

**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

October 26, 2022

Ms. A. Shonta Dunston, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Docket No. W-354, Sub 400 – Application by Carolina Water Service, Inc. of North Carolina for Authority to Adjust and Increase Rates and Charges for Water and Sewer Utility Service in All Service Areas of North Carolina and Approval of a Three-Year Water and Sewer Investment Plan

Dear Ms. Dunston:

Attached for filing on behalf of the Public Staff in the above-referenced docket are the testimonies of Lindsay Q. Darden, D. Michael Franklin, Evan M. Houser, Jay B. Lucas, and Shashi M. Bhatta.

1. Direct Testimony of Lindsay Q. Darden, Engineer, Energy Division;
2. Direct Testimony of D. Michael Franklin, Engineer, Energy Division;
3. Direct Testimony of Evan M. Houser, Engineer, Energy Division;
4. Direct Testimony of Jay B. Lucas, Manager of the Electric Section – Operations and Planning, Energy Division; and
5. Shashi M. Bhatta, Engineer, Energy Division.

By copy of this letter, I am forwarding a copy to all parties of record by electronic delivery.

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Ms. A. Shonta Dunston, Chief Clerk
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Sincerely,

Electronically submitted

/s/ Gina C. Holt

Manager, Legal Division, Water, Sewer,
Telephone, & Transportation Sections

gina.holt@psncuc.nc.gov

/s/ John D. Little

Staff Attorney

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Attachments

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. W-354, SUB 400

In the Matter of
Application by Carolina Water Service,)
Inc. of North Carolina for Authority to)
Adjust and Increase Rates and) **TESTIMONY OF**
Charges for Water and Sewer Utility) **LINDSAY Q. DARDEN**
Service in All Service Areas of North) **PUBLIC STAFF –**
Carolina and Approval of a Three-Year) **NORTH CAROLINA**
Water and Sewer Investment Plan) **UTILITIES COMMISSION**

October 26, 2022

1 **Q. Please State Your Name, Business Address, And Present**
2 **Position.**

3 A. My name is Lindsay Q. Darden. My business address is 430 North
4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am an
5 engineer with the Water, Sewer, and Telephone Division of the
6 Public Staff – North Carolina Utilities Commission (Public Staff).

7 **Q. Briefly State Your Qualifications And Duties.**

8 A. My qualifications and duties are included in Appendix A.

9 **Q. What is the nature of the Company's application in this rate**
10 **case?**

11 A. Carolina Water Service, Inc. of North Carolina (CWSNC or
12 Company) filed an application with the North Carolina Utilities
13 Commission (Commission) on July 1, 2022, in Docket No. W-354,
14 Sub 400, seeking authority to increase rates and charges for water
15 and sewer utility service in all of its four rate divisions: Uniform Water;
16 Uniform Sewer; Bradfield Farms/Fairfield Harbour/Treasure Cove
17 (BF/FH/TC) Water; and Bradfield Farms/Fairfield Harbour/Treasure
18 Cove (BF/FH/TC) Sewer. CWSNC proposed a three-year Water and
19 Sewer Investment Plan (WSIP) for all of its North Carolina service
20 areas. The WSIP includes rate increases for three successive years.
21 CWSNC requests in its application that if the Commission does not

1 approve the WSIP, that the Commission approve a rate increase
2 based on the historical test year.

3 The test year for this rate case is the 12-month period ending March
4 31, 2022. The update period to the test year is through August 31,
5 2022. WSIP Year 1 consists of the 12-month period ending March
6 31, 2024. WSIP Year 2 consists of the 12-month period ending
7 March 31, 2025. WSIP Year 3 consists of the 12-month period
8 ending March 31, 2026.

9 CWSNC proposes to pass on the increased cost of purchased water
10 and sewer treatment to purchased water and sewer customers and
11 requests the continuation of the Water Efficiency Program approved
12 in its last rate case in Docket No. W-354, Sub 384 (Sub 384). The
13 Company also requests approval of a newly proposed Sewer Use
14 Rule and tariff.

15 **Q. Briefly explain the scope of your investigation regarding this**
16 **rate increase application.**

17 A. My areas of investigation in this proceeding have been the review of
18 company records; billing analysis, including short-term variable
19 expense growth factors and customer growth factors; rate design;
20 the continuation of the Water Efficiency Program and the credit card

1 fee-free bill payment option approved in CWSNC's last rate case;
2 and the proposed Sewer Use Rule and tariff.

3 **BILLING ANALYSIS**

4 **Q. Briefly explain your billing analysis.**

5 A. I have reviewed and analyzed CWSNC's billing data for the test year
6 ending March 31, 2022, and the billing data updated through August
7 31, 2022. I determined the end-of-period (EOP) customers and
8 consumption for each service area, for each meter size, for the 12-
9 month period ending August 31, 2022, based on the billing data in
10 the Company's From W-1, Item 26 (Item 26), including the updates
11 to Item 26, provided by CWSNC in response to Public Staff data
12 requests. The customer counts and consumption amounts resulting
13 from my billing analysis for each rate entity are shown in **Darden**
14 **Exhibit Nos. 1, 2, 3, and 4.**

15 I performed a billing analysis to determine the level of annual service
16 revenues theoretically collected at present and proposed rates
17 utilizing the billing data updated through August 31, 2022. I
18 normalized the billing determinants for EOP customer counts and
19 calculated a customer growth percentage to be applicable to the
20 future WSIP years. I analyzed consumption data from the last two

1 rate cases, Docket No. W-354, Subs 364 (Sub 364) and 384 (Sub
2 384), through the updated test year to examine consumption trends.

3 I developed a recommended rate design to recover the service
4 revenue requirements determined by Public Staff Accounting
5 Division witnesses Darrell Brown, Lynn Feasel, Kuei Fen Sun, and
6 Fenge Zhang. The rate design includes specific usage rates for water
7 and sewer systems that purchase and resell bulk water or bulk sewer
8 treatment from a third-party provider.

9 **Q. What are the Public Staff's annual service revenues under**
10 **present and proposed rates?**

11 A. The present and proposed service revenues for the Uniform Water,
12 Uniform Sewer, BF/FH/TC water, and BF/FH/TC sewer for the 12-
13 month period ending August 31, 2022, are shown below in **Darden**
14 **Table 1**. The revenues were calculated using the Public Staff's
15 recommended billing determinants and customer growth factors for
16 the WSIP years, the present rates approved in the Company's most
17 recent rate case, Sub 384, and CWSNC's proposed rates.

1 Darden Table 1 - Public Staff's Service Revenues

Rate Entity	Present Rates	Proposed (Base Year) Rates	WSIP Year 1 Rates	WSIP Year 2 Rates	WSIP Year 3 Rates
Uniform Water ¹	\$22,276,705	\$23,906,083	\$26,071,578	\$27,208,719	\$28,350,864
Uniform Sewer ²	\$16,986,117	\$18,692,599	\$20,840,709	\$22,087,719	\$23,436,240
BF/FH/TC Water ³	\$ 1,879,444	\$ 2,116,038	\$ 2,510,770	\$ 2,661,120	\$ 2,773,136
BF/FH/TC Sewer ⁴	\$ 2,643,518	\$ 3,042,317	\$ 3,169,302	\$ 3,442,492	\$ 3,562,955
Total	\$43,785,784	\$47,757,036	\$52,592,359	\$55,379,572	\$58,123,195

2 **Q. Please describe CWSNC's billing data in reference to the**
3 **previous rate cases.**

4 **A.** In the past several rate cases, the Public Staff worked with CWSNC
5 to correct errors and improve its billing data records. CWSNC's billing
6 data provided to the Public Staff with the current application has
7 continued to improve. The previous issues of missing service areas,
8 including double bills and inaccurate customer counts appears to
9 have been resolved, with only minor adjustments required. The

¹ See **Darden Exhibit No. 5.**

² See **Darden Exhibit No. 6.**

³ See **Darden Exhibit No. 7.**

⁴ See **Darden Exhibit No. 8.**

1 Company's Form W-1, Item 26 met all the provisions ordered by the
2 Commission in Sub 364 Ordering Paragraph 16 as follows:

3 That in the Company's next general rate case filing
4 CWSNC shall ensure that its NCUC Form W-1, Item 26
5 is reconciled with the Company's bill data to ensure
6 that the filing does not include double bills, that the
7 Company accounts for multi-unit customers, and that
8 the other bills produced, such as final bills, late notices,
9 re-bills, or other miscellaneous bills are not included in
10 the NCUC form W-1, Item 26 filing.

11 The bulk accounts and multi-unit customers that were not included
12 in Sub 384, were included and accounted for in the current
13 application. All customer count and consumption adjustments
14 questions from the Public Staff were addressed by CWSNC and
15 incorporated in my recommended billing analysis.

16 **Q. Describe any significant adjustments made to the billing data
17 that have not been made in previous rate cases.**

18 A. The Public Staff discovered through its investigation that a portion of
19 the customers included in the Danby systems were customers
20 located in South Carolina. Danby is a water and sewer system in
21 CWSNC's Uniform rate division. These customers should be
22 included in the service territory of Blue Granite Water Company, the
23 South Carolina affiliate of CWSNC. The South Carolina customers
24 listed in **Darden Table 2** below were removed from the billing
25 analysis and expenses were adjusted accordingly. Public Staff

1 witness D. Michael Franklin describes the adjustment to purchased
2 power in his testimony due to the customer allocation.

3 Darden Table 2 – Danby Water and Sewer SC Customer Counts

Rate Class	SC Customers
Water & Sewer Residential 5/8-inch	27
Sewer Commercial 5/8-inch	327
Sewer Commercial 2-inch	1

4 Any other adjustments made to the billing determinants were minor
5 adjustments based on CWSNC's responses to Public Staff Data
6 Request Nos. 38 and 59.

7 **Q. Have you investigated average consumption?**

8 A. Yes. I calculated the average consumption per customer for
9 customers with less than a 1-inch meter for each rate class in each
10 rate entity, shown in **Darden Exhibit No. 9**. The average
11 consumption, or usage, was compared to the average usage
12 amounts determined in the previous two CWSNC rate cases. For the
13 Sub 364 test year, the total usage and EOP customer data are found
14 in Casselberry Exhibits 4-7 and 16 and for the Sub 384 test year, the
15 total usage and EOP customer data are found in Darden Exhibits 4-
16 7 and 16. I compared the average consumption for each rate class
17 in each rate entity to the corresponding average consumption of

1 previous rate cases to develop general conclusions about the
2 trending consumption for each rate class.

3 The commercial rate classes consumption data did not follow a
4 consistent trend. The average usage varied greatly over the past
5 three rate cases; therefore, more data points are necessary to
6 potentially establish a clear trend. Due to this variability, the Public
7 Staff was unable to determine a definitive forecast of commercial
8 consumption that would better predict future consumption than 12-
9 month period ending August 31, 2022. The average commercial
10 consumption over the three time periods for the commercial class
11 customers with a meter size of less than 1-inch is summarized in
12 **Darden Table 3** below.

13 Darden Table 3 – Commercial Average Consumption Summary

Commercial Rate Entity	Test Year Sub 364	Test Year Sub 384	Updated Test Year Sub 400
Uni. Water	3,761	3,832	5,383
Uni. Pur. Water	4,660	4,307	4,777
Uni. Sewer	4,909	4,897	6,703
BFFHTC Water	4,655	6,474	5,700
BFFHTC Sewer	4,958	5,795	6,640

1 The residential rate class consumption data followed a consistent
2 trend when comparing the average residential usage for customers
3 with less than a 1-inch meter over the past three rate cases. There
4 was not a consistent increase or decrease in the average
5 consumption values, so average consumption has remained
6 relatively constant over these time periods. The average residential
7 consumption amounts over the three time periods are summarized
8 in the table below, **Darden Table 4**, for the residential class
9 customers with a meter size of less than 1-inch.

Darden Table 4 – Residential Average Consumption Summary

Residential Rate Entity	Test Year Sub 364	Test Year Sub 384	Updated Test Year Sub 400
Uni. Water	3,686	3,773	3,775
Uni. Pur. Water	3,840	3,963	3,968
Uni. Sewer	3,021	3,427	3,147
BFFHTC Water	4,125	4,136	4,165

10 For all four rate entities, the maximum variation in average
11 consumption between rate cases is 406 gallons and the minimum
12 variation is 2 gallons. The average of the consumption variations
13 between rate cases is 48 gallons. According to The Water Research

1 Foundation's 2016 Residential End Uses of Water Study⁵ (Study),
2 the average American shower uses approximately 15.8 gallons and
3 lasts for 7.8 minutes at an average flow rate of 2.1 gallons per
4 minute. According to the Study, the impact of a customer spending
5 an extra 23 minutes showering a month will result in the average
6 variance in average consumption. Therefore, the differences
7 between the average consumption values shown above in **Darden**
8 **Table 4** would not be a result of a significant change in a customer's
9 water usage habits.

10 Due to the average consumption remaining relatively constant, with
11 minimal variance for residential customers and no clear trend for
12 commercial customers, the Public Staff did not make a consumption
13 factor adjustment to the billing analysis for the base case or for the
14 WSIP Years 1, 2, and 3.

15 **Q. Does your average consumption conclusion vary from**
16 **CWSNC's average consumption conclusion?**

17 A. In the Supporting Calculations for Growth Assumptions in Schedule
18 E, W1-28(a), CWSNC states:

⁵ The Water Research Foundation Study is located at this link:
<https://www.waterrf.org/research/projects/residential-end-uses-water-version-2>

The study is also referenced at this link: <https://home-water-works.org/indoor-use/showers>

1 Over this same period [Subs 364, 384, and 400 rate
2 case time periods] CWSNC has seen a slight increase
3 in average consumption under the previously approved
4 rate design. Subsequent to the order issued 4/08/22,
5 CWSNC had a shift in its rate design placing a higher
6 cost on the volumetric component. CWSNC is
7 assuming the conservation efforts due to the changed
8 rate design will offset in entirety any potential increases
9 in average usage.

10 Although the Public Staff does not agree with the assumption that a
11 shift in rate design will necessarily result in conservation efforts great
12 enough to reduce the overall average consumption; the Public Staff
13 recognizes that it could be a possible outcome. In light of the
14 relatively constant average usage determined in this rate case, the
15 Public Staff agrees with CWSNC that a consumption growth factor
16 should not be applied at this time.

17 **Q. Did CWSNC file an updated billing analysis?**

18 A. No. CWSNC provided a revised Schedule E – Consolidated Billing
19 Analysis with its update filed on September 19, 2022. The revised
20 Schedule E included updated rates for purchased water and sewer
21 systems and updated revenues that had changed due to the revised
22 rates. CWSNC did not update EOP customers or consumption
23 through August 31, 2022. The Public Staff's billing analysis updated
24 EOP customers and usage to reflect the 12-month period ending
25 August 31, 2022. The Public Staff also updated the purchased water

1 and sewer rates that had changed since CWSNC's application was
2 filed.

3 **Q. Please describe the customer growth factor used in your billing**
4 **analysis.**

5 A. A customer growth factor projects customer counts for the billing
6 analysis for the future test years. To calculate a customer growth
7 factor, I compared the EOP customer count from the Sub 364 rate
8 case, test year ending March 31, 2019, with the EOP customer count
9 from the current rate case, updated test year ending August 31,
10 2022. This comparison covers a time span of three years and five
11 months, or 3.42 years, March 31, 2019, through August 31, 2022. I
12 calculated the compound annual growth rate over this time period. A
13 compound annual growth rate is used so that the year over year
14 stacking effect of percentages does not overstate growth.⁶ This is
15 different from the customer growth factor used in a traditional historic

⁶ For example, if a system with 100 customers grows and adds another 100 customers over 5 years, the average growth rate is 20%. However, if the 20% average growth rate was compounded annually to replicate the actual growth then it would be misapplied and overquantify growth. The compound growth rate formula is:

Compound annual growth rate = $[(\text{Final \#} / \text{Begin \#})^{(1/t)}] - 1$

Year	2000	2001	2002	2003	2004	2005
Customers	100	120	140	160	180	200
20%	100	120	144	173	207	249
14.87%	100	115	132	152	174	200

1 test year rate case to quantify and account for growth from the test
2 year to the EOP, which is applied one time instead of compounded.

3 I calculated a customer growth factor for each rate class for each rate
4 entity. Based on the results, I applied a customer growth factor for
5 the residential rate classes but not for the commercial rate classes.
6 The commercial customer classes had consistent EOP customers
7 counts; therefore, a growth factor is unnecessary. The calculations
8 and EOP customer projections for the residential rate classes are
9 shown on **Darden Exhibit 10**.

10 As previously stated, I used the updated Sub 400 EOP customer
11 count compared to the Sub 364 EOP customer count and the time
12 frame of 3.42 years to calculate the compound annual growth rate. I
13 applied this growth rate to the Sub 400 EOP customer number to
14 determine the customer count in each of the WSIP Years. For the
15 projection between updated Sub 400 and the WSIP Year 1, I applied
16 13 months of growth. This year and one month adjustment projected
17 the August 31, 2022, EOP customer count to a September 31, 2023,
18 customer count, which is the midpoint of WSIP Year 1. From the
19 WSIP Year 1 customer projection, I applied the growth rate on an
20 annual basis to continue to calculate a midpoint customer count for
21 WSIP Years 2 and 3.

1 I incorporated the midpoint customer count projections for the WSIP
2 years in my billing analysis schedules for the following residential
3 rate classes: Uniform Water and Sewer (<1-inch), Uniform Water and
4 Sewer Purchased (<1-inch), Uniform Water and Sewer Availability,
5 BF/FH/TC Water and Sewer (<1-inch), and BF/FH/TC Water and
6 Sewer Availability.

7 **Q. Briefly describe any discrepancies between your calculations**
8 **and the customer growth factor calculations provided by**
9 **CWSNC.**

10 A. CWSNC provided customer growth factor calculations as part of the
11 Schedule E – Updated Consolidated Bill Analysis – MYRP. The
12 Public Staff calculations follow a similar methodology as CWSNC’s
13 calculations, but the time frames projected, and the percentage
14 calculations are different. CWSNC used a four-year average for a
15 period of March 31, 2019, through March 31, 2022, which spans
16 three years. CWSNC used a percent increase calculation between
17 the EOP customer count for Sub 364 (March 31, 2019) and the EOP
18 customer count for Sub 400 original test year (March 31, 2022).
19 Using the average annual customer percent growth, CWSNC applied
20 the customer growth rate to the Sub 400 original EOP value to project
21 one year. This provided a projection for customers for March 31,
22 2023. CWSNC then calculated the rate year average to calculate a

1 mid-year amount, which would be the customer count for September
2 31, 2022. The Public Staff does not agree with the timeline of these
3 projections. The CWSNC calculation shows a projection of
4 customers for September 31, 2023, for the mid-point of WSIP Year
5 2 and a projection of September 31, 2024, for the mid-point of WSIP
6 Year 3. These dates do not fall within the appropriate WSIP year time
7 frames. CWSNC also did not include customer growth factors for
8 purchased water systems. The historical data shows continued
9 customer growth for the purchased water and sewer systems;
10 therefore, a customer growth factor is necessary to project future
11 years.

12 The Public Staff's recommended customer growth rates accurately
13 follow the timeline to project the mid-year customer count of the
14 future WSIP years. The Public Staff's recommendation also includes
15 a projection of growth for the purchased water and sewer systems.

16 **Q. Did you calculate a growth factor to be applied to short-term**
17 **variable expenses?**

18 A. Yes. For each rate entity I calculated an expense growth factor for
19 the base case and WSIP Years 1, 2, and 3. To calculate the expense
20 growth rate, I compared the EOP customer count to the updated test
21 year and each WSIP Year EOP to the prior year (e.g., the projected
22 WSIP Rate Year 1 EOP to the updated test year EOP). The total

1 EOP customer count was used to capture all the customers since the
2 expenses apply to all customers and not specific rate classes such
3 as residential or purchased. I, therefore, recommend that Public Staff
4 Accounting witnesses Kuei Fen Sun and Fenge Zhang apply the
5 growth factors I calculated to the following water and sewer short-
6 term variable expenses: sludge hauling, purchased power, and
7 chemicals, identified by the Environmental Finance Center (EFC)⁷.
8 (EFC Report at 6 and 11) The growth factors should not be applied
9 to purchased water expenses or purchased wastewater treatment.
10 Short-term variability of the purchased water expenses and
11 purchased wastewater treatment are almost entirely matched by
12 variability of the commodity revenues of those systems. This is
13 consistent with the Commission's Order Approving Partial
14 Settlement Agreement and Stipulation, Granting Partial Rate
15 Increase, and Requiring Customer Notice issued on December 18,
16 2018, in Docket No. W-218, Sub 497. The short-term variable
17 expense growth factor calculations are shown on **Darden Exhibit**
18 **11**.

⁷ The Report to the Public Staff of the North Carolina Utilities Commission and Aqua North Carolina, Inc., on the Studies of Volumetric Wastewater Rate Structures and a Consumption Adjustment Mechanism for Water Rates of Aqua North Carolina, Inc. prepared by the Environmental Finance Center at the UNC School of Government was filed in Docket No. W-218, Sub 363A on March 31, 2016.

<https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=a7fd9d58-46ed-425f-9298-c4419f319a1f>

1 **Q. Briefly describe any discrepancies between expense growth**
2 **rate calculations performed by the Public Staff and those**
3 **provided by CWSNC.**

4 A. CWSNC calculated an expense growth rate in a similar manner to
5 the Public Staff but used EOP customer counts for residential
6 customers with a less than 1-inch meter. The expenses are not
7 categorized between rate classes, so the expense growth rate
8 should not be calculated by rate classes. By only using one rate
9 class's EOP customer counts, the customer growth trend of an entire
10 rate entity is not captured; therefore, when applied to the expenses
11 of an entire rate entity, there is not a matching between customer
12 growth and associated short-term variable expenses. CWSNC's
13 calculated expense growth rates overstate the growth impact on
14 expenses because the growth in residential customers with a less
15 than 1-inch meter has significantly outpaced growth of the other rate
16 classes and the rate entity as a whole.

17 **Q. How did you determine the usage charge for purchased water**
18 **and sewer customers?**

19 A. The usage charge for purchased water and sewer systems reflects the
20 suppliers' current usage charge except for the City of Hendersonville
21 (Uniform Water), City of Winston-Salem (Uniform Water), and Town of
22 Dallas (Uniform Sewer), which have tiered rates. The usage charge for

1 these three suppliers was calculated based on the average monthly
2 usage for each individual service area. The average monthly usage
3 was applied to the tiered rates for the supplier. For suppliers that also
4 charge a base charge, the base charge was included in the updated
5 purchased water expenses and sewer treatment expenses. The Public
6 Staff agrees with the proposed volumetric purchased water and sewer
7 rates provided by CWSNC except for the water rates of the City of
8 Hendersonville and City of Winston-Salem. The Public Staff's
9 recommendation for these systems is described in Public Staff witness
10 D. Michael Franklin's testimony. I incorporated the purchased water
11 and sewer rates recommended by Witness Franklin in the Public
12 Staff's billing analysis.

13 **Q. What is your recommendation concerning CWSNC's proposed**
14 **rates?**

15 A. The Public Staff recommends a partial rate increase for Uniform
16 Water,⁸ Uniform Sewer,⁹ BF/FH/TC water,¹⁰ and BF/FH/TC sewer.¹¹
17 My revenue calculations for each rate division are shown on the
18 referenced exhibits.

⁸ See **Darden Exhibit No. 12.**

⁹ See **Darden Exhibit No. 13.**

¹⁰ See **Darden Exhibit No. 14.**

¹¹ See **Darden Exhibit No. 15.**

1

RATE DESIGN2 **Q. Briefly describe the rate design proposed by CWSNC.**

3 A. CWSNC proposes to utilize the same ratio of base facility charges to
4 volumetric charges approved by the Commission in the Sub 384 rate
5 case. Consistent with the Joint Settlement Agreement and
6 Stipulation approved in that case, the Company's proposed rate
7 design ratio is 40:60 (base facility charge: usage charge) for Uniform
8 and BF/FH/TC water and 60:40 (base facility charge: usage charge)
9 for Uniform sewer. In addition, the Company requested changes to
10 the purchased water systems that increased their volumetric rates
11 since the end of the test year.

12 **Q. What is the Public Staff's position on rate design?**

13 A. The Public Staff agrees with the Commission, in its Sub 384 Order,
14 that there is a balance to strike between achieving revenue
15 sufficiency and stability to ensure quality, reliability, and long-term
16 viability for properly operated and well-managed utilities while setting
17 fair and reasonable rates that effectively promote efficiency and
18 conservation. The Public Staff, therefore, recommends a service
19 revenue ratio of 30:70 (base facilities charge: usage charge) for
20 Uniform Water and BF/FH/TC water customers. The Public Staff
21 recommends a service revenue ratio of 40:60 (base facilities charge:

1 usage charges) for Uniform Sewer. The BF/FH/TC residential sewer
2 rate is a flat rate.

3 A lower base facility charge reduces the cost burden on customers
4 for access to utility service before the use of any service. It allows
5 customers to have greater control over their total bill by adjusting
6 their usage through conservation and improved efficiency. The rate
7 design ratios of 30:70 for water and 40:60 for sewer, as discussed
8 above, have been implemented in my recommended rates and
9 supporting exhibits detailing the billing analysis.

10 Base facility charges are a frequently discussed and highly
11 controversial issue in electric, natural gas, water, and wastewater
12 rate cases. There are advantages and disadvantages to the different
13 base to usage ratios for the Company, rate groups, and individual
14 customers. In the past decade, investor-owned electric and natural
15 gas residential base facility charges in North Carolina have remained
16 fairly low in the \$10 to \$15 range, while residential water base
17 charges have continued to increase, and residential wastewater
18 rates have historically been either a flat rate or a very high
19 percentage of the average residential bill.

20 The Public Staff's targeted goal for an ideal service revenue ratio is
21 30:70 for both water and sewer services. A rate structure shift from

1 60:40 for sewer to 30:70 would likely result in significant rate shock
2 for customers. While the average bill would remain nearly the same,
3 low users' bills would decrease, and high users' bills would increase.
4 As a means of mitigating rate shock while still progressing toward an
5 effective price signal, the Public Staff recommends its service
6 revenue ratios as an incremental approach to gradually move
7 towards its targeted goals for service revenue ratios.

8 The incremental shift to higher volumetric charges sends a price
9 signal that properly promotes efficiency and conservation. CWSNC
10 has shown trends of customer growth, and average monthly
11 consumption per customer has been shown to be stable or
12 stabilizing. This combination of growth and stabilizing consumption
13 makes it unlikely that revenue instability and insufficiency will occur.
14 In addition, if the multi-year rate plan (MYRP) is approved, then
15 companies' revenue sufficiency is further protected by the return on
16 equity banding, which is discussed further in the joint testimony of
17 Public Staff witnesses Hinton, Sun, Zhang, and Junis.

18 CWSNC customers have filed many consumer statements and
19 testified at the public hearings about the rising cost of their water and
20 sewer bills. The topic of most of the complaints received in the
21 current and past rate cases from CWSNC customers is the cost of
22 service. These complaints have been a common reaction in the past

1 few rate cases, especially since the Company filed four rate cases in
2 the past four years. This reaction has been amplified further by the
3 fact that the Company was very recently granted a partial rate
4 increase effective April 8, 2022, in its Sub 384 rate case, and almost
5 immediately filed the current application for successive annual rate
6 increases into 2026. A rate design that is more heavily weighted to
7 the volumetric charges gives customers more control over their
8 monthly bill. With the continued rising costs of service, a rate design
9 that is more properly balanced between achieving revenue
10 sufficiency and stability and setting fair and reasonable rates that
11 effectively promote efficiency and conservation, as the Public Staff
12 has proposed, could ease the rate increases.

13 On March 20, 2019, the Commission issued an Order in Docket No.
14 W-100, Sub 59, Investigation of Rate Design for Major Water Utilities,
15 making the Public Staff, CWSNC, and Aqua parties to the proceeding
16 and requiring the parties to file initial comments to include “a
17 discussion of rate design proposals that may better achieve revenue
18 sufficiency and stability while also sending appropriate efficiency and
19 conservation signals to consumers.” The Order instructed the parties
20 to address in their initial comments (1) “specific objectives that could
21 be achieved from various types of rate structures (for example, but
22 without limitation, irrigation rates, seasonal rates, surcharges when

1 supply is low or in a drought situation, increasing block rates, multiple
2 rate schedules, etc.); (2) “the impact on customers’ monthly
3 charges”; and (3) “the anticipated impact on efficiency and
4 conservation.” On May 22, 2019, the parties filed their initial
5 comments and on June 19, 2019, the parties filed their reply
6 comments. The Public Staff incorporates by reference its initial
7 comments filed on May 22, 2019, and reply comments filed on June
8 19, 2019, into this testimony and requests the Commission take
9 judicial notice of these filings.

10 **Q. Does the Public Staff recommend any changes to the rate**
11 **design for Uniform purchased water base facility charges?**

12 A. Yes, the Public Staff is recommending a change to the purchased
13 water base facility charge to fairly distribute the increase in the
14 revenue requirement between purchased water customers and non-
15 purchased water customers. The purchased water customers’ usage
16 charge is a pass-through rate from the third-party supplier. Due to
17 this volumetric rate being fixed (ideally equal to the supplier usage
18 rate), when the rate design is shifted to a 30:70 ratio by lowering the
19 base facility charge, the purchased water customers’ base facility
20 charge is reduced without a corresponding increase in their usage
21 charge. This could result in a rate decrease for purchased water
22 customers when there is no decrease in the cost to serve these

1 customers and thus no decrease in the revenue requirement. When
2 the purchased water base facility charge is reduced, that revenue
3 reduction is reflected in the non-purchased water customer usage
4 rates.

5 With the present rates and current rate structure, purchased water
6 systems revenue contributes approximately 13% of the overall
7 revenues for Uniform water. Due to this percentage of the overall
8 rates, if the purchased water base facility charges are reduced due
9 to rate design, the impact on the overall revenue distribution leads to
10 an inequity for the non-purchased water customers in the volumetric
11 rate.

12 The Public Staff proposes to treat the purchased water base charges
13 separately from the non-purchased water base charges. All the
14 purchased water third-party providers have lower volumetric rates
15 than CWSNC, which results in the purchased water systems not
16 having the same rate design as the non-purchased water system
17 customers. Since the purchased water systems do not equate to a
18 30:70 rate design individually, it is unnecessary for the base facility
19 charge to be consistent with the non-purchased water base facility
20 charge.

1 The Public Staff recommends that the base facility charge for
2 purchased water systems be increased by the same percent
3 increase of the service revenue requirement for the rate entity. For
4 example, for the base case, the Public Staff's recommended service
5 revenue requirement for the Uniform water rate entity is an increase
6 of 2.31% compared to the last rate case; therefore, the purchased
7 water system proposed base facility charge would be the current
8 approved base facility charge of \$24.53 increased by 2.31%, or
9 \$0.57. This is the same method that the availability charges and
10 certain system-specific rates are calculated for the rate entities.

11 The service revenue requirement increase percentage applied to the
12 purchased water base facility charge to determine the proposed rate,
13 as discussed above, has been included in my recommended rates
14 and supporting exhibits detailing the billing analysis.

15 **Q. Does the Public Staff's recommended rate design vary for the**
16 **base year and WSIP Years 1, 2, and 3?**

17 A. No. The Public Staff recommends the same rate design and rate
18 structure for the base year and WSIP Years 1, 2, and 3.

19 **WATER EFFICIENCY PROGRAM**

20 **Q. Briefly describe CWSNC's request regarding the Water**
21 **Efficiency Program.**

1 A. In its application and as detailed in the direct testimony of CWSNC
2 witness Philip J. Drennan,¹² the Company has proposed to continue
3 the Water Efficiency Program as approved in Sub 384, including the
4 deferral of rebates applied to customer bills. The Water Efficiency
5 Program implements rebates to customers for installing efficient
6 water fixtures and appliances. Once a customer submits the program
7 application and the application is approved, CWSNC applies a
8 rebate as a credit to the customer's monthly bill. CWSNC proposes
9 to track the rebates applied to customer bills in a regulatory asset
10 account that would be addressed in a future rate case. The program
11 was approved in the Commission's Order Granting Partial Rate
12 Increase and Requiring Customer Notice issued on April 8, 2022
13 (Sub 384 Order); after the end of the test year for the current rate
14 case. CWSNC made a pro-forma adjustment to Office Supplies and
15 Other Expenses in the amount of \$2,000 to account for the cost of
16 an annual bill insert to provide information to customers about the
17 program. CWSNC states that as of July 5, 2022, no applications have
18 been received, but it expects more participation after customer
19 noticing and outreach efforts are complete.

¹² Page 29, line 22 through page 30, line 19, Direct Testimony of Company witness Philip J. Drennan filed in Docket No. W-354, Sub 400, on July 5, 2022.

1 **Q. Does the Public Staff have any concerns about CWSNC's**
2 **proposed water efficiency program?**

3 A. As stated in its testimony in the last rate case, the Public Staff has
4 concerns about the cost-benefit to customers, the regulatory asset
5 account balance, and the implementation of a brand-new program.
6 While providing a rebate in the form of a customer credit could
7 promote water efficiency, the Public Staff has the following concerns
8 with the Company's proposed Water Efficiency program: 1) a cost-
9 benefit analysis has not been completed for this program due to the
10 unknown customer participation, therefore, CWSNC would be
11 implementing a full program instead of a time-limited pilot; 2) with
12 participation and thereby overall cost unknown, waiting to address
13 the recovery of the regulatory asset in the next rate case could be
14 contentious; 3) since customers typically stay in their homes longer
15 than the estimated lives of the appliances included in this program,
16 CWSNC's maximum credit of one dishwasher, one washing
17 machine, two shower heads, and two toilets may be too limited; 4)
18 participation may be heavily influenced by household financial
19 demographics; and 5) conceptually, more efficient appliances should
20 reduce consumption, which would likely cause the utility to request
21 higher rates in future rate cases to recover program costs and offset
22 lower consumption.

1 **Q. What is the Public Staff's position on the Water Efficiency**
2 **Program?**

3 A. The Sub 384 Order issued in the last rate case states that the Water
4 Efficiency Program should be treated as a pilot program and
5 reevaluated in CWSNC's next rate case (see page 10 and Ordering
6 Paragraph 11). The Commission ordered CWSNC to file a report on
7 an annual basis detailing the dollar amount and number of rebates
8 applied to customers' bills, the dollar amount of the regulatory asset,
9 the type of water efficiency measures for which rebates were applied
10 and estimates or ranges of water efficiency impacts of such
11 measures from an authoritative, third-party source. The Commission
12 issued the Sub 384 Order on April 8, 2022, and CWSNC filed a
13 general rate case less than three months later on July 1, 2022. Due
14 to the program not being fully implemented over this short period,
15 and having no participants yet, the Public Staff is unable to evaluate
16 this program. The Public Staff does not oppose the Water Efficiency
17 Program, but recommends that the conditions set forth by the
18 Commission in Ordering Paragraphs 11 and 12 of the Sub 384 Order
19 be continued in this rate case proceeding, which state as follows:

20 11. That CWSNC is authorized to implement its
21 proposed Water Efficiency Program, as a pilot
22 program, to be reevaluated in CWSNC's next general
23 rate case. With regard to the Water Efficiency Program,
24 CWSNC shall file an annual report with the
25 Commission and the Public Staff detailing the

1 implementation of this program, the dollar amount and
2 number of rebates applied to customer bills, the dollar
3 amount of the regulatory asset, the type of efficient
4 water fixtures for which rebates were applied, and
5 estimates or ranges of water efficiency impacts of such
6 measures from an authoritative, third-party source;
7 [and]

8 12. That consistent with CWSNC's proposal, the
9 Stipulating Parties agree that CWSNC should be
10 authorized to defer in a regulatory asset account and
11 subsequently recover in a future rate case the efficient
12 water fixture rebates applied to customer bills. The
13 regulatory asset account shall not earn a return or
14 carrying charges[.]

15 **CREDIT CARD FEES**

16 **Q. Briefly describe CWSNC's fee-free payment option.**

17 A. The Sub 384 Order authorized CWSNC to implement its proposed
18 fee-free payment option for residential customers. CWSNC is
19 required to file a report on November 30 and May 31 each year on
20 the implementation of the fee-free payment option, detailing the
21 number of fee-free payments made by customers by month, along
22 with CWSNC's uncollectibles expense by month. CWSNC witness
23 Drennan¹³ states in his testimony that the fee-free payment program
24 was scheduled to be fully operational by mid-July of 2022.

¹³ Page 31, lines 8 through 9, Direct Testimony of Company witness Philip J. Drennan filed in Docket No. W-354, Sub 400, on July 5, 2022.

1 **Q. Have any adjustments been made associated with the fee-free**
2 **payment option?**

3 A. No. The Public Staff agrees with CWSNC's pro-forma adjustment for
4 residential-only credit card payment processing fees. The Public
5 Staff verified that the adjustment included costs for only residential
6 customers, and no commercial customers.

7 **Q. What is the Public Staff's position on the credit card fees?**

8 A. The Public Staff recommends that the conditions set forth by the
9 Commission in Ordering Paragraph 10 of the Sub 384 Order be
10 continued in this rate case proceeding, which states as follows:

11 10. That CWSNC is authorized to implement its
12 proposed fee-free payment option for residential
13 customers; in connection with this option, CWSNC
14 shall report to the Commission and Public Staff, every
15 six months on November 30 and May 31 each year with
16 the first report to be filed on or before November 30,
17 2022, for the six months ending September 30, 2022,
18 on the implementation of this option, detailing the
19 number of fee-free payments made by customers by
20 month, along with CWSNC's uncollectibles expense by
21 month[.]

22 **METER REPLACEMENT PROJECTS**

23 **Q. Please describe the meter replacement projects included in the**
24 **WSIP projections.**

25 A. Appendix 1A and 1B of the Capital Improvement Plan (CIP) plan
26 prepared by engineering firm, Black & Veatch for CWSNC lists the

1 future AMI (advanced metering infrastructure) water meter
2 replacement projects for the Uniform Water and BF/FH/TC Water
3 rate entities, respectively. CWSNC uses three types of water meters,
4 standard, AMR (automated meter reading), and AMI meters. A
5 standard meter requires a manual on-site read of the meter gauge,
6 which is typically performed once a month. An AMR meter uses radio
7 frequencies to send an electronic read that can be taken by a person
8 in a vehicle driving by near the meter. An AMI meter is on a fixed-
9 point network, either radio or cellular, with strategically distributed
10 collectors or receivers that are capable of two-way communication
11 with the meter. An AMI meter does not require a person or vehicle to
12 be in the vicinity of the meter to send an electronic read and can be
13 communicated with in near real time.

