 311,250	$ 322,500	$ 333,750	$ 345,000	$ 352,500	$ 360,000	$ 367,500	$ 375,000
Praxair, Inc.	$ 23,100	$ 24,000	$ 24,900	$ 25,800	$ 26,700	$ 27,600	$ 28,200	$ 28,800	$ 29,400	$ 30,000
CFPUA	$ 3,514,004	$ 3,687,422	$ 3,863,958	$ 4,043,655	$ 4,226,560	$ 4,412,718	$ 4,553,733	$ 4,697,128	$ 4,842,934	$ 4,991,187
Pender	$ 549,471	$ 582,297	$ 616,216	$ 651,258	$ 687,456	$ 724,842	$ 755,411	$ 786,913	$ 819,373	$ 852,817
Total	**$ 8,635,841**	**$ 9,096,365**	**$ 9,568,168**	**$ 10,051,498**	**$ 10,546,605**	**$ 11,053,749**	**$ 11,451,369**	**$ 11,858,158**	**$ 12,274,311**	**$ 12,700,028**
Percent of Total Revenue (Excluding Praxair & Stephan)										
Brunswick County	51.18%	51.33%	51.47%	51.61%	51.76%	51.90%	52.04%	52.19%	52.33%	52.47%
Stephan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Praxair, Inc.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CFPUA	42.22%	42.03%	41.85%	41.67%	41.49%	41.31%	41.13%	40.95%	40.77%	40.60%
Pender	6.60%	6.64%	6.67%	6.71%	6.75%	6.79%	6.82%	6.86%	6.90%	6.94%
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Exhibit 3
Lower Cape Fear WASA
Kings Bluff Raw Water Facilities
Annual Capital Projects

Project No.	Description	Type	Funding Source	20-Year Total	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034
	R&R Capital Cost Escalator					*0.0%*	*9.0%*	*5.0%*	*5.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
	Major Capital Facility Cost Escalator					*0.0%*	*9.0%*	*5.0%*	*5.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
					Lower Cape Fear Water and Sewer Authority Projects (Allocated Across All LCF Customer Base)											
KB 1	New 4th Pump @ King's Bluff PS	ECF	Debt Service	$ 4,828,700		$ -	$ 3,569,750	$ 1,258,950								
KB 1	New 4th Pump @ King's Bluff PS	ECF	Pay-Go Capital	$ 225,000		$ 225,000										
KB 2	Rebuild High Service Pump Motors	R&R	Pay-Go Capital	$ 456,693												
KB 3	New Generators	R&R	Debt Service	$ 21,550,283												$ 2,216,955
KB 4	Pig 48" Water Main (KBPS to 3 MG Tank)	R&R	Pay-Go Capital	$ 2,117,728												
KB 5	Pig Future 54" Water Main	R&R	Pay-Go Capital	$ 1,773,564												$ 1,773,564
KB 6	Walkway & Air Backwash Building Rplcmt	R&R	Debt Service	$ 2,180,000		$ -	$ 2,180,000									
KB 6	Walkway & Air Backwash Building Rplcmt	R&R	Pay-Go Capital	$ 226,360		$ 226,360										
KB 7	Replace Raw Water Pumps 1, 4, 5	ECF	Debt Service	$ 15,724,433							$ 4,589,676					$ 5,320,693
KB 8	New Surge Tank at KBPS	ECF	Pay-Go Capital	$ 1,253,470												
KB 9	5 ROW Acquisitions	ECF	Pay-Go Capital	$ 309,000	$ 100,000	$ 100,000	$ 109,000									
KB 10	48-Inch PCCP Inspect. and Pig - Grd Tank	R&R	Pay-Go Capital	$ 2,842,652				$ 2,632,350	$ 210,302							
KB 11	48-Inch PCCP Repairs	R&R	Pay-Go Capital	$ 327,000			$ 327,000									
	Operating Capital (FY 23/24)	Oper	Pay-Go Capital	$ 735,000		$ 735,000										
	TOTAL PROJECTS (ALLOCATED TO ALL)			$ 54,549,884	$ 100,000	$ 1,286,360	$ 6,185,750	$ 3,891,300	$ 210,302	$ -	$ 4,589,676	$ -	$ -	$ -	$ -	$ 9,311,212
					Sources of Funding											
	Pay-Go Capital			$ 10,266,468	$ 100,000	$ 1,286,360	$ 436,000	$ 2,632,350	$ 210,302	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,773,564
	Debt Service			$ 44,283,416	$ -	$ -	$ 5,749,750	$ 1,258,950	$ -	$ -	$ 4,589,676	$ -	$ -	$ -	$ -	$ 7,537,648
	TOTAL FUNDING SOURCES			$ 54,549,884	$ 100,000	$ 1,286,360	$ 6,185,750	$ 3,891,300	$ 210,302	$ -	$ 4,589,676	$ -	$ -	$ -	$ -	$ 9,311,212
	Renewal & Replacement Projects (Pay Go)				$ -	$ 226,360	$ 327,000	$ 2,632,350	$ 210,302	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,773,564
	Enterprise Capital Fund Projects (Pay Go)				$ 100,000	$ 325,000	$ 109,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
					Cost Sharing Projects											
CS 1	Intermediate Booster PS Shelter **(Option 5A)**	ECF	Pay-Go (Cost Share)	$ 926,500			$ 926,500									
CS 2	Intermediate Booster PS Upgrade **(Option 5A)**	R&R	Pay-Go (Cost Share)	$ 12,663,191											$ 1,578,415	$ 11,084,776
CS 3	New 5th Pump at King's Bluff **(Option 5B)**	ECF	Pay-Go (Cost Share)	$ -												
CS 4	20 MG Ground Tank **(Option 6)**	ECF	Pay-Go (Cost Share)	$ 23,737,627												
CS 5	7-Mile 48" Parallel Raw Water Main	ECF	Already Funded	$ 48,597,615		$ 15,000,000	$ 16,350,000	$ 17,247,615								
CS 6	3-Mile 48" Parallel Raw Water Main	ECF	Grants/ARPA	$ 30,493,772					$ 15,021,563	$ 15,472,209						
CS 7	100 MGD Reservoir (Possible Grant Funding)	ECF	Grants/ARPA	$ 55,481,686									$ 8,115,312	$ 47,366,374		
	TOTAL PROJECTS (COST SHARING)			$171,900,391	$ -	$15,000,000	$17,276,500	$17,247,615	$15,021,563	$15,472,209	$ -	$ -	$ 8,115,312	$47,366,374	$ 1,578,415	$11,084,776
	Pay-Go (Cost Share)				**Sources of Funding**											
	LCFWSA			$ 1,358,969	$ -	$ -	$ 92,650	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 157,841	$ 1,108,478
	Brunswick			$ 9,229,992	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	CFPUA			$ 23,244,868	$ -	$ -	$ 730,361	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,244,267	$ 8,738,146
	Pender			$ 3,493,489	$ -	$ -	$ 103,489	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 176,307	$ 1,238,153
	Stephan			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Praxair			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Debt Service			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Grants/ARPA			$ 85,975,458	$ -	$ -	$ 15,000,000	$ 16,350,000	$ 17,247,615	$ 15,021,563	$ 15,472,209	$ -	$ -	$ 8,115,312	$ 47,366,374	$ -	$ -
	Already Funded			$ 48,597,615	$ -	$ -	$ 15,000,000	$ 16,350,000	$ 17,247,615	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	TOTAL FUNDING SOURCES			$171,900,391	$ -	$15,000,000	$17,276,500	$17,247,615	$15,021,563	$15,472,209	$ -	$ -	$ 8,115,312	$47,366,374	$ 1,578,415	$11,084,776
	TOTAL - ALL CAPITAL PROJECTS			$226,450,275	$ 100,000	$16,286,360	$23,462,250	$21,138,915	$15,231,864	$15,472,209	$ 4,589,676	$ -	$ 8,115,312	$47,366,374	$ 1,578,415	$20,395,988

Exhibit 3
Lower Cape Fear WASA
Kings Bluff Raw Water Facilities
Annual Capital Projects

Project No.	Description	Type	Funding Source	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041	FY2042	FY2043	FY2044	FY2045	FY2046	Grand Total
	R&R Capital Cost Escalator			3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
	Major Capital Facility Cost Escalator			3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
				Lower Cape Fear Water and Sewer Authority Projects (Allocated Across All LCF Customer Base)												
KB 1	New 4th Pump @ King's Bluff PS	ECF	Debt Service													$ 4,828,700
KB 1	New 4th Pump @ King's Bluff PS	ECF	Pay-Go Capital													$ 225,000
KB 2	Rebuild High Service Pump Motors	R&R	Pay-Go Capital	$ 456,693												$ 456,693
KB 3	New Generators	R&R	Debt Service	$ 19,333,328												$ 21,550,283
KB 4	Pig 48" Water Main (KBPS to 3 MG Tank)	R&R	Pay-Go Capital						$ 2,117,728							$ 2,117,728
KB 5	Pig Future 54" Water Main	R&R	Pay-Go Capital													$ 1,773,564
KB 6	Walkway & Air Backwash Building Rplcmt	R&R	Debt Service													$ 2,180,000
KB 6	Walkway & Air Backwash Building Rplcmt	R&R	Pay-Go Capital													
KB 7	Replace Raw Water Pumps 1, 4, 5	ECF	Debt Service			$ 5,814,064										$ 15,724,433
KB 8	New Surge Tank at KBPS	ECF	Pay-Go Capital									$ 1,253,470				$ 1,253,470
KB 9	5 ROW Acquisitions	ECF	Pay-Go Capital													$ 309,000
KB 10	48-Inch PCCP Inspect. and Pig - Grd Tank	R&R	Pay-Go Capital													$ 2,842,652
KB 11	48-Inch PCCP Repairs	R&R	Pay-Go Capital													$ 327,000
	Operating Capital (FY 23/24)	Oper	Pay-Go Capital													$ 735,000
	TOTAL PROJECTS (ALLOCATED TO ALL)			$19,790,021	$ -	$ 5,814,064	$ -	$ -	$ 2,117,728	$ -	$ -	$ 1,253,470	$ -	$ -	$ -	$ 54,323,524
				Sources of Funding												
	Pay-Go Capital			$ 456,693	$ -	$ -	$ -	$ -	$ 2,117,728	$ -	$ -	$ 1,253,470	$ -	$ -	$ -	$ 10,266,468
	Debt Service			$ 19,333,328	$ -	$ 5,814,064	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 44,283,416
	TOTAL FUNDING SOURCES			$19,790,021	$ -	$ 5,814,064	$ -	$ -	$ 2,117,728	$ -	$ -	$ 1,253,470	$ -	$ -	$ -	$ 54,549,884
	Renewal & Replacement Projects (Pay Go)			$ 456,693	$ -	$ -	$ -	$ -	$ 2,117,728	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,743,997
	Enterprise Capital Fund Projects (Pay Go)			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,253,470	$ -	$ -	$ -	$ 1,787,470
				Cost Sharing Projects												
CS 1	Intermediate Booster PS Shelter **(Option 5A)**	ECF	Pay-Go (Cost Share)													$ 926,500
CS 2	Intermediate Booster PS Upgrade **(Option 5A)**	R&R	Pay-Go (Cost Share)													$ 12,663,191
CS 3	New 5th Pump at King's Bluff **(Option 5B)**	ECF	Pay-Go (Cost Share)										$ 1,986,268	$ 5,114,641	$ 2,317,955	$ 9,418,865
CS 4	20 MG Ground Tank **(Option 6)**	ECF	Pay-Go (Cost Share)		$ 5,487,925	$ 18,249,702										$ 23,737,627
CS 5	7-Mile 48" Parallel Raw Water Main	ECF	Already Funded													$ 48,597,615
CS 6	3-Mile 48" Parallel Raw Water Main	ECF	Grants/ARPA													$ 30,493,772
CS 7	100 MGD Reservoir (Possible Grant Funding)	ECF	Grants/ARPA													$ 55,481,686
	TOTAL PROJECTS (COST SHARING)			$ -	$ 5,487,925	$18,249,702	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,986,268	$ 5,114,641	$ 2,317,955	$181,319,256
	Pay-Go (Cost Share)			Sources of Funding												
	LCFWSA			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 198,627	$ 511,464	$ 231,796	$ 2,300,856
	Brunswick			$ -	$ 2,133,891	$ 7,096,101	$ -	$ -	$ -	$ -	$ -	$ -	$ 853,956	$ 2,198,938	$ 996,559	$ 13,279,444
	CFPUA			$ -	$ 2,897,307	$ 9,634,787	$ -	$ -	$ -	$ -	$ -	$ -	$ 817,846	$ 2,105,953	$ 954,418	$ 27,123,086
	Pender			$ -	$ 456,727	$ 1,518,814	$ -	$ -	$ -	$ -	$ -	$ -	$ 115,839	$ 298,286	$ 135,183	$ 4,042,798
	Stephan			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Praxair			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Debt Service			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Grants/ARPA			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 85,975,458
	Already Funded			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 48,597,615
	TOTAL FUNDING SOURCES			$ -	$ 5,487,925	$18,249,702	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,986,268	$ 5,114,641	$ 2,317,955	$181,319,256
	TOTAL - ALL CAPITAL PROJECTS			$19,790,021	$ 5,487,925	$24,063,767	$ -	$ -	$ 2,117,728	$ -	$ -	$ 1,253,470	$ 1,986,268	$ 5,114,641	$ 2,317,955	$235,642,780

