

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. W-354, SUB 384

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of  
Application by Carolina Water )  
Service, Inc. of North Carolina for ) DIRECT TESTIMONY OF  
Authority to Adjust and Increase ) DANA HILL ON BEHALF OF  
Rates and Charges for Water and ) CAROLINA WATER SERVICE,  
Sewer Utility Service in All Service ) INC. OF NORTH CAROLINA  
Areas in North Carolina

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July 2, 2021

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Dana Hill and my business address is 4494 Parkway Plaza  
3 Boulevard, Suite 375, Charlotte, North Carolina 28217.

4 **Q. WHERE ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am a Director of State Operations for Carolina Water Service, Inc. of North  
6 Carolina ("CWSNC" or "Company").

7 **Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL**  
8 **BACKGROUND?**

9 A. I have been employed with CWSNC since October of 2018 and have been  
10 in the water and sewer profession for twenty-seven years, collectively. Prior  
11 to my employment with the Company, I worked for more than twenty-four  
12 years for the Town of Snow Hill, serving most recently as the Utilities  
13 Director and Town Manager. I hold certifications in water and sewer  
14 treatment as well as utility management.

15 **Q. WHAT ARE YOUR DUTIES AS DIRECTOR OF STATE OPERATIONS**  
16 **WITH CWSNC?**

17 A. I am responsible for directing the safe and efficient operations in eastern  
18 North Carolina, including personnel, facilities, maintenance, and capital  
19 projects, as well as for communicating with state and federal regulators  
20 regarding operational and capital issues.

1 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**  
2 **PROCEEDING?**

3 A. The purpose of my testimony is to provide the North Carolina Utilities  
4 Commission (“Commission” or “NCUC”) with a brief overview of the  
5 operations of CWSNC, including capital improvements made since the last  
6 general rate case, and an update on the Company’s investment in new  
7 technology in support of operations. I also discuss the Company’s  
8 continued efforts to address non-revenue water.

9 **Q. PLEASE BRIEFLY DESCRIBE THE COMPANY’S WATER AND SEWER**  
10 **OPERATIONS IN NORTH CAROLINA.**

11 A. CWSNC is a wholly owned subsidiary of Corix Regulated Utilities, Inc.  
12 (“CRU”). CWSNC is an investor-owned public utility pursuant to North  
13 Carolina General Statute (“G.S.”) 62-3, does business as a regulated water  
14 and sewer utility in North Carolina, and is subject to the regulatory oversight  
15 of the Commission. The Company has provided water and sewer service  
16 in North Carolina for over 55 years and applies in this case for an adjustment  
17 of its water and sewer rates and charges for all the Company’s service  
18 areas in North Carolina. The Company is the second-largest Commission-  
19 regulated water and sewer public utility in North Carolina. CWSNC  
20 presently serves approximately 34,229 water customers and 20,995 sewer

1 customers<sup>1</sup> in North Carolina and operates approximately 93 water systems  
2 and 38 sewer systems in the state. The Company's service territory spans  
3 38 counties in North Carolina, from Bear Paw in Cherokee County to Corolla  
4 in Currituck County. Consequently, CWSNC, as a regulated public utility,  
5 has a continuing responsibility to upgrade the Company's widely dispersed  
6 utility infrastructure and make necessary improvements to ensure its ability  
7 to consistently provide adequate, efficient, and reasonable service to its  
8 customers as required by G.S. 62-131(b).

9 The Company also has an obligation to comply with changing  
10 environmental, health, and safety regulations and to fulfill its overall  
11 obligation to provide quality, dependable service pursuant to its certificate  
12 of public convenience and necessity. To that end, CWSNC has invested  
13 approximately \$20 million in capital improvements since its last general rate  
14 case. In addition, the Company continues to fund required operations and  
15 expense ("O&M") increases to ensure quality and compliant service.

16 **Q. PLEASE DESCRIBE THE COMPANY'S MOST SIGNIFICANT**  
17 **INVESTMENTS SINCE ITS LAST GENERAL RATE CASE.**

18 A. Since its last general rate case, the Company has invested in several capital  
19 improvement projects. Among the most significant of such capital projects  
20 are the following:

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<sup>1</sup> As of 3/31/21 Test Year: 30,856 active water customers, 3,373 water availability customers, 19,788 active sewer customers, and 1,207 sewer availability customers.

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(1) Bradfield Farms Wastewater Treatment Plant: To improve equipment and address safety and environmental concerns, the Company initiated a project to upgrade electrical aspects of its Bradfield Farms Wastewater Treatment Plant in Cabarrus County. Components, including underground wiring and panels, were approximately 31 years old and required numerous repairs during the past several years. The estimated cost of the project is \$992,891, and it is expected to be in-service by approximately September 30, 2021.

(2) Lift Station Replacements: The Company replaced lift stations in Hemby (Union County), Sapphire Valley (Jackson County), Apple Valley (Rutherford County), and Fairfield Harbour (Craven County). These projects continued the Company's effort to replace all dry-can style stations with safer wet-well arrangements. These upgrades will also reduce system vulnerability during significant rain events and severe weather by eliminating pumps that may be prone to flood damage. Customers will benefit through fewer service interruptions and potential annual energy savings. Each lift station project is expected to be in-service by approximately September 30, 2021, and the estimated cost of each lift station project is as follows:

- Hemby: \$807,238;
- Sapphire Valley: \$679,191;

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- Apple Valley: \$553,191; and
- Fairfield Harbour: \$829,243.