14 CWSNC included several meter replacement projects in WSIP Year
15 1 for Uniform Water customers and WSIP Year 2 for BF/FH/TC
16 Water customers. Each of the meter replacement projects included
17 the installation of AMI meters. For Uniform Water, in WSIP Year 1,
18 CWSNC plans to replace approximately 4,962 meters in 15 systems.
19 The total estimated cost of these projects is \$1,974,810. For
20 BF/FH/TC Water, in WSIP Year 2, CWSNC plans to have one AMI
21 meter replacement project for Fairfield Harbor replacing 1,877

1 meters. The total cost for the Fairfield Harbor meter replacement
2 project is \$590,316.

3 **Q. Please describe the functionality of the AMI meter compared to**
4 **the standard meter.**

5 A. In response to Public Staff Data Request No. 46, CWSNC stated
6 that, “AMI meters will provide the ability to continuous meter reading
7 and data along with stored data of water usage for up to 96 days.”
8 CWSNC also clarified that when the data is pulled from the meters
9 via AMI, leak, backflow, and tamper codes are collected. CWSNC
10 currently has one system with AMI meters, Mountain Air where
11 CWSNC is the emergency operator.

12 **Q. Please describe the functionality of the AMR meter compared to**
13 **the standard meter.**

14 A. Also, in response to Public Staff Data Request No. 46, CWSNC
15 stated that AMR meters provide the ability to perform drive-by meter
16 reading along with stored historical data of water usage up to 96
17 days. CWSNC also stated that data can be individually pulled by a
18 CWSNC employee upon request from the customer, and when the
19 data is pulled manually, leak, backflow, and tamper codes are
20 collected. CWSNC is currently performing monthly meter reads for
21 the AMR systems.

1 **Q. Please describe the potential benefits resulting from an AMR**
2 **and AMI meter replacement project.**

3 A. The Company contends that AMR and AMI meter technology
4 provides the following benefits for operations: reduced time to
5 manually read meters requiring less employee time or contract meter
6 readers to read meters; greater accuracy in meter reads and
7 reporting; and additional usage data to provide insight to leaks, main
8 breaks, unusual usage, etc. AMR and AMI meter technology offers
9 the following benefits for customers: access to data allow customers
10 to manage their usage goals or be notified quickly of a leak or break;
11 and customers can benefit from greater accuracy in their meter reads
12 by receiving accurate bills. The primary benefit to customers from
13 AMR and AMI meters is the access to data. CWSNC stated the
14 following in their response to Public Staff's Data Request No. 46,
15 Question 3:

16 CWSNC does not currently provide for customers to
17 access their AMR or AMI data. On customer request,
18 CWSNC is able to provide AMR or AMI data to
19 customers directly. CWSNC is working to allow
20 customers to directly access their AMI and has the
21 capabilities to do so but there has not been a roll out of
22 AMI meters in CWSNC's service areas.

23

1 **Q. Please describe the Public Staff’s position on the AMR and AMI**
2 **meter projects.**

3 A. CWSNC’s current practices and set up with AMR and AMI meters
4 does not provide a customer with easily and readily accessible usage
5 data. CWSNC has not implemented benefits to the customers while
6 materially increasing the cost to customers. CWSNC provided the
7 Public Staff copies of letters that were sent customers for three
8 systems receiving AMR meters and one system receiving AMI
9 meters. The letters described the technology and the logistics of the
10 project but did not notify customers that they could access their
11 personal usage data or request that data from CWSNC. The letters
12 provided by CWSNC in response to Public Staff DR No. 46 are
13 included in **Darden Exhibit 16**.

14 As stated previously, CWSNC plans to invest approximately \$2.57
15 million in AMI replacement projects within WSIP Years 1 and 2. This
16 would be an unreasonable cost to spend on advanced technology
17 that serves little to no realized benefit to customers. The Public Staff
18 recommends that CWSNC first implement the process to allow
19 customers to directly access their AMI data. This should be a
20 pressing priority for the Company before the installation of AMI
21 meters, not afterwards. The Public Staff recommends that customers
22 have direct access to their personal usage data without having to

1 contact a CWSNC employee. The Public Staff also recommends that
2 CWSNC change its notification letter to customers to clearly
3 communicate the current and future process that is available to them
4 to access their personal data. CWSNC should focus on educational
5 outreach to the systems receiving AMI meters so that customers are
6 aware of the technology and benefits that could be available to them.

7 Due to the customer usage data access program being incomplete
8 and projects planned to come online in future years, the Public Staff
9 cannot fully review the cost-benefit analysis of the meter
10 replacement projects for customers. Therefore, the Public Staff
11 reserves the right to analyze the reasonableness and prudence of
12 the AMI meter replacement projects in a future rate case, once the
13 projects are completed.

14 **SEWER USE RULE**

15 **Q. Briefly describe CWSNC's request regarding the Sewer Use**
16 **Rule and tariff revision.**

17 A. CWSNC requests approval of the newly proposed Sewer Use Rule
18 and accompanying new tariff wording. CWSNC witness Dana Hill¹⁴
19 states in his testimony that the Sewer Use Rule is necessary to

¹⁴ Page 21, lines 1 through 23 and Page 22, lines 1 through 13 Direct Testimony of Company witness Dana Hill filed in Docket No. W-354, Sub 400, on July 5, 2022.

1 provide sewer customers with defined discharge limits and provide
2 CWSNC with enforcement actions to monitor the discharge of
3 contaminants into the utility's collection system that are harmful to
4 the sewer treatment process. Currently, CWSNC does not have a
5 mechanism to grant it enforcement authority when customers
6 discharge certain contaminants, such as fats, oils, grease, etc. that
7 can be harmful to the sewer treatment process and the environment.
8 CWSNC provided a proposed Sewer Use Rule as Schedule F-6 to
9 Appendix 7 and included the following proposed wording in the
10 Uniform Sewer and BF/FH/TC Sewer tariffs included in Schedule F:

11 All sewer use customers are subject to the terms as
12 outlined in the Sewer Use Tariff.

13 **Q. Please describe the Public Staff's position on the proposed**
14 **Sewer Use Rule and tariff revision.**

15 A. The Public Staff agrees with CWSNC that defining discharge limits
16 for sewer customers and providing CWSNC with enforcement
17 actions is beneficial to operations and the environment, and,
18 therefore, is beneficial to customers. CWSNC witness Dana Hill¹⁵
19 references the federal requirements of 40 C.F.R. § 403, North
20 Carolina requirements of 15A NCAC 02H.0900, and NCUC Rule

¹⁵ Page 22, footnote 3 Direct Testimony of Company witness Dana Hill filed in Docket No. W-354, Sub 400, on July 5, 2022.

1 R10-16 in his testimony. The Public Staff has reviewed the proposed
2 Sewer Use Rule, the Company's references and additional source
3 material, and agrees with implementation of CWSNC's proposed
4 Sewer Use Rule. However, the Public Staff does not agree with the
5 proposed tariff revision wording concerning the Sewer Use Rule.

6 The Public Staff recommends that additional detail and clarification
7 be added to the wording on the tariff so the customers can have more
8 context concerning the Sewer Use Rule. The Public Staff
9 recommends the following wording be included in the Notes section
10 of the Uniform Sewer and the BF/FH/TC Sewer tariffs:

11 All nondomestic and industrial waste is subject to the
12 Sewer Use Rule. The Sewer Use Rule can be
13 accessed at [URL for CWSNC website page that posts
14 the Rule] and is also available upon request. The
15 Sewer Use Rule requires Users (utility customers) to
16 provide advance notice of any nondomestic or
17 industrial waste discharge into the Utility's sanitary
18 sewer systems, and to meet certain effluent limitations
19 and pretreatment requirements. Violation of the Sewer
20 Use Rule may result in disconnection. Reconnection
21 will require reimbursement of the Utility's actual costs
22 incurred as a result of the violation. Repeat violations
23 may result in permanent disconnection.

24 As part of the Sewer Use Rule, the Utility may require
25 installation and/or proper operation of grease traps on
26 grease producing commercial facilities. Failure to
27 properly operate grease traps will result in
28 disconnection of service pursuant to Commission Rule
29 R10-16.

30

- 1 Q. Does this conclude your testimony?
- 2 A. Yes, it does

QUALIFICATIONS AND EXPERIENCE

LINDSAY Q. DARDEN

I graduated from North Carolina State University, earning a Bachelor of Science Degree in Civil Engineering. I am a licensed Professional Engineer (PE - State of North Carolina #042110). I am also certified as a B-Well Operator (#130281) by the North Carolina Water Treatment Facility Operators Certification Board. I worked for the North Carolina Department of Environmental Quality (DEQ), Public Water Supply Section for four years prior to joining the Public Staff in December 2016. Prior to working for DEQ, I worked for Smith Gardner, an engineering consulting firm.

My duties with the Public Staff are to monitor the operations of regulated water and wastewater utilities with regard to rates and service. These duties include conducting field investigations, reviewing, evaluating, and recommending changes in the design, construction, and operations of regulated water and wastewater utilities, presenting expert testimony in formal hearings, and presenting information, data, and recommendations to the North Carolina Utilities Commission.

Billing Analysis for End of Period Customers

CWSNC Uniform Water

Service Area	Total																Total Comm.	Total EOP	Availab			
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	Res.	5/8 C	3/4 C	1 C	1.5 C	2 C	3 C				4 C	6 C	Flat C
Amber Acres North	551									551	1									1	552	
Amber Acres	94									94										0	94	
Amber Ridge	274									274										0	274	
Ashley Hills North ¹	3									3										0	3	
Bahia Bay	112									112										0	112	
Bear Paw	354	3								357	5		1							6	363	
Beechbrook	38									38										0	38	
Belvedere Plantation	1341		3							1344	3		4		6	3				16	1360	
Bent Creek/ Mt Carmel	300	1								301	1									1	302	
Brandywine Bay	854		2		0					856	10		3							13	869	
Buffalo Creek	282									282										0	282	
Carriage Manor	118									118										0	118	
Chapel Hills	90									90										0	90	
College Park	81									81										0	81	
Country Club Annex	13									13										0	13	
Country Crossing	54									54										0	54	
Country Hills	67									67										0	67	
Crest View Estates	38									38										0	38	
Crystal Mountain	50		1							51										0	51	
Danby	1244		3							1247	2		2	1	1					6	1253	
Eagle Crossing	77									77										0	77	
Eastwood Forest	130									130	1									1	131	
Elk River	2	272	14							288	4	33	1		2					40	328	
Fairfield Mt	669	13	1							683	25	1	2	2	1					31	714	
Fairfield Mt/Apple Valley	344	5	11							360	17		2	1	2					22	382	
Forest Brook	79									79			1							1	80	
Forest Hills	116									116	1		2	3						6	122	
Grandview at T-Square	74									74	1									1	75	
Harbor House Estates	6									6										0	6	
Heather Glen	102									102										0	102	
Heathfield	63									63			1							1	64	
Hestron Park										0	1			2	7					10	10	

Billing Analysis for End of Period Customers

CWSNC Uniform Water

Service Area	Total											Total		EOP	Availab							
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	Res.	5/8 C	3/4 C	1 C			1.5 C	2 C	3 C	4 C	6 C	Flat C	Comm.
Hidden Hollow	45									45										0	45	
High Meadows	271									271	3				1					4	275	
Holly Acres	53									53			1							1	54	
Hound Ears	413		6	1	1					421	8		2		2					12	433	
Huntington Forest	71									71										0	71	
Jordan Woods	34									34										0	34	
Kings Grant - Charlotte	181		1							182	1									1	183	
Kynwood Abington	594									594	1									1	595	
Larkhaven	146	16								162										0	162	
Lemmond Acres	33									33	1									1	34	
Linsey Pointe	29									29										0	29	
Linville Ridge ²	27	330	23		2					382	1		1		6					8	390	39
Mason Landing	28									28	1				1					2	30	
Meadow Glen	34									34										0	34	
Misty Mountain	145									145										0	145	
Monterrey	27									27										0	27	
Mt Mitchell	207									207	1		1	2	1				16	21	228	
Nero/Amherst	128									128										0	128	
Neuse Woods	104									104										0	104	
Oakdale Terrace	41									41										0	41	
Oakes Plantation	24									24										0	24	
Olde Lamp Place	46	1								47										0	47	
Olde Point	199		2							201	1				1					2	203	
Pinnacle Shores	158									158	9									9	167	
Powder Horn Mountain	235									235	2		1							3	238	
Quail Ridge CWS	176		2							178	1									1	179	
Queens Harbor	111									111	2						1			3	114	
Randall Forest	47									47										0	47	
Red Bird	8									8										0	8	
Ridges at Mountain Harbour	61									61	1				1					2	63	
Riverwood (Johnston Co.)	218	1	1		1					221				1						1	222	
Rutledge Landing North	154									154										0	154	

Billing Analysis for End of Period Customers

CWSNC Uniform Water

Service Area	Total										Res.	Total										Total	EOP	Availab
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	5/8 C		3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Flat C	Comm.				
Rutledge Landing	283										283	2									2	285		
Saddlewood	127										127										0	127		
Sandy Trail	149										149	1									1	150		
Sapphire Valley	1621	6	5	33	17						1682	40	1	2	5	7	1				56	1738	716	
Sherwood Forest CWS	266										266	6			1	1					8	274		
Sherwood Park	95										95				1						1	96		
Ski Country	71										71										0	71		
Ski Mountain	245										245										0	245		
Stewarts Ridge	48										48										0	48		
Stone Hollow	226										226	1									1	227		
Suburban Heights	22										22										0	22		
Sugar Mountain	1253		1								1254	59		4	3	22					88	1342		
Tanglewood Estates	106										106										0	106		
The Point	1554		2	1	1						1558	15		3	1	3			2		24	1582		
Transylvania Util./Connestee Falls	1415	3									1418	16				2					18	1436	375	
Tuckahoe	86										86										0	86		
Watauga Vista	141										141										0	141		
Waterglyn	46										46										0	46		
Westwood Forest	122										122										0	122		
Wilders Village	42										42										0	42		
Wildlife Bay	84										84	1									1	85		
Wildwood Green	237										237	1									1	238		
Wolf Laurel	668										668	6		14		3					23	691		
Wood Trace	46										46										0	46		
Woodhaven	80										80										0	80		
Total Uniform	20701	651	78	35	22	0	0	0	0	0	21487	253	35	48	23	70	4	1	2	16	436	21923	1130	

Irrigation

Service Area	Total										Res.	Total										Total	EOP	Availab
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	5/8 C		3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Flat C	Comm.				
Hestron Park			1																					
Total Irrigation	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	

Carolina Water Service, Inc. of North Carolina
For the 12 Months Ending August 31, 2022

W-354, Sub 400
Public Staff - Darden Exhibit 1
Page 4 of 4

Billing Analysis for End of Period Customers

Purchased Water Service Area	Total										Total										Total	EOP	Availab
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	Res.	5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Flat C	Comm.			
Carolina Forest	219		1							220	4		1	1						6	226	705	
Carolina Trace	1645		1		0					1646	26		1	1	1					29	1675		
Eastgate	66									66	1				1					2	68		
High Vista	237		1							238	2				1					3	241		
Riverbend Estates	144									144										0	144		
Riverpointe	192									192	5									5	197		
Tanglewood South	92									92										0	92		
Whispering Pines	1614		21							1635	28		6	5	1		1			41	1676		
White Oak Plantation/Winston Pointe	635									635										0	635		
Winston Plantation ³	87	1								88				1						1	89		
Willowbrook	169									169			1							1	170		
Woodrun	478		1							479	4		1							5	484	604	
Yorktown	105									105										0	105		
Zemoso Acres	235	1	3							239			1							1	240		
Total	5918	2	28	0	0	0	0	0	0	5948	70	0	11	8	4	0	1	0	0	94	6042	1309	

BF/FH/TC Service Area	Total										Total										Total	EOP	Availab
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	Res.	5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Flat C	Comm.			
Bradfield Farms	1016	93								1109	1		5							6	1115		
Fairfield Harbour ⁴	1853	3	1							1857	20		3	5						28	1885	895	
Treasure Cove	299	3	1		1					304										0	304		
Silverton/Pace	60									60										0	60		
Total	3228	99	2	0	1	0	0	0	0	3330	21	0	8	5	0	0	0	0	0	34	3364	895	

Notes:

- Ashley Hills master system consists of several subdivisions that are currently being tracked separately when previously were tracked as one system. CWSNC has stated that there is a mismatch in the tracking of the individual subdivisions, but that overall the total of the subdivision data is correct for the overall system. This mismatch is being corrected over time. The subdivisions that comprise the Ashley Hills system are: Amber Acres, Amber Acres North, Amber Ridge, Rutledge Landing, and Sandy Trail.
- Linville Ridge - In May 2022, a 3" commercial customer had a meter exchange to a 2" commercial meter. The usage recorded for the 3" commercial meter was moved to the 2" commercial meter total.
- Winston Plantation is included with the White Oak Plantation/Winston Pointe/Winston Plantation purchased water system, provider is Johnston County.
- Fairfield Harbour - In May 2022, two 2" commercial customers had a meter exchange to two 1" commercial meters. The usage recorded for the 2" commercial meters were moved to the 1" commercial meters.

Billing Analysis for End of Period Customers

Service Area	Total																Multi Flat Comm	Total Comm	Total EOP	Total Avail		
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	Flat R	Res	5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C					8 C	Flat C
Amber Acres	9							9													0	9
Amber Acres North	26							26													0	26
Amber Ridge	274							274													0	274
Ashley Hills	416							416													0	416
Ashley Hills North	3							3													0	3
Bear Paw	70							70	3												3	73
Belvedere Plantation	796			2				798	1				3	2						0	6	804
Bent Creek	300	1						301													0	301
Brandywine Bay	764			2		0		819	4										3		7	826
Carolina Pines							320	320											1		1	321
Carolina Trace	1624			1				1,625	17		1	1									19	1,644
Corolla Light	394	1	32					427	14		8	2	1	1							26	453
Danby	1,244			3				1,254				1						1	5		7	1,261
Elk River		119		4				123		1	1			2							4	127
Hestron Park								-	1			2	7							1	11	11
Hound Ears	181			4				185	6		1		2								9	194
Independent/Hemby							599	599												8	8	607
Kings Grant - Raleigh							112	112													0	112
Kynwood Abington	594						109	703	1												1	704
Monteray Shores	434	3	63					500	50		8	1	1								60	560
Nags Head							562	562	11	1	7	4	8			2				60	93	655
Nero/Amherst	128							128													0	128
Olde Point	122			2				124					1								1	125
Queens Harbor	111							111	1						1						2	113
Riverpointe	191							191	1												1	192
Rutledge Landing North	154							154													0	154
Rutledge Landing	283							283													0	283
Saddlewood	19							19													0	19
Sandy Trail	129							129													0	129
Sapphire Valley	696			2	33	17		748	18	1	2	3	5	1						30	778	83
Sugar Mountain	998			1			91	1,090	41		3	2	18						4		68	1,158

Billing Analysis for End of Period Customers

CWSNC Uniform Sewer

Service Area	Total								Bulk	Total										Multi Flat Comm	Total Comm	Total EOP	Total Avail			
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	Flat R	Res		5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C	8 C	Flat C							
Transylvania Util./Connestee Falls	1,020	3					5	1,028	6					1										7	1,035	163
Wolf Laurel	58							58						2										2	60	
Willowbrook	169							169																0	169	
Total Uniform	11,207	127	116	33	17	-	1,858	13,358	175	3	31	16	51	4	1	2	1	13	69	366	13,724	246				

Subdivision Specific Rates

Service Area	Total								Bulk	Total										Multi Flat Comm	Total Comm	Total EOP	Total Avail			
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	Flat R	Res		5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Flat C								
Ridges at Mountain Harbour	47							47	1					1										2	49	
Mt Carmel	364							364																0	364	
Fairfield Mountain ^{1,2,3}	299	10	1					310																0	310	
Fairfield Mtn/Apple Valley ^{1,2,4}	84	2	11				3	100																0	100	
Regalwood & White Oak ⁵							1,083	1,083																0	1,083	
White Oak High School							1	1																0	1	
Child Daycare							1	1																0	1	
Pantry							1	1																		
Lancaster Highway Daycare							1	1																0	1	

Notes

- 1 Fairfield Mountain & Fairfield Mountain/Apple Valley are the same system, tracked on two accounts
- 2 Fairfield Mountain residential customers are flat rate
- 3 Fairfield Mountain treatment for commercial customers : ww only small 6, medium 6, large 2
- 4 Fairfield Mountain/Apple Valley for commercial customers: medium 4, large 1
- 5 Regalwood & White Oak has 1 daycare and 1 highschool sewer customers

Purchased Sewer

Service Area	Total								Bulk	Total										Multi Flat Comm	Total Comm	Total EOP				
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	Flat R	Res.		5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Flat C								
College Park	51						1	52																0	52	
Kings Grant - Charlotte	181		1					182																0	182	
White Oak Planation/Winston Pointe/Lee Forest	634							634																0	634	
Total	866	-	1	-	-	-	1	868	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	868	

Billing Analysis for End of Period Customers

BF/FH/TC Service Area	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	Flat	Bulk	Multiple		5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Flat C	Total		Avail
									Units	Res										Comm	EOP	
Bradfield Farms							1,106		2	1,108			1							1	1,109	
Larkhaven ²							159			159										0	159	
Hawthorne at the Green ¹								169		169										0	169	
Beaver Farms ¹								7.5		8										0	8	
Woodland ¹								151		151										0	151	
Fairfield Harbour							1,842			1,842	11	3		4						18	1,860	896
Pace/Silverton							60			60										0	60	
Total	0	0	0	0	0	0	3,167	327.5	2	3,167	11	3	1	4	0	0	0	0	0	19	3,516	896

Notes

1 Hawthorne at the Green, Beaver Farms, and Woodland are bulk sewer accounts billed from Aqua NC. The 3 accounts have multiple units and CWSNC and the Public Staff agree on the listed dwelling units amounts.

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Billing Analysis for Consumption

CWSNC Water

Service Area	Uniform Water						Residential						Commercial				Total
	5/8 R	3/4 R	1 R	1.5 R	2 R	Total	5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Total		
Amber Acres North	24,620,660					24,620,660	10,400								10,400	24,631,060	
Amber Acres	4,494,350					4,494,350									-	4,494,350	
Amber Ridge	12,275,470					12,275,470									-	12,275,470	
Ashley Hills North	50,790					50,790									-	50,790	
Bahia Bay	4,781,092					4,781,092									-	4,781,092	
Bear Paw	5,596,450	48,890				5,645,340	219,580		301,380						520,960	6,166,300	
Beechbrook	1,337,550					1,337,550									-	1,337,550	
Belvedere Plantation	74,521,883		278,870			74,800,753	162,830		159,320		2,202,495	6,072,155			8,596,800	83,397,553	
Bent Creek/Mt Carmel	10,332,546	54,969				10,387,515	13,988								13,988	10,401,503	
Brandywine Bay	34,172,641		124,010			34,296,651	399,360		1,219,330						1,618,690	35,915,341	
Buffalo Creek	12,476,270					12,476,270									-	12,476,270	
Carriage Manor	5,658,750					5,658,750									-	5,658,750	
Chapel Hills	3,958,241					3,958,241									-	3,958,241	
College Park	3,274,365					3,274,365									-	3,274,365	
Country Club Annex	672,750					672,750									-	672,750	
Country Crossing	2,242,940					2,242,940									-	2,242,940	
Country Hills	3,665,644					3,665,644									-	3,665,644	
Crest View Estates	1,095,699					1,095,699									-	1,095,699	
Crystal Mountain	847,506					847,506									-	847,506	
Danby	63,999,457		136,070			64,135,527	188,810		620,340	601,400	114,700				1,525,250	65,660,777	
Eagle Crossing	3,472,944					3,472,944									-	3,472,944	
Eastwood Forest	5,949,993					5,949,993	44,130								44,130	5,994,123	
Elk River	43,892	8,409,625	1,467,153			9,920,670	33,901	547,232	644,662		783,113				2,008,908	11,929,578	
Fairfield Mountain	20,585,295	224,794	7,713			20,817,802	708,920		2,049,694	240,176	134,001				3,132,791	23,950,593	
Fairfield Mountain/Apple Valley	10,436,501	110,287	1,524,792			12,071,580	290,806		356,607	17,688	434,856				1,099,957	13,171,537	
Forest Brook	4,075,690					4,075,690			144,220						144,220	4,219,910	
Forest Hills	4,647,913					4,647,913	345,570		131,960	1,018,670					1,496,200	6,144,113	
Grandview at T-Square	3,208,600					3,208,600	119,380								119,380	3,327,980	
Harbor House Estates	227,420					227,420									-	227,420	
Heather Glen	4,748,886					4,748,886									-	4,748,886	
Heathfield	6,579,700					6,579,700			150,560						150,560	6,730,260	
Hestron Park						-	31,160			589,600	3,152,265				3,773,025	3,773,025	
Hidden Hollow	2,455,900					2,455,900									-	2,455,900	
High Meadows	6,886,582					6,886,582	1,568,882				128,986				1,697,868	8,584,450	
Holly Acres	3,278,110					3,278,110			305,400						305,400	3,583,510	
Hound Ears	9,748,393		13,380	17,600	210,000	9,989,373	302,790		282,240		672,950				1,257,980	11,247,353	
Huntington Forest	3,529,131					3,529,131									-	3,529,131	
Jordan Woods	1,575,360					1,575,360									-	1,575,360	
Kings Grant - Charlotte	6,815,101		234,070			7,049,171	66,280								66,280	7,115,451	
Kynwood Abington	28,714,798					28,714,798	671,960								671,960	29,386,758	

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Billing Analysis for Consumption

CWSNC Water

Service Area	Uniform Water						Total Residential						Total Commercial						Total
	5/8 R	3/4 R	1 R	1.5 R	2 R		5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6 C					
Larkhaven	9,040,388	900,520				9,940,908									-	9,940,908			
Lemmond Acres	1,848,470					1,848,470	45,420								45,420	1,893,890			
Linsey Pointe	1,566,860					1,566,860									-	1,566,860			
Linville Ridge	703,921	10,150,795	573,864		144,589	11,573,169		6,399	973,609		2,138,061				3,118,069	14,691,238			
Mason Landing	1,597,980					1,597,980	2,625,042				399,700				3,024,742	4,622,722			
Meadow Glen	1,577,520					1,577,520									-	1,577,520			
Misty Mountain	3,065,498					3,065,498									-	3,065,498			
Monterrey	1,391,790					1,391,790									-	1,391,790			
Mt Mitchell	5,378,908					5,378,908	24,820		59,441	137,575	464				222,300	5,601,208			
Nero/Amherst	5,725,620					5,725,620									-	5,725,620			
Neuse Woods	5,189,381					5,189,381									-	5,189,381			
Oakdale Terrace	1,514,051					1,514,051									-	1,514,051			
Oakes Plantation	1,131,230					1,131,230									-	1,131,230			
Olde Lamp Place	2,039,457	30,350				2,069,807									-	2,069,807			
Olde Point	8,637,534		62,830			8,700,364	35,890				792,700				828,590	9,528,954			
Pinnacle Shores	10,873,260					10,873,260	1,851,000								1,851,000	12,724,260			
Powder Horn Mountain	5,283,025					5,283,025	27,212		110,592						137,804	5,420,829			
Quail Ridge	7,925,430		116,800			8,042,230	183,860								183,860	8,226,090			
Queens Harbor	3,782,672					3,782,672	94,630						1,012,686		1,107,316	4,889,988			
Randall Forest	2,427,410					2,427,410									-	2,427,410			
Red Bird	203,600					203,600									-	203,600			
Ridges at Mountain Harbour	2,212,530					2,212,530	224,360				106,400				330,760	2,543,290			
Riverwood (Johnston County)	14,152,780	38,870	160,930		-	14,352,580				49,550					49,550	14,402,130			
Rutledge Landing North	5,722,757					5,722,757									-	5,722,757			
Rutledge Landing	12,563,981					12,563,981	-								-	12,563,981			
Saddlewood	5,695,752					5,695,752									-	5,695,752			
Sandy Trail	7,352,910					7,352,910	-								-	7,352,910			
Sapphire Valley	41,081,107	69,304	459,423	4,931,668	2,749,036	49,290,538	2,360,796	250	651,547	1,647,772	1,010,386	1,492,122		7,162,873	56,453,411				
Sherwood Forest	6,914,353					6,914,353	200,903			110,990	925,619				1,237,512	8,151,865			
Sherwood Park	4,807,329					4,807,329				269,300					269,300	5,076,629			
Ski Country	729,638					729,638									-	729,638			
Ski Mountain	7,430,602					7,430,602									-	7,430,602			
Stewarts Ridge	2,246,070					2,246,070									-	2,246,070			
Stone Hollow	10,409,131					10,409,131	23,130								23,130	10,432,261			
Suburban Heights	842,098					842,098									-	842,098			
Sugar Mountain	27,016,707	1,469	118,184			27,136,360	3,094,382		454,872	1,208,303	8,081,793			12,839,350	39,975,710				
Tanglewood Estates	5,238,168					5,238,168					1,768,413				1,768,413	7,006,581			
The Point	220,124,609		112,990	86,800	8,100	220,332,499	640,540		462,150	953,400	993,000		5,278,240	8,327,330	228,659,829				
Transylvania Util./Connestee Falls	39,141,290	5,954				39,147,244	695,396				545,525				1,240,921	40,388,165			
Tuckahoe	4,286,510					4,286,510									-	4,286,510			
Watauga Vista	3,381,263					3,381,263									-	3,381,263			

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Billing Analysis for Consumption

CWSNC Water

Service Area	Residential					Commercial						Total				
	5/8 R	3/4 R	1 R	1.5 R	2 R	5/8 C	3/4 C	1 C	1.5 C	2 C	3 C		4 C	6 C		
Uniform Water																
Waterglyn	1,799,999					1,799,999									-	1,799,999
Westwood Forest	5,121,277					5,121,277									-	5,121,277
Wilders Village	1,689,890					1,689,890									-	1,689,890
Wildlife Bay	5,885,287					5,885,287	140								140	5,885,427
Wildwood Green	11,861,933					11,861,933	60,680								60,680	11,922,613
Wolf Laurel	16,011,363					16,011,363	681,930		729,010		374,500				1,785,440	17,796,803
Wood Trace	2,244,270					2,244,270									-	2,244,270
Woodhaven (1)	3,157,664					3,157,664									-	3,157,664
Total Uniform	947,080,536	20,045,827	5,391,079	5,036,068	3,111,725	980,665,235	18,048,878	553,881	9,806,934	6,844,424	24,759,927	7,564,277	1,012,686	5,278,240	73,869,247	1,054,534,482
Irrigation ¹						-									-	-

Service Area	Residential					Commercial						Total				
	5/8 R	3/4 R	1 R	1.5 R	2 R	5/8 C	3/4 C	1 C	1.5 C	2 C	3 C		4 C	6 C		
Purchased Water																
Carolina Forest	7,101,360		5,280			7,106,640	12,220		87,470	176,100					275,790	7,382,430
Carolina Trace	62,182,597		95,960			62,278,557	1,468,744	27,570	52,630	327,300	4,670,580				6,546,824	68,825,381
Eastgate	2,028,020					2,028,020	4,720				1,752,210				1,756,930	3,784,950
High Vista	11,009,270		52,760			11,062,030	80,550				138,655	??			219,205	11,281,235
Riverbend Estates	5,278,641					5,278,641									-	5,278,641
Riverpointe (3)	15,644,734					15,644,734	1,128,670								1,128,670	16,773,404
Tanglewood South	3,779,300					3,779,300									-	3,779,300
Whispering Pines	95,177,540		1,946,901			97,124,441	1,219,590		1,626,420	624,960	439,300		-		3,910,270	101,034,711
WhiteOakPlantation/WinstonPointe	32,673,097					32,673,097									-	32,673,097
Willowbrook	5,370,778					5,370,778			234,060						234,060	5,604,838
Winston Plantation	5,193,090	48,600				5,241,690				169,200					169,200	5,410,890
Woodrun	20,142,289		9,520			20,151,809	70,270		251,840						322,110	20,473,919
Yorktown	3,544,920					3,544,920									-	3,544,920
Zemosa Acres	12,610,941	72,257	208,425			12,891,623			262,174						262,174	13,153,797

Service Area	Residential					Commercial						Total				
	5/8 R	3/4 R	1 R	1.5 R	2 R	5/8 C	3/4 C	1 C	1.5 C	2 C	3 C		4 C	6 C		
BF/FH/TC Water																
Bradfield Farms	63,806,624	5,643,198				69,449,822	189,849		408,510						598,359	70,048,181
Fairfield Harbor	74,533,253	68,610	93,880			74,695,743	1,246,648		264,826	782,970					2,294,444	76,990,187
Treasure Cove	18,442,364	158,190	146,030		78,200	18,824,784									-	18,824,784
Silverton/Pace	3,638,177					3,638,177									-	3,638,177
Total BF/FH/TC	160,420,418	5,869,998	239,910	-	78,200	166,608,526	1,436,497	-	673,336	782,970	-	-	-	-	2,892,803	169,501,329

Notes:

1. Irrigation - In past rate cases, Brandywine Bay and/or Hestron Park McDonalds has had metered irrigation charged at a reduced uniform rate. This case there was no irrigation usage.

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Billing Analysis for Consumption

CWSNC Sewer

Service Area	Uniform Sewer					Total										Total	
	5/8 R	3/4 R	1 R	1.5 R	2 R	Residential	5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6C	8C	Commercial	Total
Amber Acres	300,700					300,700										-	300,700
Amber Ridge	12,292,020					12,292,020										-	12,292,020
Amherst/Nero	5,725,620																
Ashley Hills	92,070					92,070										-	92,070
Ashley Hills North	50,790																
Bear Paw	911,800					911,800	109,160									109,160	1,020,960
Belvedere Plantation	37,791,440		151,890			37,943,330	118,460		23,740		1,993,521	9,125,888				11,261,609	49,204,939
Bent Creek	10,332,546	54,969				10,387,515										-	10,387,515
Brandywine Bay	29,581,125		124,010			29,705,135	170,400									170,400	29,875,535
Carolina Pines						-										-	-
Carolina Trace	60,861,757		95,960			60,957,717	1,054,054	27,570	52,630	327,300						1,461,554	62,419,271
Corolla Light	26,218,810		3,943,160			30,161,970	1,472,550		1,433,120	773,200	145,500	56,000				3,880,370	34,042,340
Danby (3)	59,588,746		136,070			59,724,816				601,400					8,355,608	8,957,008	68,681,824
Elk River		2,316,625	99,886			2,416,511		51,491	644,662		783,113					1,479,266	3,895,777
Hestron Park						-	31,160			589,600	3,152,265					3,773,025	3,773,025
Hound Ears	3,873,843		35,500			3,909,343	246,430		100,900		672,950					1,020,280	4,929,623
Independent/Hemby						-										-	-
Kings Grant - Raleigh						-										-	-
Kynwood Abington	28,714,798					28,714,798	671,960									671,960	29,386,758
Monterey Shores	27,902,243	640,360	8,430,357			36,972,960	4,929,920		1,545,558	402,200	390,100					7,267,778	44,240,738
Nags Head						-	788,050	332,300	3,739,570	3,114,700	3,455,920			6,997,901		18,428,441	18,428,441
Olde Point	4,428,750		62,830			4,491,580					792,700					792,700	5,284,280
Queens Harbor	3,782,672					3,782,672	89,570						1,012,686			1,102,256	4,884,928
Riverpointe	15,483,304		-			15,483,304	32,620									32,620	15,515,924
Rutledge Landing North	5,835,047					5,835,047										-	5,835,047
Rutledge Landing	12,451,691					12,451,691										-	12,451,691
Saddlewood	868,420					868,420										-	868,420
Sandy Trail	6,203,540					6,203,540										-	6,203,540

Carolina Water Service, Inc. of North Carolina
For the 12 Months Ending August 31, 2022

W-354, Sub 400
Public Staff - Darden Exhibit 4
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Billing Analysis for Consumption

CWSNC Sewer

Service Area	Total																Commercial	Total
	5/8 R	3/4 R	1 R	1.5 R	2 R	Residential	5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4C	6C	8C			
Sapphire Valley (1)	17,296,015		80,355	4,931,668	2,749,036	25,057,074	1,896,446	250	651,547	1,220,844	980,772	1,492,122					6,241,981	31,299,055
Sugar Mountain	19,521,327		118,184			19,639,511	1,934,629		418,812	1,199,331	7,769,917						11,322,689	30,962,200
Transylvania Util./Connestee Falls	28,491,384	5,954				28,497,338	360,010				504,857						864,867	29,362,205
Willowbrook	5,370,778					5,370,778											-	5,370,778
Wolf Laurel	1,010,111					1,010,111					352,500						352,500	1,362,611
Total Uniform	424,981,347	3,017,908	13,278,202	4,931,668	2,749,036	448,958,161	13,905,419	411,611	8,610,539	8,228,575	20,994,115	10,674,010	1,012,686	6,997,901	8,355,608		79,190,464	528,148,625

Subdivision Specific Rates

Ridges at Mountain Harbour	1,528,500					1,528,500	224,360				106,400						330,760	1,859,260
Mt Carmel	13,422,379					13,422,379											-	13,422,379
Fairfield Mountain	8,044,319	122,853	7,713			8,174,885											-	8,174,885
Fairfield Mountain/Apple Valley	2,065,905	3,438	1,524,792			3,594,135											-	3,594,135
Regalwood & White Oak	-					-											-	-
White Oak High School	-					-											-	-
Child Daycare	-					-											-	-
Lancaster Highway Daycare (4)	-					-											-	-

Purchased Sewer

College Park	2,168,853					2,168,853											-	2,168,853
Kings Grant - Charlotte	6,815,101		234,070			7,049,171											-	7,049,171
WhiteOakPlantation/WinstonPointe	32,494,397					32,494,397											-	32,494,397

	Fairfield Mtn	Fa.Mtn./Ap.Val.	Total
	Commercial	Commercial	
LG	330,620	17,688	348,308
MED	829,289	905,102	1,734,391
SM	67,584	203	67,787

Carolina Water Service, Inc. of North Carolina
 For the 12 Months Ending August 31, 2022

W-354, Sub 400
 Public Staff - Darden Exhibit 4
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Billing Analysis for Consumption

CWSNC Sewer

BF/FH/TC Sewer¹

Service Area	Residential					Residential	Commercial								Commercial	Total		
	5/8 R	3/4 R	1 R	1.5R	2 R		5/8 C	3/4 C	1 C	1.5 C	2 C	3 C	4 C	6C			8C	
Bradfield Farms	66,012,923	3,253,339				69,266,262			48,670								48,670	69,314,932
Fairfield Harbour	73,687,955					73,687,955	1,037,801	77,780		397,570							1,513,151	75,201,106
Silverton	3,638,177					3,638,177											-	3,638,177
Total	143,339,055	3,253,339	-	-	-	146,592,394	1,037,801	77,780	48,670	397,570	-	-	-	-	-	-	1,561,821	148,154,215

Notes:

(1) BF/FH/TC sewer residential customers are charged a flat rate.