Exhibit 4
Lower Cape Fear WASA
Projected Operating Results

Line	Description	Projected For Fiscal Year Ending June 30, 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
	Revenues										
	Operating Revenues:										
1	Brunswick County	$ 1,553,188	$ 1,898,341	$ 2,124,092	$ 2,357,047	$ 2,597,387	$ 2,845,298	$ 3,100,968	$ 3,364,592	$ 3,636,367	$ 3,862,100
2	Stephan	90,000	100,000	165,000	180,000	195,000	210,000	225,000	240,000	255,000	266,250
3	Praxair, Inc.	7,200	8,000	13,200	14,400	15,600	16,800	18,000	19,200	20,400	21,300
4	CFPUA	1,487,306	1,669,088	1,854,356	2,043,164	2,235,561	2,431,603	2,631,342	2,834,832	3,042,129	3,208,104
5	Pender	210,744	238,843	267,982	298,191	329,501	361,944	395,553	430,362	466,405	496,721
6	***Proposed Water Rate Increase***	***$ 0.040***	***$ 0.040***	***$ 0.040***	***$ 0.040***	***$ 0.040***	***$ 0.040***	***$ 0.040***	***$ 0.040***	***$ 0.030***	***$ 0.030***
7	***Effective Increase in Revenues***	***11.11%***	***11.52%***	***9.09%***	***8.33%***	***7.69%***	***7.14%***	***6.67%***	***6.25%***	***4.41%***	***4.23%***
8	Additional Revenue Due to Increase	$ 372,049	$ 450,827	$ 402,239	$ 407,733	$ 413,312	$ 418,975	$ 424,724	$ 430,562	$ 327,366	$ 331,879
9	**Total Water Charge Revenue**	$ 3,720,487	$ 4,365,099	$ 4,826,870	$ 5,300,535	$ 5,786,361	$ 6,284,620	$ 6,795,587	$ 7,319,548	$ 7,747,667	$ 8,186,354
	Other Revenues:										
10	Interest	$ 500	$ 550	$ 590	$ 620	$ 640	$ 660	$ 680	$ 700	$ 720	$ 740
11	Fund Balance Appropriated	0	0	0	0	0	0	0	0	0	0
12	Rembursement from BB (% of Admin Expenses)	214,218	229,872	245,763	258,050	267,184	276,660	286,472	296,649	307,215	318,169
13	**Total Other Operating Revenues**	$ 214,718	$ 230,422	$ 246,353	$ 258,670	$ 267,824	$ 277,320	$ 287,152	$ 297,349	$ 307,935	$ 318,909
	Other Non-Operating Revenues:										
14	Sales Tax Revenues	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
15	Miscellaneous	0	0	0	0	0	0	0	0	0	0
16	**Total Other Non Operating Revenues**	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
17	**TOTAL REVENUES**	$ 4,035,205	$ 4,695,521	$ 5,173,222	$ 5,659,205	$ 6,154,186	$ 6,661,940	$ 7,182,740	$ 7,716,896	$ 8,155,602	$ 8,605,263
	Operating/Administration Expenses										
	Operating Expenses										
18	Sales Tax Expense	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
19	Utilities/Energy Kings Bluff	786,589	825,920	867,220	910,580	956,110	1,003,920	1,054,120	1,106,830	1,162,170	1,220,280
20	Contract O & M Kings Bluff	686,749	748,560	800,960	841,010	866,240	892,230	919,000	946,570	974,970	1,004,220
	Administration Expenses										
21	Salaries	203,530	213,710	224,400	235,620	245,040	254,840	265,030	275,630	286,660	298,130
22	Per Diem and Mileage Board Members	64,001	69,760	74,640	78,370	80,720	83,140	85,630	88,200	90,850	93,580
23	Vehicle Allowance	5,200	5,670	6,070	6,370	6,560	6,760	6,960	7,170	7,390	7,610
24	FICA Taxes	20,953	22,000	23,100	24,260	25,470	26,740	28,080	29,480	30,950	32,500
25	Retirement	26,153	27,460	28,830	30,270	31,780	33,370	35,040	36,790	38,630	40,560
26	401K Plan	11,312	11,880	12,470	13,090	13,740	14,430	15,150	15,910	16,710	17,550
27	Miscellaneous Payroll Expenses	2,900	3,050	3,200	3,360	3,530	3,710	3,900	4,100	4,310	4,530
28	Group Insurance	40,176	42,180	44,290	46,500	48,830	51,270	53,830	56,520	59,350	62,320
29	Property and Liability Insurance	103,734	113,070	120,980	127,030	130,840	134,770	138,810	142,970	147,260	151,680
30	Professional Services General	15,000	16,350	17,490	18,360	18,910	19,480	20,060	20,660	21,280	21,920
31	Attorney	50,000	54,500	58,320	61,240	63,080	64,970	66,920	68,930	71,000	73,130
32	Auditor	8,000	8,720	15,000	15,750	16,220	16,710	17,210	17,730	18,260	18,810
33	Engineer	300,000	327,000	349,890	367,380	378,400	389,750	401,440	413,480	425,880	438,660
34	Information Technology	16,000	17,440	18,660	19,590	20,180	20,790	21,410	22,050	22,710	23,390
35	Office Maintenance/Repair/Common Charge	24,000	26,160	27,990	29,390	30,270	31,180	32,120	33,080	34,070	35,090
36	Office Utilities	5,000	5,450	5,830	6,120	6,300	6,490	6,680	6,880	7,090	7,300
37	Office Expenses (telephone, printing, adv)	14,000	15,260	16,330	17,150	17,660	18,190	18,740	19,300	19,880	20,480
38	Office Equipment	10,000	10,900	11,660	12,240	12,610	12,990	13,380	13,780	14,190	14,620
39	Printing and Advertising	5,000	5,450	5,830	6,120	6,300	6,490	6,680	6,880	7,090	7,300
40	Telephone and Internet	3,500	3,820	4,090	4,290	4,420	4,550	4,690	4,830	4,970	5,120
41	Travel and Training	29,000	31,610	33,820	35,510	36,580	37,680	38,810	39,970	41,170	42,410
42	Phone Allowance	520	570	610	640	660	680	700	720	740	760
43	Vehicle Expense	0	0	0	0	0	0	0	0	0	0
44	Miscellaneous Expense	20,000	21,800	23,330	24,500	25,240	26,000	26,780	27,580	28,410	29,260
45	**Total Expenses**	$ 2,551,317	$ 2,728,290	$ 2,895,010	$ 3,034,740	$ 3,145,690	$ 3,261,130	$ 3,381,170	$ 3,506,040	$ 3,635,990	$ 3,771,210
46	**Income Available for Debt Service**	$ 1,483,887	$ 1,967,231	$ 2,278,212	$ 2,624,465	$ 3,008,496	$ 3,400,810	$ 3,801,570	$ 4,210,856	$ 4,519,612	$ 4,834,053

Exhibit 4
Lower Cape Fear WASA
Projected Operating Results

Line	Description	Projected For Fiscal Year Ending June 30, 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
	Debt Service										
47	LCFWSA Capital Projects (Allocated to All)	$ 0	$ 281,198	$ 562,396	$ 562,396	$ 562,396	$ 746,540	$ 930,684	$ 930,684	$ 930,684	$ 930,684
48	Cost Sharing Projects Debt Service	0	0	0	0	0	0	0	0	0	0
49	Future Debt Service #3	0	0	0	0	0	0	0	0	0	0
50	**Total Annual Debt Service-Water**	$ 0	$ 281,198	$ 562,396	$ 562,396	$ 562,396	$ 746,540	$ 930,684	$ 930,684	$ 930,684	$ 930,684
51	**Debt Service Coverage**	*N/A*	*7.00*	*4.05*	*4.67*	*5.35*	*4.56*	*4.08*	*4.52*	*4.86*	*5.19*
52	**Remaining Net Revenue After Debt Service**	$ 1,483,887	$ 1,686,033	$ 1,715,816	$ 2,062,069	$ 2,446,099	$ 2,654,270	$ 2,870,886	$ 3,280,173	$ 3,588,928	$ 3,903,369
	Other Expenses & Transfers In/(Out)										
53	Operating Capital (FY 23/24)	$ (735,000)	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
54	Cost Share Pay-Go (LCF Allocated Portion)	0	(92,650)	0	0	0	0	0	0	0	(157,841)
55	Transfer Out to R&R - Kings Bluff R&R Expense	(420,000)	(1,350,000)	(1,450,000)	(1,200,000)	(1,600,000)	(1,200,000)	(1,000,000)	(300,000)	0	0
56	Transfer Out to Enterprise Capital Fund	(325,000)	(200,000)	(250,000)	(850,000)	(825,000)	(1,200,000)	(1,700,000)	(2,750,000)	(3,250,000)	(3,500,000)
57	Transfer In from R&R Fund	0	0	0	0	0	0	0	0	0	0
58	Transfer In from Enterprise Capital Fund	0	0	0	0	0	0	0	0	0	0
59	**Total Other Expenses/Transfers**	$ (1,480,000)	$ (1,642,650)	$ (1,700,000)	$ (2,050,000)	$ (2,425,000)	$ (2,400,000)	$ (2,700,000)	$ (3,050,000)	$ (3,250,000)	$ (3,657,841)
60	**Remaining Funds Available from Annual Operations (Net Income)**	$ 3,887	$ 43,383	$ 15,816	$ 12,069	$ 21,099	$ 254,270	$ 170,886	$ 230,173	$ 338,928	$ 245,528
	Funds - Balance Activity										
	Enterprise Operating Fund										
61	Beginning Fund Balance	$ 2,900,000	$ 2,903,887	$ 2,947,270	$ 2,963,086	$ 2,975,155	$ 2,996,254	$ 3,250,524	$ 3,421,410	$ 3,651,583	$ 3,990,511
62	Plus Remaining Funds from Operations	3,887	43,383	15,816	12,069	21,099	254,270	170,886	230,173	338,928	245,528
63	**Total Funds Available-Operating Fund**	$ 2,903,887	$ 2,947,270	$ 2,963,086	$ 2,975,155	$ 2,996,254	$ 3,250,524	$ 3,421,410	$ 3,651,583	$ 3,990,511	$ 4,236,039
64	**Working Capital in Enterprise Fund**	*15.00*	*14.00*	*13.00*	*13.00*	*12.00*	*13.00*	*13.00*	*14.00*	*14.00*	*15.00*
	Renewal & Replacement Fund										
65	Beginning Fund Balance	$ 343,311	$ 536,951	$ 1,559,951	$ 377,601	$ 1,367,299	$ 2,967,299	$ 4,167,299	$ 5,167,299	$ 5,467,299	$ 5,467,299
66	Plus: Transfer From Operations	420,000	1,350,000	1,450,000	1,200,000	1,600,000	1,200,000	1,000,000	300,000	0	0
67	Less: R&R Capital Expenses	(226,360)	(327,000)	(2,632,350)	(210,302)	0	0	0	0	0	0
68	**Total Funds Available-R&R Fund**	$ 536,951	$ 1,559,951	$ 377,601	$ 1,367,299	$ 2,967,299	$ 4,167,299	$ 5,167,299	$ 5,467,299	$ 5,467,299	$ 5,467,299
	Enterprise Capital Fund (ECF)										
69	Beginning Fund Balance	$ 381,406	$ 381,406	$ 472,406	$ 722,406	$ 1,572,406	$ 2,397,406	$ 3,597,406	$ 5,297,406	$ 8,047,406	$ 11,297,406
70	Plus: Transfer From Operations	325,000	200,000	250,000	850,000	825,000	1,200,000	1,700,000	2,750,000	3,250,000	3,500,000
71	Less: Enterprise Capital Project Expenses	(325,000)	(109,000)	0	0	0	0	0	0	0	0
72	**Total Funds Available-Ent. Cap.Fund**	$ 381,406	$ 472,406	$ 722,406	$ 1,572,406	$ 2,397,406	$ 3,597,406	$ 5,297,406	$ 8,047,406	$ 11,297,406	$ 14,797,406
73	**Total R&R and Capital Funds**	$ 918,357	$ 2,032,357	$ 1,100,007	$ 2,939,705	$ 5,364,705	$ 7,764,705	$ 10,464,705	$ 13,514,705	$ 16,764,705	$ 20,264,705
74	**Working Capital (R&R/Capital Funds)**	*5.00*	*10.00*	*5.00*	*13.00*	*22.00*	*31.00*	*41.00*	*51.00*	*60.00*	*70.00*

Exhibit 4
Lower Cape Fear WASA
Projected Operating Results

Line	Description	Projected For Fiscal Year Ending June 30, 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
	R&R Contributions by Partner										
	Annual Contributions Allocated by Annual Usage										
75	Brunswick County	$ 364,651	$ 673,299	$ 725,299	$ 602,004	$ 805,009	$ 605,507	$ 506,044	$ 152,249	$ 0	$ 0
76	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
77	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
78	CFPUA	$ 349,183	$ 591,988	$ 633,195	$ 521,836	$ 692,868	$ 517,468	$ 429,406	$ 128,277	$ 0	$ 0
79	Pender	$ 49,478	$ 84,712	$ 91,506	$ 76,160	$ 102,122	$ 77,025	$ 64,550	$ 19,474	$ 0	$ 0
80	Total	$ 763,311	$ 1,350,000	$ 1,450,000	$ 1,200,000	$ 1,600,000	$ 1,200,000	$ 1,000,000	$ 300,000	$ 0	$ 0
	Allocation of R&R Project Costs by Annual Usage										
81	Brunswick County	$ 108,137	$ 163,088	$ 1,316,719	$ 105,502	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
82	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
83	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
84	CFPUA	$ 103,550	$ 143,393	$ 1,149,510	$ 91,453	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
85	Pender	$ 14,673	$ 20,519	$ 166,121	$ 13,347	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
86	Total	$ 226,360	$ 327,000	$ 2,632,350	$ 210,302	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	Cumulative R&R Contributions Less R&R Expenses										
87	Brunswick County	$ 256,513	$ 766,725	$ 175,306	$ 671,807	$ 1,476,817	$ 2,082,323	$ 2,588,367	$ 2,740,616	$ 2,740,616	$ 2,740,616
88	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
89	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
90	CFPUA	$ 245,633	$ 694,228	$ 177,913	$ 608,296	$ 1,301,165	$ 1,818,633	$ 2,248,039	$ 2,376,316	$ 2,376,316	$ 2,376,316
91	Pender	$ 34,805	$ 98,998	$ 24,383	$ 87,195	$ 189,318	$ 266,343	$ 330,893	$ 350,367	$ 350,367	$ 350,367
92	Total	$ 536,951	$ 1,559,951	$ 377,601	$ 1,367,299	$ 2,967,299	$ 4,167,299	$ 5,167,299	$ 5,467,299	$ 5,467,299	$ 5,467,299
93	*Check*	*$ 536,951*	*$ 1,559,951*	*$ 377,601*	*$ 1,367,299*	*$ 2,967,299*	*$ 4,167,299*	*$ 5,167,299*	*$ 5,467,299*	*$ 5,467,299*	*$ 5,467,299*
	Enterprise Capital Contributions by Partner										
	Annual Contributions Allocated by Annual Usage										
94	Brunswick County	$ 337,466	$ 99,748	$ 125,052	$ 426,419	$ 415,083	$ 605,507	$ 860,275	$ 1,395,615	$ 1,654,074	$ 1,786,373
95	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
96	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
97	CFPUA	$ 323,151	$ 87,702	$ 109,171	$ 369,634	$ 357,260	$ 517,468	$ 729,990	$ 1,175,873	$ 1,383,773	$ 1,483,874
98	Pender	$ 45,789	$ 12,550	$ 15,777	$ 53,946	$ 52,657	$ 77,025	$ 109,735	$ 178,512	$ 212,153	$ 229,753
99	Total	$ 706,406	$ 200,000	$ 250,000	$ 850,000	$ 825,000	$ 1,200,000	$ 1,700,000	$ 2,750,000	$ 3,250,000	$ 3,500,000
	Allocation of ECF Project Costs by Annual Usage										
100	Brunswick County	$ 155,260	$ 54,363	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
101	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
102	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
103	CFPUA	$ 148,674	$ 47,798	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
104	Pender	$ 21,066	$ 6,840	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
105	Total	$ 325,000	$ 109,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	Cumulative ECF Contributions Less ECF Expenses										
106	Brunswick County	$ 182,206	$ 227,591	$ 352,643	$ 779,063	$ 1,194,145	$ 1,799,652	$ 2,659,927	$ 4,055,541	$ 5,709,615	$ 7,495,988
107	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
108	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
109	CFPUA	$ 174,477	$ 214,382	$ 323,553	$ 693,187	$ 1,050,447	$ 1,567,916	$ 2,297,906	$ 3,473,779	$ 4,857,552	$ 6,341,427
110	Pender	$ 24,723	$ 30,433	$ 46,210	$ 100,156	$ 152,813	$ 229,838	$ 339,573	$ 518,085	$ 730,239	$ 959,992
111	Total	$ 381,406	$ 472,406	$ 722,406	$ 1,572,406	$ 2,397,406	$ 3,597,406	$ 5,297,406	$ 8,047,406	$ 11,297,406	$ 14,797,406
112	*Check*	*$ 381,406*	*$ 472,406*	*$ 722,406*	*$ 1,572,406*	*$ 2,397,406*	*$ 3,597,406*	*$ 5,297,406*	*$ 8,047,406*	*$ 11,297,406*	*$ 14,797,406*