(3) Well Rehabilitation: The Company invested in upgrades to the Elk River Well #7 rehabilitation in Avery County. This project consisted of demolition of the existing well building and construction of a new well building large enough to house a filtration system to remove the radium. The project was undertaken to remain compliant with radium levels as defined by the North Carolina Department of Environmental Quality. The estimated cost of the project is \$487,356, and it is expected to be in-service by approximately September 30, 2021.

(4) Well Filtration: The Company invested in the Rutledge Landing Well #3 treatments in Wake County. The objective of this project is to remain compliant with radium levels as defined by the North Carolina Department of Environmental Quality and to achieve secondary iron and manganese compliance. The project involved expanding the well building and installing Greensand filter vessels with onsite backwash disposal. The estimated cost of the project is \$147,908, and the project is expected to be in service by September 30, 2021.

(5) Well Treatment Improvements: The Company engaged in well treatment improvements in Brandywine Bay. These investments

1 were made to restore compliance with disinfection by-products  
2 (“DBP”) regulations in Carteret County. The traditional chlorine  
3 disinfection method combined with long detention time in the system  
4 resulted in numerous violations of the maximum contaminant levels  
5 of TTHM’s and HAA5’s. An ammonia feed system was installed to  
6 form chloramines as an alternate disinfection method to eliminate  
7 DBP formation, and a mixer was installed in the elevated storage  
8 tank in addition to five automatic flushers to insure adequate water  
9 exchange. This project, which cost \$196,522, is complete.

10 In addition, the Company has made many other investments to various  
11 systems, including hydropneumatic and ground storage tank replacements,  
12 water main replacements, tank rehabilitation, and miscellaneous equipment  
13 replacements.

14 Finally, I would add that the cost figures and estimates reflected  
15 above, among other detailed estimates, are expressly identified on W1-10,  
16 Schedule 10, and the Company intends to update, in this proceeding, all  
17 relevant cost estimates with actual costs after the actual costs become  
18 available.

19 **Q. PLEASE DESCRIBE THE COMPANY’S INVESTMENT IN CERTAIN**  
20 **TECHNOLOGIES THAT SUPPORT OPERATIONS.**

21 A. The Company continues its Operations Management System (“OMS”)  
22 initiative, building a comprehensive list of assets and tracking repair /

1 replacement as well as preventative maintenance. The Company is also  
2 implementing a uniform SCADA (supervisory control and data acquisition)  
3 system in a phased approach as: (1) remediation of identified cyber-security  
4 vulnerabilities; (2) transition of systems from obsolete legacy monitoring  
5 platforms; and (3) rehabilitation or replacement of facilities. The intent of  
6 this approach is to extend the feasible lifespan of our existing monitoring  
7 solutions whenever possible. The Company expects to realize reductions  
8 in operating expenses as SCADA systems are activated, by a reduction in  
9 facility visits and the ability to identify and resolve problems remotely.

10 **Q. PLEASE SUMMARIZE THE COMPANY'S CONTINUED EFFORTS TO**  
11 **ADDRESS NON-REVENUE WATER.**

12 A. The Company has implemented an updated non-revenue water ("NRW")  
13 strategy to define the measures taken by staff, which are focused on three  
14 core factors that will lead to better financial and operational sustainability:

15 (1) meter accuracy, whereby source meters have been replaced  
16 during the past five years and are tested regularly, as are purchase  
17 system entry points. Representative residential meters are tested  
18 annually, and replacements are made as needed to ensure  
19 accuracy;

20 (2) process water usage is recorded and tracked monthly, such as  
21 volumes flushed for water quality, lost to repaired leaks, and used for

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internal treatment such as chemical feeds in an effort to quantify true unidentified loss; and

(3) leak identification through district metering in systems with significant unidentified loss. This process consists of installing large diameter meters strategically throughout the system and comparing the volume of water passing into a geographical “sub-area” with the volumes billed to customers to identify specific sections of concern. Acoustic leak detection technology is utilized to locate potential repair needs. American Water Works Association (“AWWA”) water audits are performed on all systems annually, and system specific reviews are conducted monthly by operations staff. As a result of the increased focus on non-revenue water, approximately half of purchase systems decreased in loss percentage in 2020 compared to 2019 and the remaining half showed no significant increase, as shown below:

SYSTEM	2020 % loss	2019 % loss
Whispering Pines	7.6	14.1
High Vista	35.7	48.6
Chalet Village	30	30.8
Riverbend	35.2	38.6
Woodrun	31.4	32.7
Kings Grant	26.5	27.2
Riverpointe	8.6	9.6
Carolina Trace	11.7	9.3
Tanglewood	15.7	14.7
Zemosa Acres	22.6	17.3
Carolina Forest	26	25.3

SYSTEM	2020 % loss	2019 % loss
Lamplighter	12.9	12.2
Yorktown	10.5	10.1
Bent Creek	5.5	5.4

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This strategy is consistent with the principles of the AWWA M36 Manual (“Water Audits and Loss Control Programs”) and addresses NRW based upon the system-specific economic level of intervention. In addition to the previously described efforts, the Company continues to regularly review vacancy and zero consumption reports to ensure that all billable volumes are accurately captured. The Company reviews its strategy on a regular basis and updates as necessary, based on whether or not tangible results are achieved.

**Q. IS THIS TESTIMONY TRUE AND ACCURATE TO THE BEST OF YOUR KNOWLEDGE, INFORMATION, AND BELIEF?**

A. Yes.

**Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

A. Yes, it does. However, I reserve the right to update or amend this testimony upon receipt of additional relevant data or other information that may become available.