CWSNC Uniform Service Area - Water

Public Staff's Revenue at Present Rates

Charge Type	EOP Customers	EOP Bills	EOP Usage	Base Rate	Usage Rate	Fixed Revenue	Volumetric Revenue	Total Revenue
Residential								
CWSNC								
Unmetered	-	-	-	\$68.71		\$ -	\$ -	\$ -
5/8"	20,701	248,412	947,080,536	\$24.53	\$11.71	\$ 6,093,546	\$ 11,090,313	\$ 17,183,859
3/4"	651	7,812	20,045,827	\$24.53	\$11.71	\$ 191,628	\$ 234,737	\$ 426,365
1"	78	936	5,391,079	\$61.33	\$11.71	\$ 57,400	\$ 63,130	\$ 120,530
1.5"	35	420	5,036,068	\$122.65	\$11.71	\$ 51,513	\$ 58,972	\$ 110,485
2"	22	264	3,111,725	\$196.24	\$11.71	\$ 51,807	\$ 36,438	\$ 88,246
3"	-	-	-	\$367.95	\$11.71	\$ -	\$ -	\$ -
4"	-	-	-	\$613.25	\$11.71	\$ -	\$ -	\$ -
6"	-	-	-	\$1,226.50	\$11.71	\$ -	\$ -	\$ -
8"	-	-	-	\$1,962.40	\$11.71	\$ -	\$ -	\$ -
Irrigation	1	12	-	\$24.53	\$5.99	\$ 294	\$ -	\$ 294
Purchased Water								
Carolina Forest								
5/8"	219	2,628	7,101,360	\$24.53	\$3.19	\$ 64,465	\$ 22,653	\$ 87,118
1"	1	12	5,280	\$61.33	\$3.19	\$ 736	\$ 17	\$ 753
Carolina Trace								
5/8"	1,645	19,740	62,182,597	\$24.53	\$2.21	\$ 484,222	\$ 137,424	\$ 621,646
1"	1	12	95,960	\$61.33	\$2.21	\$ 736	\$ 212	\$ 948
Eastgate								
5/8"	66	792	2,028,020	\$24.53	\$5.46	\$ 19,428	\$ 11,073	\$ 30,501
High Vista Estates								
5/8"	237	2,844	11,009,270	\$24.53	\$5.27	\$ 69,763	\$ 58,019	\$ 127,782
1"	1	12	52,760	\$61.33	\$5.27	\$ 736	\$ 278	\$ 1,014
Riverbend								
5/8"	144	1,728	5,278,641	\$24.53	\$8.40	\$ 42,388	\$ 44,341	\$ 86,728
Riverpointe								
5/8"	192	2,304	15,644,734	\$24.53	\$4.12	\$ 56,517	\$ 64,456	\$ 120,973
Tanglewood South								
5/8"	92	1,104	3,779,300	\$24.53	\$5.46	\$ 27,081	\$ 20,635	\$ 47,716
Whispering Pines								
5/8"	1,614	19,368	95,177,540	\$24.53	\$3.70	\$ 475,097	\$ 352,157	\$ 827,254
1"	21	252	1,946,901	\$61.33	\$3.70	\$ 15,454	\$ 7,204	\$ 22,657
White Oak/Lee Forest/Winston								
5/8"	722	8,664	37,866,187	\$24.53	\$3.20	\$ 212,528	\$ 121,172	\$ 333,700
3/4"	1	12	48,600	\$24.53	\$3.20	\$ 294	\$ 156	\$ 450
Willowbrook								
5/8"	169	2,028	5,370,778	\$24.53	\$3.20	\$ 49,747	\$ 17,186	\$ 66,933
Woodrun								
5/8"	478	5,736	20,142,289	\$24.53	\$3.19	\$ 140,704	\$ 64,254	\$ 204,958
1"	1	12	9,520	\$61.33	\$3.19	\$ 736	\$ 30	\$ 766
Yorktown								
5/8"	105	1,260	3,544,920	\$24.53	\$5.79	\$ 30,908	\$ 20,525	\$ 51,433
Zemosa Acres								
5/8"	235	2,820	12,610,941	\$24.53	\$5.52	\$ 69,175	\$ 69,612	\$ 138,787
3/4"	1	12	72,257	\$24.53	\$5.52	\$ 294	\$ 399	\$ 693
1"	3	36	208,425	\$61.33	\$5.52	\$ 2,208	\$ 1,151	\$ 3,358

CWSNC Uniform Service Area - Water

Public Staff's Revenue at Present Rates

Charge Type	EOP		EOP Usage	Base Rate	Usage Rate	Fixed		Volumetric		Total	
	Customers	Bills				Revenue	Revenue				
Commercial											
CWSNC											
Unmetered	16	192	-	\$68.71		\$ 13,192	\$ -	\$ -	\$ 13,192		
5/8"	253	3,036	18,048,878	\$24.53	\$11.71	\$ 74,473	\$ 211,352	\$ 6,486	\$ 285,825		
3/4"	35	420	553,881	\$24.53	\$11.71	\$ 10,303	\$ -	\$ -	\$ 16,789		
1"	48	576	9,806,934	\$61.33	\$11.71	\$ 35,323	\$ 114,839	\$ -	\$ 150,162		
1.5"	23	276	6,844,424	\$122.65	\$11.71	\$ 33,851	\$ 80,148	\$ -	\$ 114,000		
2"	70	840	24,759,927	\$196.24	\$11.71	\$ 164,842	\$ 289,939	\$ -	\$ 454,780		
3"	4	48	7,564,277	\$367.95	\$11.71	\$ 17,662	\$ 88,578	\$ -	\$ 106,239		
4"	1	12	1,012,686	\$613.25	\$11.71	\$ 7,359	\$ 11,859	\$ -	\$ 19,218		
6"	2	24	5,278,240	\$1,226.50	\$11.71	\$ 29,436	\$ 61,808	\$ -	\$ 91,244		
8"	-	-	-	\$1,962.40	\$11.71	\$ -	\$ -	\$ -	\$ -		
Irrigation	-	-	-		\$5.99	\$ -	\$ -	\$ -	\$ -		
Purchased Water											
Carolina Forest											
5/8"	4	48	12,220	\$24.53	\$3.19	\$ 1,177	\$ 39	\$ -	\$ 1,216		
1"	1	12	87,470	\$61.33	\$3.19	\$ 736	\$ 279	\$ -	\$ 1,015		
1.5"	1	12	176,100	\$122.65	\$3.19	\$ 1,472	\$ 562	\$ -	\$ 2,034		
Carolina Trace											
5/8"	26	312	1,468,744	\$24.53	\$2.21	\$ 7,653	\$ 3,246	\$ -	\$ 10,899		
3/4"	-	-	27,570	\$24.53	\$2.21	\$ -	\$ 61	\$ -	\$ 61		
1"	1	12	52,630	\$61.33	\$2.21	\$ 736	\$ 116	\$ -	\$ 852		
1.5"	1	12	327,300	\$122.65	\$2.21	\$ 1,472	\$ 723	\$ -	\$ 2,195		
2"	1	12	4,670,580	\$196.24	\$2.21	\$ 2,355	\$ 10,322	\$ -	\$ 12,677		
Eastgate											
5/8"	1	12	4,720	\$24.53	\$5.46	\$ 294	\$ 26	\$ -	\$ 320		
2"	1	12	1,752,210	\$196.24	\$5.46	\$ 2,355	\$ 9,567	\$ -	\$ 11,922		
High Vista Estates											
5/8"	2	24	80,550	\$24.53	\$5.27	\$ 589	\$ 424	\$ -	\$ 1,013		
2"	1	12	1,752,210	\$196.24	\$5.27	\$ 2,355	\$ 9,234	\$ -	\$ 11,589		
Riverbend											
5/8"	-	-	-	\$24.53	\$8.40	\$ -	\$ -	\$ -	\$ -		
Riverpointe											
5/8"	5	60	1,128,670	\$24.53	\$4.12	\$ 1,472	\$ 4,650	\$ -	\$ 6,122		
Tanglewood South											
5/8"	-	-	-	\$24.53	\$5.46	\$ -	\$ -	\$ -	\$ -		
Whispering Pines											
5/8"	28	336	1,219,590	\$24.53	\$3.70	\$ 8,242	\$ 4,512	\$ -	\$ 12,755		
1"	6	72	1,626,420	\$61.33	\$3.70	\$ 4,415	\$ 6,018	\$ -	\$ 10,433		
1.5"	5	60	624,960	\$122.65	\$3.70	\$ 7,359	\$ 2,312	\$ -	\$ 9,671		
2"	1	12	439,300	\$196.24	\$3.70	\$ 2,355	\$ 1,625	\$ -	\$ 3,980		
4"	1	12	-	\$613.25	\$3.70	\$ 7,359	\$ -	\$ -	\$ 7,359		
White Oak/Lee Forest/Winston											
1.5"	1	12	169,200	\$122.65	\$3.20	\$ 1,472	\$ 541	\$ -	\$ 2,013		
Willowbrook											
1"	1	12	234,060	\$61.33	\$3.20	\$ 736	\$ 749	\$ -	\$ 1,485		
Woodrun											
5/8"	4	48	70,270	\$24.53	\$3.19	\$ 1,177	\$ 224	\$ -	\$ 1,402		
1"	1	12	251,840	\$61.33	\$3.19	\$ 736	\$ 803	\$ -	\$ 1,539		
Yorktown											
5/8"	-	-	-	\$24.53	\$5.79	\$ -	\$ -	\$ -	\$ -		
Zemosa Acres											
1"	1	12	262,174	\$61.33	\$5.52	\$ 736	\$ 1,447	\$ -	\$ 2,183		
Availability - Connettee Falls											
	375	4,500		\$5.78		\$ 26,002	\$ -	\$ -	\$ 26,002		
Availability - Fairfield Sapphire Valley											
	716	8,592		\$10.96		\$ 94,139	\$ -	\$ -	\$ 94,139		
Availability - Carolina Forest/Woodrun*											
	1,309	2,618		\$29.60		\$ 77,491	\$ -	\$ -	\$ 77,491		
Availability - Linville Ridge											
	39	468		\$14.83		\$ 6,939	\$ -	\$ -	\$ 6,939		
*Charged bi-annually											
WSIC/SSIC Revenue Eff 10/01/22											
						\$ -	\$ -	\$ -	\$ -		
TOTAL						\$ 8,857,671	\$ 13,419,035	\$ -	\$ 22,276,705		

CWSNC Uniform Service Area - Water

Public Staff's Revenue at Proposed Rates

Charge Type	EOP		EOP Usage	Base Rate	Usage Rate	Fixed		Volumetric		Total
	Customers	EOP Bills				Revenue	Revenue	Revenue	Revenue	
Residential										
CWSNC										
Unmetered	-	-	-	\$74.38		\$	-	\$	-	\$0
5/8"	20,701	248,412	947,080,536	\$26.68	\$12.52	\$ 6,627,632	\$ 11,857,448			\$18,485,080
3/4"	651	7,812	20,045,827	\$26.68	\$12.52	\$ 208,424	\$ 250,974			\$459,398
1"	78	936	5,391,079	\$66.70	\$12.52	\$ 62,431	\$ 67,496			\$129,928
1.5"	35	420	5,036,068	\$133.40	\$12.52	\$ 56,028	\$ 63,052			\$119,080
2"	22	264	3,111,725	\$213.44	\$12.52	\$ 56,348	\$ 38,959			\$95,307
3"	-	-	-	\$400.20	\$12.52	\$	\$			\$0
4"	-	-	-	\$667.00	\$12.52	\$	\$			\$0
6"	-	-	-	\$1,334.00	\$12.52	\$	\$			\$0
8"	-	-	-	\$2,134.40	\$12.52	\$	\$			\$0
Irrigation	1	12	-	\$26.68	\$6.40	\$ 320	\$			\$320
Purchased Water										
Carolina Forest										
5/8"	219	2,628	7,101,360	\$26.68	\$3.19	\$ 70,115	\$ 22,653			\$92,768
1"	1	12	5,280	\$66.70	\$3.19	\$ 800	\$ 17			\$817
Carolina Trace										
5/8"	1,645	19,740	62,182,597	\$26.68	\$2.21	\$ 526,663	\$ 137,424			\$664,087
1"	1	12	95,960	\$66.70	\$2.21	\$ 800	\$ 212			\$1,012
Eastgate										
5/8"	66	792	2,028,020	\$26.68	\$5.46	\$ 21,131	\$ 11,073			\$32,204
High Vista Estates										
5/8"	237	2,844	11,009,270	\$26.68	\$5.27	\$ 75,878	\$ 58,019			\$133,897
1"	1	12	52,760	\$66.70	\$5.27	\$ 800	\$ 278			\$1,078
Riverbend										
5/8"	144	1,728	5,278,641	\$26.68	\$8.40	\$ 46,103	\$ 44,341			\$90,444
Riverpointe										
5/8"	192	2,304	15,644,734	\$26.68	\$4.12	\$ 61,471	\$ 64,456			\$125,927
Tanglewood South										
5/8"	92	1,104	3,779,300	\$26.68	\$5.46	\$ 29,455	\$ 20,635			\$50,090
Whispering Pines										
5/8"	1,614	19,368	95,177,540	\$26.68	\$3.70	\$ 516,738	\$ 352,157			\$868,895
1"	21	252	1,946,901	\$66.70	\$3.70	\$ 16,808	\$ 7,204			\$24,012
White Oak/Lee Forest/Winston										
5/8"	722	8,664	37,866,187	\$26.68	\$3.20	\$ 231,156	\$ 121,172			\$352,327
3/4"	1	12	48,600	\$26.68	\$3.20	\$ 320	\$ 156			\$476
Willowbrook										
5/8"	169	2,028	5,370,778	\$26.68	\$3.20	\$ 54,107	\$ 17,186			\$71,294
Woodrun										
5/8"	478	5,736	20,142,289	\$26.68	\$3.19	\$ 153,036	\$ 64,254			\$217,290
1"	1	12	9,520	\$66.70	\$3.19	\$ 800	\$ 30			\$831
Yorktown										
5/8"	105	1,260	3,544,920	\$26.68	\$5.79	\$ 33,617	\$ 20,525			\$54,142
Zemosa Acres										
5/8"	235	2,820	12,610,941	\$26.68	\$5.52	\$ 75,238	\$ 69,612			\$144,850
3/4"	1	12	72,257	\$26.68	\$5.52	\$ 320	\$ 399			\$719
1"	3	36	208,425	\$66.70	\$5.52	\$ 2,401	\$ 1,151			\$3,552

CWSNC Uniform Service Area - Water

Public Staff's Revenue at Proposed Rates

Charge Type	EOP		EOP Usage	Base Rate	Usage Rate	Fixed		Volumetric		Total
	Customers	EOP Bills				Revenue	Revenue	Revenue	Revenue	
Commercial										
CWSNC										
Unmetered	16	192	-	\$74.38		\$	14,281	\$	-	\$14,281
5/8"	253	3,036	18,048,878	\$26.68	\$12.52	\$	81,000	\$	225,972	\$306,972
3/4"	35	420	553,881	\$26.68	\$12.52	\$	11,206	\$	6,935	\$18,140
1"	48	576	9,806,934	\$66.70	\$12.52	\$	38,419	\$	122,783	\$161,202
1.5"	23	276	6,844,424	\$133.40	\$12.52	\$	36,818	\$	85,692	\$122,511
2"	70	840	24,759,927	\$213.44	\$12.52	\$	179,290	\$	309,994	\$489,284
3"	4	48	7,564,277	\$400.20	\$12.52	\$	19,210	\$	94,705	\$113,914
4"	1	12	1,012,686	\$667.00	\$12.52	\$	8,004	\$	12,679	\$20,683
6"	2	24	5,278,240	\$1,334.00	\$12.52	\$	32,016	\$	66,084	\$98,100
8"	-	-	-	\$2,134.40	\$12.52	\$	-	\$	-	\$0
Irrigation	-	-	-		\$6.40	\$	-	\$	-	\$0
Purchased Water										
Carolina Forest										
5/8"	4	48	12,220	\$26.68	\$3.19	\$	1,281	\$	39	\$1,320
1"	1	12	87,470	\$66.70	\$3.19	\$	800	\$	279	\$1,079
1.5"	1	12	176,100	\$133.40	\$3.19	\$	1,601	\$	562	\$2,163
Carolina Trace										
5/8"	26	312	1,468,744	\$26.68	\$2.21	\$	8,324	\$	3,246	\$11,570
3/4"	-	-	27,570	\$26.68	\$2.21	\$	-	\$	61	\$61
1"	1	12	52,630	\$66.70	\$2.21	\$	800	\$	116	\$917
1.5"	1	12	327,300	\$133.40	\$2.21	\$	1,601	\$	723	\$2,324
2"	1	12	4,670,580	\$213.44	\$2.21	\$	2,561	\$	10,322	\$12,883
Eastgate										
5/8"	1	12	4,720	\$26.68	\$5.46	\$	320	\$	26	\$346
2"	1	12	1,752,210	\$213.44	\$5.46	\$	2,561	\$	9,567	\$12,128
High Vista Estates										
5/8"	2	24	80,550	\$26.68	\$5.27	\$	640	\$	424	\$1,065
2"	1	12	1,752,210	\$213.44	\$5.27	\$	2,561	\$	9,234	\$11,795
Riverbend										
5/8"	-	-	-	\$26.68	\$8.40	\$	-	\$	-	\$0
Riverpointe										
5/8"	5	60	1,128,670	\$26.68	\$4.12	\$	1,601	\$	4,650	\$6,251
Tanglewood South										
5/8"	-	-	-	\$26.68	\$5.46	\$	-	\$	-	\$0
Whispering Pines										
5/8"	28	336	1,219,590	\$26.68	\$3.70	\$	8,964	\$	4,512	\$13,477
1"	6	72	1,626,420	\$66.70	\$3.70	\$	4,802	\$	6,018	\$10,820
1.5"	5	60	624,960	\$133.40	\$3.70	\$	8,004	\$	2,312	\$10,316
2"	1	12	439,300	\$213.44	\$3.70	\$	2,561	\$	1,625	\$4,187
4"	1	12	-	\$667.00	\$3.70	\$	8,004	\$	-	\$8,004
White Oak/Lee Forest/Winston										
1.5"	1	12	169,200	\$133.40	\$3.20	\$	1,601	\$	541	\$2,142
Willowbrook										
1"	1	12	234,060	\$66.70	\$3.20	\$	800	\$	749	\$1,549
Woodrun										
5/8"	4	48	70,270	\$26.68	\$3.19	\$	1,281	\$	224	\$1,505
1"	1	12	251,840	\$66.70	\$3.19	\$	800	\$	803	\$1,604
Yorktown										
5/8"	-	-	-	\$26.68	\$5.79	\$	-	\$	-	\$0
Zemoso Acres										
1"	1	12	262,174	\$66.70	\$5.52	\$	800	\$	1,447	\$2,248
Availability - Connettee Falls	375	4,500		\$6.25		\$	28,125	\$	-	\$28,125
Availability - Fairfield Sapphire Valley	716	8,592		\$11.86		\$	101,901	\$	-	\$101,901
Availability - Carolina Forest/Woodrun*	1,309	2,618		\$32.04		\$	83,881	\$	-	\$83,881
Availability - Linville Ridge	39	468		\$16.05		\$	7,511	\$	-	\$7,511
*Charged bi-annually										
WSIC/SSIC Revenue Eff 10/01/22										\$0
						TOTAL	\$ 9,632,875	\$14,273,208	\$23,906,083	

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 1 Revenue

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
CWSNC								
Unmetered	-	-	-	\$80.49		\$ -	\$ -	\$0
5/8"	20,975	251,700	959,616,166	\$28.78	\$13.57	\$ 7,243,926	\$ 13,021,991	\$20,265,917
3/4"	651	7,812	20,045,827	\$28.78	\$13.57	\$ 224,829	\$ 272,022	\$496,851
1"	78	936	5,391,079	\$71.95	\$13.57	\$ 67,345	\$ 73,157	\$140,502
1.5"	35	420	5,036,068	\$143.90	\$13.57	\$ 60,438	\$ 68,339	\$128,777
2"	22	264	3,111,725	\$230.24	\$13.57	\$ 60,783	\$ 42,226	\$103,009
3"	-	-	-	\$431.70	\$13.57	\$ -	\$ -	\$0
4"	-	-	-	\$719.50	\$13.57	\$ -	\$ -	\$0
6"	-	-	-	\$1,439.00	\$13.57	\$ -	\$ -	\$0
8"	-	-	-	\$2,302.40	\$13.57	\$ -	\$ -	\$0
Irrigation	1	12	-	\$28.78	\$6.94	\$ 345	\$ -	\$345
Purchased Water								
Carolina Forest								
5/8"	222	2,664	7,198,639	\$28.78	\$3.19	\$ 76,670	\$ 22,964	\$99,634
1"	1	12	5,280	\$71.95	\$3.19	\$ 863	\$ 17	\$880
Carolina Trace								
5/8"	1,658	19,896	62,674,010	\$28.78	\$2.21	\$ 572,607	\$ 138,510	\$711,116
1"	1	12	95,960	\$71.95	\$2.21	\$ 863	\$ 212	\$1,075
Eastgate								
5/8"	69	828	2,120,203	\$28.78	\$5.46	\$ 23,830	\$ 11,576	\$35,406
High Vista Estates								
5/8"	240	2,880	11,148,628	\$28.78	\$5.27	\$ 82,886	\$ 58,753	\$141,640
1"	1	12	52,760	\$71.95	\$5.27	\$ 863	\$ 278	\$1,141
Riverbend								
5/8"	147	1,764	5,388,613	\$28.78	\$8.40	\$ 50,768	\$ 45,264	\$96,032
Riverpointe								
5/8"	195	2,340	15,889,183	\$28.78	\$4.12	\$ 67,345	\$ 65,463	\$132,809
Tanglewood South								
5/8"	95	1,140	3,902,538	\$28.78	\$5.46	\$ 32,809	\$ 21,308	\$54,117
Whispering Pines								
5/8"	1,627	19,524	95,944,150	\$28.78	\$3.70	\$ 561,901	\$ 354,993	\$916,894
1"	21	252	1,946,901	\$71.95	\$3.70	\$ 18,131	\$ 7,204	\$25,335
White Oak/Lee Forest/Winston								
5/8"	741	8,892	38,862,666	\$28.78	\$3.20	\$ 255,912	\$ 124,361	\$380,272
3/4"	1	12	48,600	\$28.78	\$3.20	\$ 345	\$ 156	\$501
Willowbrook								
5/8"	172	2,064	5,466,117	\$28.78	\$3.20	\$ 59,402	\$ 17,492	\$76,893
Woodrun								
5/8"	481	5,772	20,268,705	\$28.78	\$3.19	\$ 166,118	\$ 64,657	\$230,775
1"	1	12	9,520	\$71.95	\$3.19	\$ 863	\$ 30	\$894
Yorktown								
5/8"	108	1,296	3,646,203	\$28.78	\$5.79	\$ 37,299	\$ 21,112	\$58,410
Zemosa Acres								
5/8"	238	2,856	12,771,932	\$28.78	\$5.52	\$ 82,196	\$ 70,501	\$152,697
3/4"	1	12	72,257	\$28.78	\$5.52	\$ 345	\$ 399	\$744
1"	3	36	208,425	\$71.95	\$5.52	\$ 2,590	\$ 1,151	\$3,741

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 1 Revenue

Charge Type	Mid Period Customers	Mid Period Bills	Annualized Usage	Base Rate	Usage Rate	Fixed Revenue	Volumetric Revenue	Total Revenue
Commercial								
CWSNC								
Unmetered	16	192	-	\$80.49		\$ 15,454	\$ -	\$15,454
5/8"	253	3,036	18,048,878	\$28.78	\$13.57	\$ 87,376	\$ 244,923	\$332,299
3/4"	35	420	553,881	\$28.78	\$13.57	\$ 12,088	\$ 7,516	\$19,604
1"	48	576	9,806,934	\$71.95	\$13.57	\$ 41,443	\$ 133,080	\$174,523
1.5"	23	276	6,844,424	\$143.90	\$13.57	\$ 39,716	\$ 92,879	\$132,595
2"	70	840	24,759,927	\$230.24	\$13.57	\$ 193,402	\$ 335,992	\$529,394
3"	4	48	7,564,277	\$431.70	\$13.57	\$ 20,722	\$ 102,647	\$123,369
4"	1	12	1,012,686	\$719.50	\$13.57	\$ 8,634	\$ 13,742	\$22,376
6"	2	24	5,278,240	\$1,439.00	\$13.57	\$ 34,536	\$ 71,626	\$106,162
8"	-	-	-	\$2,302.40	\$13.57	\$ -	\$ -	\$0
Irrigation	-	-	-		\$6.94	\$ -	\$ -	\$0
Purchased Water								
Carolina Forest								
5/8"	4	48	12,220	\$28.78	\$3.19	\$ 1,381	\$ 39	\$1,420
1"	1	12	87,470	\$71.95	\$3.19	\$ 863	\$ 279	\$1,142
1.5"	1	12	176,100	\$143.90	\$3.19	\$ 1,727	\$ 562	\$2,289
Carolina Trace								
5/8"	26	312	1,468,744	\$28.78	\$2.21	\$ 8,979	\$ 3,246	\$12,225
3/4"	-	-	-	\$28.78	\$2.21	\$ -	\$ -	\$0
1"	1	12	52,630	\$71.95	\$2.21	\$ 863	\$ 116	\$980
1.5"	1	12	327,300	\$143.90	\$2.21	\$ 1,727	\$ 723	\$2,450
2"	1	12	4,670,580	\$230.24	\$2.21	\$ 2,763	\$ 10,322	\$13,085
Eastgate								
5/8"	1	12	4,720	\$28.78	\$5.46	\$ 345	\$ 26	\$371
2"	1	12	1,752,210	\$230.24	\$5.46	\$ 2,763	\$ 9,567	\$12,330
High Vista Estates								
5/8"	2	24	80,550	\$28.78	\$5.27	\$ 691	\$ 424	\$1,115
2"	1	12	1,752,210	\$230.24	\$5.27	\$ 2,763	\$ 9,234	\$11,997
Riverbend								
5/8"	-	-	-	\$28.78	\$8.40	\$ -	\$ -	\$0
Riverpointe								
5/8"	5	60	1,128,670	\$28.78	\$4.12	\$ 1,727	\$ 4,650	\$6,377
Tanglewood South								
5/8"	-	-	-	\$28.78	\$5.46	\$ -	\$ -	\$0
Whispering Pines								
5/8"	28	336	1,219,590	\$28.78	\$3.70	\$ 9,670	\$ 4,512	\$14,183
1"	6	72	1,626,420	\$71.95	\$3.70	\$ 5,180	\$ 6,018	\$11,198
1.5"	5	60	624,960	\$143.90	\$3.70	\$ 8,634	\$ 2,312	\$10,946
2"	1	12	439,300	\$230.24	\$3.70	\$ 2,763	\$ 1,625	\$4,388
4"	1	12	-	\$719.50	\$3.70	\$ 8,634	\$ -	\$8,634
White Oak/Lee Forest/Winston								
1.5"	1	12	169,200	\$143.90	\$3.20	\$ 1,727	\$ 541	\$2,268
Willowbrook								
1"	1	12	234,060	\$71.95	\$3.20	\$ 863	\$ 749	\$1,612
Woodrun								
5/8"	4	48	70,270	\$28.78	\$3.19	\$ 1,381	\$ 224	\$1,606
1"	1	12	251,840	\$71.95	\$3.19	\$ 863	\$ 803	\$1,667
Yorktown								
5/8"	-	-	-	\$28.78	\$5.79	\$ -	\$ -	\$0
Zemoso Acres								
1"	1	12	262,174	\$71.95	\$5.52	\$ 863	\$ 1,447	\$2,311
Availability - Connetsee Falls	366	4,392		\$6.76		\$ 29,690	\$ -	\$29,690
Availability - Fairfield Sapphire Valley	707	8,484		\$12.83		\$ 108,850	\$ -	\$108,850
Availability - Carolina Forest/Woodrun*	1,298	2,596		\$34.67		\$ 90,003	\$ -	\$90,003
Availability - Linville Ridge	30	360		\$17.37		\$ 6,253	\$ -	\$6,253
*Charged bi-annually								
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$10,507,615	\$15,563,963	\$26,071,578

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 2 Revenue

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
CWSNC								
Unmetered	-	-	-	\$83.22		\$ -	\$ -	\$0
5/8"	21,231	254,772	971,328,287	\$29.76	\$14.03	\$ 7,582,015	\$ 13,627,736	\$21,209,751
3/4"	651	7,812	20,045,827	\$29.76	\$14.03	\$ 232,485	\$ 281,243	\$513,728
1"	78	936	5,391,079	\$74.40	\$14.03	\$ 69,638	\$ 75,637	\$145,275
1.5"	35	420	5,036,068	\$148.80	\$14.03	\$ 62,496	\$ 70,656	\$133,152
2"	22	264	3,111,725	\$238.08	\$14.03	\$ 62,853	\$ 43,658	\$106,511
3"	-	-	-	\$446.40	\$14.03	\$ -	\$ -	\$0
4"	-	-	-	\$744.00	\$14.03	\$ -	\$ -	\$0
6"	-	-	-	\$1,488.00	\$14.03	\$ -	\$ -	\$0
8"	-	-	-	\$2,380.80	\$14.03	\$ -	\$ -	\$0
Irrigation	1	12	-	\$29.76	\$7.18	\$ 357	\$ -	\$357
Purchased Water								
Carolina Forest								
5/8"	225	2,700	7,295,918	\$29.76	\$3.19	\$ 80,352	\$ 23,274	\$103,626
1"	1	12	5,280	\$74.40	\$3.19	\$ 893	\$ 17	\$910
Carolina Trace								
5/8"	1,668	20,016	63,052,019	\$29.76	\$2.21	\$ 595,676	\$ 139,345	\$735,021
1"	1	12	95,960	\$74.40	\$2.21	\$ 893	\$ 212	\$1,105
Eastgate								
5/8"	72	864	2,212,385	\$29.76	\$5.46	\$ 25,713	\$ 12,080	\$37,792
High Vista Estates								
5/8"	243	2,916	11,287,986	\$29.76	\$5.27	\$ 86,780	\$ 59,488	\$146,268
1"	1	12	52,760	\$74.40	\$5.27	\$ 893	\$ 278	\$1,171
Riverbend								
5/8"	150	1,800	5,498,584	\$29.76	\$8.40	\$ 53,568	\$ 46,188	\$99,756
Riverpointe								
5/8"	198	2,376	16,133,632	\$29.76	\$4.12	\$ 70,710	\$ 66,471	\$137,180
Tanglewood South								
5/8"	98	1,176	4,025,776	\$29.76	\$5.46	\$ 34,998	\$ 21,981	\$56,978
Whispering Pines								
5/8"	1,637	19,644	96,533,849	\$29.76	\$3.70	\$ 584,605	\$ 357,175	\$941,781
1"	21	252	1,946,901	\$74.40	\$3.70	\$ 18,749	\$ 7,204	\$25,952
White Oak/Lee Forest/Winston								
5/8"	760	9,120	39,859,144	\$29.76	\$3.20	\$ 271,411	\$ 127,549	\$398,960
3/4"	1	12	48,600	\$29.76	\$3.20	\$ 357	\$ 156	\$513
Willowbrook								
5/8"	175	2,100	5,561,457	\$29.76	\$3.20	\$ 62,496	\$ 17,797	\$80,293
Woodrun								
5/8"	484	5,808	20,395,121	\$29.76	\$3.19	\$ 172,846	\$ 65,060	\$237,907
1"	1	12	9,520	\$74.40	\$3.19	\$ 893	\$ 30	\$923
Yorktown								
5/8"	111	1,332	3,747,487	\$29.76	\$5.79	\$ 39,640	\$ 21,698	\$61,338
Zemosa Acres								
5/8"	241	2,892	12,932,922	\$29.76	\$5.52	\$ 86,066	\$ 71,390	\$157,456
3/4"	1	12	72,257	\$29.76	\$5.52	\$ 357	\$ 399	\$756
1"	3	36	208,425	\$74.40	\$5.52	\$ 2,678	\$ 1,151	\$3,829

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 2 Revenue

Charge Type	Mid Period Customers	Mid Period Bills	Annualized Usage	Base Rate	Usage Rate	Fixed Revenue	Volumetric Revenue	Total Revenue
Commercial								
CWSNC								
Unmetered	16	192	-	\$83.22		\$ 15,978	\$ -	\$15,978
5/8"	253	3,036	18,048,878	\$29.76	\$14.03	\$ 90,351	\$ 253,226	\$343,577
3/4"	35	420	553,881	\$29.76	\$14.03	\$ 12,499	\$ 7,771	\$20,270
1"	48	576	9,806,934	\$74.40	\$14.03	\$ 42,854	\$ 137,591	\$180,446
1.5"	23	276	6,844,424	\$148.80	\$14.03	\$ 41,069	\$ 96,027	\$137,096
2"	70	840	24,759,927	\$238.08	\$14.03	\$ 199,987	\$ 347,382	\$547,369
3"	4	48	7,564,277	\$446.40	\$14.03	\$ 21,427	\$ 106,127	\$127,554
4"	1	12	1,012,686	\$744.00	\$14.03	\$ 8,928	\$ 14,208	\$23,136
6"	2	24	5,278,240	\$1,488.00	\$14.03	\$ 35,712	\$ 74,054	\$109,766
8"	-	-	-	\$2,380.80	\$14.03	\$ -	\$ -	\$0
Irrigation	-	-	-		\$7.18	\$ -	\$ -	\$0
Purchased Water								
Carolina Forest								
5/8"	4	48	12,220	\$29.76	\$3.19	\$ 1,428	\$ 39	\$1,467
1"	1	12	87,470	\$74.40	\$3.19	\$ 893	\$ 279	\$1,172
1.5"	1	12	176,100	\$148.80	\$3.19	\$ 1,786	\$ 562	\$2,347
Carolina Trace								
5/8"	26	312	1,468,744	\$29.76	\$2.21	\$ 9,285	\$ 3,246	\$12,531
3/4"	-	-	-	\$29.76	\$2.21	\$ -	\$ -	\$0
1"	1	12	52,630	\$74.40	\$2.21	\$ 893	\$ 116	\$1,009
1.5"	1	12	327,300	\$148.80	\$2.21	\$ 1,786	\$ 723	\$2,509
2"	1	12	4,670,580	\$238.08	\$2.21	\$ 2,857	\$ 10,322	\$13,179
Eastgate								
5/8"	1	12	4,720	\$29.76	\$5.46	\$ 357	\$ 26	\$383
2"	1	12	1,752,210	\$238.08	\$5.46	\$ 2,857	\$ 9,567	\$12,424
High Vista Estates								
5/8"	2	24	80,550	\$29.76	\$5.27	\$ 714	\$ 424	\$1,139
2"	1	12	1,752,210	\$238.08	\$5.27	\$ 2,857	\$ 9,234	\$12,091
Riverbend								
5/8"	-	-	-	\$29.76	\$8.40	\$ -	\$ -	\$0
Riverpointe								
5/8"	5	60	1,128,670	\$29.76	\$4.12	\$ 1,786	\$ 4,650	\$6,436
Tanglewood South								
5/8"	-	-	-	\$29.76	\$5.46	\$ -	\$ -	\$0
Whispering Pines								
5/8"	28	336	1,219,590	\$29.76	\$3.70	\$ 9,999	\$ 4,512	\$14,512
1"	6	72	1,626,420	\$74.40	\$3.70	\$ 5,357	\$ 6,018	\$11,375
1.5"	5	60	624,960	\$148.80	\$3.70	\$ 8,928	\$ 2,312	\$11,240
2"	1	12	439,300	\$238.08	\$3.70	\$ 2,857	\$ 1,625	\$4,482
4"	1	12	-	\$744.00	\$3.70	\$ 8,928	\$ -	\$8,928
White Oak/Lee Forest/Winston								
1.5"	1	12	169,200	\$148.80	\$3.20	\$ 1,786	\$ 541	\$2,327
Willowbrook								
1"	1	12	234,060	\$74.40	\$3.20	\$ 893	\$ 749	\$1,642
Woodrun								
5/8"	4	48	70,270	\$29.76	\$3.19	\$ 1,428	\$ 224	\$1,653
1"	1	12	251,840	\$74.40	\$3.19	\$ 893	\$ 803	\$1,696
Yorktown								
5/8"	-	-	-	\$29.76	\$5.79	\$ -	\$ -	\$0
Zemoso Acres								
1"	1	12	262,174	\$74.40	\$5.52	\$ 893	\$ 1,447	\$2,340
Availability - Connettee Falls	358	4,296		\$6.99		\$ 30,029	\$ -	\$30,029
Availability - Fairfield Sapphire Valley	699	8,388		\$13.27		\$ 111,309	\$ -	\$111,309
Availability - Carolina Forest/Woodrun*	1,287	2,574		\$35.85		\$ 92,278	\$ -	\$92,278
Availability - Linville Ridge	22	264		\$17.96		\$ 4,741	\$ -	\$4,741
*Charged bi-annually								
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$10,977,042	\$16,231,677	\$27,208,719