Exhibit 4
Lower Cape Fear WASA
Projected Operating Results

Line	Description	Projected For Fiscal Year Ending June 30, 2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
	Revenues										
	Operating Revenues:										
1	Brunswick County	$ 4,094,522	$ 4,333,797	$ 4,580,091	$ 4,833,577	$ 5,094,427	$ 5,362,820	$ 5,638,939	$ 5,860,623	$ 6,088,264	$ 6,322,003
2	Stephan	277,500	288,750	300,000	311,250	322,500	333,750	345,000	352,500	360,000	367,500
3	Praxair, Inc.	22,200	23,100	24,000	24,900	25,800	26,700	27,600	28,200	28,800	29,400
4	CFPUA	3,377,095	3,549,144	3,724,296	3,902,597	4,084,091	4,268,825	4,456,845	4,599,271	4,744,099	4,891,364
5	Pender	528,064	560,461	593,943	628,540	664,284	701,205	739,338	770,519	802,652	835,761
6	*Proposed Water Rate Increase*	*$ 0.030*	*$ 0.030*	*$ 0.030*	*$ 0.030*	*$ 0.030*	*$ 0.030*	*$ 0.020*	*$ 0.020*	*$ 0.020*	*$ 0.020*
7	*Effective Increase In Revenues*	*4.05%*	*3.90%*	*3.75%*	*3.61%*	*3.49%*	*3.37%*	*2.17%*	*2.13%*	*2.08%*	*2.04%*
8	Additional Revenue Due to Increase	$ 336,461	$ 341,114	$ 345,837	$ 350,634	$ 355,504	$ 360,448	$ 243,646	$ 247,045	$ 250,496	$ 254,001
9	**Total Water Charge Revenue**	$ 8,635,841	$ 9,096,365	$ 9,568,168	$ 10,051,498	$ 10,546,605	$ 11,053,749	$ 11,451,369	$ 11,858,158	$ 12,274,311	$ 12,700,028
	Other Revenues:										
10	Interest	$ 760	$ 780	$ 800	$ 820	$ 840	$ 870	$ 900	$ 930	$ 960	$ 990
11	Fund Balance Appropriated	0	0	0	0	0	0	0	0	0	0
12	Rembursement from BB (% of Admin Expenses)	329,533	341,309	353,530	366,210	379,366	393,003	407,159	421,842	437,076	452,893
13	**Total Other Operating Revenues**	$ 330,293	$ 342,089	$ 354,330	$ 367,030	$ 380,206	$ 393,873	$ 408,059	$ 422,772	$ 438,036	$ 453,883
	Other Non-Operating Revenues:										
14	Sales Tax Revenues	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
15	Miscellaneous	0	0	0	0	0	0	0	0	0	0
16	**Total Other Non Operating Revenues**	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
17	**TOTAL REVENUES**	$ 9,066,134	$ 9,538,454	$ 10,022,499	$ 10,518,527	$ 11,026,811	$ 11,547,623	$ 11,959,428	$ 12,380,930	$ 12,812,347	$ 13,253,911
	Operating/Administration Expenses										
	Operating Expenses										
18	Sales Tax Expense	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
19	Utilities/Energy Kings Bluff	1,281,290	1,345,350	1,412,620	1,483,250	1,557,410	1,635,280	1,717,040	1,802,890	1,893,030	1,987,680
20	Contract O & M Kings Bluff	1,034,350	1,065,380	1,097,340	1,130,260	1,164,170	1,199,100	1,235,070	1,272,120	1,310,280	1,349,590
	Administration Expenses										
21	Salaries	310,060	322,460	335,360	348,770	362,720	377,230	392,320	408,010	424,330	441,300
22	Per Diem and Mileage Board Members	96,390	99,280	102,260	105,330	108,490	111,740	115,090	118,540	122,100	125,760
23	Vehicle Allowance	7,840	8,080	8,320	8,570	8,830	9,090	9,360	9,640	9,930	10,230
24	FICA Taxes	34,130	35,840	37,630	39,510	41,490	43,560	45,740	48,030	50,430	52,950
25	Retirement	42,590	44,720	46,960	49,310	51,780	54,370	57,090	59,940	62,940	66,090
26	401K Plan	18,430	19,350	20,320	21,340	22,410	23,530	24,710	25,950	27,250	28,610
27	Miscellaneous Payroll Expenses	4,760	5,000	5,250	5,510	5,790	6,080	6,380	6,700	7,040	7,390
28	Group Insurance	65,440	68,710	72,150	75,760	79,550	83,530	87,710	92,100	96,710	101,550
29	Property and Liability Insurance	156,230	160,920	165,750	170,720	175,840	181,120	186,550	192,150	197,910	203,850
30	Professional Services General	22,580	23,260	23,960	24,680	25,420	26,180	26,970	27,780	28,610	29,470
31	Attorney	75,320	77,580	79,910	82,310	84,780	87,320	89,940	92,640	95,420	98,280
32	Auditor	19,370	19,950	20,550	21,170	21,810	22,460	23,130	23,820	24,530	25,270
33	Engineer	451,820	465,370	479,330	493,710	508,520	523,780	539,490	555,670	572,340	589,510
34	Information Technology	24,090	24,810	25,550	26,320	27,110	27,920	28,760	29,620	30,510	31,430
35	Office Maintenance/Repair/Common Charge	36,140	37,220	38,340	39,490	40,670	41,890	43,150	44,440	45,770	47,140
36	Office Utilities	7,520	7,750	7,980	8,220	8,470	8,720	8,980	9,250	9,530	9,820
37	Office Expenses (telephone, printing, adv)	21,090	21,720	22,370	23,040	23,730	24,440	25,170	25,930	26,710	27,510
38	Office Equipment	15,060	15,510	15,980	16,460	16,950	17,460	17,980	18,520	19,080	19,650
39	Printing and Advertising	7,520	7,750	7,980	8,220	8,470	8,720	8,980	9,250	9,530	9,820
40	Telephone and Internet	5,270	5,430	5,590	5,760	5,930	6,110	6,290	6,480	6,670	6,870
41	Travel and Training	43,680	44,990	46,340	47,730	49,160	50,630	52,150	53,710	55,320	56,980
42	Phone Allowance	780	800	820	840	870	900	930	960	990	1,020
43	Vehicle Expense	0	0	0	0	0	0	0	0	0	0
44	Miscellaneous Expense	30,140	31,040	31,970	32,930	33,920	34,940	35,990	37,070	38,180	39,330
45	**Total Expenses**	$ 3,911,890	$ 4,058,270	$ 4,210,630	$ 4,369,210	$ 4,534,290	$ 4,706,100	$ 4,884,970	$ 5,071,210	$ 5,265,140	$ 5,467,100
46	**Income Available for Debt Service**	$ 5,154,244	$ 5,480,184	$ 5,811,869	$ 6,149,317	$ 6,492,521	$ 6,841,523	$ 7,074,458	$ 7,309,720	$ 7,547,207	$ 7,786,811

Exhibit 4
Lower Cape Fear WASA
Projected Operating Results

Line	Description	Projected For Fiscal Year Ending June 30, 2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
	Debt Service										
47	LCFWSA Capital Projects (Allocated to All)	$ 2,008,782	$ 3,086,880	$ 3,086,880	$ 3,320,148	$ 3,553,416	$ 3,553,416	$ 3,553,416	$ 3,553,416	$ 3,553,416	$ 3,553,416
48	Cost Sharing Projects Debt Service	0	0	0	0	0	0	0	0	0	0
49	Future Debt Service #3	0	0	0	0	0	0	0	0	0	0
50	**Total Annual Debt Service-Water**	$ 2,008,782	$ 3,086,880	$ 3,086,880	$ 3,320,148	$ 3,553,416	$ 3,553,416	$ 3,553,416	$ 3,553,416	$ 3,553,416	$ 3,553,416
51	**Debt Service Coverage**	*2.57*	*1.78*	*1.88*	*1.85*	*1.83*	*1.93*	*1.99*	*2.06*	*2.12*	*2.19*
52	**Remaining Net Revenue After Debt Service**	$ 3,145,462	$ 2,393,304	$ 2,724,988	$ 2,829,169	$ 2,939,105	$ 3,288,107	$ 3,521,042	$ 3,756,304	$ 3,993,791	$ 4,233,395
	Other Expenses & Transfers In/(Out)										
53	Operating Capital (FY 23/24)	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
54	Cost Share Pay-Go (LCF Allocated Portion)	(1,108,478)	0	0	0	0	0	0	0	0	0
55	Transfer Out to R&R - Kings Bluff R&R Expense	(400,000)	(1,000,000)	(250,000)	(250,000)	(1,200,000)	(250,000)	(1,100,000)	(1,150,000)	(1,500,000)	(1,000,000)
56	Transfer Out to Enterprise Capital Fund	(1,450,000)	(1,250,000)	(2,300,000)	(2,400,000)	(1,500,000)	(2,700,000)	(2,200,000)	(2,400,000)	(2,250,000)	(3,000,000)
57	Transfer In from R&R Fund	0	0	0	0	0	0	0	0	0	0
58	Transfer In from Enterprise Capital Fund	0	0	0	0	0	0	0	0	0	0
59	**Total Other Expenses/Transfers**	$ (2,958,478)	$ (2,250,000)	$ (2,550,000)	$ (2,650,000)	$ (2,700,000)	$ (2,950,000)	$ (3,300,000)	$ (3,550,000)	$ (3,750,000)	$ (4,000,000)
60	**Remaining Funds Available from Annual Operations (Net Income)**	$ 186,984	$ 143,304	$ 174,988	$ 179,169	$ 239,105	$ 338,107	$ 221,042	$ 206,304	$ 243,791	$ 233,395
	Funds - Balance Activity										
	Enterprise Operating Fund										
61	Beginning Fund Balance	$ 4,236,039	$ 4,423,023	$ 4,566,327	$ 4,741,315	$ 4,920,484	$ 5,159,590	$ 5,497,696	$ 5,718,738	$ 5,925,042	$ 6,168,833
62	Plus Remaining Funds from Operations	186,984	143,304	174,988	179,169	239,105	338,107	221,042	206,304	243,791	233,395
63	**Total Funds Available-Operating Fund**	$ 4,423,023	$ 4,566,327	$ 4,741,315	$ 4,920,484	$ 5,159,590	$ 5,497,696	$ 5,718,738	$ 5,925,042	$ 6,168,833	$ 6,402,228
64	**Working Capital in Enterprise Fund**	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*
	Renewal & Replacement Fund										
65	Beginning Fund Balance	$ 5,467,299	$ 4,093,735	$ 4,637,042	$ 4,887,042	$ 5,137,042	$ 6,337,042	$ 6,587,042	$ 5,569,314	$ 6,719,314	$ 8,219,314
66	Plus: Transfer From Operations	400,000	1,000,000	250,000	250,000	1,200,000	250,000	1,100,000	1,150,000	1,500,000	1,000,000
67	Less: R&R Capital Expenses	(1,773,564)	(456,693)	0	0	0	0	(2,117,728)	0	0	0
68	**Total Funds Available-R&R Fund**	$ 4,093,735	$ 4,637,042	$ 4,887,042	$ 5,137,042	$ 6,337,042	$ 6,587,042	$ 5,569,314	$ 6,719,314	$ 8,219,314	$ 9,219,314
	Enterprise Capital Fund (ECF)										
69	Beginning Fund Balance	$ 14,797,406	$ 16,247,406	$ 17,497,406	$ 19,797,406	$ 22,197,406	$ 23,697,406	$ 26,397,406	$ 28,597,406	$ 30,997,406	$ 33,247,406
70	Plus: Transfer From Operations	1,450,000	1,250,000	2,300,000	2,400,000	1,500,000	2,700,000	2,200,000	2,400,000	2,250,000	3,000,000
71	Less: Enterprise Capital Project Expenses	0	0	0	0	0	0	0	0	0	(1,253,470)
72	**Total Funds Available-Ent. Cap.Fund**	$ 16,247,406	$ 17,497,406	$ 19,797,406	$ 22,197,406	$ 23,697,406	$ 26,397,406	$ 28,597,406	$ 30,997,406	$ 33,247,406	$ 34,993,936
73	**Total R&R and Capital Funds**	$ 20,341,141	$ 22,134,448	$ 24,684,448	$ 27,334,448	$ 30,034,448	$ 32,984,448	$ 34,166,720	$ 37,716,720	$ 41,466,720	$ 44,213,249
74	**Working Capital (R&R/Capital Funds)**	*68.00*	*71.00*	*77.00*	*82.00*	*87.00*	*92.00*	*92.00*	*97.00*	*103.00*	*106.00*

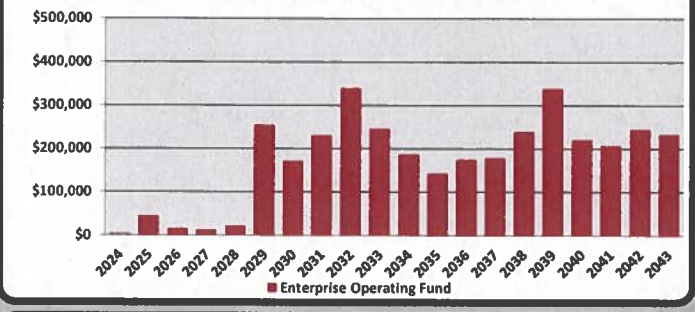
Exhibit 4
Lower Cape Fear WASA
Projected Operating Results