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 3 Revenue

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
CWSNC								
Unmetered	-	-	-	\$85.90		\$ -	\$ -	\$0
5/8"	21,491	257,892	983,223,409	\$30.72	\$14.48	\$ 7,922,442	\$ 14,237,075	\$22,159,517
3/4"	651	7,812	20,045,827	\$30.72	\$14.48	\$ 239,985	\$ 290,264	\$530,248
1"	78	936	5,391,079	\$76.80	\$14.48	\$ 71,885	\$ 78,063	\$149,948
1.5"	35	420	5,036,068	\$153.60	\$14.48	\$ 64,512	\$ 72,922	\$137,434
2"	22	264	3,111,725	\$245.76	\$14.48	\$ 64,881	\$ 45,058	\$109,938
3"	-	-	-	\$460.80	\$14.48	\$ -	\$ -	\$0
4"	-	-	-	\$768.00	\$14.48	\$ -	\$ -	\$0
6"	-	-	-	\$1,536.00	\$14.48	\$ -	\$ -	\$0
8"	-	-	-	\$2,457.60	\$14.48	\$ -	\$ -	\$0
Irrigation	1	12	-	\$30.72	\$7.41	\$ 369	\$ -	\$369
Purchased Water								
Carolina Forest								
5/8"	228	2,736	7,393,197	\$30.72	\$3.19	\$ 84,050	\$ 23,584	\$107,634
1"	1	12	5,280	\$76.80	\$3.19	\$ 922	\$ 17	\$938
Carolina Trace								
5/8"	1,679	20,148	63,467,830	\$30.72	\$2.21	\$ 618,947	\$ 140,264	\$759,210
1"	1	12	95,960	\$76.80	\$2.21	\$ 922	\$ 212	\$1,134
Eastgate								
5/8"	75	900	2,304,568	\$30.72	\$5.46	\$ 27,648	\$ 12,583	\$40,231
High Vista Estates								
5/8"	246	2,952	11,427,344	\$30.72	\$5.27	\$ 90,685	\$ 60,222	\$150,908
1"	1	12	52,760	\$76.80	\$5.27	\$ 922	\$ 278	\$1,200
Riverbend								
5/8"	153	1,836	5,608,556	\$30.72	\$8.40	\$ 56,402	\$ 47,112	\$103,514
Riverpointe								
5/8"	201	2,412	16,378,081	\$30.72	\$4.12	\$ 74,097	\$ 67,478	\$141,574
Tanglewood South								
5/8"	101	1,212	4,149,014	\$30.72	\$5.46	\$ 37,233	\$ 22,654	\$59,886
Whispering Pines								
5/8"	1,648	19,776	97,182,519	\$30.72	\$3.70	\$ 607,519	\$ 359,575	\$967,094
1"	21	252	1,946,901	\$76.80	\$3.70	\$ 19,354	\$ 7,204	\$26,557
White Oak/Lee Forest/Winston								
5/8"	779	9,348	40,855,623	\$30.72	\$3.20	\$ 287,171	\$ 130,738	\$417,909
3/4"	1	12	48,600	\$30.72	\$3.20	\$ 369	\$ 156	\$524
Willowbrook								
5/8"	178	2,136	5,656,796	\$30.72	\$3.20	\$ 65,618	\$ 18,102	\$83,720
Woodrun								
5/8"	487	5,844	20,521,537	\$30.72	\$3.19	\$ 179,528	\$ 65,464	\$244,991
1"	1	12	9,520	\$76.80	\$3.19	\$ 922	\$ 30	\$952
Yorktown								
5/8"	114	1,368	3,848,770	\$30.72	\$5.79	\$ 42,025	\$ 22,284	\$64,309
Zemosa Acres								
5/8"	244	2,928	13,093,913	\$30.72	\$5.52	\$ 89,948	\$ 72,278	\$162,227
3/4"	1	12	72,257	\$30.72	\$5.52	\$ 369	\$ 399	\$767
1"	3	36	208,425	\$76.80	\$5.52	\$ 2,765	\$ 1,151	\$3,915

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 3 Revenue

Charge Type	Mid Period Customers	Mid Period Bills	Annualized Usage	Base Rate	Usage Rate	Fixed Revenue	Volumetric Revenue	Total Revenue
Commercial								
CWSNC								
Unmetered	16	192	-	\$85.90		\$ 16,493	\$ -	\$16,493
5/8"	253	3,036	18,048,878	\$30.72	\$14.48	\$ 93,266	\$ 261,348	\$354,614
3/4"	35	420	553,881	\$30.72	\$14.48	\$ 12,902	\$ 8,020	\$20,923
1"	48	576	9,806,934	\$76.80	\$14.48	\$ 44,237	\$ 142,004	\$186,241
1.5"	23	276	6,844,424	\$153.60	\$14.48	\$ 42,394	\$ 99,107	\$141,501
2"	70	840	24,759,927	\$245.76	\$14.48	\$ 206,438	\$ 358,524	\$564,962
3"	4	48	7,564,277	\$460.80	\$14.48	\$ 22,118	\$ 109,531	\$131,649
4"	1	12	1,012,686	\$768.00	\$14.48	\$ 9,216	\$ 14,664	\$23,880
6"	2	24	5,278,240	\$1,536.00	\$14.48	\$ 36,864	\$ 76,429	\$113,293
8"	-	-	-	\$2,457.60	\$14.48	\$ -	\$ -	\$0
Irrigation	-	-	-		\$7.41	\$ -	\$ -	\$0
Purchased Water								
Carolina Forest								
5/8"	4	48	12,220	\$30.72	\$3.19	\$ 1,475	\$ 39	\$1,514
1"	1	12	87,470	\$76.80	\$3.19	\$ 922	\$ 279	\$1,201
1.5"	1	12	176,100	\$153.60	\$3.19	\$ 1,843	\$ 562	\$2,405
Carolina Trace								
5/8"	26	312	1,468,744	\$30.72	\$2.21	\$ 9,585	\$ 3,246	\$12,831
3/4"	-	-	-	\$30.72	\$2.21	\$ -	\$ -	\$0
1"	1	12	52,630	\$76.80	\$2.21	\$ 922	\$ 116	\$1,038
1.5"	1	12	327,300	\$153.60	\$2.21	\$ 1,843	\$ 723	\$2,567
2"	1	12	4,670,580	\$245.76	\$2.21	\$ 2,949	\$ 10,322	\$13,271
Eastgate								
5/8"	1	12	4,720	\$30.72	\$5.46	\$ 369	\$ 26	\$394
2"	1	12	1,752,210	\$245.76	\$5.46	\$ 2,949	\$ 9,567	\$12,516
High Vista Estates								
5/8"	2	24	80,550	\$30.72	\$5.27	\$ 737	\$ 424	\$1,162
2"	1	12	1,752,210	\$245.76	\$5.27	\$ 2,949	\$ 9,234	\$12,183
Riverbend								
5/8"	-	-	-	\$30.72	\$8.40	\$ -	\$ -	\$0
Riverpointe								
5/8"	5	60	1,128,670	\$30.72	\$4.12	\$ 1,843	\$ 4,650	\$6,493
Tanglewood South								
5/8"	-	-	-	\$30.72	\$5.46	\$ -	\$ -	\$0
Whispering Pines								
5/8"	28	336	1,219,590	\$30.72	\$3.70	\$ 10,322	\$ 4,512	\$14,834
1"	6	72	1,626,420	\$76.80	\$3.70	\$ 5,530	\$ 6,018	\$11,547
1.5"	5	60	624,960	\$153.60	\$3.70	\$ 9,216	\$ 2,312	\$11,528
2"	1	12	439,300	\$245.76	\$3.70	\$ 2,949	\$ 1,625	\$4,575
4"	1	12	-	\$768.00	\$3.70	\$ 9,216	\$ -	\$9,216
White Oak/Lee Forest/Winston								
1.5"	1	12	169,200	\$153.60	\$3.20	\$ 1,843	\$ 541	\$2,385
Willowbrook								
1"	1	12	234,060	\$76.80	\$3.20	\$ 922	\$ 749	\$1,671
Woodrun								
5/8"	4	48	70,270	\$30.72	\$3.19	\$ 1,475	\$ 224	\$1,699
1"	1	12	251,840	\$76.80	\$3.19	\$ 922	\$ 803	\$1,725
Yorktown								
5/8"	-	-	-	\$30.72	\$5.79	\$ -	\$ -	\$0
Zemoso Acres								
1"	1	12	262,174	\$76.80	\$5.52	\$ 922	\$ 1,447	\$2,369
Availability - Connettee Falls	350	4,200		\$7.22		\$ 30,324	\$ -	\$30,324
Availability - Fairfield Sapphire Valley	691	8,292		\$13.70		\$ 113,600	\$ -	\$113,600
Availability - Carolina Forest/Woodrun*	1,277	2,554		\$37.00		\$ 94,498	\$ -	\$94,498
Availability - Linville Ridge	14	168		\$18.54		\$ 3,115	\$ -	\$3,115
*Charged bi-annually								
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$11,448,650	\$16,902,214	\$28,350,864

CWSNC Uniform Service Area - Sewer

Public Staff's Revenue at Present Rates

Charge Type	EOP		EOP Usage	Base Rate	Usage Rate	Fixed		Volumetric		Total
	Customers	Bills				Revenue	Revenue			
Residential										
CWSNC										
Flat	1,858	22,296	-	\$85.12		\$ 1,897,836	\$ -	\$ -	\$ 1,897,836	
Multiple Units - Nags Head	60	720	-	\$85.12		\$ 61,286	\$ -	\$ -	\$ 61,286	
Regalwood/White Oak - Flat	1,083	12,996	-	\$85.12		\$ 1,106,220	\$ -	\$ -	\$ 1,106,220	
5/8"	11,207	134,484	424,981,347	\$41.03	\$11.69	\$ 5,517,879	\$ 4,968,032	\$ 10,485,910		
3/4"	127	1,524	3,017,908	\$41.03	\$11.69	\$ 62,530	\$ 35,279	\$ 97,809		
1"	116	1,392	13,278,202	\$41.03	\$11.69	\$ 57,114	\$ 155,222	\$ 212,336		
1.5"	33	396	4,931,668	\$41.03	\$11.69	\$ 16,248	\$ 57,651	\$ 73,899		
2"	17	204	2,749,036	\$41.03	\$11.69	\$ 8,370	\$ 32,136	\$ 40,506		
3"	-	-	-	\$41.03	\$11.69	\$ -	\$ -	\$ -		
4"	-	-	-	\$41.03	\$11.69	\$ -	\$ -	\$ -		
6"	-	-	-	\$41.03	\$11.69	\$ -	\$ -	\$ -		
8"	-	-	-	\$41.03	\$11.69	\$ -	\$ -	\$ -		
Purchased Sewer Treatment										
The Ridges										
5/8"	47	564	1,528,500	\$45.67		\$ 25,758	\$ -	\$ 25,758		
1"	-	-	-	\$45.67		\$ -	\$ -	\$ -		
Fairfield Mountain										
5/8"	383	4,596	10,110,224	\$118.72		\$ 545,642	\$ -	\$ 545,642		
3/4"	12	144	126,291	\$118.72		\$ 17,096	\$ -	\$ 17,096		
1"	12	144	1,532,505	\$118.72		\$ 17,096	\$ -	\$ 17,096		
Flat	3	36	-	\$118.72		\$ 4,274	\$ -	\$ 4,274		
Mt. Carmel										
5/8"	364	4,368	13,422,379	\$36.44	\$6.71	\$ 159,174	\$ 90,064	\$ 249,238		
College Park										
5/8"	51	612	2,168,853	\$28.72	\$7.77	\$ 17,577	\$ 16,852	\$ 34,429		
Flat	1	12	-	\$28.72	\$7.77	\$ 345	\$ -	\$ 345		
Kings Grant										
5/8"	181	2,172	6,815,101	\$28.72	\$4.61	\$ 62,382	\$ 31,418	\$ 93,800		
1"	1	12	234,070	\$28.72	\$4.61	\$ 345	\$ 1,079	\$ 1,424		
White Oak/Lee Forest/Winston										
5/8"	634	7,608	32,494,397	\$28.72	\$6.77	\$ 218,509	\$ 219,987	\$ 438,496		
Commercial										
CWSNC										
Flat	13	156	-	\$85.12		\$ 13,279	\$ -	\$ 13,279		
5/8"	175	2,100	13,905,419	\$41.03	\$11.69	\$ 86,163	\$ 162,554	\$ 248,717		
3/4"	3	36	411,611	\$41.03	\$11.69	\$ 1,477	\$ 4,812	\$ 6,289		
1"	31	372	8,610,539	\$102.58	\$11.69	\$ 38,158	\$ 100,657	\$ 138,815		
1.5"	16	192	8,228,575	\$205.15	\$11.69	\$ 39,389	\$ 96,192	\$ 135,581		
2"	51	612	20,994,115	\$328.24	\$11.69	\$ 200,883	\$ 245,421	\$ 446,304		
3"	4	48	10,674,010	\$615.45	\$11.69	\$ 29,542	\$ 124,779	\$ 154,321		
4"	1	12	1,012,686	\$1,025.75	\$11.69	\$ 12,309	\$ 11,838	\$ 24,147		
6"	2	24	6,997,901	\$2,051.50	\$11.69	\$ 49,236	\$ 81,805	\$ 131,041		
8"	1	12	8,355,608	\$3,282.40	\$11.69	\$ 39,389	\$ 97,677	\$ 137,066		
Danby - Flat - Daycare	1	12	-	\$1,302.34		\$ 15,628	\$ -	\$ 15,628		
White Oak - Flat - Pantry	1	12	-	\$177.51		\$ 2,130	\$ -	\$ 2,130		
White Oak - Flat - Day Care	1	12	-	\$323.73		\$ 3,885	\$ -	\$ 3,885		
White Oak - Flat - High School	1	12	-	\$2,525.23		\$ 30,303	\$ -	\$ 30,303		
Purchased Sewer Treatment										
The Ridges										
Under 1"	1	12	224,360	\$45.67		\$ 548	\$ -	\$ 548		
Under 2"	1	12	106,400	\$164.32		\$ 1,972	\$ -	\$ 1,972		
Fairfield Mountain										
Small	6	72	67,787	\$103.00	\$13.93	\$ 7,416	\$ 944	\$ 8,360		
Medium	10	120	1,734,391	\$182.00	\$13.93	\$ 21,840	\$ 24,160	\$ 46,000		
Large	3	36	348,308	\$286.00	\$13.93	\$ 10,296	\$ 4,852	\$ 15,148		
Availability - Connestee Falls	163	1,956		\$6.23		\$ 12,180	\$ -	\$ 12,180		
Availability - Fairfield Sapphire Valley	83	996		\$11.05		\$ 11,002	\$ -	\$ 11,002		
WSIC/SSIC Revenue Eff 10/01/22										
						\$ -	\$ -	\$ -		
TOTAL						\$ 10,422,703	\$ 6,563,414	\$ 16,986,117		

CWSNC Uniform Service Area - Sewer

Public Staff's Revenue at Proposed Rates

Charge Type	EOP		EOP Usage	Base Rate	Usage Rate	Fixed		Volumetric		Total
	Customers	EOP Bills				Revenue	Revenue	Revenue	Revenue	
Residential										
CWSNC										
Flat	1,858	22,296	-	\$88.31		\$ 1,968,960	\$ -			\$1,968,960
Multiple Units - Nags Head	60	720	-	\$88.31		\$ 63,583	\$ -			\$63,583
Regalwood/White Oak - Flat	1,083	12,996	-	\$88.31		\$ 1,147,677	\$ -			\$1,147,677
5/8"	11,207	134,484	424,981,347	\$45.20	\$13.40	\$ 6,078,677	\$ 5,694,750			\$11,773,427
3/4"	127	1,524	3,017,908	\$45.20	\$13.40	\$ 68,885	\$ 40,440			\$109,325
1"	116	1,392	13,278,202	\$45.20	\$13.40	\$ 62,918	\$ 177,928			\$240,846
1.5"	33	396	4,931,668	\$45.20	\$13.40	\$ 17,899	\$ 66,084			\$83,984
2"	17	204	2,749,036	\$45.20	\$13.40	\$ 9,221	\$ 36,837			\$46,058
3"	-	-	-	\$45.20	\$13.40	\$ -	\$ -			\$0
4"	-	-	-	\$45.20	\$13.40	\$ -	\$ -			\$0
6"	-	-	-	\$45.20	\$13.40	\$ -	\$ -			\$0
8"	-	-	-	\$45.20	\$13.40	\$ -	\$ -			\$0
Purchased Sewer Treatment										
The Ridges										
5/8"	47	564	1,528,500	\$48.59		\$ 27,405	\$ -			\$27,405
1"	-	-	-	\$48.59		\$ -	\$ -			\$0
Fairfield Mountain										
5/8"	383	4,596	10,110,224	\$121.64		\$ 559,057	\$ -			\$559,057
3/4"	12	144	126,291	\$121.64		\$ 17,516	\$ -			\$17,516
1"	12	144	1,532,505	\$121.64		\$ 17,516	\$ -			\$17,516
Flat	3	36	-	\$121.64		\$ 4,379	\$ -			\$4,379
Mt. Carmel										
5/8"	364	4,368	13,422,379	\$39.36	\$6.71	\$ 171,924	\$ 90,064			\$261,989
College Park										
5/8"	51	612	2,168,853	\$31.64	\$7.77	\$ 19,364	\$ 16,852			\$36,216
Flat	1	12	-	\$31.64	\$7.77	\$ 380	\$ -			\$380
Kings Grant										
5/8"	181	2,172	6,815,101	\$31.64	\$4.61	\$ 68,722	\$ 31,418			\$100,140
1"	1	12	234,070	\$31.64	\$4.61	\$ 380	\$ 1,079			\$1,459
White Oak/Lee Forest/Winston										
5/8"	634	7,608	32,494,397	\$31.64	\$6.77	\$ 240,717	\$ 219,987			\$460,704
Commercial										
CWSNC										
Flat	13	156	-	\$88.31		\$ 13,776	\$ -			\$13,776
5/8"	175	2,100	13,905,419	\$45.20	\$13.40	\$ 94,920	\$ 186,333			\$281,253
3/4"	3	36	411,611	\$45.20	\$13.40	\$ 1,627	\$ 5,516			\$7,143
1"	31	372	8,610,539	\$113.00	\$13.40	\$ 42,036	\$ 115,381			\$157,417
1.5"	16	192	8,228,575	\$226.00	\$13.40	\$ 43,392	\$ 110,263			\$153,655
2"	51	612	20,994,115	\$361.60	\$13.40	\$ 221,299	\$ 281,321			\$502,620
3"	4	48	10,674,010	\$678.00	\$13.40	\$ 32,544	\$ 143,032			\$175,576
4"	1	12	1,012,686	\$1,130.00	\$13.40	\$ 13,560	\$ 13,570			\$27,130
6"	2	24	6,997,901	\$2,260.00	\$13.40	\$ 54,240	\$ 93,772			\$148,012
8"	1	12	8,355,608	\$3,616.00	\$13.40	\$ 43,392	\$ 111,965			\$155,357
Danby - Flat - Daycare	1	12	-	\$1,351.14		\$ 16,214	\$ -			\$16,214
White Oak - Flat - Pantry	1	12	-	\$184.16		\$ 2,210	\$ -			\$2,210
White Oak - Flat - Day Care	1	12	-	\$335.86		\$ 4,030	\$ -			\$4,030
White Oak - Flat - High School	1	12	-	\$2,619.87		\$ 31,438	\$ -			\$31,438
Purchased Sewer Treatment										
The Ridges										
Under 1"	1	12	224,360	\$48.59		\$ 583	\$ -			\$583
Under 2"	1	12	106,400	\$167.24		\$ 2,007	\$ -			\$2,007
Fairfield Mountain										
Small	6	72	67,787	\$103.00	\$13.93	\$ 7,416	\$ 944			\$8,360
Medium	10	120	1,734,391	\$182.00	\$13.93	\$ 21,840	\$ 24,160			\$46,000
Large	3	36	348,308	\$286.00	\$13.93	\$ 10,296	\$ 4,852			\$15,148
Availability - Connestee Falls	163	1,956		\$6.46		\$ 12,636	\$ -			\$12,636
Availability - Fairfield Sapphire Valley	83	996		\$11.46		\$ 11,414	\$ -			\$11,414
WSIC/SSIC Revenue Eff 10/01/22										\$0
TOTAL						\$ 11,226,051	\$ 7,466,548	\$18,692,599		

CWSNC Uniform Service Area - Sewer

Public Staff's WSIP Year 1 Revenue

Charge Type	Mid Period Customers	Mid Period Bills	Annualized Usage	Base Rate	Usage Rate	Fixed Revenue	Volumetric Revenue	Total Revenue
Residential								
CWSNC								
Flat	1,858	22,296	-	\$98.58		\$ 2,197,940	\$ -	\$2,197,940
Multiple Units - Nags Head	60	720	-	\$98.58		\$ 70,978	\$ -	\$70,978
Regalwood/White Oak - Flat	1,083	12,996	-	\$98.58		\$ 1,281,146	\$ -	\$1,281,146
5/8"	11,245	134,940	426,422,347	\$50.45	\$14.96	\$ 6,807,723	\$ 6,379,278	\$13,187,001
3/4"	127	1,524	3,017,908	\$50.45	\$14.96	\$ 76,886	\$ 45,148	\$122,034
1"	116	1,392	13,278,202	\$50.45	\$14.96	\$ 70,226	\$ 198,642	\$268,868
1.5"	33	396	4,931,668	\$50.45	\$14.96	\$ 19,978	\$ 73,778	\$93,756
2"	17	204	2,749,036	\$50.45	\$14.96	\$ 10,292	\$ 41,126	\$51,417
3"	-	-	-	\$50.45	\$14.96	\$ -	\$ -	\$0
4"	-	-	-	\$50.45	\$14.96	\$ -	\$ -	\$0
6"	-	-	-	\$50.45	\$14.96	\$ -	\$ -	\$0
8"	-	-	-	\$50.45	\$14.96	\$ -	\$ -	\$0
Purchased Sewer Treatment								
The Ridges								
5/8"	47	564	1,528,500	\$52.27		\$ 29,480	\$ -	\$29,480
1"	-	-	-	\$52.27		\$ -	\$ -	\$0
Fairfield Mountain								
5/8"	383	4,596	10,110,224	\$125.32		\$ 575,971	\$ -	\$575,971
3/4"	12	144	126,291	\$125.32		\$ 18,046	\$ -	\$18,046
1"	12	144	1,532,505	\$125.32		\$ 18,046	\$ -	\$18,046
Flat	3	36	-	\$125.32		\$ 4,512	\$ -	\$4,512
Mt. Carmel								
5/8"	364	4,368	13,422,379	\$43.04	\$6.71	\$ 187,999	\$ 90,064	\$278,063
College Park								
5/8"	52	624	2,211,380	\$35.32	\$7.77	\$ 22,040	\$ 17,182	\$39,222
Flat	1	12	-	\$35.32	\$7.77	\$ 424	\$ -	\$424
Kings Grant								
5/8"	184	2,208	6,928,058	\$35.32	\$4.61	\$ 77,987	\$ 31,938	\$109,925
1"	1	12	234,070	\$35.32	\$4.61	\$ 424	\$ 1,079	\$1,503
White Oak/Lee Forest/Winston								
5/8"	680	8,160	34,852,035	\$35.32	\$6.77	\$ 288,211	\$ 235,948	\$524,159
Commercial								
CWSNC								
Flat	13	156	-	\$98.58		\$ 15,378	\$ -	\$15,378
5/8"	175	2,100	13,905,419	\$50.45	\$14.96	\$ 105,945	\$ 208,025	\$313,970
3/4"	3	36	411,611	\$50.45	\$14.96	\$ 1,816	\$ 6,158	\$7,974
1"	31	372	8,610,539	\$126.13	\$14.96	\$ 46,920	\$ 128,814	\$175,734
1.5"	16	192	8,228,575	\$252.25	\$14.96	\$ 48,432	\$ 123,099	\$171,531
2"	51	612	20,994,115	\$403.60	\$14.96	\$ 247,003	\$ 314,072	\$561,075
3"	4	48	10,674,010	\$756.75	\$14.96	\$ 36,324	\$ 159,683	\$196,007
4"	1	12	1,012,686	\$1,261.25	\$14.96	\$ 15,135	\$ 15,150	\$30,285
6"	2	24	6,997,901	\$2,522.50	\$14.96	\$ 60,540	\$ 104,689	\$165,229
8"	1	12	8,355,608	\$4,036.00	\$14.96	\$ 48,432	\$ 125,000	\$173,432
Danby - Flat - Daycare	1	12	-	\$1,508.27		\$ 18,099	\$ -	\$18,099
White Oak - Flat - Pantry	1	12	-	\$205.58		\$ 2,467	\$ -	\$2,467
White Oak - Flat - Day Care	1	12	-	\$374.92		\$ 4,499	\$ -	\$4,499
White Oak - Flat - High School	1	12	-	\$2,924.55		\$ 35,095	\$ -	\$35,095
Purchased Sewer Treatment								
The Ridges								
Under 1"	1	12	224,360	\$52.27		\$ 627	\$ -	\$627
Under 2"	1	12	106,400	\$170.92		\$ 2,051	\$ -	\$2,051
Fairfield Mountain								
Small	6	72	67,787	\$103.00	\$13.93	\$ 7,416	\$ 944	\$8,360
Medium	10	120	1,734,391	\$182.00	\$13.93	\$ 21,840	\$ 24,160	\$46,000
Large	3	36	348,308	\$286.00	\$13.93	\$ 10,296	\$ 4,852	\$15,148
Availability - Connestee Falls	150	1,800		\$7.21		\$ 12,978	\$ -	\$12,978
Availability - Fairfield Sapphire Valley	80	960		\$12.79		\$ 12,278	\$ -	\$12,278
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$12,511,879	\$ 8,328,829	\$20,840,709

CWSNC Uniform Service Area - Sewer

Public Staff's WSIP Year 2 Revenue

Charge Type	Mid Period	Mid Period	Annualized	Base Rate	Usage Rate	Fixed	Volumetric	Total
	Customers	Bills	Usage			Revenue	Revenue	Revenue
Residential								
CWSNC								
Flat	1,858	22,296	-	\$104.36		\$ 2,326,811	\$ -	\$2,326,811
Multiple Units - Nags Head	60	720	-	\$104.36		\$ 75,139	\$ -	\$75,139
Regalwood/White Oak - Flat	1,083	12,996	-	\$104.36		\$ 1,356,263	\$ -	\$1,356,263
5/8"	11,280	135,360	427,749,585	\$53.43	\$15.83	\$ 7,232,285	\$ 6,771,276	\$14,003,561
3/4"	127	1,524	3,017,908	\$53.43	\$15.83	\$ 81,427	\$ 47,773	\$129,201
1"	116	1,392	13,278,202	\$53.43	\$15.83	\$ 74,375	\$ 210,194	\$284,568
1.5"	33	396	4,931,668	\$53.43	\$15.83	\$ 21,158	\$ 78,068	\$99,227
2"	17	204	2,749,036	\$53.43	\$15.83	\$ 10,900	\$ 43,517	\$54,417
3"	-	-	-	\$53.43	\$15.83	\$ -	\$ -	\$0
4"	-	-	-	\$53.43	\$15.83	\$ -	\$ -	\$0
6"	-	-	-	\$53.43	\$15.83	\$ -	\$ -	\$0
8"	-	-	-	\$53.43	\$15.83	\$ -	\$ -	\$0
Purchased Sewer Treatment								
The Ridges								
5/8"	47	564	1,528,500	\$54.35		\$ 30,653	\$ -	\$30,653
1"	-	-	-	\$54.35		\$ -	\$ -	\$0
Fairfield Mountain								
5/8"	383	4,596	10,110,224	\$127.40		\$ 585,530	\$ -	\$585,530
3/4"	12	144	126,291	\$127.40		\$ 18,346	\$ -	\$18,346
1"	12	144	1,532,505	\$127.40		\$ 18,346	\$ -	\$18,346
Flat	3	36	-	\$127.40		\$ 4,586	\$ -	\$4,586
Mt. Carmel								
5/8"	364	4,368	13,422,379	\$45.12	\$6.71	\$ 197,084	\$ 90,064	\$287,148
College Park								
5/8"	53	636	2,253,906	\$37.40	\$7.77	\$ 23,786	\$ 17,513	\$41,299
Flat	1	12	-	\$37.40	\$7.77	\$ 449	\$ -	\$449
Kings Grant								
5/8"	187	2,244	7,041,016	\$37.40	\$4.61	\$ 83,926	\$ 32,459	\$116,385
1"	1	12	234,070	\$37.40	\$4.61	\$ 449	\$ 1,079	\$1,528
White Oak/Lee Forest/Winston								
5/8"	724	8,688	37,107,166	\$37.40	\$6.77	\$ 324,931	\$ 251,216	\$576,147
Commercial								
CWSNC								
Flat	13	156	-	\$104.36		\$ 16,280	\$ -	\$16,280
5/8"	175	2,100	13,905,419	\$53.43	\$15.83	\$ 112,203	\$ 220,123	\$332,326
3/4"	3	36	411,611	\$53.43	\$15.83	\$ 1,923	\$ 6,516	\$8,439
1"	31	372	8,610,539	\$133.58	\$15.83	\$ 49,692	\$ 136,305	\$185,997
1.5"	16	192	8,228,575	\$267.15	\$15.83	\$ 51,293	\$ 130,258	\$181,551
2"	51	612	20,994,115	\$427.44	\$15.83	\$ 261,593	\$ 332,337	\$593,930
3"	4	48	10,674,010	\$801.45	\$15.83	\$ 38,470	\$ 168,970	\$207,439
4"	1	12	1,012,686	\$1,335.75	\$15.83	\$ 16,029	\$ 16,031	\$32,060
6"	2	24	6,997,901	\$2,671.50	\$15.83	\$ 64,116	\$ 110,777	\$174,893
8"	1	12	8,355,608	\$4,274.40	\$15.83	\$ 51,293	\$ 132,269	\$183,562
Danby - Flat - Daycare	1	12	-	\$1,596.71		\$ 19,161	\$ -	\$19,161
White Oak - Flat - Pantry	1	12	-	\$217.63		\$ 2,612	\$ -	\$2,612
White Oak - Flat - Day Care	1	12	-	\$396.90		\$ 4,763	\$ -	\$4,763
White Oak - Flat - High School	1	12	-	\$3,096.02		\$ 37,152	\$ -	\$37,152
Purchased Sewer Treatment								
The Ridges								
Under 1"	1	12	224,360	\$54.35		\$ 652	\$ -	\$652
Under 2"	1	12	106,400	\$173.00		\$ 2,076	\$ -	\$2,076
Fairfield Mountain								
Small	6	72	67,787	\$103.00	\$13.93	\$ 7,416	\$ 944	\$8,360
Medium	10	120	1,734,391	\$182.00	\$13.93	\$ 21,840	\$ 24,160	\$46,000
Large	3	36	348,308	\$286.00	\$13.93	\$ 10,296	\$ 4,852	\$15,148
Availability - Connestee Falls	139	1,668		\$7.63		\$ 12,727	\$ -	\$12,727
Availability - Fairfield Sapphire Valley	77	924		\$13.54		\$ 12,511	\$ -	\$12,511
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$13,260,540	\$ 8,826,701	\$22,087,241

CWSNC Uniform Service Area - Sewer

Public Staff's WSIP Year 3 Revenue

Charge Type	Mid Period	Mid Period	Annualized	Base Rate	Usage Rate	Fixed	Volumetric	Total
	Customers	Bills	Usage			Revenue	Revenue	Revenue
Residential								
CWSNC								
Flat	1,858	22,296	-	\$110.60		\$ 2,465,938	\$ -	\$2,465,938
Multiple Units - Nags Head	60	720	-	\$110.60		\$ 79,632	\$ -	\$79,632
Regalwood/White Oak - Flat	1,083	12,996	-	\$110.60		\$ 1,437,358	\$ -	\$1,437,358
5/8"	11,315	135,780	429,076,822	\$56.64	\$16.77	\$ 7,690,579	\$ 7,195,618	\$14,886,198
3/4"	127	1,524	3,017,908	\$56.64	\$16.77	\$ 86,319	\$ 50,610	\$136,930
1"	116	1,392	13,278,202	\$56.64	\$16.77	\$ 78,843	\$ 222,675	\$301,518
1.5"	33	396	4,931,668	\$56.64	\$16.77	\$ 22,429	\$ 82,704	\$105,134
2"	17	204	2,749,036	\$56.64	\$16.77	\$ 11,555	\$ 46,101	\$57,656
3"	-	-	-	\$56.64	\$16.77	\$ -	\$ -	\$0
4"	-	-	-	\$56.64	\$16.77	\$ -	\$ -	\$0
6"	-	-	-	\$56.64	\$16.77	\$ -	\$ -	\$0
8"	-	-	-	\$56.64	\$16.77	\$ -	\$ -	\$0
Purchased Sewer Treatment								
The Ridges								
5/8"	47	564	1,528,500	\$56.60		\$ 31,922	\$ -	\$31,922
1"	-	-	-	\$56.60		\$ -	\$ -	\$0
Fairfield Mountain								
5/8"	383	4,596	10,110,224	\$129.65		\$ 595,871	\$ -	\$595,871
3/4"	12	144	126,291	\$129.65		\$ 18,670	\$ -	\$18,670
1"	12	144	1,532,505	\$129.65		\$ 18,670	\$ -	\$18,670
Flat	3	36	-	\$129.65		\$ 4,667	\$ -	\$4,667
Mt. Carmel								
5/8"	364	4,368	13,422,379	\$47.37	\$6.71	\$ 206,912	\$ 90,064	\$296,976
College Park								
5/8"	54	648	2,296,433	\$39.65	\$7.77	\$ 25,693	\$ 17,843	\$43,536
Flat	1	12	-	\$39.65	\$7.77	\$ 476	\$ -	\$476
Kings Grant								
5/8"	190	2,280	7,153,973	\$39.65	\$4.61	\$ 90,402	\$ 32,980	\$123,382
1"	1	12	234,070	\$39.65	\$4.61	\$ 476	\$ 1,079	\$1,555
White Oak/Lee Forest/Winston								
5/8"	771	9,252	39,516,057	\$39.65	\$6.77	\$ 366,842	\$ 267,524	\$634,366
Commercial								
CWSNC								
Flat	13	156	-	\$110.60		\$ 17,254	\$ -	\$17,254
5/8"	175	2,100	13,905,419	\$56.64	\$16.77	\$ 118,944	\$ 233,194	\$352,138
3/4"	3	36	411,611	\$56.64	\$16.77	\$ 2,039	\$ 6,903	\$8,942
1"	31	372	8,610,539	\$141.60	\$16.77	\$ 52,675	\$ 144,399	\$197,074
1.5"	16	192	8,228,575	\$283.20	\$16.77	\$ 54,374	\$ 137,993	\$192,368
2"	51	612	20,994,115	\$453.12	\$16.77	\$ 277,309	\$ 352,071	\$629,381
3"	4	48	10,674,010	\$849.60	\$16.77	\$ 40,781	\$ 179,003	\$219,784
4"	1	12	1,012,686	\$1,416.00	\$16.77	\$ 16,992	\$ 16,983	\$33,975
6"	2	24	6,997,901	\$2,832.00	\$16.77	\$ 67,968	\$ 117,355	\$185,323
8"	1	12	8,355,608	\$4,531.20	\$16.77	\$ 54,374	\$ 140,124	\$194,498
Danby - Flat - Daycare	1	12	-	\$1,692.18		\$ 20,306	\$ -	\$20,306
White Oak - Flat - Pantry	1	12	-	\$230.64		\$ 2,768	\$ -	\$2,768
White Oak - Flat - Day Care	1	12	-	\$420.63		\$ 5,048	\$ -	\$5,048
White Oak - Flat - High School	1	12	-	\$3,281.14		\$ 39,374	\$ -	\$39,374
Purchased Sewer Treatment								
The Ridges								
Under 1"	1	12	224,360	\$56.60		\$ 679	\$ -	\$679
Under 2"	1	12	106,400	\$175.25		\$ 2,103	\$ -	\$2,103
Fairfield Mountain								
Small	6	72	67,787	\$103.00	\$13.93	\$ 7,416	\$ 944	\$8,360
Medium	10	120	1,734,391	\$182.00	\$13.93	\$ 21,840	\$ 24,160	\$46,000
Large	3	36	348,308	\$286.00	\$13.93	\$ 10,296	\$ 4,852	\$15,148
Availability - Connestee Falls	129	1,548		\$8.09		\$ 12,523	\$ -	\$12,523
Availability - Fairfield Sapphire Valley	74	888		\$14.35		\$ 12,743	\$ -	\$12,743
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$14,071,060	\$ 9,365,180	\$23,436,240

BF/FH/TC - Water

Public Staff's Revenue at Present Rates

<u>Charge Type</u>	<u>EOP Customers</u>	<u>EOP Bills</u>	<u>EOP Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
5/8"	3,228	38,736	160,420,418	\$17.08	\$6.68	\$ 661,611	\$ 1,071,608	\$ 1,733,219
3/4"	99	1,188	5,869,998	\$17.08	\$6.68	\$ 20,291	\$ 39,212	\$ 59,503
1"	2	24	239,910	\$42.70	\$6.68	\$ 1,025	\$ 1,603	\$ 2,627
1.5"	-	-	-	\$85.40	\$6.68	\$ -	\$ -	\$ -
2"	1	12	78,200	\$136.64	\$6.68	\$ 1,640	\$ 522	\$ 2,162
Commercial								
BFFHTC								
5/8"	21	252	1,436,497	\$17.08	\$6.68	\$ 4,304	\$ 9,596	\$ 13,900
3/4"	-	-	-	\$17.08	\$6.68	\$ -	\$ -	\$ -
1"	8	96	673,336	\$42.70	\$6.68	\$ 4,099	\$ 4,498	\$ 8,597
1.5"	5	60	782,970	\$85.40	\$6.68	\$ 5,124	\$ 5,230	\$ 10,354
2"	-	-	-	\$136.64	\$6.68	\$ -	\$ -	\$ -
Availability - Fairfield Harbour	895	10,740		\$4.57		\$ 49,082	\$ -	\$ 49,082
WSIC/SSIC Revenue Eff 10/01/22							\$ -	\$ -
TOTAL						\$ 747,176	\$ 1,132,269	\$ 1,879,444

BF/FH/TC - Water

Public Staff's Revenue at Proposed Rates

<u>Charge Type</u>	<u>EOP Customers</u>	<u>EOP Bills</u>	<u>EOP Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
5/8"	3,228	38,736	160,420,418	\$19.44	\$7.47	\$ 753,028	\$ 1,198,341	\$1,951,368
3/4"	99	1,188	5,869,998	\$19.44	\$7.47	\$ 23,095	\$ 43,849	\$66,944
1"	2	24	239,910	\$48.60	\$7.47	\$ 1,166	\$ 1,792	\$2,959
1.5"	-	-	-	\$97.20	\$7.47	\$ -	\$ -	\$0
2"	1	12	78,200	\$155.52	\$7.47	\$ 1,866	\$ 584	\$2,450
Commercial								
BFFHTC								
5/8"	21	252	1,436,497	\$19.44	\$7.47	\$ 4,899	\$ 10,731	\$15,630
3/4"	-	-	-	\$19.44	\$7.47	\$ -	\$ -	\$0
1"	8	96	673,336	\$48.60	\$7.47	\$ 4,666	\$ 5,030	\$9,695
1.5"	5	60	782,970	\$97.20	\$7.47	\$ 5,832	\$ 5,849	\$11,681
2"	-	-	-	\$155.52	\$7.47	\$ -	\$ -	\$0
Availability - Fairfield Harbour	895	10,740		\$5.15		\$ 55,311	\$ -	\$55,311
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 849,863	\$ 1,266,175	\$2,116,038

BF/FH/TC - Water

Public Staff WSIP Year 1 Revenue

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
5/8"	3,269	39,228	162,457,976	\$22.80	\$8.77	\$ 894,398	\$ 1,424,756	\$2,319,155
3/4"	99	1,188	5,869,998	\$22.80	\$8.77	\$ 27,086	\$ 51,480	\$78,566
1"	2	24	239,910	\$57.00	\$8.77	\$ 1,368	\$ 2,104	\$3,472
1.5"	-	-	-	\$114.00	\$8.77	\$ -	\$ -	\$0
2"	1	12	78,200	\$182.40	\$8.77	\$ 2,189	\$ 686	\$2,875
Commercial								
BFFHTC								
5/8"	21	252	1,436,497	\$22.80	\$8.77	\$ 5,746	\$ 12,598	\$18,344
3/4"	-	-	-	\$22.80	\$8.77	\$ -	\$ -	\$0
1"	8	96	673,336	\$57.00	\$8.77	\$ 5,472	\$ 5,905	\$11,377
1.5"	5	60	782,970	\$114.00	\$8.77	\$ 6,840	\$ 6,867	\$13,707
2"	-	-	-	\$182.40	\$8.77	\$ -	\$ -	\$0
Availability - Fairfield Harbour	873	10,476		\$6.04		\$ 63,275	\$ -	\$63,275
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 1,006,374	\$ 1,504,396	\$2,510,770

BF/FH/TC - Water

Public Staff WSIP Year 2 Revenue

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
5/8"	3,307	39,684	164,346,444	\$23.97	\$9.19	\$ 951,225	\$ 1,510,344	\$2,461,569
3/4"	99	1,188	5,869,998	\$23.97	\$9.19	\$ 28,476	\$ 53,945	\$82,422
1"	2	24	239,910	\$59.93	\$9.19	\$ 1,438	\$ 2,205	\$3,643
1.5"	-	-	-	\$119.85	\$9.19	\$ -	\$ -	\$0
2"	1	12	78,200	\$191.76	\$9.19	\$ 2,301	\$ 719	\$3,020
Commercial								
BFFHTC								
5/8"	21	252	1,436,497	\$23.97	\$9.19	\$ 6,040	\$ 13,201	\$19,242
3/4"	-	-	-	\$23.97	\$9.19	\$ -	\$ -	\$0
1"	8	96	673,336	\$59.93	\$9.19	\$ 5,753	\$ 6,188	\$11,941
1.5"	5	60	782,970	\$119.85	\$9.19	\$ 7,191	\$ 7,195	\$14,386
2"	-	-	-	\$191.76	\$9.19	\$ -	\$ -	\$0
Availability - Fairfield Harbour	853	10,236		\$6.34		\$ 64,896	\$ -	\$64,896
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 1,067,322	\$ 1,593,797	\$2,661,120

BF/FH/TC - Water

Public Staff WSIP Year 3 Revenue

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
5/8"	3,346	40,152	166,284,609	\$24.76	\$9.47	\$ 994,164	\$ 1,574,715	\$2,568,879
3/4"	99	1,188	5,869,998	\$24.76	\$9.47	\$ 29,415	\$ 55,589	\$85,004
1"	2	24	239,910	\$61.90	\$9.47	\$ 1,486	\$ 2,272	\$3,758
1.5"	-	-	-	\$123.80	\$9.47	\$ -	\$ -	\$0
2"	1	12	78,200	\$198.08	\$9.47	\$ 2,377	\$ 741	\$3,118
Commercial								
BFFHTC								
5/8"	21	252	1,436,497	\$24.76	\$9.47	\$ 6,240	\$ 13,604	\$19,843
3/4"	-	-	-	\$24.76	\$9.47	\$ -	\$ -	\$0
1"	8	96	673,336	\$61.90	\$9.47	\$ 5,942	\$ 6,376	\$12,319
1.5"	5	60	782,970	\$123.80	\$9.47	\$ 7,428	\$ 7,415	\$14,843
2"	-	-	-	\$198.08	\$9.47	\$ -	\$ -	\$0
Availability - Fairfield Harbour	833	9,996		\$6.54		\$ 65,374	\$ -	\$65,374
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 1,112,425	\$ 1,660,711	\$2,773,136

BF/FH/TC - Sewer

Public Staff's Revenue at Present Rates

Charge Type	EOP		EOP Usage	Base Rate	Usage Rate	Fixed		Volumetric		Total
	Customers	EOP Bills				Revenue	Revenue			
Residential										
BFFHTC										
Flat	3,008	36,096		\$61.58		\$ 2,222,792				\$ 2,222,792
Bulk Sewer	159	1,908		\$61.58		\$ 117,495				\$ 117,495
Beaver Farms	7	90		\$61.58		\$ 5,542				\$ 5,542
Hawthorne	169	2,028		\$61.58		\$ 124,884				\$ 124,884
Woodland Farms	151	1,812		\$61.58		\$ 111,583				\$ 111,583
Commercial										
BFFHTC										
5/8"	11	132	1,037,801	\$50.97	\$2.65	\$ 6,728	\$ 2,750	\$ 9,478		\$ 9,478
3/4"	3	36	77,780	\$50.97	\$2.65	\$ 1,835	\$ 206	\$ 2,041		\$ 2,041
1"	1	12	48,670	\$127.42	\$2.65	\$ 1,529	\$ 129	\$ 1,658		\$ 1,658
1.5"	4	48	397,570	\$254.84	\$2.65	\$ 12,232	\$ 1,054	\$ 13,286		\$ 13,286
2"	-	-	-	\$407.75	\$2.65	\$ -	\$ -	\$ -		\$ -
Availability - Fairfield Harbour	896	10,752		\$3.23		\$ 34,759	\$ -	\$ 34,759		\$ 34,759
WSIC/SSIC Revenue Eff 10/01/22								\$ -		\$ -
TOTAL						\$ 2,639,379	\$ 4,139	\$ 2,643,518		

BF/FH/TC - Sewer

Public Staff's Revenue at Proposed Rates

Charge Type	EOP		EOP Usage	Base Rate	Usage Rate	Fixed		Volumetric		Total
	Customers	EOP Bills				Revenue	Revenue	Revenue	Revenue	
Residential										
BFFHTC										
Flat	3,008	36,096		\$70.87		\$ 2,558,124				\$2,558,124
Bulk Sewer	159	1,908		\$70.87		\$ 135,220				\$135,220
Beaver Farms	8	90		\$70.87		\$ 6,378				\$6,378
Hawthorne	169	2,028		\$70.87		\$ 143,724				\$143,724
Woodland Farms	151	1,812		\$70.87		\$ 128,416				\$128,416
Commercial										
BFFHTC										
5/8"	11	132	1,037,801	\$58.66	\$3.05	\$ 7,743	\$ 3,165			\$10,908
3/4"	3	36	77,780	\$58.66	\$3.05	\$ 2,112	\$ 237			\$2,349
1"	1	12	48,670	\$146.65	\$3.05	\$ 1,760	\$ 148			\$1,908
1.5"	4	48	397,570	\$293.30	\$3.05	\$ 14,078	\$ 1,213			\$15,291
2"	-	-	-	\$469.28	\$3.05	\$ -	\$ -			\$0
Availability - Fairfield Harbour	896	10,752		\$3.72		\$ 39,997	\$ -			\$39,997
WSIC/SSIC Revenue Eff 10/01/22										\$0
TOTAL						\$ 3,037,553	\$ 4,764			\$3,042,317

BF/FH/TC - Sewer

Public Staff's WSIP Year 1 Revenue

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
Flat	3,047	36,564		\$73.05		\$ 2,671,000		\$2,671,000
Bulk Sewer	159	1,908		\$73.05		\$ 139,379		\$139,379
Beaver Farms	8	90		\$73.05		\$ 6,575		\$6,575
Hawthorne	169	2,028		\$73.05		\$ 148,145		\$148,145
Woodland Farms	151	1,812		\$73.05		\$ 132,367		\$132,367
Commercial								
BFFHTC								
5/8"	11	132	1,037,801	\$60.46	\$3.32	\$ 7,981	\$ 3,445	\$11,426
3/4"	3	36	77,780	\$60.46	\$3.32	\$ 2,177	\$ 258	\$2,435
1"	1	12	48,670	\$151.15	\$3.32	\$ 1,814	\$ 162	\$1,975
1.5"	4	48	397,570	\$302.30	\$3.32	\$ 14,510	\$ 1,320	\$15,830
2"	-	-	-	\$483.68	\$3.32	\$ -	\$ -	\$0
Availability - Fairfield Harbour	874	10,488		\$3.83		\$ 40,169	\$ -	\$40,169
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 3,164,117	\$ 5,185	\$3,169,302

BF/FH/TC - Sewer

Public Staff's WSIP Year 2 Revenue

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
Flat	3,083	36,996		\$78.13		\$ 2,890,497		\$2,890,497
Bulk Sewer	159	1,908		\$78.13		\$ 149,072		\$149,072
Beaver Farms	8	90		\$78.13		\$ 7,032		\$7,032
Hawthorne	169	2,028		\$78.13		\$ 158,448		\$158,448
Woodland Farms	151	1,812		\$78.13		\$ 141,572		\$141,572
Commercial								
BFFHTC								
5/8"	11	132	1,037,801	\$64.67	\$3.54	\$ 8,536	\$ 3,674	\$12,210
3/4"	3	36	77,780	\$64.67	\$3.54	\$ 2,328	\$ 275	\$2,603
1"	1	12	48,670	\$161.68	\$3.54	\$ 1,940	\$ 172	\$2,112
1.5"	4	48	397,570	\$323.35	\$3.54	\$ 15,521	\$ 1,407	\$16,928
2"	-	-	-	\$517.36	\$3.54	\$ -	\$ -	\$0
Availability - Fairfield Harbour	854	10,248		\$4.10		\$ 42,017	\$ -	\$42,017
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 3,416,963	\$ 5,529	\$3,422,492

BF/FH/TC - Sewer

Public Staff's WSIP Year 3 Revenue

Charge Type	Mid Period	Mid Period	Annualized	Base Rate	Usage Rate	Fixed	Volumetric	Total
	Customers	Bills	Usage			Revenue	Revenue	Revenue
Residential								
BFFHTC								
Flat	3,120	37,440		\$80.54		\$ 3,015,418		\$3,015,418
Bulk Sewer	159	1,908		\$80.54		\$ 153,670		\$153,670
Beaver Farms	8	90		\$80.54		\$ 7,249		\$7,249
Hawthorne	169	2,028		\$80.54		\$ 163,335		\$163,335
Woodland Farms	151	1,812		\$80.54		\$ 145,938		\$145,938
Commercial								
BFFHTC								
5/8"	11	132	1,037,801	\$66.66	\$3.69	\$ 8,799	\$ 3,829	\$12,629
3/4"	3	36	77,780	\$66.66	\$3.69	\$ 2,400	\$ 287	\$2,687
1"	1	12	48,670	\$166.65	\$3.69	\$ 2,000	\$ 180	\$2,179
1.5"	4	48	397,570	\$333.30	\$3.69	\$ 15,998	\$ 1,467	\$17,465
2"	-	-	-	\$533.28	\$3.69	\$ -	\$ -	\$0
Availability - Fairfield Harbour	835	10,020		\$4.23		\$ 42,385	\$ -	\$42,385
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 3,557,192	\$ 5,763	\$3,562,955

AVERAGE CONSUMPTION (<1-INCH METER)

Service Area	CWSNC Water Sub 364 Test Year 2018-2019 ¹				CWSNC Water Sub 384 Test Year 2020-2021 ²				CWSNC Water Sub 400 Test Year 2021-2022 ³			
	Total Usage	EOP Customers	EOP Annual	Average Usage	Total Usage	EOP Customers	EOP Annual	Average Usage	Total Usage	EOP Customers	EOP Annual	Average Usage
Residential												
Uniform Water	908,491,618	20,537	246,444	3,686	952,807,980	21,046	252,552	3,773	967,126,363	21,352	256,224	3,775
Uniform Purchased Water	253,831,671	5,508	66,096	3,840	273,177,179	5,744	68,928	3,963	281,857,434	5,920	71,040	3,968
Uniform Sewer	376,017,839	10,373	124,476	3,021	458,898,025	11,158	133,896	3,427	427,999,255	11,334	136,008	3,147
Uniform Purchased Sewer	31,825,633	726	8,712	3,653	37,485,705	737	8,844	4,239	41,478,351	866	10,392	3,991
Commercial												
Uniform Water	12,953,741	287	3,444	3,761	12,737,289	277	3,324	3,832	18,602,759	288	3,456	5,383
Uniform Purchased Water	3,914,520	70	840	4,660	3,669,893	71	852	4,307	4,012,334	70	840	4,777
Uniform Sewer	26,035,742	442	5,304	4,909	29,381,926	500	6,000	4,897	14,317,030	178	2,136	6,703
Residential												
BFFHTC Water	158,949,824	3,211	38,532	4,125	162,388,647	3,272	39,264	4,136	166,290,416	3,327	39,924	4,165
BFFHTC Sewer ⁴	-	2,889	34,668	-	-	2,956	35,472	-	-	3,008	36,096	-
Commercial												
BFFHTC Water	1,284,790	23	276	4,655	1,476,170	19	228	6,474	1,436,497	21	252	5,700
BFFHTC Sewer	952,000	16	192	4,958	973,500	14	168	5,795	1,115,581	14	168	6,640

Notes:

- (1) Data from W-354, Sub 364 rate case: Casselberry Exhibits 4-7 and 16 ; Sub 364 Test Year Ending March 31, 2019
- (2) Data from W-354, Sub 384 rate case: Darden Exhibits 4-7 and 16; Sub 384 Test Year Ending March 31, 2021
- (3) Data from Darden Exhibits 1-4; Sub 400 Updated Test Year Ending August 31, 2022
- (4) BFFTC Sewer is a flat rate
- (5) Average consumption based on <1-inch customers only

Public Staff Calculations for Growth Assumptions

	Sub 364¹	Sub 384²	Sub 400³	WSIP Year 1	WSIP Year 2	WSIP Year 3
	TY Ended 03/31/19	TY Ended 03/31/21	Updated to 08/31/22	Projected to 09/31/23	Projected to 09/31/24	Projected to 09/31/25
<u>Uniform Water</u>						
Actual Water Customers - Res < 1"	20,510	21,019	21,352			
Compound % Growth Rate - (3/31/19 - 8/31/22)	Note 4	Note 4	1.18%			
Projected Water Customers - Res < 1"				21,626	21,882	22,142
<u>Uniform Water - Purchased</u>						
Actual Water Customers - Res < 1"	5,691	5,744	5,920			
Compound % Growth Rate - (3/31/19 - 8/31/22)			1.16%			
Projected Water Customers - Res < 1"				5,995	6,064	6,135
<u>Uniform Water Availability</u>						
Actual Water Customers - Availability	2,563	2,473	2,439			
Compound % Growth Rate - (3/31/19 - 8/31/22)	Note 6		-1.44%			
Projected Water Customers - Availability				2,401	2,366	2,332
<u>Uniform Sewer</u>						
Sewer Customers - Res < 1"	11,215	11,131	11,334			
Compound % Growth Rate - (3/31/19 - 8/31/22)	Notes 4, 5	Note 4	0.31%			
Projected Sewer Customers - Res < 1"				11,372	11,407	11,442
<u>Uniform Sewer - Purchased</u>						
Sewer Customers - Res < 1"	726	737	866			
Compound % Growth Rate - (3/31/19 - 8/31/22)			5.30%			
Projected Sewer Customers - Res < 1"				916	964	1,015
<u>Uniform Sewer Availability</u>						
Actual Sewer Customers - Availability	305	265	246			
Compound % Growth Rate - (3/31/19 - 8/31/22)			-6.10%			
Projected Sewer Customers - Availability				230	216	203

Public Staff Calculations for Growth Assumptions

	Sub 364¹	Sub 384²	Sub 400³	WSIP Year 1	WSIP Year 2	WSIP Year 3
	TY Ended 03/31/19	TY Ended 03/31/21	Updated to 08/31/22	Projected to 09/31/23	Projected to 09/31/24	Projected to 09/31/25
<u>BFFHTC Water</u>						
Actual Water Customers - Res < 1"	3,201	3,272	3,327			
Compound % Growth Rate - (3/31/19 - 8/31/22)	Note 7		1.14%			
Projected Water Customers - Res < 1"				3,368	3,406	3,445
<u>BFFHTC Water Availability</u>						
Actual Water Customers - Availability	969	901	895			
Compound % Growth Rate - (3/31/19 - 8/31/22)			-2.30%			
Projected Water Customers - Availability				873	853	833
<u>BFFH Sewer</u>						
Sewer Customers - Res < 1"	2,889	2,956	3,008			
Compound % Growth Rate - (3/31/19 - 8/31/22)			1.19%			
Projected Sewer Customers - Res < 1"				3,047	3,083	3,120
<u>BFFH Sewer Availability</u>						
Actual Sewer Customers - Availability	969	902	896			
Compound % Growth Rate - (3/31/19 - 8/31/22)			-2.27%			
Projected Sewer Customers - Availability				874	854	835

Notes:

1. Sub 364 customer counts from Docket No. W-354, Sub 364 Casselberry Exhibits 4 & 5 (with adjustments applied)
2. Sub 384 customer counts from Docket No. W-354, Sub 384 Darden Exhibits 4 & 5 (with adjustments applied)
3. Sub 400 customer counts from Docket No. W-354, Sub 400 Darden Exhibits 1 & 2
4. Adjustments were made to Sub 364 and 384 to remove SC Danby customers (27 uniform water and sewer customers)
5. Sub 364 Uniform Sewer has 869 customers added for CL/MS that were incorporated into Uniform rates
6. Sub 364 Uniform Purchased Water has 156 customers added for Eastgate and Tanglewood
7. Sub 364 BFFHTC Water has 62 customers added for Silverton
8. Purchased water and sewer systems customer projections were distributed with emphasis on the systems showing growth in the WSIP years

Public Staff Calculations for Short Term Variable Expense Growth Adjustment

	Base Case Updated to 08/31/22	WSIP Year 1 Projected to 09/31/23	WSIP Year 2 Projected to 09/31/24	WSIP Year 3 Projected to 09/31/25
<u>Uniform Water</u>				
Previous EOP ¹	30,189	30,421	30,732	31,022
Current/Projected EOP ²	30,421	30,732	31,022	31,319
Short term variable expense growth adjustment	0.77%	1.02%	0.94%	0.96%
<u>Uniform Sewer</u>				
Previous EOP ¹	16,723	16,758	16,830	16,899
Current/Projected EOP ²	16,758	16,830	16,899	16,972
Short term variable expense growth adjustment	0.21%	0.43%	0.41%	0.43%
<u>BFFHTC Water</u>				
Previous EOP ¹	4,235	4,259	4,278	4,296
Current/Projected EOP ²	4,259	4,278	4,296	4,315
Short term variable expense growth adjustment	0.57%	0.45%	0.42%	0.44%
<u>BFFHTC Sewer</u>				
Previous EOP ¹	4412	4410	4427	4443
Current/Projected EOP ²	4410	4427	4443	4461
Short term variable expense growth adjustment	-0.05%	0.39%	0.36%	0.41%

Notes:

- (1) The Base Case "Previous EOP" is the EOP for March 31, 2022.
- (2) The "Current/Projected EOP" is the current/updated test year (ending 8/31/22) for the base case and is the projected EOP for the future years.
- (3) The following short term variable expenses should have the growth adjustment factor applied: sludge hauling, purchased power, and chemicals.

CWSNC Uniform Service Area - Water

Public Staff's Base Case Proposed Rates

Charge Type	EOP Customers	EOP Bills	EOP Usage	Base Rate	Usage Rate	Fixed Revenue	Volumetric Revenue	Total Revenue
Residential								
CWSNC								
Unmetered	-	-	-	\$70.38		\$ -	\$ -	\$0
5/8"	20,701	248,412	947,080,536	\$17.08	\$14.12	\$ 4,242,877	\$ 13,372,777	\$17,615,654
3/4"	651	7,812	20,045,827	\$17.08	\$14.12	\$ 133,429	\$ 283,047	\$416,476
1"	78	936	5,391,079	\$42.70	\$14.12	\$ 39,967	\$ 76,122	\$116,089
1.5"	35	420	5,036,068	\$85.40	\$14.12	\$ 35,868	\$ 71,109	\$106,977
2"	22	264	3,111,725	\$136.64	\$14.12	\$ 36,073	\$ 43,938	\$80,011
3"	-	-	-	\$256.20	\$14.12	\$ -	\$ -	\$0
4"	-	-	-	\$427.00	\$14.12	\$ -	\$ -	\$0
6"	-	-	-	\$854.00	\$14.12	\$ -	\$ -	\$0
8"	-	-	-	\$1,366.40	\$14.12	\$ -	\$ -	\$0
Irrigation	1	12	-	\$17.08	\$7.22	\$ 205	\$ -	\$205
Purchased Water								
Carolina Forest								
5/8"	219	2,628	7,101,360	\$25.10	\$3.19	\$ 65,952	\$ 22,653	\$88,606
1"	1	12	5,280	\$62.74	\$3.19	\$ 753	\$ 17	\$770
Carolina Trace								
5/8"	1,645	19,740	62,182,597	\$25.10	\$2.21	\$ 495,396	\$ 137,424	\$632,820
1"	1	12	95,960	\$62.74	\$2.21	\$ 753	\$ 212	\$965
Eastgate								
5/8"	66	792	2,028,020	\$25.10	\$5.46	\$ 19,876	\$ 11,073	\$30,949
High Vista Estates								
5/8"	237	2,844	11,009,270	\$25.10	\$5.22	\$ 71,373	\$ 57,468	\$128,842
1"	1	12	52,760	\$62.74	\$5.22	\$ 753	\$ 275	\$1,028
Riverbend								
5/8"	144	1,728	5,278,641	\$25.10	\$8.40	\$ 43,366	\$ 44,341	\$87,707
Riverpointe								
5/8"	192	2,304	15,644,734	\$25.10	\$4.12	\$ 57,821	\$ 64,456	\$122,278
Tanglewood South								
5/8"	92	1,104	3,779,300	\$25.10	\$5.46	\$ 27,706	\$ 20,635	\$48,341
Whispering Pines								
5/8"	1,614	19,368	95,177,540	\$25.10	\$3.70	\$ 486,061	\$ 352,157	\$838,218
1"	21	252	1,946,901	\$62.74	\$3.70	\$ 15,810	\$ 7,204	\$23,014
White Oak/Lee Forest/Winston								
5/8"	722	8,664	37,866,187	\$25.10	\$3.20	\$ 217,432	\$ 121,172	\$338,604
3/4"	1	12	48,600	\$25.10	\$3.20	\$ 301	\$ 156	\$457
Willowbrook								
5/8"	169	2,028	5,370,778	\$25.10	\$3.20	\$ 50,895	\$ 17,186	\$68,081
Woodrun								
5/8"	478	5,736	20,142,289	\$25.10	\$3.19	\$ 143,951	\$ 64,254	\$208,205
1"	1	12	9,520	\$62.74	\$3.19	\$ 753	\$ 30	\$783
Yorktown								
5/8"	105	1,260	3,544,920	\$25.10	\$5.64	\$ 31,621	\$ 19,993	\$51,614
Zemosa Acres								
5/8"	235	2,820	12,610,941	\$25.10	\$5.52	\$ 70,771	\$ 69,612	\$140,383
3/4"	1	12	72,257	\$25.10	\$5.52	\$ 301	\$ 399	\$700
1"	3	36	208,425	\$62.74	\$5.52	\$ 2,259	\$ 1,151	\$3,409

CWSNC Uniform Service Area - Water

Public Staff's Base Case Proposed Rates

Charge Type	EOP		EOP Usage	Base Rate	Usage Rate	Fixed		Volumetric		Total
	Customers	EOP Bills				Revenue	Revenue	Revenue	Revenue	
Commercial										
CWSNC										
Unmetered	16	192	-	\$70.38		\$ 13,513	\$ -			\$13,513
5/8"	253	3,036	18,048,878	\$17.08	\$14.12	\$ 51,855	\$ 254,850			\$306,705
3/4"	35	420	553,881	\$17.08	\$14.12	\$ 7,174	\$ 7,821			\$14,994
1"	48	576	9,806,934	\$42.70	\$14.12	\$ 24,595	\$ 138,474			\$163,069
1.5"	23	276	6,844,424	\$85.40	\$14.12	\$ 23,570	\$ 96,643			\$120,214
2"	70	840	24,759,927	\$136.64	\$14.12	\$ 114,778	\$ 349,610			\$464,388
3"	4	48	7,564,277	\$256.20	\$14.12	\$ 12,298	\$ 106,808			\$119,105
4"	1	12	1,012,686	\$427.00	\$14.12	\$ 5,124	\$ 14,299			\$19,423
6"	2	24	5,278,240	\$854.00	\$14.12	\$ 20,496	\$ 74,529			\$95,025
8"	-	-	-	\$1,366.40	\$14.12	\$ -	\$ -			\$0
Irrigation	-	-	-		\$7.22	\$ -	\$ -			\$0
Purchased Water										
Carolina Forest										
5/8"	4	48	12,220	\$25.10	\$3.19	\$ 1,205	\$ 39			\$1,244
1"	1	12	87,470	\$62.74	\$3.19	\$ 753	\$ 279			\$1,032
1.5"	1	12	176,100	\$125.48	\$3.19	\$ 1,506	\$ 562			\$2,068
Carolina Trace										
5/8"	26	312	1,468,744	\$25.10	\$2.21	\$ 7,830	\$ 3,246			\$11,076
3/4"	-	-	27,570	\$25.10	\$2.21	\$ -	\$ 61			\$61
1"	1	12	52,630	\$62.74	\$2.21	\$ 753	\$ 116			\$869
1.5"	1	12	327,300	\$125.48	\$2.21	\$ 1,506	\$ 723			\$2,229
2"	1	12	4,670,580	\$200.77	\$2.21	\$ 2,409	\$ 10,322			\$12,731
Eastgate										
5/8"	1	12	4,720	\$25.10	\$5.46	\$ 301	\$ 26			\$327
2"	1	12	1,752,210	\$200.77	\$5.46	\$ 2,409	\$ 9,567			\$11,976
High Vista Estates										
5/8"	2	24	80,550	\$25.10	\$5.22	\$ 602	\$ 420			\$1,023
2"	1	12	1,752,210	\$200.77	\$5.22	\$ 2,409	\$ 9,147			\$11,556
Riverbend										
5/8"	-	-	-	\$25.10	\$8.40	\$ -	\$ -			\$0
Riverpointe										
5/8"	5	60	1,128,670	\$25.10	\$4.12	\$ 1,506	\$ 4,650			\$6,156
Tanglewood South										
5/8"	-	-	-	\$25.10	\$5.46	\$ -	\$ -			\$0
Whispering Pines										
5/8"	28	336	1,219,590	\$25.10	\$3.70	\$ 8,432	\$ 4,512			\$12,945
1"	6	72	1,626,420	\$62.74	\$3.70	\$ 4,517	\$ 6,018			\$10,535
1.5"	5	60	624,960	\$125.48	\$3.70	\$ 7,529	\$ 2,312			\$9,841
2"	1	12	439,300	\$200.77	\$3.70	\$ 2,409	\$ 1,625			\$4,035
4"	1	12	-	\$627.40	\$3.70	\$ 7,529	\$ -			\$7,529
White Oak/Lee Forest/Winston										
1.5"	1	12	169,200	\$125.48	\$3.20	\$ 1,506	\$ 541			\$2,047
Willowbrook										
1"	1	12	234,060	\$62.74	\$3.20	\$ 753	\$ 749			\$1,502
Woodrun										
5/8"	4	48	70,270	\$25.10	\$3.19	\$ 1,205	\$ 224			\$1,429
1"	1	12	251,840	\$62.74	\$3.19	\$ 753	\$ 803			\$1,556
Yorktown										
5/8"	-	-	-	\$25.10	\$5.64	\$ -	\$ -			\$0
Zemosa Acres										
1"	1	12	262,174	\$62.74	\$5.52	\$ 753	\$ 1,447			\$2,200
Availability - Connettee Falls	375	4,500		\$5.91		\$ 26,602	\$ -			\$26,602
Availability - Fairfield Sapphire Valley	716	8,592		\$11.21		\$ 96,312	\$ -			\$96,312
Availability - Carolina Forest/Woodrun*	1,309	2,618		\$30.28		\$ 79,279	\$ -			\$79,279
Availability - Linville Ridge	39	468		\$15.17		\$ 7,099	\$ -			\$7,099
*Charged bi-annually										
WSIC/SSIC Revenue Eff 10/01/22										\$0
TOTAL						\$ 6,833,592	\$15,959,286	\$22,792,879		

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 1 Proposed Rates

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
CWSNC								
Unmetered	-	-	-	\$72.72		\$ -	\$ -	\$0
5/8"	20,975	251,700	959,616,166	\$17.42	\$14.65	\$ 4,384,614	\$ 14,058,377	\$18,442,991
3/4"	651	7,812	20,045,827	\$17.42	\$14.65	\$ 136,085	\$ 293,671	\$429,756
1"	78	936	5,391,079	\$43.55	\$14.65	\$ 40,763	\$ 78,979	\$119,742
1.5"	35	420	5,036,068	\$87.10	\$14.65	\$ 36,582	\$ 73,778	\$110,360
2"	22	264	3,111,725	\$139.36	\$14.65	\$ 36,791	\$ 45,587	\$82,378
3"	-	-	-	\$261.30	\$14.65	\$ -	\$ -	\$0
4"	-	-	-	\$435.50	\$14.65	\$ -	\$ -	\$0
6"	-	-	-	\$871.00	\$14.65	\$ -	\$ -	\$0
8"	-	-	-	\$1,393.60	\$14.65	\$ -	\$ -	\$0
Irrigation	1	12	-	\$17.42	\$7.49	\$ 209	\$ -	\$209
Purchased Water								
Carolina Forest								
5/8"	222	2,664	7,198,639	\$26.89	\$3.19	\$ 71,632	\$ 22,964	\$94,595
1"	1	12	5,280	\$67.22	\$3.19	\$ 807	\$ 17	\$823
Carolina Trace								
5/8"	1,658	19,896	62,674,010	\$26.89	\$2.21	\$ 534,978	\$ 138,510	\$673,487
1"	1	12	95,960	\$67.22	\$2.21	\$ 807	\$ 212	\$1,019
Eastgate								
5/8"	69	828	2,120,203	\$26.89	\$5.46	\$ 22,264	\$ 11,576	\$33,840
High Vista Estates								
5/8"	240	2,880	11,148,628	\$26.89	\$5.22	\$ 77,439	\$ 58,196	\$135,635
1"	1	12	52,760	\$67.22	\$5.22	\$ 807	\$ 275	\$1,082
Riverbend								
5/8"	147	1,764	5,388,613	\$26.89	\$8.40	\$ 47,432	\$ 45,264	\$92,696
Riverpointe								
5/8"	195	2,340	15,889,183	\$26.89	\$4.12	\$ 62,920	\$ 65,463	\$128,383
Tanglewood South								
5/8"	95	1,140	3,902,538	\$26.89	\$5.46	\$ 30,653	\$ 21,308	\$51,961
Whispering Pines								
5/8"	1,627	19,524	95,944,150	\$26.89	\$3.70	\$ 524,975	\$ 354,993	\$879,968
1"	21	252	1,946,901	\$67.22	\$3.70	\$ 16,939	\$ 7,204	\$24,143
White Oak/Lee Forest/Winston								
5/8"	741	8,892	38,862,666	\$26.89	\$3.20	\$ 239,094	\$ 124,361	\$363,455
3/4"	1	12	48,600	\$26.89	\$3.20	\$ 323	\$ 156	\$478
Willowbrook								
5/8"	172	2,064	5,466,117	\$26.89	\$3.20	\$ 55,498	\$ 17,492	\$72,990
Woodrun								
5/8"	481	5,772	20,268,705	\$26.89	\$3.19	\$ 155,202	\$ 64,657	\$219,859
1"	1	12	9,520	\$67.22	\$3.19	\$ 807	\$ 30	\$837
Yorktown								
5/8"	108	1,296	3,646,203	\$26.89	\$5.64	\$ 34,848	\$ 20,565	\$55,412
Zemosa Acres								
5/8"	238	2,856	12,771,932	\$26.89	\$5.52	\$ 76,794	\$ 70,501	\$147,295
3/4"	1	12	72,257	\$26.89	\$5.52	\$ 323	\$ 399	\$722
1"	3	36	208,425	\$67.22	\$5.52	\$ 2,420	\$ 1,151	\$3,570

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 1 Proposed Rates

Charge Type	Mid Period Customers	Mid Period Bills	Annualized Usage	Base Rate	Usage Rate	Fixed Revenue	Volumetric Revenue	Total Revenue
Commercial								
CWSNC								
Unmetered	16	192	-	\$72.72		\$ 13,962	\$ -	\$13,962
5/8"	253	3,036	18,048,878	\$17.42	\$14.65	\$ 52,887	\$ 264,416	\$317,303
3/4"	35	420	553,881	\$17.42	\$14.65	\$ 7,316	\$ 8,114	\$15,431
1"	48	576	9,806,934	\$43.55	\$14.65	\$ 25,085	\$ 143,672	\$168,756
1.5"	23	276	6,844,424	\$87.10	\$14.65	\$ 24,040	\$ 100,271	\$124,310
2"	70	840	24,759,927	\$139.36	\$14.65	\$ 117,062	\$ 362,733	\$479,795
3"	4	48	7,564,277	\$261.30	\$14.65	\$ 12,542	\$ 110,817	\$123,359
4"	1	12	1,012,686	\$435.50	\$14.65	\$ 5,226	\$ 14,836	\$20,062
6"	2	24	5,278,240	\$871.00	\$14.65	\$ 20,904	\$ 77,326	\$98,230
8"	-	-	-	\$1,393.60	\$14.65	\$ -	\$ -	\$0
Irrigation	-	-	-		\$7.49	\$ -	\$ -	\$0
Purchased Water								
Carolina Forest								
5/8"	4	48	12,220	\$26.89	\$3.19	\$ 1,291	\$ 39	\$1,330
1"	1	12	87,470	\$67.22	\$3.19	\$ 807	\$ 279	\$1,086
1.5"	1	12	176,100	\$134.44	\$3.19	\$ 1,613	\$ 562	\$2,175
Carolina Trace						\$ -	\$ -	\$0
5/8"	26	312	1,468,744	\$26.89	\$2.21	\$ 8,389	\$ 3,246	\$11,635
3/4"	-	-	-	\$26.89	\$2.21	\$ -	\$ -	\$0
1"	1	12	52,630	\$67.22	\$2.21	\$ 807	\$ 116	\$923
1.5"	1	12	327,300	\$134.44	\$2.21	\$ 1,613	\$ 723	\$2,337
2"	1	12	4,670,580	\$215.11	\$2.21	\$ 2,581	\$ 10,322	\$12,903
Eastgate								
5/8"	1	12	4,720	\$26.89	\$5.46	\$ 323	\$ 26	\$348
2"	1	12	1,752,210	\$215.11	\$5.46	\$ 2,581	\$ 9,567	\$12,148
High Vista Estates								
5/8"	2	24	80,550	\$26.89	\$5.22	\$ 645	\$ 420	\$1,066
2"	1	12	1,752,210	\$215.11	\$5.22	\$ 2,581	\$ 9,147	\$11,728
Riverbend								
5/8"	-	-	-	\$26.89	\$8.40	\$ -	\$ -	\$0
Riverpointe								
5/8"	5	60	1,128,670	\$26.89	\$4.12	\$ 1,613	\$ 4,650	\$6,263
Tanglewood South								
5/8"	-	-	-	\$26.89	\$5.46	\$ -	\$ -	\$0
Whispering Pines								
5/8"	28	336	1,219,590	\$26.89	\$3.70	\$ 9,035	\$ 4,512	\$13,547
1"	6	72	1,626,420	\$67.22	\$3.70	\$ 4,840	\$ 6,018	\$10,858
1.5"	5	60	624,960	\$134.44	\$3.70	\$ 8,066	\$ 2,312	\$10,379
2"	1	12	439,300	\$215.11	\$3.70	\$ 2,581	\$ 1,625	\$4,207
4"	1	12	-	\$672.22	\$3.70	\$ 8,067	\$ -	\$8,067
White Oak/Lee Forest/Winston								
1.5"	1	12	169,200	\$134.44	\$3.20	\$ 1,613	\$ 541	\$2,155
Willowbrook								
1"	1	12	234,060	\$67.22	\$3.20	\$ 807	\$ 749	\$1,556
Woodrun								
5/8"	4	48	70,270	\$26.89	\$3.19	\$ 1,291	\$ 224	\$1,515
1"	1	12	251,840	\$67.22	\$3.19	\$ 807	\$ 803	\$1,610
Yorktown								
5/8"	-	-	-	\$26.89	\$5.64	\$ -	\$ -	\$0
Zemoso Acres								
1"	1	12	262,174	\$67.22	\$5.52	\$ 807	\$ 1,447	\$2,254
Availability - Connettee Falls	366	4,392		\$6.33		\$ 27,818	\$ -	\$27,818
Availability - Fairfield Sapphire Valley	707	8,484		\$12.01		\$ 101,894	\$ -	\$101,894
Availability - Carolina Forest/Woodrun*	1,298	2,596		\$32.45		\$ 84,228	\$ -	\$84,228
Availability - Linville Ridge	30	360		\$16.25		\$ 5,851	\$ -	\$5,851
*Charged bi-annually								
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 7,153,577	\$16,715,200	\$23,868,777