Line	Description	Projected For Fiscal Year Ending June 30, 2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
	R&R Contributions by Partner										
	Annual Contributions Allocated by Annual Usage										
75	Brunswick County	$ 204,734	$ 513,276	$ 128,678	$ 129,037	$ 621,095	$ 129,752	$ 572,475	$ 600,131	$ 784,906	$ 524,686
76	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
77	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
78	CFPUA	$ 168,861	$ 420,345	$ 104,635	$ 104,184	$ 497,918	$ 103,283	$ 452,466	$ 470,968	$ 611,615	$ 405,952
79	Pender	$ 26,404	$ 66,379	$ 16,687	$ 16,779	$ 80,987	$ 16,965	$ 75,059	$ 78,902	$ 103,479	$ 69,363
80	Total	$ 400,000	$ 1,000,000	$ 250,000	$ 250,000	$ 1,200,000	$ 250,000	$ 1,100,000	$ 1,150,000	$ 1,500,000	$ 1,000,000
	Allocation of R&R Project Costs by Annual Usage										
81	Brunswick County	$ 907,773	$ 234,410	$ 0	$ 0	$ 0	$ 0	$ 1,102,133	$ 0	$ 0	$ 0
82	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
83	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
84	CFPUA	$ 748,717	$ 191,969	$ 0	$ 0	$ 0	$ 0	$ 871,092	$ 0	$ 0	$ 0
85	Pender	$ 117,074	$ 30,315	$ 0	$ 0	$ 0	$ 0	$ 144,504	$ 0	$ 0	$ 0
86	Total	$ 1,773,564	$ 456,693	$ 0	$ 0	$ 0	$ 0	$ 2,117,728	$ 0	$ 0	$ 0
	Cumulative R&R Contributions Less R&R Expenses										
87	Brunswick County	$ 2,037,577	$ 2,316,443	$ 2,445,122	$ 2,574,159	$ 3,195,253	$ 3,325,005	$ 2,795,347	$ 3,395,478	$ 4,180,384	$ 4,705,070
88	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
89	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
90	CFPUA	$ 1,796,461	$ 2,024,838	$ 2,129,472	$ 2,233,656	$ 2,731,574	$ 2,834,857	$ 2,416,231	$ 2,887,199	$ 3,498,814	$ 3,904,766
91	Pender	$ 259,697	$ 295,761	$ 312,448	$ 329,228	$ 410,215	$ 427,180	$ 357,735	$ 436,637	$ 540,115	$ 609,478
92	Total	$ 4,093,735	$ 4,637,042	$ 4,887,042	$ 5,137,042	$ 6,337,042	$ 6,587,042	$ 5,569,314	$ 6,719,314	$ 8,219,314	$ 9,219,314
93	*Check*	*$ 4,093,735*	*$ 4,637,042*	*$ 4,887,042*	*$ 5,137,042*	*$ 6,337,042*	*$ 6,587,042*	*$ 5,569,314*	*$ 6,719,314*	*$ 8,219,314*	*$ 9,219,314*
	Enterprise Capital Contributions by Partner										
	Annual Contributions Allocated by Annual Usage										
94	Brunswick County	$ 742,162	$ 641,595	$ 1,183,841	$ 1,238,755	$ 776,368	$ 1,401,318	$ 1,144,949	$ 1,252,447	$ 1,177,359	$ 1,574,057
95	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
96	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
97	CFPUA	$ 612,123	$ 525,432	$ 962,639	$ 1,000,162	$ 622,398	$ 1,115,455	$ 904,933	$ 982,889	$ 917,422	$ 1,217,855
98	Pender	$ 95,715	$ 82,973	$ 153,520	$ 161,083	$ 101,234	$ 183,227	$ 150,118	$ 164,664	$ 155,218	$ 208,088
99	Total	$ 1,450,000	$ 1,250,000	$ 2,300,000	$ 2,400,000	$ 1,500,000	$ 2,700,000	$ 2,200,000	$ 2,400,000	$ 2,250,000	$ 3,000,000
	Allocation of ECF Project Costs by Annual Usage										
100	Brunswick County	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 657,678
101	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
102	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
103	CFPUA	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 508,848
104	Pender	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 86,944
105	Total	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 1,253,470
	Cumulative ECF Contributions Less ECF Expenses										
106	Brunswick County	$ 8,238,150	$ 8,879,745	$ 10,063,586	$ 11,302,341	$ 12,078,709	$ 13,480,027	$ 14,624,977	$ 15,877,424	$ 17,054,783	$ 17,971,162
107	Stephan	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
108	Praxair, Inc.	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
109	CFPUA	$ 6,953,550	$ 7,478,981	$ 8,441,620	$ 9,441,783	$ 10,064,180	$ 11,179,635	$ 12,084,568	$ 13,067,457	$ 13,984,879	$ 14,693,886
110	Pender	$ 1,055,707	$ 1,138,680	$ 1,292,200	$ 1,453,283	$ 1,554,517	$ 1,737,743	$ 1,887,861	$ 2,052,525	$ 2,207,744	$ 2,328,888
111	Total	$ 16,247,406	$ 17,497,406	$ 19,797,406	$ 22,197,406	$ 23,697,406	$ 26,397,406	$ 28,597,406	$ 30,997,406	$ 33,247,406	$ 34,993,936
112	*Check*	*$ 16,247,406*	*$ 17,497,406*	*$ 19,797,406*	*$ 22,197,406*	*$ 23,697,406*	*$ 26,397,406*	*$ 28,597,406*	*$ 30,997,406*	*$ 33,247,406*	*$ 34,993,936*

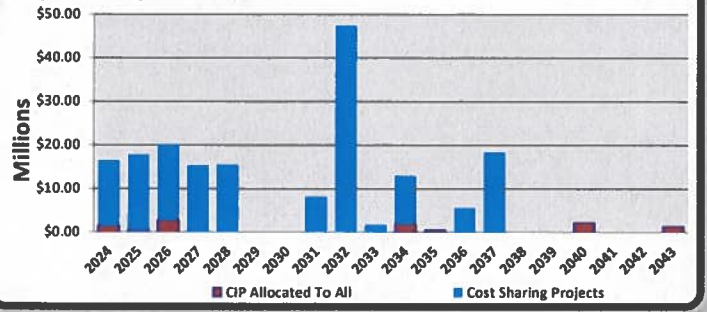
Exhibit 5
Lower Cape Fear WSA
FY 2024 Rate Study
Financial Dashboard

WILLDAN Financial Services

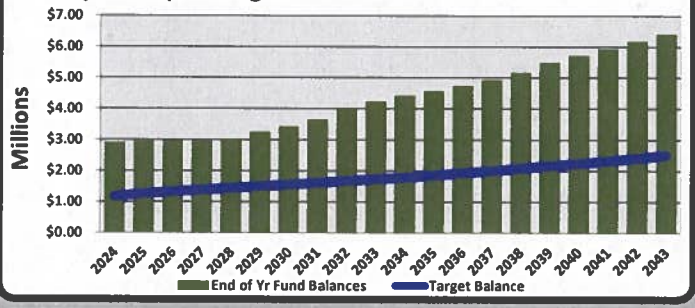
Projected Operating Results (Net Income)



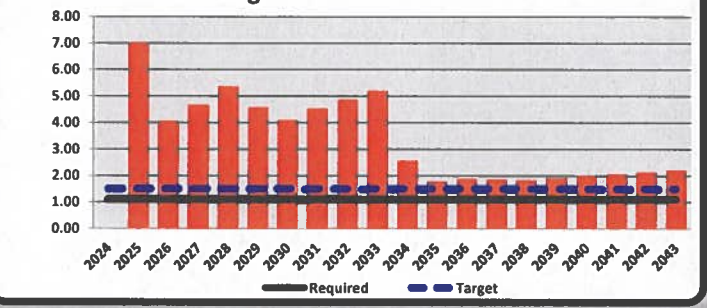
Capital Projects



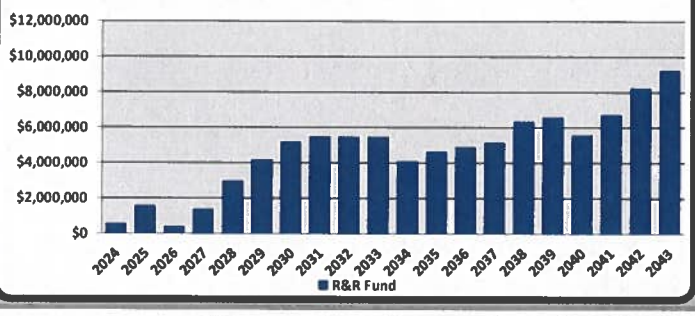
Enterprise Operating Fund Balance



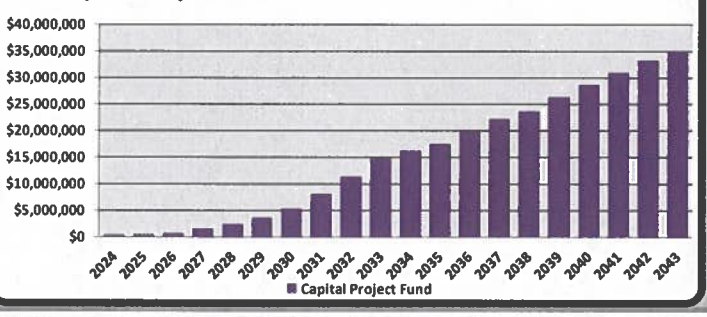
Debt Service Coverage



Renewal & Replacement Fund



Enterprise Capital Fund



	2024	2025	2026	2027	2028	2029	2030
Volumetric Increase	$ 0.040	$ 0.040	$ 0.040	$ 0.040	$ 0.040	$ 0.040	$ 0.040

	2031	2032	2033	2034	2035	2036	2037
Volumetric Increase	$ 0.040	$ 0.030	$ 0.030	$ 0.030	$ 0.030	$ 0.030	$ 0.030

	2038	2039	2040	2041	2042	2043	2044
Volumetric Increase	$ 0.030	$ 0.030	$ 0.020	$ 0.020	$ 0.020	$ 0.020	$ -

Exhibit 6
Lower Cape Fear WASA
2023 Rate Study
Capital Projects Cost Share Methodology Assumptions

Cost Share Projects	Funding Source	Estimated Cost (Future Dollars)
Estimated Capital Costs (Cost Share)		
Intermediate Booster PS Shelter (Option 5A)	Pay-Go (Cost Share)	$ 926,500
Intermediate Booster PS Upgrade (Option 5A)	Pay-Go (Cost Share)	$ 12,663,191
New 5th Pump at King's Bluff (Option 5B)	Pay-Go (Cost Share)	$ -
20 MG Ground Tank (Option 6)	Pay-Go (Cost Share)	$ 23,737,627
7-Mile 48" Parallel Raw Water Main	Already Funded	$ 48,597,615
3-Mile 48" Parallel Raw Water Main	Grants/ARPA	$ 30,493,772
100 MGD Reservoir (Possible Grant Funding)	Grants/ARPA	$ 55,481,686
TOTAL PROJECTS (COST SHARING)		**$ 171,900,391**

Possible Cost Allocation Methods:

Option 1: Allocation of Project Cost by Annual Usage (All Partners)
Option 2: Allocation of Project Costs by Allocated Capacity for Each Partner
Option 3: Allocation of Project Costs 3 Ways by Usage (Brunswick, Pender and CFPUA)
Option 4: Allocation of Project Costs 3 Ways by Capacity (Brunswick, Pender and CFPUA)
Option 5A: Allocation of Project Costs 4 Ways (Pender, CFPUA and LCFWASA)
Option 5B: Allocation of Project Costs 4 Ways (Brunswick, Pender, CFPUA and LCFWASA)
Option 6: McKim & Creed Utilization

Description	Annual Usage - KGals (Based on FY24 Budget)	Allocated Capacity (MGD) (After 54 Inch Line)
Brunswick	4,314,412	50
CFPUA	4,131,405	38
Pender	585,400	6
Praxair	20,000	1
Stephan	250,000	1
Total	**9,301,217**	**96**

With Praxair & Stephan	**(Option 1)**	**(Option 2)**
Brunswick	46.39%	52.08%
CFPUA	44.42%	39.58%
Pender	6.29%	6.25%
Praxair	0.22%	1.04%
Stephan	2.69%	1.04%
Total	**100.00%**	**100.00%**

Without Praxair & Stephan (Differential Rates Instead)	**(Option 3)**	**(Option 4)**
Brunswick	47.77%	53.19%
CFPUA	45.75%	40.43%
Pender	6.48%	6.38%
Praxair	0.00%	0.00%
Stephan	0.00%	0.00%
LCFWASA	0.00%	0.00%
Total	**100.00%**	**100.00%**

With LCFWASA/With & Without Brunswick (Diff Rates)	**(Option 5A)**	**(Option 5B)**
Brunswick	0.000%	42.99%
CFPUA	78.83%	41.18%
Pender	11.17%	5.83%
Praxair	0.000%	0.00%
Stephan	0.000%	0.000%
LCFWASA	10.000%	10.000%
Total	**100.00%**	**100.00%**

OLD BUSINESS (OB2)	**Lower Cape Fear Water & Sewer Authority**

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: November 13, 2023

Re: Resolution adopting recommendation of Water Rate Study Methodology as Sound Fiscal Policy

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Background: The Authority awarded the contract for the water rate study to Willdan Financial Services on December 12, 2022. The primary goals and objectives of the water rate study conducted by Willdan include full cost recovery of expenditures, meeting financial metric targets, meeting required debt coverage, maintaining adequate/positive balances in enterprise operating fund, achieving target levels in Renewal and Replacement and enterprise capital funds in specified time frames, financial strength for possible future debt issuances, a 20-year financial plan, and determining cost-sharing mechanisms and agreements. There were multiple meetings with partners throughout the process.