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 2 Proposed Rates

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
CWSNC								
Unmetered	-	-	-	\$75.33		\$ -	\$ -	\$0
5/8"	21,231	254,772	971,328,287	\$17.98	\$15.19	\$ 4,580,801	\$ 14,754,477	\$19,335,277
3/4"	651	7,812	20,045,827	\$17.98	\$15.19	\$ 140,460	\$ 304,496	\$444,956
1"	78	936	5,391,079	\$44.95	\$15.19	\$ 42,073	\$ 81,890	\$123,964
1.5"	35	420	5,036,068	\$89.90	\$15.19	\$ 37,758	\$ 76,498	\$114,256
2"	22	264	3,111,725	\$143.84	\$15.19	\$ 37,974	\$ 47,267	\$85,241
3"	-	-	-	\$269.70	\$15.19	\$ -	\$ -	\$0
4"	-	-	-	\$449.50	\$15.19	\$ -	\$ -	\$0
6"	-	-	-	\$899.00	\$15.19	\$ -	\$ -	\$0
8"	-	-	-	\$1,438.40	\$15.19	\$ -	\$ -	\$0
Irrigation	1	12	-	\$17.98	\$7.77	\$ 216	\$ -	\$216
Purchased Water								
Carolina Forest								
5/8"	225	2,700	7,295,918	\$28.13	\$3.19	\$ 75,952	\$ 23,274	\$99,226
1"	1	12	5,280	\$70.33	\$3.19	\$ 844	\$ 17	\$861
Carolina Trace								
5/8"	1,668	20,016	63,052,019	\$28.13	\$2.21	\$ 563,060	\$ 139,345	\$702,405
1"	1	12	95,960	\$70.33	\$2.21	\$ 844	\$ 212	\$1,056
Eastgate								
5/8"	72	864	2,212,385	\$28.13	\$5.46	\$ 24,305	\$ 12,080	\$36,384
High Vista Estates								
5/8"	243	2,916	11,287,986	\$28.13	\$5.22	\$ 82,028	\$ 58,923	\$140,952
1"	1	12	52,760	\$70.33	\$5.22	\$ 844	\$ 275	\$1,119
Riverbend								
5/8"	150	1,800	5,498,584	\$28.13	\$8.40	\$ 50,635	\$ 46,188	\$96,823
Riverpointe								
5/8"	198	2,376	16,133,632	\$28.13	\$4.12	\$ 66,838	\$ 66,471	\$133,309
Tanglewood South								
5/8"	98	1,176	4,025,776	\$28.13	\$5.46	\$ 33,081	\$ 21,981	\$55,062
Whispering Pines								
5/8"	1,637	19,644	96,533,849	\$28.13	\$3.70	\$ 552,595	\$ 357,175	\$909,770
1"	21	252	1,946,901	\$70.33	\$3.70	\$ 17,723	\$ 7,204	\$24,927
White Oak/Lee Forest/Winston								
5/8"	760	9,120	39,859,144	\$28.13	\$3.20	\$ 256,550	\$ 127,549	\$384,099
3/4"	1	12	48,600	\$28.13	\$3.20	\$ 338	\$ 156	\$493
Willowbrook								
5/8"	175	2,100	5,561,457	\$28.13	\$3.20	\$ 59,074	\$ 17,797	\$76,871
Woodrun								
5/8"	484	5,808	20,395,121	\$28.13	\$3.19	\$ 163,382	\$ 65,060	\$228,442
1"	1	12	9,520	\$70.33	\$3.19	\$ 844	\$ 30	\$874
Yorktown								
5/8"	111	1,332	3,747,487	\$28.13	\$5.64	\$ 37,470	\$ 21,136	\$58,606
Zemosa Acres								
5/8"	241	2,892	12,932,922	\$28.13	\$5.52	\$ 81,353	\$ 71,390	\$152,743
3/4"	1	12	72,257	\$28.13	\$5.52	\$ 338	\$ 399	\$736
1"	3	36	208,425	\$70.33	\$5.52	\$ 2,532	\$ 1,151	\$3,682

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 2 Proposed Rates

Charge Type	Mid Period	Mid Period	Annualized	Base Rate	Usage Rate	Fixed	Volumetric	Total
	Customers	Bills	Usage			Revenue	Revenue	Revenue
Commercial								
CWSNC								
Unmetered	16	192	-	\$75.33		\$ 14,463	\$ -	\$14,463
5/8"	253	3,036	18,048,878	\$17.98	\$15.19	\$ 54,587	\$ 274,162	\$328,750
3/4"	35	420	553,881	\$17.98	\$15.19	\$ 7,552	\$ 8,413	\$15,965
1"	48	576	9,806,934	\$44.95	\$15.19	\$ 25,891	\$ 148,967	\$174,859
1.5"	23	276	6,844,424	\$89.90	\$15.19	\$ 24,812	\$ 103,967	\$128,779
2"	70	840	24,759,927	\$143.84	\$15.19	\$ 120,826	\$ 376,103	\$496,929
3"	4	48	7,564,277	\$269.70	\$15.19	\$ 12,946	\$ 114,901	\$127,847
4"	1	12	1,012,686	\$449.50	\$15.19	\$ 5,394	\$ 15,383	\$20,777
6"	2	24	5,278,240	\$899.00	\$15.19	\$ 21,576	\$ 80,176	\$101,752
8"	-	-	-	\$1,438.40	\$15.19	\$ -	\$ -	\$0
Irrigation	-	-	-		\$7.77	\$ -	\$ -	\$0
Purchased Water								
Carolina Forest								
5/8"	4	48	12,220	\$28.13	\$3.19	\$ 1,350	\$ 39	\$1,389
1"	1	12	87,470	\$70.33	\$3.19	\$ 844	\$ 279	\$1,123
1.5"	1	12	176,100	\$140.65	\$3.19	\$ 1,688	\$ 562	\$2,250
Carolina Trace						\$ -	\$ -	\$0
5/8"	26	312	1,468,744	\$28.13	\$2.21	\$ 8,777	\$ 3,246	\$12,023
3/4"	-	-	-	\$28.13	\$2.21	\$ -	\$ -	\$0
1"	1	12	52,630	\$70.33	\$2.21	\$ 844	\$ 116	\$960
1.5"	1	12	327,300	\$140.65	\$2.21	\$ 1,688	\$ 723	\$2,411
2"	1	12	4,670,580	\$225.04	\$2.21	\$ 2,700	\$ 10,322	\$13,022
Eastgate								
5/8"	1	12	4,720	\$28.13	\$5.46	\$ 338	\$ 26	\$363
2"	1	12	1,752,210	\$225.04	\$5.46	\$ 2,700	\$ 9,567	\$12,268
High Vista Estates								
5/8"	2	24	80,550	\$28.13	\$5.22	\$ 675	\$ 420	\$1,096
2"	1	12	1,752,210	\$225.04	\$5.22	\$ 2,700	\$ 9,147	\$11,847
Riverbend								
5/8"	-	-	-	\$28.13	\$8.40	\$ -	\$ -	\$0
Riverpointe								
5/8"	5	60	1,128,670	\$28.13	\$4.12	\$ 1,688	\$ 4,650	\$6,338
Tanglewood South								
5/8"	-	-	-	\$28.13	\$5.46	\$ -	\$ -	\$0
Whispering Pines								
5/8"	28	336	1,219,590	\$28.13	\$3.70	\$ 9,452	\$ 4,512	\$13,964
1"	6	72	1,626,420	\$70.33	\$3.70	\$ 5,064	\$ 6,018	\$11,082
1.5"	5	60	624,960	\$140.65	\$3.70	\$ 8,439	\$ 2,312	\$10,751
2"	1	12	439,300	\$225.04	\$3.70	\$ 2,700	\$ 1,625	\$4,326
4"	1	12	-	\$703.26	\$3.70	\$ 8,439	\$ -	\$8,439
White Oak/Lee Forest/Winston								
1.5"	1	12	169,200	\$140.65	\$3.20	\$ 1,688	\$ 541	\$2,229
Willowbrook								
1"	1	12	234,060	\$70.33	\$3.20	\$ 844	\$ 749	\$1,593
Woodrun								
5/8"	4	48	70,270	\$28.13	\$3.19	\$ 1,350	\$ 224	\$1,574
1"	1	12	251,840	\$70.33	\$3.19	\$ 844	\$ 803	\$1,647
Yorktown								
5/8"	-	-	-	\$28.13	\$5.64	\$ -	\$ -	\$0
Zemoso Acres								
1"	1	12	262,174	\$70.33	\$5.52	\$ 844	\$ 1,447	\$2,291
Availability - Connettee Falls	358	4,296		\$6.63		\$ 28,466	\$ -	\$28,466
Availability - Fairfield Sapphire Valley	699	8,388		\$12.56		\$ 105,394	\$ -	\$105,394
Availability - Carolina Forest/Woodrun*	1,287	2,574		\$33.94		\$ 87,371	\$ -	\$87,371
Availability - Linville Ridge	22	264		\$17.00		\$ 4,489	\$ -	\$4,489
*Charged bi-annually								
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 7,489,335	\$17,481,844	\$24,971,179

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 3 Proposed Rates

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
CWSNC								
Unmetered	-	-	-	\$75.33		\$ -	\$ -	\$0
5/8"	21,491	257,892	983,223,409	\$17.90	\$15.21	\$ 4,616,267	\$ 14,954,828	\$19,571,095
3/4"	651	7,812	20,045,827	\$17.90	\$15.21	\$ 139,835	\$ 304,897	\$444,732
1"	78	936	5,391,079	\$44.75	\$15.21	\$ 41,886	\$ 81,998	\$123,884
1.5"	35	420	5,036,068	\$89.50	\$15.21	\$ 37,590	\$ 76,599	\$114,189
2"	22	264	3,111,725	\$143.20	\$15.21	\$ 37,805	\$ 47,329	\$85,134
3"	-	-	-	\$268.50	\$15.21	\$ -	\$ -	\$0
4"	-	-	-	\$447.50	\$15.21	\$ -	\$ -	\$0
6"	-	-	-	\$895.00	\$15.21	\$ -	\$ -	\$0
8"	-	-	-	\$1,432.00	\$15.21	\$ -	\$ -	\$0
Irrigation	1	12	-	\$17.90	\$7.78	\$ 215	\$ -	\$215
Purchased Water								
Carolina Forest								
5/8"	228	2,736	7,393,197	\$28.47	\$3.19	\$ 77,881	\$ 23,584	\$101,466
1"	1	12	5,280	\$71.16	\$3.19	\$ 854	\$ 17	\$871
Carolina Trace								
5/8"	1,679	20,148	63,467,830	\$28.47	\$2.21	\$ 573,520	\$ 140,264	\$713,784
1"	1	12	95,960	\$71.16	\$2.21	\$ 854	\$ 212	\$1,066
Eastgate								
5/8"	75	900	2,304,568	\$28.47	\$5.46	\$ 25,619	\$ 12,583	\$38,202
High Vista Estates								
5/8"	246	2,952	11,427,344	\$28.47	\$5.22	\$ 84,030	\$ 59,651	\$143,681
1"	1	12	52,760	\$71.16	\$5.22	\$ 854	\$ 275	\$1,129
Riverbend								
5/8"	153	1,836	5,608,556	\$28.47	\$8.40	\$ 52,262	\$ 47,112	\$99,374
Riverpointe								
5/8"	201	2,412	16,378,081	\$28.47	\$4.12	\$ 68,658	\$ 67,478	\$136,136
Tanglewood South								
5/8"	101	1,212	4,149,014	\$28.47	\$5.46	\$ 34,500	\$ 22,654	\$57,154
Whispering Pines								
5/8"	1,648	19,776	97,182,519	\$28.47	\$3.70	\$ 562,931	\$ 359,575	\$922,507
1"	21	252	1,946,901	\$71.16	\$3.70	\$ 17,932	\$ 7,204	\$25,136
White Oak/Lee Forest/Winston								
5/8"	779	9,348	40,855,623	\$28.47	\$3.20	\$ 266,094	\$ 130,738	\$396,832
3/4"	1	12	48,600	\$28.47	\$3.20	\$ 342	\$ 156	\$497
Willowbrook								
5/8"	178	2,136	5,656,796	\$28.47	\$3.20	\$ 60,802	\$ 18,102	\$78,904
Woodrun								
5/8"	487	5,844	20,521,537	\$28.47	\$3.19	\$ 166,352	\$ 65,464	\$231,815
1"	1	12	9,520	\$71.16	\$3.19	\$ 854	\$ 30	\$884
Yorktown								
5/8"	114	1,368	3,848,770	\$28.47	\$5.64	\$ 38,941	\$ 21,707	\$60,648
Zemosa Acres								
5/8"	244	2,928	13,093,913	\$28.47	\$5.52	\$ 83,347	\$ 72,278	\$155,625
3/4"	1	12	72,257	\$28.47	\$5.52	\$ 342	\$ 399	\$740
1"	3	36	208,425	\$71.16	\$5.52	\$ 2,562	\$ 1,151	\$3,712

CWSNC Uniform Service Area - Water

Public Staff's WSIP Year 3 Proposed Rates

Charge Type	Mid Period	Mid Period	Annualized	Base Rate	Usage Rate	Fixed	Volumetric	Total
	Customers	Bills	Usage			Revenue	Revenue	Revenue
Commercial								
CWSNC								
Unmetered	16	192	-	\$75.33		\$ 14,463	\$ -	\$14,463
5/8"	253	3,036	18,048,878	\$17.90	\$15.21	\$ 54,344	\$ 274,523	\$328,868
3/4"	35	420	553,881	\$17.90	\$15.21	\$ 7,518	\$ 8,425	\$15,943
1"	48	576	9,806,934	\$44.75	\$15.21	\$ 25,776	\$ 149,163	\$174,939
1.5"	23	276	6,844,424	\$89.50	\$15.21	\$ 24,702	\$ 104,104	\$128,806
2"	70	840	24,759,927	\$143.20	\$15.21	\$ 120,288	\$ 376,598	\$496,886
3"	4	48	7,564,277	\$268.50	\$15.21	\$ 12,888	\$ 115,053	\$127,941
4"	1	12	1,012,686	\$447.50	\$15.21	\$ 5,370	\$ 15,403	\$20,773
6"	2	24	5,278,240	\$895.00	\$15.21	\$ 21,480	\$ 80,282	\$101,762
8"	-	-	-	\$1,432.00	\$15.21	\$ -	\$ -	\$0
Irrigation	-	-	-		\$7.78	\$ -	\$ -	\$0
Purchased Water								
Carolina Forest								
5/8"	4	48	12,220	\$28.47	\$3.19	\$ 1,366	\$ 39	\$1,405
1"	1	12	87,470	\$71.16	\$3.19	\$ 854	\$ 279	\$1,133
1.5"	1	12	176,100	\$142.33	\$3.19	\$ 1,708	\$ 562	\$2,270
Carolina Trace								
5/8"	26	312	1,468,744	\$28.47	\$2.21	\$ 8,881	\$ 3,246	\$12,127
3/4"	-	-	-	\$28.47	\$2.21	\$ -	\$ -	\$0
1"	1	12	52,630	\$71.16	\$2.21	\$ 854	\$ 116	\$970
1.5"	1	12	327,300	\$142.33	\$2.21	\$ 1,708	\$ 723	\$2,431
2"	1	12	4,670,580	\$227.72	\$2.21	\$ 2,733	\$ 10,322	\$13,055
Eastgate								
5/8"	1	12	4,720	\$28.47	\$5.46	\$ 342	\$ 26	\$367
2"	1	12	1,752,210	\$227.72	\$5.46	\$ 2,733	\$ 9,567	\$12,300
High Vista Estates								
5/8"	2	24	80,550	\$28.47	\$5.22	\$ 683	\$ 420	\$1,104
2"	1	12	1,752,210	\$227.72	\$5.22	\$ 2,733	\$ 9,147	\$11,879
Riverbend								
5/8"	-	-	-	\$28.47	\$8.40	\$ -	\$ -	\$0
Riverpointe								
5/8"	5	60	1,128,670	\$28.47	\$4.12	\$ 1,708	\$ 4,650	\$6,358
Tanglewood South								
5/8"	-	-	-	\$28.47	\$5.46	\$ -	\$ -	\$0
Whispering Pines								
5/8"	28	336	1,219,590	\$28.47	\$3.70	\$ 9,564	\$ 4,512	\$14,077
1"	6	72	1,626,420	\$71.16	\$3.70	\$ 5,124	\$ 6,018	\$11,141
1.5"	5	60	624,960	\$142.33	\$3.70	\$ 8,540	\$ 2,312	\$10,852
2"	1	12	439,300	\$227.72	\$3.70	\$ 2,733	\$ 1,625	\$4,358
4"	1	12	-	\$711.63	\$3.70	\$ 8,540	\$ -	\$8,540
White Oak/Lee Forest/Winston								
1.5"	1	12	169,200	\$142.33	\$3.20	\$ 1,708	\$ 541	\$2,249
Willowbrook								
1"	1	12	234,060	\$71.16	\$3.20	\$ 854	\$ 749	\$1,603
Woodrun								
5/8"	4	48	70,270	\$28.47	\$3.19	\$ 1,366	\$ 224	\$1,590
1"	1	12	251,840	\$71.16	\$3.19	\$ 854	\$ 803	\$1,657
Yorktown								
5/8"	-	-	-	\$28.47	\$5.64	\$ -	\$ -	\$0
Zemoso Acres								
1"	1	12	262,174	\$71.16	\$5.52	\$ 854	\$ 1,447	\$2,301
Availability - Connettee Falls	350	4,200		\$6.71		\$ 28,161	\$ -	\$28,161
Availability - Fairfield Sapphire Valley	691	8,292		\$12.71		\$ 105,428	\$ -	\$105,428
Availability - Carolina Forest/Woodrun*	1,277	2,554		\$34.35		\$ 87,725	\$ -	\$87,725
Availability - Linville Ridge	14	168		\$17.21		\$ 2,891	\$ -	\$2,891
*Charged bi-annually								
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 7,570,600	\$17,697,165	\$25,267,766

CWSNC Uniform Service Area - Sewer

Public Staff's Base Case Proposed Rates

Charge Type	EOP		EOP Usage	Base Rate	Usage Rate	Fixed		Volumetric		Total
	Customers	EOP Bills				Revenue	Revenue	Revenue	Revenue	
CWSNC										
Flat	1,858	22,296	-	\$85.24		\$ 1,900,511	\$ -			\$1,900,511
Multiple Units - Nags Head	60	720	-	\$85.24		\$ 61,373	\$ -			\$61,373
Regalwood/White Oak - Flat	1,083	12,996	-	\$85.24		\$ 1,107,779	\$ -			\$1,107,779
5/8"	11,207	134,484	424,981,347	\$22.14	\$20.05	\$ 2,977,476	\$ 8,520,876			\$11,498,352
3/4"	127	1,524	3,017,908	\$22.14	\$20.05	\$ 33,741	\$ 60,509			\$94,250
1"	116	1,392	13,278,202	\$22.14	\$20.05	\$ 30,819	\$ 266,228			\$297,047
1.5"	33	396	4,931,668	\$22.14	\$20.05	\$ 8,767	\$ 98,880			\$107,647
2"	17	204	2,749,036	\$22.14	\$20.05	\$ 4,517	\$ 55,118			\$59,635
3"	-	-	-	\$22.14	\$20.05	\$ -	\$ -			\$0
4"	-	-	-	\$22.14	\$20.05	\$ -	\$ -			\$0
6"	-	-	-	\$22.14	\$20.05	\$ -	\$ -			\$0
8"	-	-	-	\$22.14	\$20.05	\$ -	\$ -			\$0
Purchased Sewer Treatment										
The Ridges										
5/8"	47	564	1,528,500	\$32.45		\$ 18,302	\$ -			\$18,302
1"	-	-	-	\$32.45		\$ -	\$ -			\$0
Fairfield Mountain										
5/8"	383	4,596	10,110,224	\$105.50		\$ 484,878	\$ -			\$484,878
3/4"	12	144	126,291	\$105.50		\$ 15,192	\$ -			\$15,192
1"	12	144	1,532,505	\$105.50		\$ 15,192	\$ -			\$15,192
Flat	3	36	-	\$105.50		\$ 3,798	\$ -			\$3,798
Mt. Carmel										
5/8"	364	4,368	13,422,379	\$23.22	\$6.71	\$ 101,425	\$ 90,064			\$191,489
College Park										
5/8"	51	612	2,168,853	\$15.50	\$7.77	\$ 9,486	\$ 16,852			\$26,338
Flat	1	12	-	\$15.50	\$7.77	\$ 186	\$ -			\$186
Kings Grant										
5/8"	181	2,172	6,815,101	\$15.50	\$4.61	\$ 33,666	\$ 31,418			\$65,084
1"	1	12	234,070	\$15.50	\$4.61	\$ 186	\$ 1,079			\$1,265
White Oak/Lee Forest/Winston										
5/8"	634	7,608	32,494,397	\$15.50	\$6.77	\$ 117,924	\$ 219,987			\$337,911
CWSNC										
Flat	13	156	-	\$85.24		\$ 13,297	\$ -			\$13,297
5/8"	175	2,100	13,905,419	\$22.14	\$20.05	\$ 46,494	\$ 278,804			\$325,298
3/4"	3	36	411,611	\$22.14	\$20.05	\$ 797	\$ 8,253			\$9,050
1"	31	372	8,610,539	\$55.35	\$20.05	\$ 20,590	\$ 172,641			\$193,232
1.5"	16	192	8,228,575	\$110.70	\$20.05	\$ 21,254	\$ 164,983			\$186,237
2"	51	612	20,994,115	\$177.12	\$20.05	\$ 108,397	\$ 420,932			\$529,329
3"	4	48	10,674,010	\$332.10	\$20.05	\$ 15,941	\$ 214,014			\$229,955
4"	1	12	1,012,686	\$553.50	\$20.05	\$ 6,642	\$ 20,304			\$26,946
6"	2	24	6,997,901	\$1,107.00	\$20.05	\$ 26,568	\$ 140,308			\$166,876
8"	1	12	8,355,608	\$1,771.20	\$20.05	\$ 21,254	\$ 167,530			\$188,784
Danby - Flat - Daycare	1	12	-	\$1,304.17		\$ 15,650	\$ -			\$15,650
White Oak - Flat - Pantry	1	12	-	\$191.30		\$ 2,296	\$ -			\$2,296
White Oak - Flat - Day Care	1	12	-	\$348.88		\$ 4,187	\$ -			\$4,187
White Oak - Flat - High School	1	12	-	\$2,721.40		\$ 32,657	\$ -			\$32,657
Purchased Sewer Treatment										
The Ridges										
Under 1"	1	12	224,360	\$32.45		\$ 389	\$ -			\$389
Under 2"	1	12	106,400	\$151.10		\$ 1,813	\$ -			\$1,813
Fairfield Mountain										
Small	6	72	67,787	\$103.00	\$13.93	\$ 7,416	\$ 944			\$8,360
Medium	10	120	1,734,391	\$182.00	\$13.93	\$ 21,840	\$ 24,160			\$46,000
Large	3	36	348,308	\$286.00	\$13.93	\$ 10,296	\$ 4,852			\$15,148
Availability - Connestee Falls	163	1,956		\$6.71		\$ 13,125	\$ -			\$13,125
Availability - Fairfield Sapphire Valley	83	996		\$11.90		\$ 11,852	\$ -			\$11,852
WSIC/SSIC Revenue Eff 10/01/22										
TOTAL										
						\$ 7,327,974	\$ 10,978,736	\$ 18,306,710		

CWSNC Uniform Service Area - Sewer

Public Staff's WSIP Year 1 Proposed Rates

Charge Type	Mid Period	Mid Period	Annualized	Base Rate	Usage Rate	Fixed	Volumetric	Total
	Customers	Bills	Usage			Revenue	Revenue	Revenue
Residential								
CWSNC								
Flat	1,858	22,296	-	\$91.11		\$ 2,031,389	\$ -	\$2,031,389
Multiple Units - Nags Head	60	720	-	\$91.11		\$ 65,599	\$ -	\$65,599
Regalwood/White Oak - Flat	1,083	12,996	-	\$91.11		\$ 1,184,066	\$ -	\$1,184,066
5/8"	11,245	134,940	426,422,347	\$24.24	\$21.25	\$ 3,270,946	\$ 9,061,475	\$12,332,420
3/4"	127	1,524	3,017,908	\$24.24	\$21.25	\$ 36,942	\$ 64,131	\$101,072
1"	116	1,392	13,278,202	\$24.24	\$21.25	\$ 33,742	\$ 282,162	\$315,904
1.5"	33	396	4,931,668	\$24.24	\$21.25	\$ 9,599	\$ 104,798	\$114,397
2"	17	204	2,749,036	\$24.24	\$21.25	\$ 4,945	\$ 58,417	\$63,362
3"	-	-	-	\$24.24	\$21.25	\$ -	\$ -	\$0
4"	-	-	-	\$24.24	\$21.25	\$ -	\$ -	\$0
6"	-	-	-	\$24.24	\$21.25	\$ -	\$ -	\$0
8"	-	-	-	\$24.24	\$21.25	\$ -	\$ -	\$0
Purchased Sewer Treatment								
The Ridges								
5/8"	47	564	1,528,500	\$33.92		\$ 19,131	\$ -	\$19,131
1"	-	-	-	\$33.92		\$ -	\$ -	\$0
Fairfield Mountain								
5/8"	383	4,596	10,110,224	\$106.97		\$ 491,634	\$ -	\$491,634
3/4"	12	144	126,291	\$106.97		\$ 15,404	\$ -	\$15,404
1"	12	144	1,532,505	\$106.97		\$ 15,404	\$ -	\$15,404
Flat	3	36	-	\$106.97		\$ 3,851	\$ -	\$3,851
Mt. Carmel								
5/8"	364	4,368	13,422,379	\$24.69	\$6.71	\$ 107,846	\$ 90,064	\$197,910
College Park								
5/8"	52	624	2,211,380	\$16.97	\$7.77	\$ 10,589	\$ 17,182	\$27,772
Flat	1	12	-	\$16.97	\$7.77	\$ 204	\$ -	\$204
Kings Grant								
5/8"	184	2,208	6,928,058	\$16.97	\$4.61	\$ 37,470	\$ 31,938	\$69,408
1"	1	12	234,070	\$16.97	\$4.61	\$ 204	\$ 1,079	\$1,283
White Oak/Lee Forest/Winston								
5/8"	680	8,160	34,852,035	\$16.97	\$6.77	\$ 138,475	\$ 235,948	\$374,423
Commercial								
CWSNC								
Flat	13	156	-	\$91.11		\$ 14,213	\$ -	\$14,213
5/8"	175	2,100	13,905,419	\$24.24	\$21.25	\$ 50,904	\$ 295,490	\$346,394
3/4"	3	36	411,611	\$24.24	\$21.25	\$ 873	\$ 8,747	\$9,619
1"	31	372	8,610,539	\$60.60	\$21.25	\$ 22,543	\$ 182,974	\$205,517
1.5"	16	192	8,228,575	\$121.20	\$21.25	\$ 23,270	\$ 174,857	\$198,128
2"	51	612	20,994,115	\$193.92	\$21.25	\$ 118,679	\$ 446,125	\$564,804
3"	4	48	10,674,010	\$363.60	\$21.25	\$ 17,453	\$ 226,823	\$244,276
4"	1	12	1,012,686	\$606.00	\$21.25	\$ 7,272	\$ 21,520	\$28,792
6"	2	24	6,997,901	\$1,212.00	\$21.25	\$ 29,088	\$ 148,705	\$177,793
8"	1	12	8,355,608	\$1,939.20	\$21.25	\$ 23,270	\$ 177,557	\$200,827
Danby - Flat - Daycare	1	12	-	\$1,393.98		\$ 16,728	\$ -	\$16,728
White Oak - Flat - Pantry	1	12	-	\$220.46		\$ 2,646	\$ -	\$2,646
White Oak - Flat - Day Care	1	12	-	\$402.07		\$ 4,825	\$ -	\$4,825
White Oak - Flat - High School	1	12	-	\$3,136.27		\$ 37,635	\$ -	\$37,635
Purchased Sewer Treatment								
The Ridges								
Under 1"	1	12	224,360	\$33.92		\$ 407	\$ -	\$407
Under 2"	1	12	106,400	\$152.57		\$ 1,831	\$ -	\$1,831
Fairfield Mountain								
Small	6	72	67,787	\$103.00	\$13.93	\$ 7,416	\$ 944	\$8,360
Medium	10	120	1,734,391	\$182.00	\$13.93	\$ 21,840	\$ 24,160	\$46,000
Large	3	36	348,308	\$286.00	\$13.93	\$ 10,296	\$ 4,852	\$15,148
Availability - Connestee Falls	150	1,800		\$7.73		\$ 13,914	\$ -	\$13,914
Availability - Fairfield Sapphire Valley	80	960		\$13.71		\$ 13,162	\$ -	\$13,162
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 7,915,702	\$11,659,948	\$19,575,650

CWSNC Uniform Service Area - Sewer

Public Staff's WSIP Year 2 Proposed Rates

Charge Type	Mid Period	Mid Period	Annualized	Base Rate	Usage Rate	Fixed	Volumetric	Total
	Customers	Bills	Usage			Revenue	Revenue	Revenue
Residential								
CWSNC								
Flat	1,858	22,296	-	\$93.05		\$ 2,074,643	\$ -	\$2,074,643
Multiple Units - Nags Head	60	720	-	\$93.05		\$ 66,996	\$ -	\$66,996
Regalwood/White Oak - Flat	1,083	12,996	-	\$93.05		\$ 1,209,278	\$ -	\$1,209,278
5/8"	11,280	135,360	427,749,585	\$24.48	\$21.79	\$ 3,313,613	\$ 9,320,663	\$12,634,276
3/4"	127	1,524	3,017,908	\$24.48	\$21.79	\$ 37,308	\$ 65,760	\$103,068
1"	116	1,392	13,278,202	\$24.48	\$21.79	\$ 34,076	\$ 289,332	\$323,408
1.5"	33	396	4,931,668	\$24.48	\$21.79	\$ 9,694	\$ 107,461	\$117,155
2"	17	204	2,749,036	\$24.48	\$21.79	\$ 4,994	\$ 59,901	\$64,895
3"	-	-	-	\$24.48	\$21.79	\$ -	\$ -	\$0
4"	-	-	-	\$24.48	\$21.79	\$ -	\$ -	\$0
6"	-	-	-	\$24.48	\$21.79	\$ -	\$ -	\$0
8"	-	-	-	\$24.48	\$21.79	\$ -	\$ -	\$0
Purchased Sewer Treatment								
The Ridges								
5/8"	47	564	1,528,500	\$34.09		\$ 19,227	\$ -	\$19,227
1"	-	-	-	\$34.09		\$ -	\$ -	\$0
Fairfield Mountain								
5/8"	383	4,596	10,110,224	\$107.14		\$ 492,415	\$ -	\$492,415
3/4"	12	144	126,291	\$107.14		\$ 15,428	\$ -	\$15,428
1"	12	144	1,532,505	\$107.14		\$ 15,428	\$ -	\$15,428
Flat	3	36	-	\$107.14		\$ 3,857	\$ -	\$3,857
Mt. Carmel								
5/8"	364	4,368	13,422,379	\$24.86	\$6.71	\$ 108,588	\$ 90,064	\$198,653
College Park								
5/8"	53	636	2,253,906	\$17.14	\$7.77	\$ 10,901	\$ 17,513	\$28,414
Flat	1	12	-	\$17.14	\$7.77	\$ 206	\$ -	\$206
Kings Grant								
5/8"	187	2,244	7,041,016	\$17.14	\$4.61	\$ 38,462	\$ 32,459	\$70,921
1"	1	12	234,070	\$17.14	\$4.61	\$ 206	\$ 1,079	\$1,285
White Oak/Lee Forest/Winston								
5/8"	724	8,688	37,107,166	\$17.14	\$6.77	\$ 148,912	\$ 251,216	\$400,128
Commercial								
CWSNC								
Flat	13	156	-	\$93.05		\$ 14,516	\$ -	\$14,516
5/8"	175	2,100	13,905,419	\$24.48	\$21.79	\$ 51,408	\$ 302,999	\$354,407
3/4"	3	36	411,611	\$24.48	\$21.79	\$ 881	\$ 8,969	\$9,850
1"	31	372	8,610,539	\$61.20	\$21.79	\$ 22,766	\$ 187,624	\$210,390
1.5"	16	192	8,228,575	\$122.40	\$21.79	\$ 23,501	\$ 179,301	\$202,801
2"	51	612	20,994,115	\$195.84	\$21.79	\$ 119,854	\$ 457,462	\$577,316
3"	4	48	10,674,010	\$367.20	\$21.79	\$ 17,626	\$ 232,587	\$250,212
4"	1	12	1,012,686	\$612.00	\$21.79	\$ 7,344	\$ 22,066	\$29,410
6"	2	24	6,997,901	\$1,224.00	\$21.79	\$ 29,376	\$ 152,484	\$181,860
8"	1	12	8,355,608	\$1,958.40	\$21.79	\$ 23,501	\$ 182,069	\$205,569
Danby - Flat - Daycare	1	12	-	\$1,423.67		\$ 17,084	\$ -	\$17,084
White Oak - Flat - Pantry	1	12	-	\$225.66		\$ 2,708	\$ -	\$2,708
White Oak - Flat - Day Care	1	12	-	\$411.54		\$ 4,938	\$ -	\$4,938
White Oak - Flat - High School	1	12	-	\$3,210.17		\$ 38,522	\$ -	\$38,522
Purchased Sewer Treatment								
The Ridges								
Under 1"	1	12	224,360	\$34.09		\$ 409	\$ -	\$409
Under 2"	1	12	106,400	\$152.74		\$ 1,833	\$ -	\$1,833
Fairfield Mountain								
Small	6	72	67,787	\$103.00	\$13.93	\$ 7,416	\$ 944	\$8,360
Medium	10	120	1,734,391	\$182.00	\$13.93	\$ 21,840	\$ 24,160	\$46,000
Large	3	36	348,308	\$286.00	\$13.93	\$ 10,296	\$ 4,852	\$15,148
Availability - Connestee Falls	139	1,668		\$7.91		\$ 13,194	\$ -	\$13,194
Availability - Fairfield Sapphire Valley	77	924		\$14.03		\$ 12,964	\$ -	\$12,964
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 8,046,209	\$11,990,965	\$20,037,174

CWSNC Uniform Service Area - Sewer

Public Staff's WSIP Year 3 Proposed Rates

Charge Type	Mid Period	Mid Period	Annualized	Base Rate	Usage Rate	Fixed	Volumetric	Total
	Customers	Bills	Usage			Revenue	Revenue	Revenue
Residential								
CWSNC								
Flat	1,858	22,296	-	\$97.61		\$ 2,176,313	\$ -	\$2,176,313
Multiple Units - Nags Head	60	720	-	\$97.61		\$ 70,279	\$ -	\$70,279
Regalwood/White Oak - Flat	1,083	12,996	-	\$97.61		\$ 1,268,540	\$ -	\$1,268,540
5/8"	11,315	135,780	429,076,822	\$25.54	\$22.90	\$ 3,467,821	\$ 9,825,859	\$13,293,680
3/4"	127	1,524	3,017,908	\$25.54	\$22.90	\$ 38,923	\$ 69,110	\$108,033
1"	116	1,392	13,278,202	\$25.54	\$22.90	\$ 35,552	\$ 304,071	\$339,623
1.5"	33	396	4,931,668	\$25.54	\$22.90	\$ 10,114	\$ 112,935	\$123,049
2"	17	204	2,749,036	\$25.54	\$22.90	\$ 5,210	\$ 62,953	\$68,163
3"	-	-	-	\$25.54	\$22.90	\$ -	\$ -	\$0
4"	-	-	-	\$25.54	\$22.90	\$ -	\$ -	\$0
6"	-	-	-	\$25.54	\$22.90	\$ -	\$ -	\$0
8"	-	-	-	\$25.54	\$22.90	\$ -	\$ -	\$0
Purchased Sewer Treatment								
The Ridges								
5/8"	47	564	1,528,500	\$34.83		\$ 19,644	\$ -	\$19,644
1"	-	-	-	\$34.83		\$ -	\$ -	\$0
Fairfield Mountain								
5/8"	383	4,596	10,110,224	\$107.88		\$ 495,816	\$ -	\$495,816
3/4"	12	144	126,291	\$107.88		\$ 15,535	\$ -	\$15,535
1"	12	144	1,532,505	\$107.88		\$ 15,535	\$ -	\$15,535
Flat	3	36	-	\$107.88		\$ 3,884	\$ -	\$3,884
Mt. Carmel								
5/8"	364	4,368	13,422,379	\$25.60	\$6.71	\$ 111,821	\$ 90,064	\$201,885
College Park								
5/8"	54	648	2,296,433	\$17.88	\$7.77	\$ 11,586	\$ 17,843	\$29,430
Flat	1	12	-	\$17.88	\$7.77	\$ 215	\$ -	\$215
Kings Grant								
5/8"	190	2,280	7,153,973	\$17.88	\$4.61	\$ 40,766	\$ 32,980	\$73,746
1"	1	12	234,070	\$17.88	\$4.61	\$ 215	\$ 1,079	\$1,294
White Oak/Lee Forest/Winston								
5/8"	771	9,252	39,516,057	\$17.88	\$6.77	\$ 165,426	\$ 267,524	\$432,949
Commercial								
CWSNC								
Flat	13	156	-	\$97.61		\$ 15,227	\$ -	\$15,227
5/8"	175	2,100	13,905,419	\$25.54	\$22.90	\$ 53,634	\$ 318,434	\$372,068
3/4"	3	36	411,611	\$25.54	\$22.90	\$ 919	\$ 9,426	\$10,345
1"	31	372	8,610,539	\$63.85	\$22.90	\$ 23,752	\$ 197,181	\$220,934
1.5"	16	192	8,228,575	\$127.70	\$22.90	\$ 24,518	\$ 188,434	\$212,953
2"	51	612	20,994,115	\$204.32	\$22.90	\$ 125,044	\$ 480,765	\$605,809
3"	4	48	10,674,010	\$383.10	\$22.90	\$ 18,389	\$ 244,435	\$262,824
4"	1	12	1,012,686	\$638.50	\$22.90	\$ 7,662	\$ 23,191	\$30,853
6"	2	24	6,997,901	\$1,277.00	\$22.90	\$ 30,648	\$ 160,252	\$190,900
8"	1	12	8,355,608	\$2,043.20	\$22.90	\$ 24,518	\$ 191,343	\$215,862
Danby - Flat - Daycare	1	12	-	\$1,493.43		\$ 17,921	\$ -	\$17,921
White Oak - Flat - Pantry	1	12	-	\$236.94		\$ 2,843	\$ -	\$2,843
White Oak - Flat - Day Care	1	12	-	\$432.12		\$ 5,185	\$ -	\$5,185
White Oak - Flat - High School	1	12	-	\$3,370.68		\$ 40,448	\$ -	\$40,448
Purchased Sewer Treatment								
The Ridges								
Under 1"	1	12	224,360	\$34.83		\$ 418	\$ -	\$418
Under 2"	1	12	106,400	\$153.48		\$ 1,842	\$ -	\$1,842
Fairfield Mountain								
Small	6	72	67,787	\$103.00	\$13.93	\$ 7,416	\$ 944	\$8,360
Medium	10	120	1,734,391	\$182.00	\$13.93	\$ 21,840	\$ 24,160	\$46,000
Large	3	36	348,308	\$286.00	\$13.93	\$ 10,296	\$ 4,852	\$15,148
Availability - Connestee Falls	129	1,548		\$8.31		\$ 12,864	\$ -	\$12,864
Availability - Fairfield Sapphire Valley	74	888		\$14.73		\$ 13,080	\$ -	\$13,080
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 8,411,659	\$12,627,836	\$21,039,496