Action Requested: Recommend Approval

RESOLUTION OF THE LOWER CAPE FEAR WATER AND SEWER AUTHORITY BOARD OF DIRECTORS ADOPTING RECOMMENDATIONS OF WATER RATE STUDY METHODOLOGY AS SOUND FISCAL POLICY

WHEREAS, the Lower Cape Fear Water and Sewer Authority ("LCFWASA") serves Brunswick, Bladen, Pender, New Hanover, Columbus Counties, and the City of Wilmington with a Board of Directors representing those local governments. As the largest regional water system in Eastern North Carolina, LCFWASA's primary role is to provide raw water from the Cape Fear River to supply treatment facilities that serve 550,000 customers;

WHEREAS, LCFWASA and its local government partners have recognized the importance of financial planning in relation to infrastructure, construction, maintenance and emergency work;

WHEREAS, LCFWASA received funding from the State Revolving Loan Fund to proceed with a water rate study to assist LCFWASA in its financial planning;

WHEREAS, at its December 12, 2022 Board Meeting, the LCFWASA Board of Directors awarded the contract for the water rate study to Willdan Financial Services ("Willdan");

WHEREAS, the primary goals and objectives of the water rate study conducted by Willdan (the "Willdan Study") include full cost recovery of expenditures, meeting financial metric targets, meeting required debt coverage, maintaining adequate/positive balances in enterprise operating fund, achieving target levels in Renewal and Replacement and enterprise capital funds in specified time frames, financial strength for possible future debt issuances, and a 20-year financial plan;

WHEREAS, factors driving the financial planning for LCFWASA in the Willdan Study includes current inflation in line with the economic fluctuations for the first two years (FY 2025 and FY 2026) and industry standard rates for the remaining years impacting LCFWASA's operating costs, LCFWASA's future capital improvements, and requirements for meeting debt service coverage targets for possible future debt issuances;

WHEREAS, the Willdan Study provides guidance and recommendations to LCFWASA regarding funds and target levels to achieve, including maintaining an Enterprise Operating Fund positive ending annual balance from operations, an R&R Fund balance build-up to approximately $3 million by Year 5 (FY 2029) and $5 million by Year 10 (FY 2034), and an Enterprise Capital Fund build-up balance to approximately $10 million by Year 10 (FY 2034);

WHEREAS, the Willdan Study contains recommendations for LCFWASA water rate increases for the 20-year period FY 2024 through FY 2043 necessary for LCFWASA to achieve the recommended financial plan, in conjunction with recommended future steps to minimize rate increases;

WHEREAS, the Willdan Study recommends that LCFWASA continue to apply for State/Federal grants and matching funds, continue to apply for State revolving loans with lower interest costs than revenue bonds and payments, and continue to monitor annually/bi-annually future costs of capital projects to better plan for phasing-in rate adjustments;

WHEREAS, the LCFWASA Board supports the accrual of necessary funding to carry out the mission of providing a reliable source of raw water and the allocation of these funds will be determined by cost share mechanisms for funds including renewal and replacement and enterprise. These documents and agreements will be considered for adoption and approval in the future by the LCFWASA Board, independently of this Resolution;

WHEREAS, the LCFWASA Board is not bound by the recommendations in the Willdan Study, which study may serve as a guide to the Board for purposes of financial planning and establishing water rates, fees and other charges in the future; and,

WHEREAS, while the LCFWASA Board of Directors is not bound by the recommendations in the Willdan Study, the Board wishes to adopt the recommendations of the Willdan Study as sound fiscal policy for the purpose of providing guidance to the Board as it establishes LCFWASA's annual budgets and rates, fees and other charges in the future.

NOW, THEREFORE, BE IT RESOLVED by the LCFWASA Board of Directors as follows:

1. While the Board of Directors is not bound by the recommendations in the aforementioned Willdan Study, the Board hereby adopts the recommendations of the Willdan Study as sound fiscal policy for the purpose of providing guidance to the Board as it establishes LCFWASA's annual budgets and water rates in the future.

2. Nothing in the Willdan Study or this Resolution shall be deemed or construed to establish, set or revise any rates, fees or other charges, which matters shall be established by the LCFWASA Board from time to time in accordance with the provisions of Chapter 162A of the North Carolina General Statutes and all other applicable law.

3. This Resolution shall be effective upon passage.

THEREFORE, BE IT FURTHER RESOLVED, that a copy of this Resolution be recorded in the permanent minutes of this Board.

Adopted this _____ day of November 2023.

_____

Norwood Blanchard, Chairman

ATTEST:

_____

Patrick DeVane, Secretary

OLD BUSINESS (OB3)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: November 13, 2023

Re: Resolution adopting recommendation of Cost Share Methodology as Generated by Water Rate Study Sound Fiscal Policy

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Background: The Authority awarded the contract for the water rate study to Willdan Financial Services on December 12, 2022. The primary goals and objectives of the water rate study conducted by Willdan include full cost recovery of expenditures, meeting financial metric targets, meeting required debt coverage, maintaining adequate/positive balances in enterprise operating fund, achieving target levels in Renewal and Replacement and enterprise capital funds in specified time frames, financial strength for possible future debt issuances, a 20-year financial plan, and determining cost-sharing mechanisms and agreements. There were multiple meetings with partners throughout the process.

Action Requested: Recommend Approval

RESOLUTION OF THE LOWER CAPE FEAR WATER AND SEWER AUTHORITY BOARD OF DIRECTORS ADOPTING RECOMMENDATIONS OF COST SHARE METHODOLOGY AS GENERATED BY THE WATER RATE STUDY SOUND FISCAL POLICY

WHEREAS, the Lower Cape Fear Water and Sewer Authority ("LCFWASA") serves Brunswick, Bladen, Pender, New Hanover, Columbus Counties, and the City of Wilmington with a Board of Directors representing those local governments. As the largest regional water system in Eastern North Carolina, LCFWASA's primary role is to provide raw water from the Cape Fear River to supply treatment facilities that serve 550,000 customers;

WHEREAS, LCFWASA and its local government partners have recognized the importance of financial planning in relation to infrastructure, construction, maintenance and emergency work;

WHEREAS, LCFWASA received funding from the State Revolving Loan Fund to proceed with a water rate study to assist LCFWASA in its financial planning;

WHEREAS, at its December 12, 2022 Board Meeting, the LCFWASA Board of Directors awarded the contract for the water rate study to Willdan Financial Services ("Willdan");

WHEREAS, the primary goals and objectives of the water rate study conducted by Willdan (the "Willdan Study") include full cost recovery of expenditures, meeting financial metric targets, meeting required debt coverage, maintaining adequate/positive balances in enterprise operating fund, achieving target levels in Renewal and Replacement and enterprise capital funds in specified time frames, financial strength for possible future debt issuances, and a 20-year financial plan;

WHEREAS, the Willdan Study includes a Cost Share analysis, primarily for new capital improvement projects, which proposes different cost share methodology options;

WHEREAS, in addition to new projects, these cost share methodology options in the Willdan Study may also apply to renewal and replacement as well as emergency projects until such time that LCFWASA is self-sufficient;

WHEREAS, in consultation with its local government partners, LCFWASA continues to evaluate how accrued funds should be appropriated to new projects and renewal and replacement projects, and it is understood among LCFWASA and its local government partners that these decisions will be made by the LCFWASA Board in the future, prior to expenditure of funds, on a case-by-case basis;

WHEREAS, LCFWASA and its local government partners do not want to delay the accrual of funding and resources necessary to fund future emergencies, maintenance and replacement;

WHERAS, the LCFWASA Board supports the accrual of necessary funding to carry out the mission of providing a reliable source of raw water, and the allocation of these funds will be determined by cost share mechanisms for funds, including renewal and replacement and enterprise. These documents and agreements will be considered for adoption and approval the LCFWASA Board in the future, independently of this Resolution; and,

WHEREAS, the LCFWASA Board is not bound by the recommendations in the Willdan Study, which study may serve as a guide to the Board for purposes of financial planning and establishing water rates, fees and other charges in the future;

WHEREAS, while the LCFWASA Board is not bound by the recommendations in the Willdan Study, the Board wishes to adopt the recommendations of the Willdan Study as sound fiscal policy for the purpose of providing guidance to the Board as it establishes LCFWASA's annual budgets and water rates in the future.

NOW, THEREFORE, BE IT RESOLVED by the LCFWASA Board of Directors as follows:

1. While the Board of Directors is not bound by the recommendations in the aforementioned Willdan Study, the Board hereby adopts the recommendations of the Willdan Study as sound fiscal policy for the purpose of providing general guidance to the Board as it establishes LCFWASA's annual budgets and rates, fees and other charges in the future.

2. Nothing in the Willdan Study or this Resolution shall be deemed or construed to establish, set or revise any rates, fees or other charges, which matters shall be established by the LCFWASA Board from time to time in accordance with the provisions of Chapter 162A of the North Carolina General Statutes and all other applicable law.

3. This Resolution shall be effective upon passage.

THEREFORE, BE IT FURTHER RESOLVED, that a copy of this Resolution be recorded in the permanent minutes of this Board.

Adopted this _____ day of November 2023.

_____

Norwood Blanchard, Chairman

ATTEST:

_____

Patrick DeVane, Secretary

OLD BUSINESS (OB4)	**Lower Cape Fear Water & Sewer Authority**

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: November 13, 2023

Re: Amendment to the Professional Services Agreement Between Willdan Financial Services and LCFWASA

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Background: The Authority awarded Willdan the work for the Rate and Cost Share Methodology. The scope has been exceeded, and now there are additional charges to finish the work and compensate for work already conducted beyond the original scope and meetings expected. The additional charges will be eligible for State Revolving Loan Fund Reimbursement.

Action Requested: Recommend Approval

SUPPLEMENT NO. 2
TO THE PROFESSIONAL SERVICES AGREEMENT BETWEEN WILLDAN FINANCIAL SERVICES AND LOWER CAPE FEAR WATER & SEWER AUTHORITY

ADDENDUM TO WATER RATE STUDY

This document represents Supplement No. 2 to the Professional Services Agreement (the "Agreement") dated on February 2, 2022 by and between Willdan Financial Services ("Willdan" or the "Consultant") and the Lower Cape Fear Water & Sewer Authority, North Carolina (hereinafter the "Client", "Authority" or "LCFWASA"). All provisions of the Agreement remain in effect except as specifically defined in this Supplement.

Scope of Services Included in this Supplement No. 2

This Addendum includes consulting services related to 1) the preparation of capital project cost share alternative scenarios utilizing annual usage and capacity allocations, 2) working with the Authority's design engineer (McKim & Creed) for more in depth capital cost share allocation methodologies, 3) subsequent updates to the Water System Rate Model as may be required, 4) additional Zoom presentations to the Authority Board which include development of additional PowerPoint presentations and backup workpapers, 5) assist Authority staff in developing rate study and project cost share Resolutions for presentation and adoption by the Authority Board and 6) put together letter report setting forth the findings and recommendations related to the rate study project, user rate differential calculations and cost share methodologies. It is uncertain at this time how many presentations (and required preparation for those meetings) will be requested by Authority staff. This Addendum is intended to cover the additional cost of up to two (2) additional Board Zoom meetings, as well as the other above mentioned consulting services.

General Disclosure

LCFWASA further represents, acknowledges, and agrees that:

1. LCFWASA uses, or may use, the services of one or more municipal advisors registered with the U.S. Securities and Exchange Commission ("SEC") to advise it in connection with municipal financial products and the issuance of municipal securities;
2. LCFWASA is not looking to Willdan to provide, and LCFWASA shall not otherwise request or require Willdan to provide, any advice or recommendations with respect to municipal financial products or the issuance of municipal securities (including any advice or recommendations with respect to the structure, timing, terms, and other similar matters concerning such financial products or issues);
3. The provisions of this proposal and the services to be provided hereunder as outlined in the scope of services are not intended (and shall not be construed) to constitute or include any municipal advisory services within the meaning of Section 15B of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the rules and regulations adopted thereunder;
4. For the avoidance of doubt and without limiting the foregoing, in connection with any revenue projections, cash-flow analyses, feasibility studies and/or other analyses Willdan may provide LCFWASA with respect to financial, economic or other matters relating to a

prospective, new or existing issuance of municipal securities of LCFWASA, (A) any such projections, studies and analyses shall be based upon assumptions, opinions or views (including, without limitation, any assumptions related to revenue growth) established by LCFWASA, in conjunction with such of its municipal, financial, legal and other advisers as it deems appropriate; and (B) under no circumstances shall Willdan be asked to provide, nor shall it provide, any advice or recommendations or subjective assumptions, opinions or views with respect to the actual or proposed structure, terms, timing, pricing or other similar matters with respect to any municipal financial products or municipal securities issuances, including any revisions or amendments thereto; and

5. Notwithstanding all of the foregoing, LCFWASA recognizes that interpretive guidance regarding municipal advisory activities is currently quite limited and is likely to evolve and develop during the term of the potential engagement and, to that end, LCFWASA will work with Willdan throughout the term of the potential Agreement to ensure that the Agreement and the services to be provided by Willdan hereunder, is interpreted by the parties, and if necessary amended, in a manner intended to ensure that LCFWASA is not asking Willdan to provide, and Willdan is not in fact providing or required to provide, any municipal advisory services.

Professional Service Fees

On the basis of the services described herein, the Consultant's total labor billings and all out-of-pocket costs and expenses directly chargeable to the work performed and described in the Scope of Services section of this Supplement will be performed and billed to Client on an hourly basis with a not-to-exceed fixed fee of **$15,000**, unless specifically authorized in writing by LCFWASA. Payment for such services shall be invoiced monthly based on the percentage of project completion.

IN WITNESS WHEREOF, the parties have executed this Supplement No. 2 on the date(s) indicated below.

LOWER CAPE FEAR WATER & SEWER AUTHORITY		**WILLDAN FINANCIAL SERVICES**	
By:	_____ (Signature)	By:	 (Signature)
By:	Tim H. Holloman (Name Printed)	By:	Jeff McGarvey (Name Printed)
Title:	Executive Director	Title:	Vice President, Managing Principal
Date:	_____	Date:	October 19, 2023

NEW BUSINESS (NB1)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: November 13, 2023

Re: Demand Automation Reduction Amendment

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Background: The Authority entered the Demand Response Automation Reduction Program in 2010. This is an amendment to the Electric Service Agreement and continued participation in the Rider DRA. Adoption of this agreement ensures continued savings based on our usage. We are not using the amount of electricity specified in our current agreement. If we don't reduce our projected usage, we would face non-compliance for each occurrence of $21,250.

Action Requested: Recommend Approval

DUKE ENERGY PROGRESS

Duke Energy Progress
411 Fayetteville St Raleigh NC
27601

Tim H. Holloman, Executive Director
Lower Cape Fear Water and Sewer Authority
1107 New Pointe Blvd, Suite 17
Leland, NC 28451

October 12, 2023

Re: Demand Response Automation Rider
CA#910082627006

Dear Mr. Holloman:

We have been supplying electric service under a service agreement dated January 8, 1996, for a contract demand of 900 kW at the above-referenced location under Schedule MGS-TOU and amendments dated October 13, 2010, July 29, 2011, August 24, 2011, and July 24, 2013, confirming participation in Rider DRA. This letter hereby serves as an amendment to the Electric Service Agreement.

We understand you have requested that your Contracted Curtailable Demand under Rider DRA be changed from 1,250 kW to 1,050 kW for summer and from 700 kW to 900 kW for winter in accordance with the Adjustments to Contracted Curtailable Demand paragraph of Rider DRA.

We hereby agree to this change in Contracted Curtailable Demand and will begin billing you under Rider DRA at the new Contracted Curtailable Demand effective with the December 2023 bill, provided Provision 1 of the above referenced amendment is amended as follows:

1. A Contracted Curtailable Demand of 1,050 kW in the summer period and 900 kW in the winter period, applicable to a Curtailable Event Period of no more than eight (8) hours per Curtailment Event.

There are no other modifications to your Electric Service Agreement.

If you have any questions regarding this letter, please reach out to me.

Yours very truly,
Wilson G. Hudspeth
Large Account Management – Account Executive

Acknowledged Receipt – Lower Cape Fear Water and Sewer Authority

_____ (name)

_____(title)

_____(date)

NEW BUSINESS (NB2)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: November 13, 2023

Re: Engineering Services Proposal Ground Storage Reservoir Feasibility Evaluation

Reviewed and approved as to form: MATTHEW A. NICHOLS, AUTHORITY ATTORNEY

Background: The Authority has received advanced notice of the 30-million-dollar State Budgeted Award for the last 3-mile section of the 10-mile parallel line project, and five million of this is to be used towards the study and possible purchase of land for a 100 mgd reservoir. Attached is the proposal for $49,000.00.

A) A Resolution of Lower Cape Fear Water & Sewer Authority Exempting Lower Cape Fear Water & Sewer Authority from The Provisions of N.C.G.S. §143-64.31
B) Accept the Proposal for Reservoir Feasibility Evaluation

Action Requested: Recommend Approval

RESOLUTION OF LOWER CAPE FEAR WATER AND SEWER AUTHORITY BOARD OF DIRECTORS EXEMPTING LOWER CAPE FEAR WATER AND SEWER AUTHORITY FROM THE PROVISIONS OF N.C.G.S. § 143-64.31

WHEREAS, N.C.G.S. § 143-64.31 requires the Lower Cape Fear Water and Sewer Authority ("LCFWASA") to conduct an initial selection of firms to provide engineering services without regard to fee;

WHEREAS, N.C.G.S. § 143-64.32 permits LCFWASA to exempt particular projects from the provisions of N.C.G.S. § 143-64.31 in the case of proposed projects where the estimated professional fee is less than $50,000.00;

WHEREAS, LCFWASA proposes to enter into a contract with McKim & Creed, Inc. (the "Engineer") for an engineering services proposal related to a Ground Storage Reservoir Feasibility Evaluation as more fully set forth in an Engineering Services Proposal, Ground Storage Reservoir Feasibility Evaluation dated November 6, 2023 (the "Proposal");

WHEREAS, the estimated professional fee for the work to be performed by Engineer in connection with the above-referenced project is less than $50,000.00;

WHEREAS, under the Proposal, Engineer will provide LCFWASA with a feasibility evaluation for sites that may be suitable for a new ground reservoir to include preliminary costs, permitting requirements, and water quality parameters;

WHEREAS, as more fully set forth in the Proposal, upon completion of the tasks identified in the scope of services, the Engineer shall provide LCFWASA with a Draft Technical Memorandum for review and comment. It is anticipated that Pender County, Brunswick County and CFPUA representatives will also be provided a copy for review and comment. Comments received will be incorporated and an updated Draft document will be provided to LCFWASA;

WHEREAS, the Engineer shall present findings to the Board of Directors at a regularly scheduled meeting date at the discretion of the LCFWASA Executive Director;

WHEREAS, upon the Board of Directors acceptance of the findings, the Engineer will provide a Final Technical Memorandum to LCFWASA to include a PDF electronic document and five (5) hard copies;

WHEREAS, the Engineer shall perform the scope of services outlined in the Proposal for a lump sum cost not to exceed forty-nine thousand dollars ($49,000.00); and,

WHEREAS, the LCFWASA Board, by its approval of this Resolution, intends to exempt the above-referenced Proposal for engineering services from the requirements of N.C.G.S. § 143-64.31.

NOW, THEREFORE, BE IT RESOLVED by the LCFWASA Board of Directors as follows:

1. Based upon the foregoing, pursuant to N.C.G.S. § 143-64.32, the Board of Directors hereby resolves that the above-referenced McKim & Creed, Inc. Engineering Services Proposal dated November 6, 2023, for the Ground Storage Reservoir Feasibility Evaluation is hereby made exempt from the provisions of N.C.G.S. § 143-64.31.

2. The Board of Directors designates that the Chairman and the Executive Director are duly authorized to execute the contract with Engineer for the above-referenced engineering services on behalf of LCFWASA.

3. This Resolution shall be effective upon passage.

THEREFORE, BE IT FURTHER RESOLVED, that a copy of this Resolution be recorded in the permanent minutes of this Board.

Adopted this _____ day of November 2023.

_____
Norwood Blanchard, Chairman

ATTEST:

_____
Patrick DeVane, Secretary

McKIM&CREED

ENGINEERS
SURVEYORS
PLANNERS

November 6, 2023 233679

Mr. Tim Holloman
Executive Director
Lower Cape Fear Water and Sewer Authority
1107 New Pointe Boulevard, Suite 17
Leland, NC 28451

RE: Engineering Services Proposal
Ground Storage Reservoir Feasibility Evaluation

Dear Mr. Holloman:

McKim & Creed appreciates the opportunity to provide this proposal for professional consulting to prepare a feasibility evaluation for a new ground storage reservoir for the Kings Bluff Raw Water System.

I. PROJECT UNDERSTANDING

The Lower Cape Fear Water & Sewer Authority owns and operates the Kings Bluff Raw Water System, which supplies raw water from the Cape Fear River to customers in Brunswick, Pender, and New Hanover County. The current Kings Bluff system includes a 3 million gallon (MG) concrete storage tank, located near the Brunswick County Northwest Water Treatment Plant. Given current and projected raw water demands, the existing storage tank does not provide adequate storage for outages, system failures, or other incidents that may result in the inability to withdraw and pump water from the Kings Bluff pump station. Therefore, the Authority desires to investigate ground reservoir alternatives to provide additional storage for the system.

McKim & Creed will prepare a feasibility evaluation for sites that may be suitable for a new ground reservoir to include preliminary costs, permitting requirements, and water quality parameters. Our detailed scope of services to conduct this evaluation is provided as follows:

243 North Front Street
Wilmington, NC 28401

910.343.1048
Fax 910.251.8282
www.mckimcreed.com

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II. SCOPE OF SERVICES

Assumptions:

1) This scope of work will be based on a reservoir to accommodate up to 100 MG of storage.
2) Water quality requirements will be based on quality parameters for raw water that is currently provided to Pender County, Brunswick County, and CFPUA water treatment facilities.
3) The scope of work will be considered a 'desktop' level analysis and does not include field determination of soil conditions, ground water levels, wetlands delineations, or surveys of properties identified.
4) McKim & Creed will not engage with any property owners or assist with land acquisition or similar discussions as part of this scope of work.

Tasks

1) McKim & Creed will utilize GIS data to identify up to ten (10) parcels that would be potentially suitable for the reservoir. The parcels will be centralized in the vicinity of the existing 3 MG ground tank and surrounding areas.
2) Parcels will be evaluated based on available on-line records and mapping data to determine environmental constraints such as topography, water bodies, wetlands, flood areas, or other relevant data.
3) The parcels will be evaluated and the top three (3) most suitable sites will be identified for further evaluation. The reservoir will be sized to fit each site based on site configurations with 25, 50, 75, and 100 MG phased options.
4) For the purposes of the evaluation, the geometry of the basin will include the following configurations:
    - Configuration A – assumes the basin depth is fully excavated below existing grade.
    - Configuration B – assumes that half of the basin depth is excavated below existing grade and the remaining half will utilize a constructed berm.
5) The three sites will be evaluated for conveyance piping and pumping requirements to deliver water to the reservoir and return it to the transmission system.
6) Perform evaluations relevant to maintaining a desired level of water quality in the reservoir with a primary focus on algae reduction and

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mitigation. The evaluation will consider, but may not be limited to the following:

- Freeboard requirements
- Mixing or other mechanical operations
- Chemical (algaecide) treatment
- Short-circuiting mitigation
- Evaluate raw water quality data.
- "Shade" balls or other means to reduce sunlight exposure.

7) An evaluation matrix will be developed for the viable water quality options. The matrix will include capital and O&M costs, effectiveness, ease of operations/maintenance, permitting considerations, expected life cycle, etc. Capital O&M costs will be developed for up to three main algae mitigation alternatives.

Deliverables

1) Upon completion of the tasks identified in this scope of work, a Draft Technical Memorandum will be developed and provided to the Authority for review and comment. It is anticipated that Pender, Brunswick and CFPUA representatives will also be provided a copy for review and comment. Comments received will be incorporated and an updated Draft document will be provided.
2) Present findings to the Board of Directors at a regularly scheduled meeting date at the discretion of the Executive Director.
3) Upon acceptance of the findings, a Final Technical Memorandum will be provided to the Authority to include a PDF electronic document and five (5) hard copies.

III. COMPENSATION

McKim & Creed will complete the scope of services outlined in this proposal for the lump amount of $49,000. Invoices will be billed on a monthly basis commensurate with the work completed.

Miscellaneous Conditions

- 1.5% per month on overdue invoices.
- Either party may terminate with a 30-day notice.

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Wilmington, NC 28401

910.343.1048

Fax 910.251.8282

www.mckimcreed.com

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IV. SCHEDULE

Upon Authorization to Proceed, McKim & Creed will complete the work in 145 calendar days as per the following schedule:

- Draft Technical Memorandum 115 Calendar Days
- Present to Board of Directors 130 Calendar Days
- Final Technical Memorandum 145 Calendar Days

ACCEPTANCE AND AUTHORIZATION

If this proposal is acceptable, please sign below as indicated and return one executed copy to our office. Upon receipt, McKim & Creed will consider this as the authorization to proceed.

We appreciate the opportunity to provide these services and look forward to our continuing work with the Authority. If you have any questions, please do not hesitate to contact me.

Sincerely,

McKIM & CREED, Inc.

Tony Boahn, PE
Vice-President

Enclosure: McKim & Creed, Inc. Engineering Division General Conditions (01/2011-01)

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Wilmington, NC 28401

910.343.1048
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www.mckimcreed.com

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Accepted by:

LOWER CAPE FEAR WATER & SEWER AUTHORITY

NAME: Norwood Blanchard

SIGNATURE: _____

TITLE: Chairman, Board of Directors

DATE: _____

E-Verify Requirement. As a condition of payment for services rendered under this agreement, Engineer shall comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes (requirement that employers use E-Verify). Further, if Engineer provides the services to the Client utilizing a subcontractor, Engineer shall require the subcontractor to comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes as well. Engineer shall verify by affidavit compliance with the terms of this section upon request of Client.

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act, this the ____ day of _____, 2023

_____
Finance Officer, Lower Cape Fear Water and Sewer Authority

243 North Front Street
Wilmington, NC 28401

910.343.1048
Fax 910.251.8282
www.mckimcreed.com

McKim & Creed, Inc.
Engineering Division
General Conditions
(01/2011-1)

Billing and Payment. Invoices will be submitted by McKim & Creed, Inc. (the "Engineer") to the Client monthly for services performed and expenses incurred pursuant to this Agreement. Payment of each such invoice will be due upon receipt and considered past due if not paid within thirty (30) days of the date of the invoice. Any retainers shall be credited on the final invoice.

a) Interest. A service charge will be added to delinquent accounts at 18 percent per annum (1.5 percent per month).

b) Suspension of Services. If the Client fails to make any payment due the Engineer for services and expenses within thirty (30) days of the invoice date on the project(s) covered by this agreement or any other project(s) being performed by Engineer for Client, the Engineer may suspend services under this Agreement until it has been paid in full for all past due amounts owed by Client for services and expenses. The Engineer shall have no liability whatsoever to the Client for any costs or damages occurring as a result of such suspension caused by any such breach of this Agreement by Client.

c) Collection Costs. In the event legal action is necessary to enforce the payment provisions of this Agreement, the Engineer shall be entitled to collect from the Client any judgment or settlement sums due, reasonable attorneys' fees, court costs.

d) Termination Of Services. The failure of the Client to make payment to the Engineer in accordance with the payment terms set forth herein shall constitute a material breach of this Agreement and shall entitle the Engineer, at its option, to terminate the Agreement. Any material breach of this Agreement by the Client shall, at the Engineer's option and in its sole discretion, constitute a breach of and default under any and/or all other agreements between the Client and Engineer.

Confidentiality. The Engineer agrees to keep confidential and not to disclose to any person or entity, other than the Engineer's employees, sub-consultants and the general contractor and subcontractors, if appropriate, any data and information not previously known to and generated by the Engineer or furnished to the Engineer and marked CONFIDENTIAL by the Client. These provisions shall not apply to information in whatever form that comes into the public domain, nor shall it restrict the Engineer from giving notices required by law or complying with an order to provide information or data when such order is issued by a court, administrative agency or other authority with proper jurisdiction, or if it is reasonably necessary for the Engineer to defend itself from any suit or claim.

~~The Client agrees that the technical methods, techniques and pricing information contained in any proposal submitted by the Engineer pertaining to this project or in this Agreement or any addendum thereto, are to be considered confidential and proprietary, and shall not be released or otherwise made available to any third party without the express written consent of the Engineer.~~

Consequential Damages. Notwithstanding any other provision of the Agreement, neither party shall be liable to the other for any consequential damages incurred due to the fault of the other party, regardless of the nature of the fault or whether it was committed by the Client or the Engineer, their employees, agents, sub-consultants or subcontractors. Consequential damages include, but are not limited to, loss of use and lost profit.

Non-Contingency. The Client acknowledges and agrees that the payment for services rendered and expenses incurred by the Engineer pursuant to this Agreement is not subject to any contingency unless the same is expressly set forth in this Agreement. Payments to the Engineer shall not be withheld, postponed or made contingent on the financing, construction, completion or success of the project or upon receipt by the Client of offsetting reimbursement or credit from other parties causing Additional Services or expenses. No withholdings, deductions or offsets shall be made from the Engineer's compensation for any reason.

Opinions of Cost.

(a) Since the Engineer has no control over the cost of labor, materials, equipment or services furnished by others, or over methods of determining prices, or over competitive bidding or market conditions, any and all opinions as to costs rendered hereunder, including but not limited to opinions as to the costs of construction and materials, are estimates only and shall be made on the basis of its experience and qualifications and represent its best judgment as an experienced and qualified professional engineer, familiar with the construction industry; but the Engineer cannot and does not guarantee that proposals, bids or actual costs will not vary from opinions of probable cost prepared by it and the Engineer shall have no liability whatsoever if the actual cost differs from the Engineers estimate. If at any time the Client wishes greater assurance as to the amount of any cost, Client shall employ an independent cost estimator to make such determination. Engineering services required to bring costs within any limitation established by the Client will be paid for as additional services hereunder by the Client.