BF/FH/TC - Water

Public Staff's Base Case Proposed Rates

<u>Charge Type</u>	<u>EOP Customers</u>	<u>EOP Bills</u>	<u>EOP Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
5/8"	3,228	38,736	160,420,418	\$13.30	\$8.20	\$ 515,189	\$ 1,315,447	\$1,830,636
3/4"	99	1,188	5,869,998	\$13.30	\$8.20	\$ 15,800	\$ 48,134	\$63,934
1"	2	24	239,910	\$33.25	\$8.20	\$ 798	\$ 1,967	\$2,765
1.5"	-	-	-	\$66.50	\$8.20	\$ -	\$ -	\$0
2"	1	12	78,200	\$106.40	\$8.20	\$ 1,277	\$ 641	\$1,918
Commercial								
BFFHTC								
5/8"	21	252	1,436,497	\$13.30	\$8.20	\$ 3,352	\$ 11,779	\$15,131
3/4"	-	-	-	\$13.30	\$8.20	\$ -	\$ -	\$0
1"	8	96	673,336	\$33.25	\$8.20	\$ 3,192	\$ 5,521	\$8,713
1.5"	5	60	782,970	\$66.50	\$8.20	\$ 3,990	\$ 6,420	\$10,410
2"	-	-	-	\$106.40	\$8.20	\$ -	\$ -	\$0
Availability - Fairfield Harbour	895	10,740		\$4.83		\$ 51,874	\$ -	\$51,874
WSIC/SSIC Revenue Eff 10/01/22								\$0
					TOTAL	\$ 595,472	\$ 1,389,911	\$1,985,383

BF/FH/TC - Water

Public Staff WSIP Year 1 Proposed Rates

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
5/8"	3,269	39,228	162,457,976	\$14.92	\$9.25	\$ 585,282	\$ 1,502,736	\$2,088,018
3/4"	99	1,188	5,869,998	\$14.92	\$9.25	\$ 17,725	\$ 54,297	\$72,022
1"	2	24	239,910	\$37.30	\$9.25	\$ 895	\$ 2,219	\$3,114
1.5"	-	-	-	\$74.60	\$9.25	\$ -	\$ -	\$0
2"	1	12	78,200	\$119.36	\$9.25	\$ 1,432	\$ 723	\$2,156
Commercial								
BFFHTC								
5/8"	21	252	1,436,497	\$14.92	\$9.25	\$ 3,760	\$ 13,288	\$17,047
3/4"	-	-	-	\$14.92	\$9.25	\$ -	\$ -	\$0
1"	8	96	673,336	\$37.30	\$9.25	\$ 3,581	\$ 6,228	\$9,809
1.5"	5	60	782,970	\$74.60	\$9.25	\$ 4,476	\$ 7,242	\$11,718
2"	-	-	-	\$119.36	\$9.25	\$ -	\$ -	\$0
Availability - Fairfield Harbour	873	10,476		\$5.82		\$ 60,970	\$ -	\$60,970
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 678,121	\$ 1,586,735	\$2,264,856

BF/FH/TC - Water

Public Staff WSIP Year 2 Proposed Rates

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
5/8"	3,307	39,684	164,346,444	\$15.56	\$9.60	\$ 617,483	\$ 1,577,726	\$2,195,209
3/4"	99	1,188	5,869,998	\$15.56	\$9.60	\$ 18,485	\$ 56,352	\$74,837
1"	2	24	239,910	\$38.90	\$9.60	\$ 934	\$ 2,303	\$3,237
1.5"	-	-	-	\$77.80	\$9.60	\$ -	\$ -	\$0
2"	1	12	78,200	\$124.48	\$9.60	\$ 1,494	\$ 751	\$2,244
Commercial								
BFFHTC								
5/8"	21	252	1,436,497	\$15.56	\$9.60	\$ 3,921	\$ 13,790	\$17,711
3/4"	-	-	-	\$15.56	\$9.60	\$ -	\$ -	\$0
1"	8	96	673,336	\$38.90	\$9.60	\$ 3,734	\$ 6,464	\$10,198
1.5"	5	60	782,970	\$77.80	\$9.60	\$ 4,668	\$ 7,517	\$12,185
2"	-	-	-	\$124.48	\$9.60	\$ -	\$ -	\$0
Availability - Fairfield Harbour	853	10,236		\$6.11		\$ 62,542	\$ -	\$62,542
WSIC/SSIC Revenue Eff 10/01/22								\$0
					TOTAL	\$ 713,261	\$ 1,664,903	\$2,378,164

BF/FH/TC - Water

Public Staff WSIP Year 3 Proposed Rates

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
5/8"	3,346	40,152	166,284,609	\$15.78	\$9.73	\$ 633,599	\$ 1,617,949	\$2,251,548
3/4"	99	1,188	5,869,998	\$15.78	\$9.73	\$ 18,747	\$ 57,115	\$75,862
1"	2	24	239,910	\$39.45	\$9.73	\$ 947	\$ 2,334	\$3,281
1.5"	-	-	-	\$78.90	\$9.73	\$ -	\$ -	\$0
2"	1	12	78,200	\$126.24	\$9.73	\$ 1,515	\$ 761	\$2,276
Commercial								
BFFHTC								
5/8"	21	252	1,436,497	\$15.78	\$9.73	\$ 3,977	\$ 13,977	\$17,954
3/4"	-	-	-	\$15.78	\$9.73	\$ -	\$ -	\$0
1"	8	96	673,336	\$39.45	\$9.73	\$ 3,787	\$ 6,552	\$10,339
1.5"	5	60	782,970	\$78.90	\$9.73	\$ 4,734	\$ 7,618	\$12,352
2"	-	-	-	\$126.24	\$9.73	\$ -	\$ -	\$0
Availability - Fairfield Harbour	833	9,996		\$6.26		\$ 62,575	\$ -	\$62,575
WSIC/SSIC Revenue Eff 10/01/22								\$0
					TOTAL	\$ 729,880	\$ 1,706,307	\$2,436,186

BF/FH/TC - Sewer

Public Staff's Base Case Proposed Rates

Charge Type	EOP		EOP Usage	Base Rate	Usage Rate	Fixed		Volumetric		Total
	Customers	EOP Bills				Revenue	Revenue	Revenue	Revenue	
Residential										
BFFHTC										
Flat	3,008	36,096		\$62.39		\$ 2,252,109				\$2,252,109
Bulk Sewer	159	1,908		\$62.39		\$ 119,044				\$119,044
Beaver Farms	7	90		\$62.39		\$ 5,615				\$5,615
Hawthorne	169	2,028		\$62.39		\$ 126,531				\$126,531
Woodland Farms	151	1,812		\$62.39		\$ 113,055				\$113,055
Commercial										
BFFHTC										
5/8"	11	132	1,037,801	\$51.23	\$2.68	\$ 6,762	\$ 2,781			\$9,544
3/4"	3	36	77,780	\$51.23	\$2.68	\$ 1,844	\$ 208			\$2,053
1"	1	12	48,670	\$128.08	\$2.68	\$ 1,537	\$ 130			\$1,667
1.5"	4	48	397,570	\$256.15	\$2.68	\$ 12,295	\$ 1,065			\$13,361
2"	-	-	-	\$409.84	\$2.68	\$ -	\$ -			\$0
Availability - Fairfield Harbour	896	10,752		\$3.27		\$ 35,159	\$ -			\$35,159
WSIC/SSIC Revenue Eff 10/01/22										\$0
TOTAL						\$ 2,673,952	\$ 4,186			\$2,678,138

BF/FH/TC - Sewer

Public Staff's WSIP Year 1 Proposed Rates

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
Flat	3,047	36,564		\$64.90		\$ 2,373,013		\$2,373,013
Bulk Sewer	159	1,908		\$64.90		\$ 123,830		\$123,830
Beaver Farms	8	90		\$64.90		\$ 5,841		\$5,841
Hawthorne	169	2,028		\$64.90		\$ 131,618		\$131,618
Woodland Farms	151	1,812		\$64.90		\$ 117,599		\$117,599
Commercial								
BFFHTC								
5/8"	11	132	1,037,801	\$53.03	\$2.85	\$ 7,000	\$ 2,958	\$9,958
3/4"	3	36	77,780	\$53.03	\$2.85	\$ 1,909	\$ 222	\$2,131
1"	1	12	48,670	\$132.58	\$2.85	\$ 1,591	\$ 139	\$1,730
1.5"	4	48	397,570	\$265.15	\$2.85	\$ 12,727	\$ 1,133	\$13,860
2"	-	-	-	\$424.24	\$2.85	\$ -	\$ -	\$0
Availability - Fairfield Harbour	874	10,488		\$3.48		\$ 36,498	\$ -	\$36,498
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 2,811,626	\$ 4,451	\$2,816,077

BF/FH/TC - Sewer

Public Staff's WSIP Year 2 Proposed Rates

<u>Charge Type</u>	<u>Mid Period Customers</u>	<u>Mid Period Bills</u>	<u>Annualized Usage</u>	<u>Base Rate</u>	<u>Usage Rate</u>	<u>Fixed Revenue</u>	<u>Volumetric Revenue</u>	<u>Total Revenue</u>
Residential								
BFFHTC								
Flat	3,083	36,996		\$67.48		\$ 2,496,614		\$2,496,614
Bulk Sewer	159	1,908		\$67.48		\$ 128,758		\$128,758
Beaver Farms	8	90		\$67.48		\$ 6,074		\$6,074
Hawthorne	169	2,028		\$67.48		\$ 136,856		\$136,856
Woodland Farms	151	1,812		\$67.48		\$ 122,280		\$122,280
Commercial								
BFFHTC								
5/8"	11	132	1,037,801	\$55.03	\$2.99	\$ 7,264	\$ 3,103	\$10,367
3/4"	3	36	77,780	\$55.03	\$2.99	\$ 1,981	\$ 233	\$2,214
1"	1	12	48,670	\$137.58	\$2.99	\$ 1,651	\$ 146	\$1,796
1.5"	4	48	397,570	\$275.15	\$2.99	\$ 13,207	\$ 1,189	\$14,396
2"	-	-	-	\$440.24	\$2.99	\$ -	\$ -	\$0
Availability - Fairfield Harbour	854	10,248		\$3.65		\$ 37,405	\$ -	\$37,405
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 2,952,090	\$ 4,670	\$2,956,760

BF/FH/TC - Sewer

Public Staff's WSIP Year 3 Proposed Rates

Charge Type	Mid Period	Mid Period	Annualized	Base Rate	Usage Rate	Fixed	Volumetric	Total
	Customers	Bills	Usage			Revenue	Revenue	Revenue
Residential								
BFFHTC								
Flat	3,120	37,440		\$70.16		\$ 2,626,719		\$2,626,719
Bulk Sewer	159	1,908		\$70.16		\$ 133,862		\$133,862
Beaver Farms	8	90		\$70.16		\$ 6,314		\$6,314
Hawthorne	169	2,028		\$70.16		\$ 142,281		\$142,281
Woodland Farms	151	1,812		\$70.16		\$ 127,126		\$127,126
Commercial								
BFFHTC								
5/8"	11	132	1,037,801	\$57.08	\$3.14	\$ 7,535	\$ 3,259	\$10,793
3/4"	3	36	77,780	\$57.08	\$3.14	\$ 2,055	\$ 244	\$2,299
1"	1	12	48,670	\$142.70	\$3.14	\$ 1,712	\$ 153	\$1,865
1.5"	4	48	397,570	\$285.40	\$3.14	\$ 13,699	\$ 1,248	\$14,948
2"	-	-	-	\$456.64	\$3.14	\$ -	\$ -	\$0
Availability - Fairfield Harbour	835	10,020		\$3.83		\$ 38,377	\$ -	\$38,377
WSIC/SSIC Revenue Eff 10/01/22								\$0
TOTAL						\$ 3,099,680	\$ 4,904	\$3,104,584



July 30, 2021

Dear Valued Customer,

Carolina Water Service Inc. of North Carolina ("CWSNC") installed water new meters at all the residential homes, condominiums, and commercial account for your service area.

The new automated meters ("AMR") that wirelessly transmit a meter read, eliminates the need for a manual reading. AMR is the technology of automatically collecting consumption, diagnostic and status data from water meters and transferring the data to a central database for billing, troubleshooting and analysis. This system eliminates periodic trips to each physical location to read a meter. This data, coupled with analysis, can help both CWSNC and customers better control water consumption (usage).

Recently, it has been discovered that your water meter was not properly configured to measure the actual water passing through the meter for the last year. This error has been corrected by our operations staff. You may notice an increase in your bill due to the accurate measurement of water passing through the meter. Since this was our installation oversight, CWSNC will not back-bill for any usage during this timeframe.

Water meter reads will continue to be collected monthly by our staff using equipment in our vehicles without opening the meter box. This technology is especially beneficial in mountain areas where weather may cause manual reading problems (snow, ice etc.) and will help us ensure accurate and timely billings to our customers.

CWSNC customers may contact our Customer Experience Team by calling (800) 525-7990 or by email at customerservice@carolinawaterservicenc.com if there are any questions about the meter and billing. This communication contains Frequently Asked Questions for your review.

Thank you for your patience as we work to provide the best level of service for our customers.

Sincerely,

Tony Konsul
Regional Director
Western North Carolina


Carolina Water Service, Inc. of North Carolina

FREQUENTLY ASKED QUESTIONS:

- **Why is Carolina Water Service Inc of NC (CWSNC) installing water meters?** Water meters are being installed to accurately measure the water used at your residence.
- **Where will my water meter located?** Water meters are usually located outside in your yard at or near the property lines. Some meters may be housed in a common building closet for condominiums.
- **How does the system work?** As water passes through the metering chamber of the meter, flow is registered. In the new meters, the water usage data from each meter will be stored electronically and wirelessly transmitted by a radio signal to ERUI equipment. Our staff simply drive through the system once a month and upload the information to a computer in the vehicle.
- **Is my meter data secure?** Yes, only meter consumption readings and meter identification numbers are transmitted. Personal customer information is not transmitted.
- **Does the transmitter run on my home's electricity?** No, the transmitters run on an internal battery with an estimated 20 year life span.
- **Will my water bill go up?** The new water meter will accurately measure the water that you use. All new meters are tested at the factory to ensure that they register properly. When there is a change from flat rate to metered rate, you may notice a change in your bills.
- **Will the timing of my water bills change?** There will be no change to your billing period.
- **How do I know that you have my reading and not someone else's?** Each radio frequency device has a unique identification number which is transmitted along with the meter reading. The unique identification number is compared to your account record to ensure that there is a match.
- **How do you know that my reading is accurate?** These states of the art water meters have electronic registers, which verify the meter reading before it is sent to the transmitting unit. Substantial experience around the country indicates that this reading is more accurate than visually reading the meter.
- **Is there a hazard from the radio transmitter?** No, the radio signal is only on when the meter reading takes place. This is less than a few seconds per month. The power level is low, and the meter is located some distance from homes and business in the ground.
- **Is there anything hazardous inside the equipment?** No, only ordinary electronics and batteries are inside the equipment.
- **Will the radio interfere with my television, cordless phone or pacemaker?** No, the radio transmissions occur on a licensed frequency which is very different from those used by television signals, cordless phones and pacemakers. In addition, the transmissions last less than a few seconds each month. You will never see interference with your television reception.

● Page 3

- **I have occasionally in the past received an estimated bill because I was told ice or snow prevented the meter reader for accessing my meter. Does the new meter help that situation?** Part of the benefit of the new AMR technology is that it eliminates the need for a person to physically access the meter to read so weather related estimating is eliminated.
- **What will the new meters look like;** The below picture represents what the new meters will look like. The new meters are manufactured by NEPTUNE and are made of a new high strength composite material that has been developed to eliminate any concern of lead in brass. NEPTUNE is a leading manufacturer of water metering technology.

	<p>MACH 10® Solid State Ultrasonic Water Meter</p> <p>Ensure continued accuracy and performance over time. The MACH 10 solid-state ultrasonic meter features no moving parts to wear out over time. It's high resolution measurement enables capture of extremely low flow rates. It combines solid-state metrology with corrosion-resistant, lead-free, high-copper alloy main case, built to withstand demanding service conditions.</p>	<p>Key Features</p> <ul style="list-style-type: none">● Sizes 5/8", 3/4", 1", 1-1/2", 2"● Extended low-flow/upper-flow range and accuracy● No special test mode required for bench testing● Sustained accuracy over meter life● Maintenance-free. Fully potted electronics and battery● MACH 10®)R900i™ seamlessly integrates R900® radio for easy installation – no external wires, reducing potential wire vandalism/damage
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May 22, 2019

Connetsee Falls, North Carolina

Dear Valued Customer,

Over the next few weeks, Carolina Water Service Inc. of NC (CWSNC) will be installing water meters at all the residential homes we serve. CWSNC will install new automated meters (“AMR”) that wirelessly transmit a meter read, eliminating the need for a manual reading. AMR is the technology of automatically collecting consumption, diagnostic and status data from water meters and transferring the data to a central database for billing, troubleshooting and analysis. This system eliminates periodic trips to each physical location to read a meter. This data, coupled with analysis, can help both CWSNC and customers better control water consumption (usage).

Water meter reads will continue to be collected monthly by our staff using equipment in our vehicles. We will not have to open the meter boxes to obtain the reads. This technology is especially beneficial in mountain areas where weather may cause manual reading problems (snow, ice etc.) and will help us ensure accurate and timely billings to our customers.

CWSNC has awarded the installation contract to Core & Main of Asheville to complete the installation of the water meters. Core & Main subcontracted the installation to VEPO Metering. Contractor vehicles will display the CWSNC company logo and “contractor” identification magnets. Installation is scheduled to begin in early June and all meters are expected to be installed by late July.

All Core & Main employees and subcontractors will have completed background checks and act professionally. VEPO Metering is an experienced and professional meter installation contractor. CWSNC staff will work closely with our contractors to minimize any inconvenience and ensure that your property is restored. Core & Main or subcontractors will contact customers prior to the meter installation and the entire process should take less than an hour during which the water service will be shut off.

Please find attached a set of “Frequently Asked Questions” that will hopefully address any issues or concerns you may have. CWSNC and Core & Main thank you for your cooperation in making this a successful project and we thank you for your patience while the meter replacement is in progress.

Customers may contact Martin Scanlon, Project Manager at martin.scanlon@carolinawaterservicenc.com if they have any questions about the project. Thank you for your patience as we work to provide the best level of service for our customers.

Sincerely,

Martin Scanlon
Project Manager

September 26, 2022

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OFFICIAL COPY

Oct 26 2022


FREQUENTLY ASKED QUESTIONS:

- **Why is Carolina Water Service Inc of NC (CWSNC) installing water meters?** Water meters are being installed to accurately measure the water used at your residence.
- **Where will my water meter located?** Water meters are usually located outside in your yard at or near the property lines. Some meters may be housed in a common building closet for condominiums.
- **How will I be contacted?** Contact with each customer will be attempted prior to the meter exchange by knocking on the door or making prior contact. If the customer is home they will be made aware that the water will be off for a brief period of time, typically 60 minutes or less. If this is inconvenient, arrangements will be made to come back.
- **Will you be digging in my yard?** For the vast majority, yes. Where digging is essential, your property will be restored.
- **How does the system work?** As water passes through the metering chamber of the meter, flow is registered. In the new meters, the water usage data from each meter will be stored electronically and wirelessly transmitted by a radio signal to ERUI equipment. Our staff simply drive through the system once a month and upload the information to a computer in the vehicle.
- **Is my meter data secure?** Yes, only meter consumption readings and meter identification numbers are transmitted. Personal customer information is not transmitted.
- **Does the transmitter run on my home's electricity?** No, the transmitters run on an internal battery with an estimated 20 year life span.
- **Do I have to be at my home or business during the water meter replacement?** No, since the water meters are located outside, the customer does not have to be present.
- **Will my water bill go up?** The new water meter will accurately measure the water that you use. All new meters are tested at the factory to ensure that they register properly. When there is a change from flat rate to metered rate, you may notice a change in your bills.
- **Will the timing of my water bills change?** There will be no change to your billing period.
- **How do I know that you have my reading and not someone else's?** Each radio frequency device has a unique identification number which is transmitted along with the meter reading. The unique identification number is compared to your account record to ensure that there is a match.
- **How do you know that my reading is accurate?** These state of the art water meters have electronic registers, which verify the meter reading before it is sent to the transmitting unit. Substantial experience around the country indicates that this reading is more accurate than visually reading the meter.
- **Is there a hazard from the radio transmitter?** No, the radio signal is only on when the meter reading takes place. This is less than a few seconds per month. The power level is low and the meter is located some distance from homes and business in the ground.

● Page 3

September 26, 2022

- **Is there anything hazardous inside the equipment?** No, only ordinary electronics and batteries are inside the equipment.
- **Will the radio interfere with my television, cordless phone or pacemaker?** No, the radio transmissions occur on a licensed frequency which is very different from those used by television signals, cordless phones and pacemakers. In addition, the transmissions last less than a few seconds each month. You will never see interference with your television reception.
- **I have occasionally in the past received an estimated bill because I was told ice or snow prevented the meter reader for accessing my meter. Does the new meter help that situation?** Part of the benefit of the new AMR technology is that it eliminates the need for a person to physically access the meter to read so weather related estimating is eliminated.
- **What will the new meters look like;** The below picture represents what the new meters will look like. The new meters are manufactured by NEPTUNE and are made of a new high strength composite material that has been developed to eliminate any concern of lead in brass. NEPTUNE is a leading manufacturer of water metering technology.

	<p>MACH 10[®] Solid State Ultrasonic Water Meter</p> <p>Ensure continued accuracy and performance over time. The MACH 10 solid-state ultrasonic meter features no moving parts to wear out over time. It's high resolution measurement enables capture of extremely low flow rates. It combines solid-state metrology with corrosion-resistant, lead-free, high-copper alloy main case, built to withstand demanding service conditions.</p>	<p>Key Features</p> <ul style="list-style-type: none"> ● Sizes 5/8", 3/4", 1", 1-1/2", 2" ● Extended low-flow/upper-flow range and accuracy ● No special test mode required for bench testing ● Sustained accuracy over meter life ● Maintenance-free. Fully potted electronics and battery ● MACH 10[®])R900i™ seamlessly integrates R900[®] radio for easy installation – no external wires, reducing potential wire vandalism/damage
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November 1, 2021

Mountain Air, North Carolina

Dear Valued Customer,

Over the next few weeks, Carolina Water Service Inc. of NC (CWSNC) will be installing water meters at all the residential homes and condominiums we serve. CWSNC will install new automated meters (“AMI”) that wirelessly transmit a meter read, eliminating the need for a manual reading. AMI is the technology of automatically collecting consumption, diagnostic and status data from water meters and transferring the data to a central database for billing, troubleshooting and analysis. This system eliminates periodic trips to each physical location to read a meter. This data, coupled with analysis, can help both CWSNC and customers better control water consumption (usage).

The meter boxes will not be required be opened by staff to obtain the reads for monthly meter reads. This technology is especially beneficial in mountain areas where weather may cause manual reading problems (snow, ice etc.) and will help ensure accurate and timely billings to our customers.

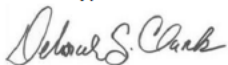
CWSNC has awarded the installation contract to Core & Main of Asheville to complete the installation of the water meters. Core & Main subcontracted the installation to Freeman Construction & CTS. Contractor vehicles will display the CWSNC company logo and “contractor” identification magnets. Installation is scheduled to begin in November and all meters are expected to be installed by late January depending on weather conditions experienced during the course of the project.

All Core & Main employees and subcontractors will have completed background checks and act professionally. Freeman Construction & CTS are an experienced and professional water and wastewater utility construction contractor. CWSNC staff will work closely with our contractors to minimize any inconvenience and ensure that your property is restored. Core & Main or subcontractors will contact customers prior to the meter installation and the entire process should take less than an hour during which the water service will be shut off. Due to the depth of some meters being deeper, longer water shut offs may be experienced. The homeowners will be notified of longer shutoffs when possible.

Please find attached a set of “Frequently Asked Questions” that will hopefully address any issues or concerns you may have. CWSNC and Core & Main thank you for your cooperation in making this a successful project and we thank you for your patience while the meter replacement is in progress.

Customers may contact Neil Reece, Area Manager at Ronnie.Reece@carolinawaterservicenc.com or Mason Sexton, Project Manager at mason.sexton@carolinawaterservicenc.com if there are any questions about the project. Thank you for your patience as we work to provide the best level of service for our customers.

Sincerely,



Deborah S. Clark

Communications and Community Engagement Manager


FREQUENTLY ASKED QUESTIONS:

- **Why is Carolina Water Service Inc of NC (CWSNC) installing water meters?** Water meters are being installed to accurately measure the water used at your residence.
- **Where will my water meter located?** Water meters are usually located outside in your yard at or near the property lines. Some meters may be housed in a common building closet for condominiums or commercial buildings.
- **How will I be contacted?** Contact with each customer will be attempted prior to the meter exchange by knocking on the door or making prior contact. If the customer is home, they will be made aware that the water will be off for a brief period of time, typically 60 minutes or less. If this is inconvenient, arrangements will be made to come back.
- **Will you be digging in my yard?** For the vast majority, yes. Where digging is essential, your property will be restored.
- **How does the system work?** As water passes through the metering chamber of the meter, flow is registered. In the new meters, the water usage data from each meter will be stored electronically and wirelessly transmitted by cellular signal.
- **Is my meter data secure?** Yes, only meter consumption readings and meter identification numbers are transmitted. Personal customer information is not transmitted.
- **Does the transmitter run on my home's electricity?** No, the transmitters run on an internal battery with an estimated 20 year life span. The water meter has an anticipated life span of 20 years.
- **Do I have to be at my home or business during the water meter replacement?** No, since the water meters are located outside, the customer does not have to be present, except in some commercial buildings, which have been identified by staff.
- **Will my water bill go up?** The new water meter will accurately measure the water that you use. All new meters are tested at the factory to ensure that they register properly. When there is a change from flat rate to metered rate, you may notice a change in your bills.
- **Will the timing of my water bills change?** There will be no change to your billing period.
- **How do I know that you have my reading and not someone else's?** Each meter device has a unique cellular identification number which is transmitted along with the meter reading. The unique identification number is compared to your account record to ensure that there is a match.
- **How do you know that my reading is accurate?** These states of the art water meters have electronic registers, which verify the meter reading before it is sent to the transmitting unit. Substantial experience around the country indicates that this reading is more accurate than visually reading the meter.
- **Is there a hazard from the cellular transmitter?** No. The transmitter uses a cellular network like a typical personal cellular phone.
- **Is there anything hazardous inside the equipment?** No, only ordinary electronics and batteries are inside the equipment.

October 27, 2021

● Page 3

- **Will the cellular interfere with my television, cordless phone or pacemaker?** No, the data transmissions occur on a cellular signal, which is very different from those used by television signals, cordless phones and pacemakers. In addition, the transmissions last less than a few seconds each month. You will never see interference with your television reception.
- **I have occasionally in the past received an estimated bill because I was told ice or snow prevented the meter reader for accessing my meter. Does the new meter help that situation?** Part of the benefit of the new AMI technology is that it eliminates the need for a person to physically access the meter to read so weather related estimating is eliminated.
- **What will the new meters look like;** The below picture represents what the new meters will look like. The new meters are manufactured by NEPTUNE and are made of a new high strength composite material that has been developed to eliminate any concern of lead in brass. NEPTUNE is a leading manufacturer of water metering technology.

	<p>MACH 10® Solid State Ultrasonic Water Meter</p> <p>Ensure continued accuracy and performance over time. The MACH 10 solid-state ultrasonic meter features no moving parts to wear out over time. It's high resolution measurement enables capture of extremely low flow rates. It combines solid-state metrology with corrosion-resistant, lead-free, high-copper alloy main case, built to withstand demanding service conditions.</p>	<p>Key Features</p> <ul style="list-style-type: none"> ● Sizes 5/8", 3/4", 1", 1-1/2", 2" ● Extended low-flow/upper-flow range and accuracy ● No special test mode required for bench testing ● Sustained accuracy over meter life ● Maintenance-free. Fully potted electronics and battery ● MACH 10®)R900i™ seamlessly integrates R900® radio for easy installation – no external wires, reducing potential wire vandalism/damage
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OFFICIAL COPY

Oct 26 2022

March 16, 2020

Dear Valued Customer,

Over the next few weeks, Carolina Water Service Inc. of NC (CWSNC) will be installing water meters at all the residential homes and condominiums we serve in Sugar Mountain, North Carolina.

CWSNC will install new automated meters (“AMR”) that wirelessly transmit a meter read, eliminating the need for a manual reading. AMR is the technology of automatically collecting consumption, diagnostic and status data from water meters and transferring the data to a central database for billing, troubleshooting and analysis. This system eliminates periodic trips to each physical location to read a meter. This data, coupled with analysis, can help both CWSNC and customers better control water consumption (usage).

Water meter reads will continue to be collected monthly by our staff using equipment in our vehicles. We will not have to open the meter boxes to obtain the reads. This technology is especially beneficial in mountain areas where weather may cause manual reading problems (snow, ice etc.) and will help us ensure accurate and timely billings to our customers.

CWSNC has awarded the installation contract to Core & Main of Asheville to complete the installation of the water meters. Core & Main subcontracted the installation to VEPO Metering. Contractor vehicles will display the CWSNC company logo and “contractor” identification magnets. Installation is scheduled to begin in early April and all meters are expected to be installed by late May.

All Core & Main employees and subcontractors will have completed background checks and act professionally. VEPO Metering is an experienced and professional meter installation contractor. CWSNC staff will work closely with our contractors to minimize any inconvenience and ensure that your property is restored. Core & Main or subcontractors will contact customers prior to the meter installation and the entire process should take less than an hour during which the water service will be shut off.

Please find attached a set of “Frequently Asked Questions” that will hopefully address any issues or concerns you may have. CWSNC and Core & Main thank you for your cooperation in making this a successful project and we thank you for your patience while the meter replacement is in progress.

Customers may contact Neil Reece, Area Manager at Ronnie.Reece@carolinawaterservicenc.com or Martin Scanlon, Project Manager at Martin.Scanlon@Carolinawaterservicenncc.com if there are any questions about the project. Thank you for your patience as we work to provide the best level of service for our customers.

Sincerely,

Martin Scanlon


Martin Scanlon
Martin Scanlon, Project Manager

Carolina Water Service, Inc. of North Carolina

FREQUENTLY ASKED QUESTIONS:

- **Why is Carolina Water Service Inc of NC (CWSNC) installing water meters?** Water meters are being installed to accurately measure the water used at your residence.
- **Where will my water meter located?** Water meters are usually located outside in your yard at or near the property lines. Some meters may be housed in a common building closet for condominiums.
- **How will I be contacted?** Contact with each customer will be attempted prior to the meter exchange by knocking on the door or making prior contact. If the customer is home, they will be made aware that the water will be off for a brief period of time, typically 60 minutes or less. If this is inconvenient, arrangements will be made to come back.
- **Will you be digging in my yard?** For the vast majority, yes. Where digging is essential, your property will be restored.
- **How does the system work?** As water passes through the metering chamber of the meter, flow is registered. In the new meters, the water usage data from each meter will be stored electronically and wirelessly transmitted by a radio signal to ERUI equipment. Our staff simply drive through the system once a month and upload the information to a computer in the vehicle.
- **Is my meter data secure?** Yes, only meter consumption readings and meter identification numbers are transmitted. Personal customer information is not transmitted.
- **Does the transmitter run on my home's electricity?** No, the transmitters run on an internal battery with an estimated 20 year life span.
- **Do I have to be at my home or business during the water meter replacement?** No, since the water meters are located outside, the customer does not have to be present.
- **Will my water bill go up?** The new water meter will accurately measure the water that you use. All new meters are tested at the factory to ensure that they register properly. When there is a change from flat rate to metered rate, you may notice a change in your bills.
- **Will the timing of my water bills change?** There will be no change to your billing period.
- **How do I know that you have my reading and not someone else's?** Each radio frequency device has a unique identification number which is transmitted along with the meter reading. The unique identification number is compared to your account record to ensure that there is a match.
- **How do you know that my reading is accurate?** These state of the art water meters have electronic registers, which verify the meter reading before it is sent to the transmitting unit. Substantial experience around the country indicates that this reading is more accurate than visually reading the meter.
- **Is there a hazard from the radio transmitter?** No, the radio signal is only on when the meter reading takes place. This is less than a few seconds per month. The power level is low and the meter is located some distance from homes and business in the ground.

- **Is there anything hazardous inside the equipment?** No, only ordinary electronics and batteries are inside the equipment.
- **Will the radio interfere with my television, cordless phone or pacemaker?** No, the radio transmissions occur on a licensed frequency which is very different from those used by television signals, cordless phones and pacemakers. In addition, the transmissions last less than a few seconds each month. You will never see interference with your television reception.
- **I have occasionally in the past received an estimated bill because I was told ice or snow prevented the meter reader for accessing my meter. Does the new meter help that situation?** Part of the benefit of the new AMR technology is that it eliminates the need for a person to physically access the meter to read so weather related estimating is eliminated.
- **What will the new meters look like;** The below picture represents what the new meters will look like. The new meters are manufactured by NEPTUNE and are made of a new high strength composite material that has been developed to eliminate any concern of lead in brass. NEPTUNE is a leading manufacturer of water metering technology.

	<p>MACH 10® Solid State Ultrasonic Water Meter</p> <p>Ensure continued accuracy and performance over time. The MACH 10 solid-state ultrasonic meter features no moving parts to wear out over time. It's high resolution measurement enables capture of extremely low flow rates. It combines solid-state metrology with corrosion-resistant, lead-free, high-copper alloy main case, built to withstand demanding service conditions.</p>	<p>Key Features</p> <ul style="list-style-type: none"> ● Sizes 5/8", 3/4", 1", 1-1/2", 2" ● Extended low-flow/upper-flow range and accuracy ● No special test mode required for bench testing ● Sustained accuracy over meter life ● Maintenance-free. Fully potted electronics and battery ● MACH 10®)R900i™ seamlessly integrates R900® radio for easy installation – no external wires, reducing potential wire vandalism/damage
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BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. W-354, SUB 400

In the Matter of
Application by Carolina Water Service,)
Inc. of North Carolina for Authority to)
Adjust and Increase Rates and) **TESTIMONY OF**
Charges for Water and Sewer Utility) **D. MICHAEL FRANKLIN**
Service in All Service Areas of North) **PUBLIC STAFF –**
Carolina and Approval of a Three-Year) **NORTH CAROLINA**
Water and Sewer Investment Plan) **UTILITIES COMMISSION**

October 26, 2022

1 **Q. Please state your name, business address, and present**
2 **position.**

3 A. My name is D. Michael Franklin. My business address is 430 North
4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am a
5 Public Utilities Engineer with the Water, Sewer, and Telephone
6 Division of the Public Staff – North Carolina Utilities Commission.

7 **Q. Briefly state your qualifications and duties.**

8 A. My qualifications and duties are included in Appendix A.

9 **Q. Briefly explain the scope of your investigation regarding this**
10 **rate increase application.**

11 A. My areas of investigation in this proceeding have been the review of
12 Carolina Water Service, Inc. of North Carolina's (CWSNC or
13 Company) records and expenses, including purchased power,
14 sludge removal, meter reading, purchased water, and purchased
15 sewer in coordination with the Public Staff Accounting Division.

16 **Q. Have you recommended any adjustments to expenses related**
17 **to water and wastewater operations?**

18 A. Yes, I have provided Public Staff Financial Analyst Darrell Brown with
19 recommendations for adjustments to purchased power, sludge
20 removal, and meter reading.

1 **Purchased Power Expenses**

2 I reviewed CWSNC's expenses for purchased power for all CWSNC
3 rate divisions. In response to Public Staff Data Request No. 40,
4 CWSNC provided additional information regarding invoices received
5 from Duke Energy Carolinas and Duke Energy Progress. CWSNC
6 also provided copies of approximately 500 purchased power invoices
7 for specific meters identified by the Public Staff. Based on my review
8 of the purchased power invoices, I determined the billed amount
9 shown in the Company's general ledger report accurately reflected
10 the actual invoiced amount. No late fees were recorded, and, unlike
11 the previous rate case, there was no pervasive evidence of the
12 Company recording the total past-due balance as the monthly
13 purchased power expense.

14 I recommend adjustments to the purchased power expense amount
15 requested by CWSNC for the Uniform Water and Uniform Sewer rate
16 Divisions. During the review of purchased power expenses, I
17 determined the Company was inappropriately including invoices
18 from the South Carolina business units of Duke Energy Carolinas
19 and Duke Energy Progress. Removal of these charges reduced the
20 Uniform Sewer purchased power expense amount by \$13,484 and
21 Uniform Water purchased power expense amount by \$1,966.

1 Further review determined the Company's systems in its Danby
2 service area, part of Uniform Water and Sewer, include service
3 connections in both North Carolina and South Carolina, with the
4 wastewater treatment plant (WWTP) actually located in South
5 Carolina. CWSNC informed the Public Staff that in addition to serving
6 the Danby service area, the Danby WWTP also provides wastewater
7 utility service to 328 additional customers in Lancaster County, South
8 Carolina. Based on information provided by the Company, Danby
9 WWTP serves 355 total customers in South Carolina with a total of
10 1,614 wastewater customers in North and South Carolina. Since the
11 customer count in South Carolina represents approximately 22% of
12 the Danby wastewater customers, the purchased power expenses
13 during the test year for Danby wastewater were reduced 22%, or
14 \$8,861. Similarly, the Danby water utility system serves 27
15 customers in South Carolina out of a total of 1,283 water utility
16 customers in North and South Carolina, or approximately 2%. I
17 therefore reduced the purchased power expense for Danby water
18 service area by \$239.