Termination. The obligation to provide further services under this Agreement may be terminated by either party upon seven (7) days' written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party. In the event of any termination, the Engineer shall provide a final statement of charges due and will be paid for all services rendered to the date of termination, all expenses subject to reimbursement hereunder, and other reasonable expenses incurred by the Engineer as a result of such termination. In the event the Engineer's compensation under this Agreement is a fixed fee, upon such termination the amount payable to the Engineer for services rendered will be determined using a proportional amount of the total fee based on a ratio of the amount of the work done, as reasonably determined by the Engineer, to the total amount of work which was to have been performed, less prior partial payments, if any, which have been made.

Reuse of Documents. All documents, including but not limited to drawings and specifications, prepared by the Engineer pursuant to this Agreement are related exclusively to the services described herein. They are not intended or represented to be suitable for reuse by the Client or others on extensions of this project or on any other project. Any reuse without written verification or adaptation by the Engineer for specific purposes intended will be at the Client's sole risk and without liability or legal exposure to the Engineer. The Client releases the Engineer harmless from all claims that the Client may have against the Engineer and arising out of any unauthorized reuse.

McKim & Creed, Inc.
Engineering Division
General Conditions
(01/2011-1)

Limitation of Liability. In performing its professional services hereunder, the Engineer will use that degree of care and skill ordinarily exercised, under similar circumstances, by reputable members of its profession practicing in the same or similar locality. No other warranty, express or implied, is made or intended by the Engineer's undertaking herein or its performance of services hereunder. THE CLIENT UNDERSTANDS AND AGREES THAT THE ENGINEER HAS NOT MADE AND IS NOT MAKING ANY PROMISE, WARRANTY OR REPRESENTATION EXCEPT THE WARRANTIES EXPRESSLY MADE HEREIN, AND THE ENGINEER EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER IMPLIED WARRANTIES. Under no circumstances shall the Engineer be liable ~~for errors in judgment or~~ for any loss or damage, which occurs for any reason beyond the control of the Engineer~~. No action may be instituted hereunder more than one year after the cause of action accrued or should have been discovered by reasonable diligence.~~ The provisions of this paragraph shall survive the termination of this Agreement.

Controlling Law. This Agreement is to be governed by the law of the State of North Carolina. ~~The parties agree that any suit or action related to this Agreement shall be instituted and prosecuted in the courts of the County of Wake, State of North Carolina, and each party waives any right or defense relating to such jurisdiction or venue.~~

Binding Effect. This Agreement shall bind, and the benefits thereof shall inure to the respective parties hereto, their legal representatives, executors, administrators, successors and permitted assigns.

Merger; Amendment. This Agreement constitutes the entire agreement between the Engineer and the Client with respect to its subject matter, and all negotiations and oral understandings between the parties are merged herein. This Agreement can be supplemented and/or amended only by a written document executed by both the Engineer and the Client.

Ownership Of Instruments Of Service. All reports, plans, specifications, field data, notes and other documents, including all documents on electronic media, prepared by the Engineer as instruments of service shall become the property of the Owner. The Owner shall retain all common law, statutory and other reserved rights, including the copyright thereto. If the Owner uses any reports, plans, specification, field data, notes or other documents ("documents") for any project other than the specific project for which the documents were intended, then Owner waives any claims for damages related to these other projects.

Photographs. Photographs of any completed project embodying the services of the Engineer provided hereunder may be made by the Engineer and shall be considered as its property, and may be used by it for publication.

Assignment. Neither party to this Agreement shall transfer, sublet or assign any rights under or interest in this Agreement, including but not limited to fees that are due or fees that may be due, without the prior written consent of the other party.

Archiving of Project Documentation. Engineer shall maintain copies of printed project documentation for a period of three years from substantial completion of Engineer's services. Engineer shall maintain copies of all electronic media related to the project for a period of one year from substantial completion of Engineer's services. Requests for reproduction of project documentation after these periods have expired will be considered additional services and will be invoiced at the Engineer's prevailing hourly rates at the time of the request, plus expenses.

Betterment. If, due to the Engineer's error, any required item or component of the project is omitted from the Engineer's construction documents, the Engineer shall not be responsible for paying the cost to add such item or component to the extent that such item or component would have been otherwise necessary to the project or otherwise adds value or betterment to the project. In no event will the Engineer be responsible for any cost or expense that provides betterment, upgrade or enhancement of the project.

Electronic Files. Because data stored on electronic media can deteriorate undetected or be modified without the Engineer's knowledge, the Client agrees that it will accept responsibility for the completeness, correctness, or readability of any electronic media delivered to the Client after an acceptance period of 30 days after delivery of the electronic files, ~~and that upon the expiration of this acceptance period, Client will release, indemnify and save harmless the Engineer from any and all claims, losses, costs, damages, awards or judgments arising from use of the electronic media files or output generated from them.~~ The Engineer agrees that it is responsible only for the printed and sealed drawings and documents, and if there is a conflict between these printed documents and the electronic media, the sealed documents will govern. Engineer makes no warranties, express or implied, under this agreement or otherwise, in connection with the Engineer's delivery of electronic files.

Certifications, Guarantees and Warranties. The Engineer shall not be required to sign any documents, no matter by whom they may be requested, that would result in the Engineer's having to certify, guarantee or warrant the existence of conditions which the Engineer cannot ascertain. The Client also agrees that it has no right to make the resolution of any dispute with the Engineer or the payment of any amounts due to the Engineer in any way contingent upon the Engineer's signing any such certification.

Corporate Protection. It is intended by the parties to this Agreement that the Engineer's services in connection with the project shall not subject the Engineer's individual employees, officers or directors to any personal legal exposure for the risks associated with this project. Therefore, and notwithstanding anything to the contrary contained herein, the Client agrees that as the Client's sole and exclusive remedy, any claim, demand or suit shall be directed and/or asserted only against the Engineer, a North Carolina corporation, and not against any of the Engineer's employees, shareholders, officers or directors.

Job-Site Safety. Neither the professional activities of the Engineer, nor the presence of the Engineer or its employees and sub-consultants at a construction site, shall relieve the General Contractor and any other entity of their obligations, duties and responsibilities including, but not limited to, construction means, methods, sequence, techniques or procedures necessary for performing, superintending or coordinating all portions of the Work of construction in accordance with the contract documents and any health or safety precautions required by any regulatory

McKim & Creed, Inc.
Engineering Division
General Conditions
(01/2011-1)

agencies. The Engineer and its personnel have no authority to exercise any control over any construction contractor or other entity or their employees in connection with their work or any health or safety precautions. The Client agrees that the General Contractor is solely responsible for job-site safety, and warrants that this intent shall be made evident in the Client's agreement with the General Contractor. ~~The Client also agrees that the Client, the Engineer and the Engineer's consultants shall be indemnified and shall be made additional insured under the General Contractor's general liability insurance policy.~~ The Client, upon written request of the Engineer, agrees to use its best efforts to add the Engineer as an additional insured on the contractor's general liability and auto liability policies.

Scope of Services. Services not set forth as Basic Services or Additional Services and listed in this Agreement are excluded from the scope of the Engineer's services and the Engineer assumes no responsibility to perform such services.

Severability And Survival. Any provision of this Agreement later held to be unenforceable for any reason shall be deemed void, and all remaining provisions shall continue in full force and effect. All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating responsibility or liability between the Client and the Engineer shall survive the completion of the services hereunder and the termination of this Agreement.

Shop Drawing Review. If included in the scope of services to be provided, the Engineer shall review and approve Contractor submittals, such as shop drawings, product data, samples and other data, as required by the Engineer, but only for the limited purpose of checking for conformance with the design concept and the information expressed in the contract documents. This review shall not include review of the accuracy or completeness of details, such as quantities, dimensions, weights or gauges, fabrication processes, construction means or methods, coordination of the work with other trades or construction safety precautions, all of which are the sole responsibility of the Contractor. The Engineer's review shall be conducted with reasonable promptness while allowing sufficient time in the Engineer's judgment to permit adequate review. Review of a specific item shall not indicate that the Engineer has reviewed the entire assembly of which the item is a component. The Engineer shall not be responsible for any deviations from the contract documents not brought to the attention of the Engineer in writing by the Contractor and approved by the Engineer. The Engineer shall not be required to review partial submissions or those for which submissions of correlated items have not been received.

Specification Of Materials. The Client understands and agrees that products or building materials, which are permissible under current building codes or ordinances may, at some future date, be banned or limited in use in the construction industry because of presently unknown hazardous characteristics. The Client agrees that if the Client directs the Engineer to specify any product or material, after the Engineer has informed the Client that such product or material may not be suitable or may embody characteristics that are suspected of causing or may cause the product or material to be considered a hazardous substance in the future, the Client waives all claims as a result thereof against the Engineer. ~~The Client further agrees that if any product or material specified for this project by the Engineer shall, at any future date be suspected or discovered to be a health or safety hazard, the Client hereby releases the Engineer from any and all liabilities and waives all claims against the Engineer relating thereto.~~

Standard Of Care. Services provided by the Engineer under this Agreement will be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances in the same geographic area.

Suspension Of Services. If the project is suspended for more than thirty (30) calendar days in the aggregate, the Engineer shall be compensated for services performed and charges incurred prior to such suspension and, upon resumption of services, the Engineer shall be entitled to an equitable adjustment in fees to accommodate the resulting demobilization and re-mobilization costs. In addition, there shall be an equitable adjustment in the project schedule based on the delay caused by the suspension. If the project is suspended for more than ninety (90) calendar days in the aggregate, the Engineer may, at its option, terminate this Agreement upon giving notice in writing to the Client.

Unauthorized Changes To Documents. In the event the Client consents to, allows, authorizes or approves of changes to any plans, specifications, construction documents or electronic media, and these changes are not approved in writing by the Engineer, the Client recognizes that such changes and the results thereof are not the responsibility of the Engineer. Therefore, the Client releases the Engineer from any liability arising from the construction, use or result of such changes. ~~In addition, the Client agrees, to the fullest extent permitted by law, to indemnify and hold the Engineer harmless from any damage, liability or cost (including reasonable attorneys' fees and costs of defense) arising from such changes.~~

Compensation for Additional Services. The undertaking of the Engineer to perform professional services under this Agreement extends only to those services specifically described herein. If upon the request of the Client, the Engineer agrees to perform additional services hereunder, the Client and the Engineer shall negotiate and agree upon an additional fee to be paid to the Engineer for completion of the agreed upon Additional Services. The Engineer will be under no obligation to begin or complete requested Additional Services until the additional fee has been negotiated and agreed upon in writing by the Client and the Engineer.

Hourly Billing Rates. All services to be billed on an hourly basis under this agreement will be billed using the Engineer's prevailing billing rate schedule at the time services are provided. If a specific rate schedule is to be used for this Agreement, it shall expire no later than one year from the date of this Agreement and will be replaced with the prevailing rate schedule in effect at that time.

Priority Over Form Agreements. The parties agree that the provisions of this Agreement shall control and govern over any Work Orders, Purchase Orders or other documents, which the Client may issue to Engineer in regard to the project(s) which is (are) the subject of this Agreement. The Client may issue such documents to Engineer for its convenience for accounting or other purposes, but any such Orders will not alter the terms of this Agreement, regardless of any contrary language appearing therein.

McKim & Creed, Inc.
Engineering Division
General Conditions
(01/2011-1)

Paragraph Headings. The paragraph headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

Third Parties. Nothing in this Agreement shall be construed as giving any person, firm, corporation or other entity other than the parties to this Agreement and their respective successors and permitted assigns, any right, remedy or claim under or in respect of this Agreement or any of its provisions.

Default. The Client shall be in default under this Agreement if (i) it fails to pay in full any invoice from the Engineer on the due date or fails to make any other payment due to the Engineer under this Agreement, (ii) it fails to observe or perform any other term, condition or covenant under this Agreement, (iii) it breaches any warranty or representation made under this Agreement, (iv) it dissolves, terminates or liquidates its business, or its business fails or its legal existence is terminated or suspended, (v) any voluntary or involuntary bankruptcy, reorganization, insolvency, receivership, or other similar proceeding is commenced by or against the Client, or (vi) it becomes insolvent, makes an assignment for the benefit of creditors, or conveys substantially all of its assets.

Design Without Construction Phase Services. If the services to be provided by Engineer hereunder do not include construction observation and/or construction administration services, or if such services are included in Engineers contracted services and Client later decides to perform these services itself or decides to retain other consultants or individuals to perform these services, Engineer assumes no responsibility for interpretations of the Engineer's services or for any construction observation, construction administration and/or supervision performed by Client or other parties and Client waives any and all claims against Engineer for any losses, claims, costs or damages of any kind whatsoever that may be in any way connected thereto.

~~In addition Client agrees, to the fullest extent permitted by law, to indemnify and hold Engineer harmless from any loss, claim, damage or cost, including reasonable attorneys' fees and costs of defense, arising or resulting from the performance of construction observation, construction administration and/or supervision by Client, its employees, agents or consultants, and including any and all claims arising from the modification or adjustment of, or any clarifications or interpretations of, the Engineer's Work by others.~~

~~Unless, in the Engineer's sole opinion, appropriate levels of construction observation and construction administration services are contracted for and performed by Engineer, Engineer will not be responsible to provide any engineering or other certifications related to the construction or installation of any improvements.~~

Reliance on Data Provided by Others. Engineer shall be entitled to reasonably rely on the accuracy of information provided to it by Client or any of Client's other consultants or sub-consultants. Engineer shall not be responsible to extensively review the information provided to insure the accuracy thereof. Client agrees to not hold Engineer responsible for errors or omissions in Engineer's work that are directly attributable to errors or incorrect data provided to Engineer by Client or Client's other consultants. Client further acknowledges that any redesign or corrective efforts required by Engineer resulting from incorrect information provided by Client or Client's other consultants will be paid for by the Client as additional services.

Credit and Financial Obligations. Prior to commencement of the work, Engineer may require that Client provide reasonable credit information and other documentation to confirm that the Client has made financial arrangements to fulfill the Client's payment obligations under this Agreement. Engineer may also require such information at any time during the performance of Engineer's services should the Client fail to make payments per this Agreement, a change in the scope materially changes the contract sum, or Engineer identifies in writing a reasonable concern regarding the Client's ability to make payment when payment is due. The Client may be required to furnish this information prior to further commencement or continuation of services by Engineer and Engineer shall not be responsible for the cost of any delay occurring as a result of such a request.

Markup on Expenses. Unless specified otherwise in our proposal, all sub consultant costs and other project related costs incurred by Engineer will be billed with a 15% markup. Company vehicle mileage and internal reproduction costs will be billed at the Engineer's prevailing rate for those items. Personal vehicle mileage costs incurred on the project by employees of Engineer will be billed at the prevailing IRS mileage rate in effect at the time of travel.

SUE Technical Standards. Quality Level A information obtained by direct exposure of the existing utilities can greatly increase the level of confidence with respect to the location of underground utilities at a particular jobsite. Utility exposure (Quality Level A) permits three-dimensional measurements to be taken on utilities for accurate location at each test hole. The overall level of confidence with respect to the location of site utilities can be raised by increasing the number of test holes examined; however, Engineer provides no guarantee of the location of utilities on the site other than at the locations where test holes have been established.

Quality Level B services include the horizontal, above ground detection, marking and mapping of underground utilities. Geophysical prospecting methods are used to indicate the presence and surface position of buried utilities. Utilities are identified and marked in the field in order to be surveyed and mapped. Quality Level B information should not be used for construction purposes, or where exact horizontal and vertical measurements are required.

The accuracy of Quality Level B designating information and depth of cover readings obtained by utilizing Geophysical and Ground Penetrating Radar equipment and techniques are subject to field and soil conditions beyond our control. Engineer will make reasonable efforts to provide comprehensive and correct positional utility marks to the limits obtainable by the instrumentation used and the existing ground conditions; however, Engineer provides no guarantee that all existing utilities on a particular site will be properly located using these methods.

Utilizing Engineer's SUE services does not relieve any party from their obligation to contact the utility damage prevention system before digging begins. Utility marks placed on the ground by Engineer are not to be used for construction purposes.

McKim & Creed, Inc.
Engineering Division
General Conditions
(01/2011-1)

INSURANCE. Engineer shall take out and maintain during the life of this Contract the following insurance:

a. Statutory Workers Compensation insurance;
b. Comprehensive General Liability insurance in an amount of $1,000,000.00 for each occurrence and $2,000,000.00 aggregate;
c. Automobile Insurance in an amount of $1,000,000.00

Client shall be named as an additional insured on the Comprehensive General Liability and Automobile insurance policies. Prior to commencing work, Engineer shall provide evidence that the required insurance is in place. Each policy shall provide that Client shall receive not less than thirty days prior written notice of any cancellation, non-renewal or reduction of coverage of any of the policies.

Executive Director's Report (EDR1-3)	Lower Cape Fear Water & Sewer Authority

AGENDA ITEM

To: CHAIRMAN BLANCHARD AND BOARD MEMBERS

From: TIM H. HOLLOMAN, EXECUTIVE DIRECTOR

Date: November 13, 2023

Re: Executive Director's Report

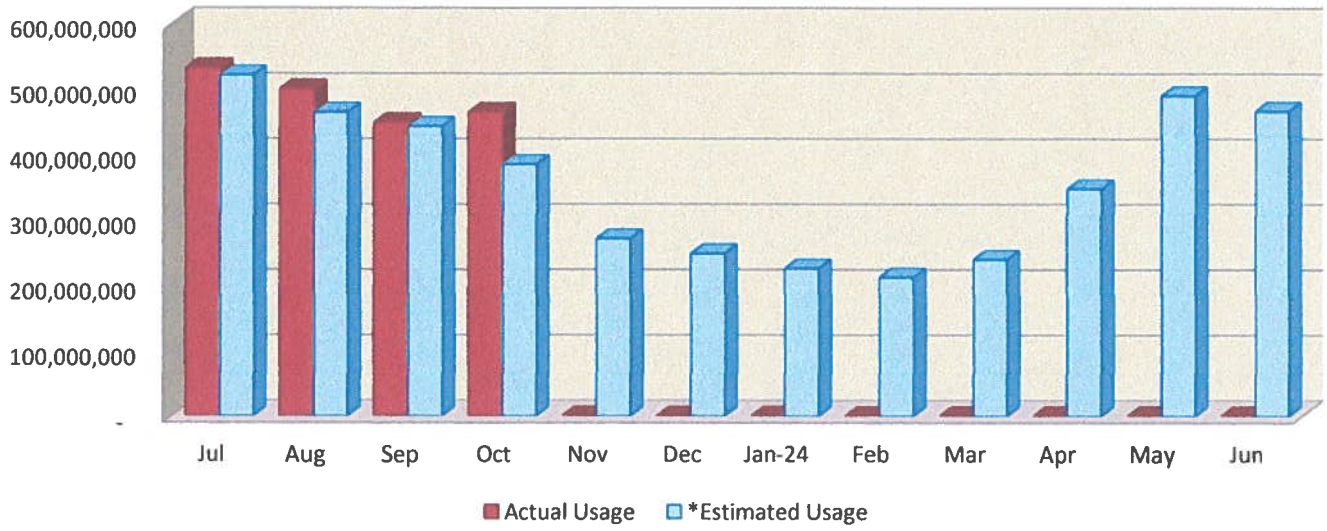
EDR1 - Comments on Customers' Water Usage and Raw Water Revenue for Fiscal Year to Date Ending October 31, 2023

EDR2 - Operating Budget Status, Ending September 30, 2023

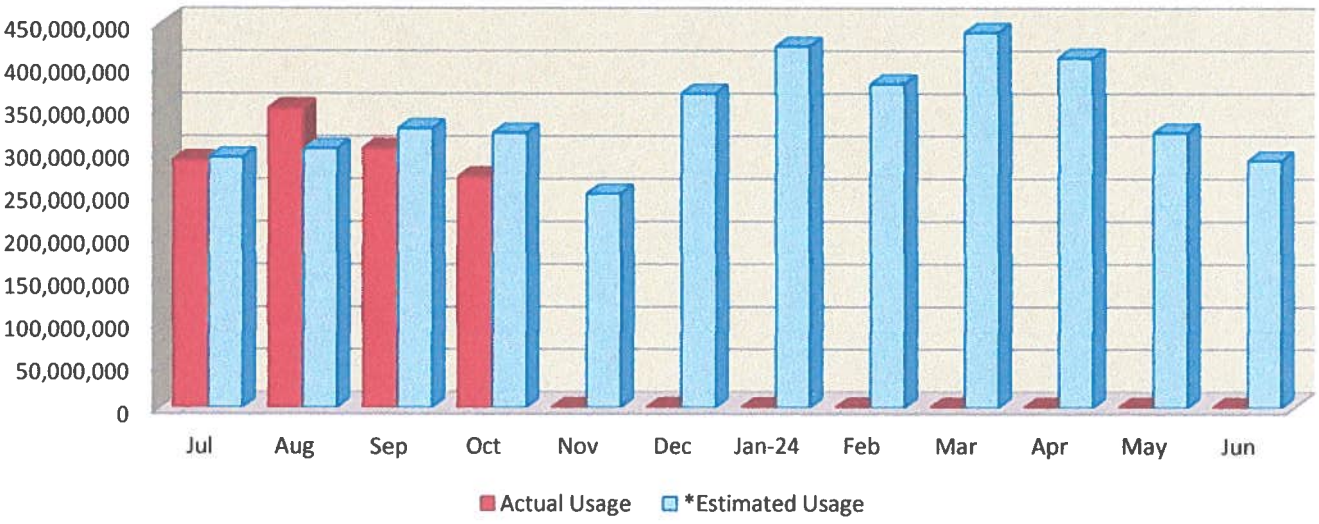
EDR3 - Summary of Activities.

Action Requested: For information purposes.

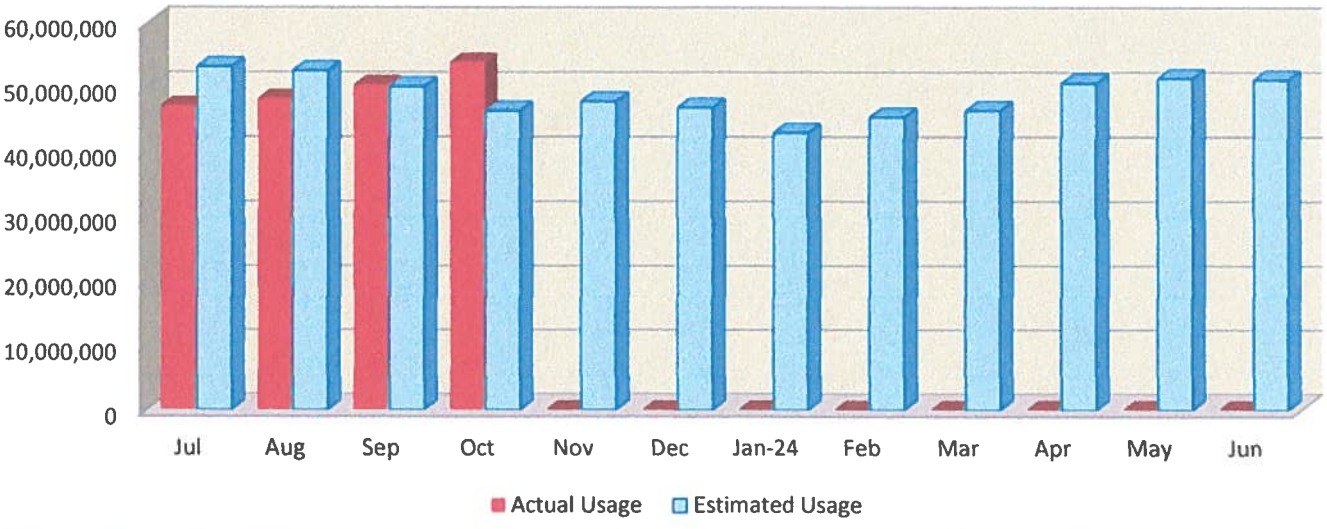
Brunswick County Water Usage FY 22-23



CFPUA Water Usage FY 22-23



Pender County Water Usage FY 22-23



OPERATING FUND BUDGET PERFORMANCE

Jul-1 through Sep 30

	Approved Annual Budget	Jul 1- Sep 30 Kings Bluff	Jul 1- Sep 30 Bladen Bluffs	Jul 1- Sep 30 OF BUDGET	Budget As of 9/30/21
Income					
3000-01 · OPERATING REVENUE					
3001-01 · 01 Bruns County Public Utility	1,725,765	591,368		591,368	34%
3002-01 · 01 CFPUA	1,652,562	377,824		377,824	23%
3003-01 · 01 Pender County	234,160	58,419		58,419	25%
3004-01 · 01 HWY 421 - Invista	200,000	33,281		33,281	17%
3005-01 · 01 Praxair, Inc	100,000	4,274		4,274	4%
3006-01 · 01 Bladen Bluffs Revenue	4,938,603		1,125,116	1,125,116	23%
Bladen Admin Reimb	110,473		39,689	39,689	36%
3007-01 · Sales Tax Refund Revenue	100,000		0	0	0%
Total 3000-01 · OPERATING REVENUE	9,061,563	1,065,165	1,164,805	2,229,970	25%
3100-00 · OF NONOPERATING REVENUE					
3120-00 · Revenue-Other					
Interest & Investment Revenue	500	7,254		7,254	1451%
FEMA Reimbursement	0	0		0	0%
Refunds / Insurance Proceeds/ Other	0	432		432	0%
3180-00 · SRF/Parallel Revenue	2,500,000	97,139		97,139	4%
3900-01 R&R Fund Appropriated	0	0		0	0%
2900-00 Fund Balance	0	0		0	0%
Total 3100-00 · OF NONOPERATING REVENUE	2,500,500	104,824	0	104,824	4%
Total Income	11,562,063	1,169,990	1,164,805	2,334,795	20%
Expense					
4000-01 · ADMINISTRATION EXPENDITURES					
4001-01 · Salary - gross	203,530	35,495	15,265	50,760	25%
4010-01 · Per Diem= mileage+per diem pay	64,001	8,919	4,800	13,719	21%
4012-01 - Vehicle Allowance	5,200	1,010	390	1,400	27%
4070-02 - Phone Allowance	520	101	39	140	27%
4015-01 · Payroll Taxes	20,953	3,382	1,571	4,954	24%
4029-01 · Retirement Employer's Part	26,153	4,128	1,961	6,090	23%
4035-01 · 401K Employer PD Contribution	11,312	2,066	848	2,914	26%
4036-01 · Payroll Processing Exp	2,900	610		610	21%
4038-01 · Insurance Group	40,176	6,487	3,013	9,500	24%
4039-01 · Insurance, Property	103,734	20,558	7,780	28,338	27%
4046-00 Professional Services General	15,000	0	0	0	0%
4046-01 · Attorney	50,000	8,296		8,296	17%
4047-01 · Auditor	8,000	3,200	2,800	6,000	75%
4048-01 · Engineer	300,000	16,014		16,014	5%
4049-01 Information Technology	16,000	4,472		4,472	28%
4055-01 · Office Maint/Repair	24,000	1,718		1,718	7%
4058-01 Office Utilities	5,000	528		528	11%
4059-01 Office Expense	14,000	1,813		1,813	13%
4062-01 Office Equipment	10,000	3,625		3,625	36%
4064-01 Printing & Advertising	5,000	635		635	13%
4065-01 Telephone and Internet	3,500	778		778	22%
4070-01 · Travel & Training	29,000	2,490		2,490	9%
4080-01 · Miscellaneous Expenses	20,000	7,158		7,158	36%
Total 4000-01 · ADMINISTRATION EXPENDITURES	977,979	133,484	38,468	171,953	18%
4500-01 · OPERATING EXPENDITURES					
4501-00 · Sales Tax Expense - Other	100,000		27,559	27,559	28%
4510-01 · Bladen Bluffs Expenses	3,324,385		857,244	857,244	26%
4520-01 · Utilities-Energy Pump Station	786,589	200,163		200,163	25%
4530-01 · Kings Bluff O&M Expenses	686,749	110,569		110,569	16%
4535-01 Kings Bluff Hurricane Other FEMA	0	0		0	0%
4543-01 · Series 2012 Bond Principal (ST)	0	0		0	0%
4544-01 · Series 2012 Bond Interest (ST)	0	0		0	0%
4545-01 · Series 2010 Bond Principal (BB)	970,000		0	0	0%
4546-01 · Series 2010 Bond Interest (BB)	450,000		154,252	154,252	34%
5180-00 · SRF/Parallel Expenditures	2,500,000		349,850	349,850	14%
7400-01 · Operating Capital Expense	1,286,360		12,000	12,000	1%
4998-05- Transfer to R&R- KB R&R Expense	380,000		0	0	0%
4998-05- Transfer to Enterprise Fund	100,000		0	0	0%
Total 4500-01 · OPERATING EXPENDITURES	10,584,083	310,731	1,400,904	1,711,635	16%
Total Expense	11,562,062	444,216	1,439,373	1,883,588	16%

Executive Director Highlighted Activities:

- Meeting with CFPUA to review financial submissions and the State process.
- Continue to review the rate study and addition of partner comments from the October 23, 2023, meeting.
- Participated in the orientation meeting for Leadership Brunswick for the 2023-24 Cohort
- Attended North Carolina Planning Conference
- Attended regional Authority Directors' meeting.
- Attended NCEDA regional meeting.
- Submitted materials for Wilmington Biz Journal advertisements
- Continued LCFWASA Directors Meetings