19 As a result, the Public Staff's recommended total purchased power
20 expense for Uniform Water is reduced by \$2,205 and Uniform Sewer
21 is reduced by \$22,345. No adjustments were made to the Bradfield

1 Farm/Fairfield Harbour/Treasure Cove (BF/FH/TC) Water and Sewer
2 rate divisions purchased power expenses.

3 Based on the analysis of the most recent purchased power invoices
4 and information derived from additional data provided by the
5 Company, the Public Staff recommends the following purchased
6 power expense levels in the Company's base case:

7		<u>CWSNC Updated</u>	<u>Public Staff</u>
8		<u>Application</u>	<u>Recommendation</u>
9	Uniform Water	\$1,073,063	\$1,070,858
10	Uniform Sewer	\$838,500	\$816,155
11	BF/FH/TC Water	\$70,432	\$70,432
12	BF/FH/TC Sewer	\$149,604	\$149,604

13 My calculations are shown in **Franklin Exhibit 1**.

14 **Sludge Removal Expenses**

15 In order to investigate the Company's requested sludge hauling
16 expense, I reviewed the historical sludge hauling quantity and
17 expense data provided by CWSNC in response to Public Staff Data
18 Request Nos. 14 and 36. The Company provided the data based on
19 a review of sludge hauling invoiced amounts from September 1,
20 2019, through August 31, 2022. To accurately reflect the most recent
21 pricing, I used sludge hauling expenses for the time period from

1 September 1, 2021, through August 31, 2022, based on the cost
2 information provided by the Company. The following is a summary
3 of adjustments by rate division.

4 **Uniform Water**

5 In response to Public Staff Data Request No. 36, the Company
6 provided a sludge variance explanation spreadsheet that showed
7 sludge hauling expenses were assigned to Belvedere Plantation
8 Water and Sugar Mountain Water, but instead, should have been
9 assigned to Belvedere Plantation Sewer and Sugar Mountain Sewer,
10 respectively. This resulted in a \$20,385 reduction to the Uniform
11 Water sludge hauling expense amount. Further, the total
12 documented sludge cost for the updated time period from September
13 1, 2021, through August 31, 2022, is \$14,195 less than the expense
14 amount provided by the Company, resulting in a total adjustment of
15 \$34,580.

16 **Uniform Sewer**

17 As stated above, \$20,385 was reallocated to Uniform Sewer from
18 Uniform Water. Additionally, as previously discussed in my testimony
19 on adjustments to Purchased Power, sludge hauling expenses for
20 the Danby service area were reduced by 22% to account for the
21 wastewater connections located in South Carolina. Factoring in the

1 above, I calculated the total sludge hauling expenses for the updated
2 12-month period from September 1, 2021, through August 31, 2022,
3 to be \$403,299 resulting in a downward adjustment of \$60,837 from
4 the Company's September 19, 2022, updated Schedule B-6a,
5 amount of \$464,136.

6 **BF/FH/TC Water**

7 There were no sludge hauling expenses for this rate division during
8 the evaluated time period.

9 **BF/FH/TC Sewer**

10 In response to Public Staff Data Request No. 36, the Company
11 provided a sludge variance explanation spreadsheet that stated
12 increased sludge hauling during the test year was required at
13 Bradfield Farms and Fairfield Harbour due to ongoing capital
14 projects. The Bradfield Farms project is a multi-year project to
15 replace the electrical controls at the WWTP and install new sludge
16 transfer pumps. The capital project for Fairfield Harbour required the
17 emptying of WWTP tanks for inspection to determine project scope.
18 Since both capital projects are considered infrequent events and not
19 representative of operations on a go-forward basis, I reduced the
20 sludge hauling expenses for both Bradfield Farms and Fairfield
21 Harbour to account for these projects.

1 For Bradfield Farms, I reduced the sludge hauling expense by
2 \$16,856 to match the sludge hauling expense more closely for the
3 test year of CWSNC's previous rate case (Docket No. W-354, Sub
4 384). Fairfield Harbour's sludge hauling expense was reduced by
5 \$4,320, which was the sludge hauling expense that was booked the
6 closest to the time of the inspection based on the Company's capital
7 improvement plan. Further reductions in sludge hauling expenses of
8 \$29,816 were made based on the Public Staff's review of the sludge
9 hauling expenses for the time period from September 1, 2021,
10 through August 31, 2022. This reduction results in a total sludge
11 hauling expense for the rate division of \$39,685, which is \$50,992
12 less than the Company's September 19, 2022, updated Schedule B-
13 6b, amount of \$90,677.

14 Based on the analysis of sludge hauling levels and the current sludge
15 hauling expenses derived from invoices and additional data provided
16 by the Company, the Public Staff recommends the following sludge
17 hauling expense levels:

	<u>CWSNC Updated Application</u>	<u>Public Staff Recommendation</u>	
1			
2			
3	Uniform Water	\$39,130	\$4,550
4	Uniform Sewer	\$464,136	\$403,299
5	BF/FH/TC Water	\$0	\$0
6	BF/FH/TC Sewer	\$90,677	\$39,685

7 My calculations are shown in **Franklin Exhibit 2**.

8 **Meter Reading**

9 To investigate the Company's meter reading expenses, I analyzed
10 the General Ledger Detail Report the Company provided in response
11 to Public Staff Data Request No. 42. For the updated test year ending
12 August 31, 2022, I calculated the Uniform Water meter reading
13 expense as \$222,612, as compared to the updated Schedule B-8a
14 amount of \$229,336, resulting in a downward adjustment of \$6,724.
15 No adjustments were required for the Uniform Sewer or BF/FH/TC
16 Water and Sewer rate divisions' meter reading expenses.

17 Based on the foregoing analysis of meter reading expenses, derived
18 from the data request response provided by the Company, the Public
19 Staff recommends the following meter reading expense levels in the
20 base case:

	<u>CWSNC Updated Application</u>	<u>Public Staff Recommendation</u>	
1			
2			
3	Uniform Water	\$229,336	\$222,612
4	Uniform Sewer	\$3,024	\$3,024
5	BF/FH/TC Water	\$47,602	\$47,602
6	BF/FH/TC Sewer	\$1,041	\$1,041

7 My calculations are shown in **Franklin Exhibit 3**.

8 **Purchased Water**

9 CWSNC's pro forma adjustment to the Uniform purchased water
10 expense, which is included in its update filed on September 19, 2022,
11 reflects changes in suppliers' rates from the City of Charlotte, City of
12 Fayetteville - Public Works Commission (PWC), Town of Franklin,
13 Town of Hendersonville, Town of Southern Pines, and Johnston
14 County. To match costs to the revenues and facilitate future filings
15 pursuant to N.C. Gen. Stat. § 62-133.11, purchased water expenses
16 and pass-through rates charged by the utility should reflect the
17 current rates for all suppliers. Therefore, in addition to the updated
18 rates included in CWSNC's pro forma adjustment, I updated the rates
19 for the City of Asheville, City of Gastonia, Town of Sanford and
20 Lancaster County, South Carolina. With respect to the City of
21 Winston-Salem and the Town of Hendersonville, I disagree with the
22 Company's rates of \$5.79 and \$5.27 per 1,000 gallons, respectively.

1 Both municipalities use tiered rates that result in the overall rate
2 changing based on the volume of water purchased. Based on the
3 City of Winston-Salem's and the Town of Hendersonville's current
4 schedule of rates, effective July 1, 2022, and the purchased water
5 amount determined during the update period from each municipality,
6 the usage rate for water service is \$5.64 per 1,000 gallons for the
7 City of Winston-Salem and \$5.22 per 1,000 gallons for the Town of
8 Hendersonville.

9 In response to Public Staff Data Request No. 13, CWSNC provided
10 test year invoices for its partial purchased water and 100%
11 purchased water systems. The data request response also included
12 a spreadsheet showing for each of the purchased water systems the
13 volume of water provided by CWSNC wells, the volume of water
14 purchased, the volume of water sold, and the volume of non-revenue
15 water. In response to Public Staff Data Request No. 63, CWSNC
16 revised this spreadsheet to show these amounts through the update
17 period for the purchased water systems.

18 The Public Staff calculates purchased water expenses based on the
19 actual number of gallons purchased during the test year period,
20 adjusted for excess amounts of non-revenue purchased water if
21 applicable, multiplied by the supplier's current rate. I therefore made
22 non-revenue water (NRW) adjustments to the Zemosa Acres, Kings

1 Grant, High Vista Estates, Carolina Forest, Woodrun, Eastgate, and
 2 Riverbend Estates purchased water systems. The Public Staff
 3 recommends a 15% maximum allowance for NRW for most water
 4 systems and 20% for water systems located in the mountain regions
 5 of North Carolina, which is consistent with the Public Staff's position
 6 in the last two general rate cases, Docket No. W-354, Subs 364 and
 7 384. Due to challenges with terrain and rocky subsurface conditions,
 8 the mountainous areas are expected to have more issues with
 9 managing NRW than water systems in other regions of North
 10 Carolina. **Franklin Table 1** shows the purchased water systems that
 11 were adjusted for NRW, the actual NRW percentage, and the Public
 12 Staff's recommended allowable NRW percentage.

13 **Franklin Table 1**

Purchased Water System	Supplier	Actual NRW (%)	Public Staff Adjusted NRW (%)
Zemosa Acres	City of Concord	23.8	15
Kings Grant	City of Gastonia	44.2	15
High Vista Estates	City of Hendersonville	39.3	20
Carolina Forest	Montgomery County	16.9	15
Woodrun	Montgomery County	21.2	15
Eastgate	PWC	21.9	15
Riverbend Estates	Town of Franklin	39.1	20

1 Based on the foregoing analysis of CWSNC's purchased water
2 expenses and the impact of the analysis results on CWSNC's
3 updated purchase water expenses, I have found the updated
4 purchased water expense levels to be reasonable and agree with the
5 Uniform Water rate division's updated purchased water expenses as
6 follows:

7	<u>Per Books</u>	<u>Pro Forma Adjustment</u>	<u>Total Expense</u>
8	\$1,632,051	\$33,405	\$1,665,457

9 There are no purchased water systems within the Bradfield
10 Farms/Fairfield Harbour/Treasure Cove, (BF/FH/TC) Water Rate
11 Division.

12 **Purchased Sewer**

13 I reviewed CWSNC's expenses for Uniform Sewer Purchased Sewer
14 based on invoices and documentation provided by the Company.
15 Based on my review, I agree that the following expense levels
16 requested by the Company in its application accurately reflect
17 expected expense levels going forward and, therefore, do not
18 recommend any adjustments:

19	<u>Per Books</u>	<u>Pro Forma Adjustment</u>	<u>Total Expense</u>
20	\$1,032,514	\$16,026	\$1,048,540

1 There are no purchased water systems within the Bradfield
2 Farms/Fairfield Harbour/Treasure Cove, (BF/FH/TC) Water Rate
3 Division.

4 **Purchased Sewer**

5 I reviewed CWSNC's expenses for Uniform Sewer Purchased Sewer
6 based on invoices and documentation provided by the Company.
7 Based on my review, I agree that the following expense levels
8 requested by the Company in its application accurately reflect
9 expected expense levels going forward and, therefore, do not
10 recommend any adjustments:

11	<u>Per Books</u>	<u>Pro Forma Adjustment</u>	<u>Total Expense</u>
12	\$1,032,514	\$16,026	\$1,048,540

13 **Q. Does This Conclude Your Testimony?**

14 A. Yes, it does.

QUALIFICATIONS AND EXPERIENCE

D. MICHAEL FRANKLIN

I graduated from the University of South Carolina, earning a Bachelor of Science Degree in Engineering. I worked in the electric utility industry for 33 years prior to joining the Public Staff in June 2019. While employed by the Public Staff, I have worked on utility rate case proceedings, new franchise and transfer applications, customer complaints, and other aspects of utility regulation.

DANBY PURCHASED POWER CALCULATION

For the 12 Months Ending March 31, 2022

DANBY ACTIVE CUSTOMERS AS OF MARCH 31, 2022¹

Service Type	NC	SC	SC % of Total
Water Only	7	0	
Water & Sewer	1249	27	
Sewer Only	10	328	
Total Water	1256	27	2%
Total Sewer	1259	355	22%

DANBY PURCHASED POWER EXPENSES - POSTED DATE: MAY 2021 - APR 2022²

DANBY WATER

POSTED DATE ³	AMOUNT
5/10/21	\$ (5,098.08)
5/10/21	\$ 5,098.08
5/12/21	\$ (54.55)
5/18/21	\$ 54.55
5/18/21	\$ (54.55)
6/9/21	\$ 5,998.46
6/11/21	\$ (5,998.46)
7/9/21	\$ 6,780.96
7/9/21	\$ (6,780.96)
7/14/21	\$ 35.64
7/15/21	\$ 416.73
8/9/21	\$ (6,693.00)
8/9/21	\$ 6,693.00
8/10/21	\$ 83.22
8/11/21	\$ 6.37
8/11/21	\$ 438.74
8/11/21	\$ 35.59
8/12/21	\$ 37.33
9/9/21	\$ 35.16
9/9/21	\$ 35.16
9/9/21	\$ 36.96
9/9/21	\$ 38.64
9/9/21	\$ 76.95
9/9/21	\$ 81.26

DANBY SEWER

POSTED DATE ³	AMOUNT
5/10/2021	\$ (9,660.38)
5/10/2021	\$ 9,660.38
5/12/2021	\$ (68.61)
5/18/2021	\$ 68.61
5/18/2021	\$ (68.61)
6/9/2021	\$ 12,996.25
6/11/2021	\$ (12,996.25)
6/11/2021	\$ 68.05
6/11/2021	\$ 136.59
6/11/2021	\$ 34.20
7/9/2021	\$ 15,820.22
7/9/2021	\$ (15,820.22)
7/15/2021	\$ 61.53
8/9/2021	\$ (16,829.68)
8/9/2021	\$ 16,829.68
8/10/2021	\$ 871.03
8/10/2021	\$ 2,947.08
8/11/2021	\$ 8.02
8/12/2021	\$ 49.83
9/9/2021	\$ 59.00
9/9/2021	\$ 68.09
9/9/2021	\$ 792.71
9/9/2021	\$ 920.26
9/9/2021	\$ 2,206.62

DANBY PURCHASED POWER CALCULATION

For the 12 Months Ending March 31, 2022

DANBY WATER (continued)

POSTED DATE ³	AMOUNT
9/9/21	\$ 81.29
9/9/21	\$ 86.97
9/9/21	\$ 449.67
9/9/21	\$ 497.86
9/9/21	\$ (5,728.25)
9/9/21	\$ 5,728.25
9/10/21	\$ 317.22
9/10/21	\$ 35.71
9/13/21	\$ 38.43
10/11/21	\$ 6,356.45
10/11/21	\$ (6,356.45)
10/13/21	\$ 17.04
10/25/21	\$ 39.25
10/25/21	\$ 448.94
10/25/21	\$ 36.89
11/8/21	\$ 335.06
11/9/21	\$ 595.09
11/9/21	\$ (595.09)
11/9/21	\$ 424.20
11/9/21	\$ 36.99
11/11/21	\$ 39.17
12/3/21	\$ 974.66
12/10/21	\$ 3.31
12/30/21	\$ 74.09
12/30/21	\$ 80.42
12/30/21	\$ 84.55
12/30/21	\$ 365.32
12/30/21	\$ 813.15
1/4/22	\$ (974.66)
1/6/22	\$ 1,748.29
1/6/22	\$ (1,748.29)
1/19/22	\$ 21.61
1/31/22	\$ 0.16
1/31/22	\$ 84.58

DANBY SEWER (continued)

POSTED DATE ³	AMOUNT
9/9/2021	\$ 2,474.83
9/9/2021	\$ (34.20)
9/9/2021	\$ (68.05)
9/9/2021	\$ (136.59)
9/9/2021	\$ (10,281.27)
9/9/2021	\$ 10,281.27
9/15/2021	\$ 55.14
10/11/2021	\$ 13,763.77
10/11/2021	\$ (13,763.77)
10/13/2021	\$ 21.46
10/25/2021	\$ 87.23
11/8/2021	\$ 3,373.19
11/9/2021	\$ 93.05
11/9/2021	\$ (93.05)
11/9/2021	\$ 11,880.77
11/11/2021	\$ 86.14
12/3/2021	\$ 17,896.78
12/10/2021	\$ 4.17
12/30/2021	\$ 2,738.44
1/4/2022	\$ (17,896.78)
1/5/2022	\$ 204.41
1/6/2022	\$ 7,789.78
1/6/2022	\$ (7,789.78)
1/19/2022	\$ 27.26
1/31/2022	\$ 2,989.94
1/31/2022	\$ 123.40
2/4/2022	\$ 136.32
2/4/2022	\$ 2,989.96
2/4/2022	\$ (136.32)
2/4/2022	\$ (2,989.96)
2/22/2022	\$ 2,972.23
3/3/2022	\$ 54.04
3/3/2022	\$ 3,279.68
3/4/2022	\$ (54.04)

DANBY PURCHASED POWER CALCULATION
 For the 12 Months Ending March 31, 2022

DANBY WATER (continued)

POSTED DATE ³	AMOUNT
1/31/22	\$ 0.88
1/31/22	\$ 451.41
1/31/22	\$ 927.82
2/4/22	\$ 37.06
2/4/22	\$ 42.88
2/4/22	\$ 84.66
2/4/22	\$ 451.52
2/4/22	\$ 927.86
2/4/22	\$ (37.06)
2/4/22	\$ (42.88)
2/4/22	\$ (84.66)
2/4/22	\$ (451.52)
2/4/22	\$ (927.86)
2/22/22	\$ 40.98
2/22/22	\$ 446.01
2/22/22	\$ 839.86
2/22/22	\$ 37.16
2/22/22	\$ 84.53
3/3/22	\$ 35.84
3/3/22	\$ 40.96
3/3/22	\$ 93.12
3/3/22	\$ 475.84
3/3/22	\$ 896.00
3/4/22	\$ (35.84)
3/4/22	\$ (40.96)
3/4/22	\$ (93.12)
3/4/22	\$ (475.84)
3/4/22	\$ (896.00)
3/15/22	\$ 16.67
3/31/22	\$ 37.05
3/31/22	\$ 84.53
3/31/22	\$ 38.80
3/31/22	\$ 409.93
3/31/22	\$ 798.51

DANBY SEWER (continued)

POSTED DATE ³	AMOUNT
3/4/2022	\$ (3,279.68)
3/15/2022	\$ 21.00
3/31/2022	\$ 2,648.13
4/6/2022	\$ (2,579.61)
4/6/2022	\$ 2,579.61
4/7/2022	\$ 63.55
4/7/2022	\$ 3,432.80
4/7/2022	\$ (63.55)
4/7/2022	\$ (3,432.80)
4/8/2022	\$ 29.03
4/18/2022	\$ 55.98
4/18/2022	\$ 2,579.61

Total Danby Sewer \$ 40,288
SC Allocation \$ 8,861

DANBY PURCHASED POWER CALCULATION
 For the 12 Months Ending March 31, 2022

DANBY WATER (continued)

POSTED DATE³	AMOUNT
4/6/22	\$ (37.16)
4/6/22	\$ (39.17)
4/6/22	\$ (84.54)
4/6/22	\$ (434.55)
4/6/22	\$ 37.16
4/6/22	\$ 39.17
4/6/22	\$ 84.54
4/6/22	\$ 434.55
4/7/22	\$ 43.09
4/7/22	\$ 47.95
4/7/22	\$ 109.55
4/7/22	\$ 512.40
4/7/22	\$ 998.20
4/7/22	\$ (43.09)
4/7/22	\$ (47.95)
4/7/22	\$ (109.55)
4/7/22	\$ (512.40)
4/7/22	\$ (998.20)
4/18/22	\$ 816.99
4/18/22	\$ 37.16
4/18/22	\$ 39.17
4/18/22	\$ 84.54
4/18/22	\$ 434.55

Total Danby Water \$ 11,342
SC Allocation \$ 239

Notes:

1. Danby Customer Count based on CWSNC spreadsheet Danby 032122.xlsx, Cust.Cons.Assets Tab.
2. Based on CWSNC spreadsheet DR12 Response Bill Analysis 09.14.22 Update.xlsx, GL Detail Report Tab.
3. Used GL posted date for the month following service period based on review of ExpenseSmart data.

LIQUID & SOLID SLUDGE EXPENSES
 For the 12 Months Ending August 31, 2022

	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Cost Sep 2021 - Aug 2022
CWS Uniform - Water													
Belvedere Plantation ¹													0
Fairfield Mountain													0
Linsey Point	\$ 325	\$ 325	\$ 975				\$ 650	\$ 325	\$ 325			\$ 325	\$ 3,250
Riverwood													0
Sandy Trail													0
Sugar Mountain ²													0
Transylvania													0
Tuckahoe			\$ 650				\$ 650						\$ 1,300
Winston Pointe													0
Wood Trace													0
												Total	\$ 4,550
												Updated Schedule B-6a Amt (9/19/2022)	\$ 39,130
												Adjustment Amount	\$ 34,580

LIQUID & SOLID SLUDGE EXPENSES
 For the 12 Months Ending August 31, 2022

	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Cost Sep 2021 - Aug 2022
CWS Uniform - Wastewater													
Amherst	\$ 1,120			\$ 575	\$ 575		\$ 1,150		\$ 2,875		\$ 575		\$ 6,870
Ashley Hills CWS NC	\$ 6,700		\$ 8,820	\$ 1,150	\$ 6,995		\$ 3,975		\$ 9,100	\$ 8,745	\$ 3,975		\$ 49,460
Ashley Hills North													\$ -
Belvedere Plantation	\$ 4,635		\$ 4,950										\$ 9,585
Bent Creek	\$ 5,020		\$ 4,535	\$ 4,635		\$ 2,200	\$ 660			\$ 3,100		\$ 3,900	\$ 24,050
Brandywine Bay/Spooners Cr.	\$ 1,620		\$ 540		\$ 1,620			\$ 1,620					\$ 5,400
Carolina Pines				\$ 1,080				\$ 1,620					\$ 2,700
Carolina Trace	\$ 3,900			\$ 3,920		\$ 3,975			\$ 3,975	\$ 3,975			\$ 19,745
Corolla Light													\$ -
Danby ³	\$ 9,795			\$ 7,264	\$ 1,212	\$ 7,985	\$ 9,164	\$ 5,914	\$ 1,953	\$ 3,503	\$ 538	\$ 751	\$ 37,503
Elk River		\$ 560						\$ 1,450				\$ 1,200	\$ 3,210
Hestron Park			\$ 1,080		\$ 540								\$ 1,620
Independent/Hemby		\$ 1,112	\$ 1,590	\$ 2,391	\$ 978		\$ 415	\$ 1,069		\$ 1,201			\$ 8,755
Kings Grant - Raleigh		\$ 560	\$ 1,110		\$ 560		\$ 560		\$ 1,150	\$ 575			\$ 4,515

LIQUID & SOLID SLUDGE EXPENSES
 For the 12 Months Ending August 31, 2022

	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Cost Sep 2021 - Aug 2022
CWS Uniform - Wastewater (Continued)													
Kynwood Abington	\$ 11,352	\$ 5,676	\$ 3,612	\$ 1,548	\$ 1,548		\$ 3,540	\$ 3,840	\$ 1,992		\$ 2,988	\$ 1,548	\$ 37,644
Monteray Shores	\$ 8,100	\$ 450	\$ 4,050	\$ 3,150	\$ 3,050	\$ 2,013	\$ 900	\$ 675	\$ 1,800	\$ 9,100	\$ 11,110	\$ 10,080	\$ 54,478
Nags Head	\$ 7,650	\$ 1,350	\$ 1,350	\$ 2,700	\$ 2,150	\$ 1,800		\$ 1,800	\$ 4,050	\$ 3,600	\$ 3,780	\$ 4,880	\$ 35,110
Olde Point													\$ -
Queens Harbor	\$ 2,377			\$ 1,385		\$ 1,914				\$ 4,096			\$ 9,772
Regalwood	\$ 540		\$ 1,080										\$ 1,620
Riverpointe						2,865			1,000	1,000			\$ 4,865
Saddlewood							\$ 1,185	\$ 560					\$ 1,745
Sapphire Valley	\$ 2,640				\$ 2,800			\$ 2,800	\$ 2,800	\$ 2,960	\$ 2,960	\$ 2,960	\$ 19,920
Sugar Mountain	\$ 3,985	\$ 1,680		\$ 803		\$ 12,880			\$ 2,400			\$ 1,200	\$ 22,948
Transylvania	\$ 2,355		\$ 1,695		\$ 3,675	\$ 2,355	\$ 4,920	\$ 375	\$ 2,355	\$ 4,790	\$ 2,435		\$ 24,955
White Oak Estates	\$ 2,160		\$ 4,320		\$ 1,620								\$ 8,100
Willowbrook	\$ 560	\$ 560	\$ 560	\$ 575		\$ 575	\$ 575		\$ 1,725	\$ 575	\$ 575		\$ 6,280
Wolf Laurel				\$ 600	\$ 1,200						\$ 650		\$ 2,450
												Total	\$ 403,299
												Updated Schedule B-6a	\$ 464,136
												Adjustment Amount	\$ 60,837

LIQUID & SOLID SLUDGE EXPENSES
 For the 12 Months Ending August 31, 2022

	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Cost Sep 2021 - Aug 2022
Bradfield Farms/Fairfield Harbour/Treasure Cove - Water													
Fairfield Harbour													0
													0
													0
													0
Bradfield Farms/Fairfield Harbour/Treasure Cove - Wastewater													
Bradfield Farms/Larkhaven ⁴	\$ 9,646		\$ 7,210	\$ 6,020	\$ 5,879	\$ 4,769	\$ 2,800		\$ 2,000	\$ 2,000	\$ 7,578		\$ 31,045
Fairfield Harbour ⁵	\$ 8,640		\$ 4,320										\$ 8,640
													\$ 39,685
													\$ 90,677
													\$ 50,992

Notes

- 1 Moved Sep 2021 and Nov 2021 expenses of \$4,635 and \$4,950 respectively to Belvedere Plantation Wastewater.
- 2 Moved Feb 2022 expense of \$10,080 to Sugar Mountain Wastewater.
- 3 Danby wastewater sludge total reduced 22% to account for customers located in South Carolina. 355 SC wastewater customers out of a total of 1,614 wastewater customers served by Danby wastewater utility system (Reference CWSNC Spreadsheet Danby 033122.xlsx).
- 4 Removed Sep 2021 and Nov 2021 expenses of \$9,646 and \$7,210 respectively due to electrical upgrade capital project.
- 5 Removed Nov 2021 expense of \$4,320 due to capital project requiring tank inspection.

METER READING
 For the 12 Months Ending August 31, 2022

JOURNAL_CATEGORY		2021						2022						
Purchase Invoices		Sum of AMOUNT												
Rate Division	JOURNAL_DESCRIPTION	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
CWSNC Uniform - Water	CORVALLIS MICROTECHNOLOGY INC													
	JOANNA R. ALLEN													
	METERMARK	20,818.54	11,782.98	17,942.94	23,302.20	10,902.55	18,051.24	23,735.52	12,378.76	17,339.57	18,064.11	18,177.84	23,702.69	\$ 216,198.94
CWSNC Uniform - Sewer	SHERRY MAYBIN PEACOCK	595.00	631.40	823.20	439.60	406.70	502.40	502.40	502.40	502.40	502.40	502.40	502.40	\$ 6,412.70
	METERMARK	17.91	17.91	17.91	35.82		337.38	674.76		337.38	337.38	337.38	337.38	\$ 2,801.83
BF-FH-TC - Water	SOBWS	280.00	280.00	140.00	280.00		420.00	140.00	140.00	140.00	140.00	560.00	420.00	\$ 2,800.00
	METERMARK	3,388.82	3,391.53	3,391.53	3,687.43	1,370.66	7,402.57	6,739.12	3,622.02	5,181.10	5,190.71	5,022.06	6,828.91	\$ 55,216.46
BF-FH-TC - Sewer	METERMARK						346.99	693.98		346.99	346.99	346.99	707.12	\$ 2,789.06
Grand Total		25,100.27	16,103.82	22,315.58	27,745.05	12,679.91	26,640.58	32,765.78	16,643.18	23,847.44	24,581.59	24,946.67	32,849.12	\$ 286,218.99

UPDATED TEST YEAR CALCULATION SUMMARY

Rate Division	Sep 2021 - Aug 2022 Vendor	Expense Amount
CWSNC Uniform - Water	Metermark	\$ 216,199
	Sherry Maybin Peacock	\$ 6,413
	CWSNC U Water Total	\$ 222,612
CWSNC Uniform - Sewer	Metermark	\$ 2,802
	SOBWS	\$ 2,800
	CWSNC U Sewer Total	\$ 5,602
BF-FH-TC - Water	Metermark	\$ 55,216
BF-FH-TC - Sewer	Metermark	\$ 2,789
Combined Total		\$ 286,219

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. W-354, SUB 400

In the Matter of
Application by Carolina Water Service,)
Inc. of North Carolina for Authority to)
Adjust and Increase Rates and) **TESTIMONY OF**
Charges for Water and Sewer Utility) **EVAN M. HOUSER**
Service in All Service Areas of North) **PUBLIC STAFF –**
Carolina and Approval of a Three-Year) **NORTH CAROLINA**
Water and Sewer Investment Plan) **UTILITIES COMMISSION**

October 26, 2022

1 **Q. Please state your name, business address, and present**
2 **position.**

3 A. My name is Evan Houser. My business address is 430 North
4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am a
5 Public Utilities Engineer with the Water, Sewer, and Telephone
6 Division of the Public Staff – North Carolina Utilities Commission
7 (Public Staff).

8 **Q. Briefly state your qualifications and duties.**

9 A. My qualifications and duties are included in Appendix A.

10 **Q. Briefly explain the scope of your investigation regarding this**
11 **rate increase application.**

12 A. My areas of investigation in this proceeding have been the review of
13 the company records of Carolina Water Service, Inc. of North
14 Carolina (CWSNC or Company), including environmental
15 compliance and Department of Environmental Quality (DEQ)
16 records. I have also assisted the Public Staff Accounting Division
17 with the review of fuel for transportation.

18 **Environmental Compliance**

19 **Q. Describe the results of your investigation of DEQ Notices of**
20 **Violation and Fines.**

1 A. In response to Public Staff Data Request No. 10, CWSNC provided
2 information on findings of environmental noncompliance regarding
3 CWSNC's water and wastewater utility systems. As shown below in
4 **Houser Table 1**, CWSNC accrued a much larger number of
5 violations related to its wastewater systems than its water systems.

6 Houser Table 1 – CWSNC Violation Summary

Year	Wastewater Violations	Water Violations
2020	19	8
2021	41	4
2022	12	1

7 **Q. Describe CWSNC's wastewater violations and civil penalties.**

8 A. In 2020, 13 wastewater systems were issued a total of 19 Notices of
9 Violation (NOVs) by DEQ. In 2021, the number of wastewater
10 systems that were issued violations increased to 18 and the number
11 of NOVs issued in 2022 increased to a total of 41. From January
12 2022 through August 2022, eight wastewater systems were issued a
13 total of 12 NOVs.

14 Of the 72 total NOVs CWSNC was issued from January 2020
15 through August 2022, 53 of the 72 included an effluent limit
16 exceedance with some violations including multiple exceedances for
17 one or more parameters. A summary of parameter exceedances can
18 be found below in **Houser Table 2**.

1 Houser Table 2 – CWSNC Wastewater Parameter Exceedances

Parameter	NOVs Parameter Exceedance
Biological Oxygen Demand (BOD)	22
Fecal	14
Enterococci	8
Ammonia	8
Nitrogen	8
Phosphorus	5
Total Suspended Solids (TSS)	3

2 CWSNC reported its investigation of these parameter exceedances
3 and various resolutions. The reported resolutions included actions
4 such as implementing new operational procedures, training or
5 retraining staff, maintenance and/or repairs of equipment, installation
6 of new equipment, and planning for future plant upgrades. CWSNC
7 reported that six of the NOVs could have been related to weather
8 events.

9 CWSNC received ten NOVs for sanitary sewer overflows (SSO).
10 CWSNC reported that four SSO NOVs were due to debris or roots,
11 three were caused by operator error or equipment malfunction, and
12 two were caused by weather events. An additional SSO was
13 reportedly due to erosion exposing portions of the collection system.

14 CWSNC was issued three violations for failing to meet minimum
15 parameter limits, two violations for pH, and one violation for dissolved
16 oxygen. CWSNC reported retraining operations staff on maintaining

1 dissolved oxygen levels, pH meter calibration, and sample
2 technique.

3 Ashley Hills, Carolina Pines, Sugar Mountain, White Oak Estates,
4 Regalwood, Fairfield Harbour, Saddlewood, Queens Harbor,
5 Riverpointe, Brandywine Bay, Monteray Shores, and Carolina Trace
6 wastewater systems received three or more NOVs between July 1,
7 2020, and March 31, 2022.

8 The total wastewater civil penalties reported by CWSNC from 2020
9 through 2022 are summarized below in **Houser Table 3**.

10 Houser Table 3 – CWSNC Wastewater Penalties by Year

Year	Wastewater Penalties
2020	\$6,039
2021	\$5,548
2022	\$1,254

11 The wastewater civil penalties accrued from January 2022 to August
12 2022 are significantly less than the previous two years.

13 **Q. Describe CWSNC's water violations and civil penalties.**

14 A. Of the 13 water NOVs, eight were issued for maximum contaminant
15 level (MCL) exceedances, three for failure to calibrate the effluent
16 flow meter of a water treatment plant annually, and two for failure to

1 monitor. CWSNC has not received any civil penalties for water
2 system NOVs.

3 The Zemosa Acres water system was issued three violations for
4 exceeding the total trihalomethanes (TTHM) locational running
5 annual average (LRAA) in the first three quarterly monitoring periods
6 of 2021. CWSNC indicated in its environmental compliance
7 submission that it has installed automatic flushing devices to resolve
8 the issue. The system did not receive another MCL violation for
9 TTHM after the third quarter of 2021, indicating that the issue has
10 been resolved.

11 The remaining five MCL exceedances include a combined radium
12 LRAA exceedance, a TTHM exceedance, and haloacetic acid
13 (HAA5) exceedance in three water systems. CWSNC installed a
14 treatment system at the Elk River water system following its radium
15 exceedance in 2020. A chlorine injection point was relocated to lower
16 the timeframe for disinfection byproducts (DBP) to form in the
17 Fairfield Harbour water system, addressing the TTHM exceedance
18 that was received in November of 2020. The Brandywine Bay water
19 system was switched to chloramines for disinfection to resolve the
20 HAA5 exceedance that it received in February of 2021. The
21 remaining two HAA5 exceedances occurred in the Carolina Forest
22 and Woodrun water systems, which receive purchased water from

1 the City of Concord. CWSNC has worked with DEQ and the City of
2 Concord to address HAA5 exceedances in those water utility
3 systems.

4 These five MCL exceedance violations did not recur after the initial
5 violation, indicating that the issues are not ongoing. The Company
6 received two monitoring violations, one for failing to sample DBPs in
7 the third quarter of 2020 and another for failing to sample total
8 coliform in June of 2022.

9 CWSNC reported receiving an Administrative Order for the
10 Brandywine Bay water system dated September 1, 2020. After
11 reviewing the letter from NCDEQ, I determined that the letter was not
12 an Administrative Order and is instead a notification that CWSNC
13 must submit a plan for returning the Brandywine Bay water system
14 to compliance. CWSNC reported that the disinfection system would
15 be switched to chloramines to address the DBP levels. DEQ stated
16 that the system had returned to compliance for TTHM and HAA5
17 MCLs referenced in the letter.

18 **Q. Describe any other findings of noncompliance issues.**

19 A. CWSNC was issued 17 Notices of Deficiency (NOD) related to its
20 wastewater systems. Six NODs were related to limit exceedances
21 three for failing to sample, two for failing to report monthly flow and

1 coliform results, two for Sanitary Sewer Overflows, two for not having
2 a Sewer Use Ordinance or Fats, Oils, and Grease programs, and
3 one for failure to collect a temperature reading. The remaining NOD
4 was issued after DEQ noted that a sludge blanket was not being kept
5 at acceptable levels.

6 For the water systems, Connetsee Falls water system had a fluoride
7 secondary MCL exceedance in 2021, requiring CWSNC to post a
8 Special Public Notice. The Saddlewood water system exceeded the
9 lead action level during the 2020 to 2022 three-year monitoring
10 period, for which it sampled in 2021, requiring CWSNC to submit a
11 corrosion control treatment recommendation to DEQ. CWSNC was
12 issued a NOD for the Heather Glen water system after the system
13 exceeded the manganese action level in 2021.

14 **Q. Summarize the state of CWSNC's water quality.**

15 A. CWSNC's water systems are generally in compliance with federal
16 and state regulations, testing requirements, and primary water
17 quality standards. CWSNC's water systems have had some issues
18 with TTHMs and HAA5s LRAA exceedances; however, CWSNC has
19 indicated that it has addressed these issues.

20

1 Fuel for Transportation

2 **Q. Describe your investigation of CWSNC's fuel for transportation**
3 **expense.**

4 A. I reviewed CWSNC's fuel for transportation expense for each rate
5 entity using data provided by the Company in response to Public
6 Staff Data Request Nos. 16 and 28. The Company provided the
7 monthly fuel consumption and cost between January 2019 and
8 August 2022, as well as percentages of its total fuel consumption by
9 fuel type and percentages allocated to each rate entity. In its
10 application, CWSNC based the fuel for transportation expense on
11 the per books value of the test year, the 12-months ending March 31,
12 2022, and added an inflator rate to adjust to each of the years in the
13 Water and Sewer Investment Plan (WSIP). The Company uses
14 entity-specific inflator rates rather than one universal inflator rate for
15 all rate entities.

16 I determined a cost per gallon value of \$3.13 using a 24-month
17 average of fuel costs from the U.S. Energy Information
18 Administration (EIA). The test year average and current EIA data
19 trends support this cost per gallon. I recommend that this cost be
20 used for the base year and all three years of the WSIP, if approved.

1 The cost per gallon of \$3.13 incorporates both gasoline and diesel
2 prices that have been averaged over a 24-month period ending
3 October 3, 2022. The gasoline and diesel costs were combined using
4 a weighted average, based on the Company's 2019 to 2022 usage
5 (approximately 95% gasoline and 5% diesel). The average cost per
6 gallon incurred by the Company during the test year, 12-month
7 period ending March 31, 2022, was \$3.12 per gallon across all its
8 rate entities. The Company's average cost per gallon for fuel during
9 the 24-month period ending August 31, 2022, was \$3.10 per gallon.
10 Based on the EIA Lower Atlantic Retail Gasoline and Diesel
11 (PADD1C) data, the cost per gallon of gasoline has been trending
12 downwards since June of 2022 after peaking at \$4.69 per gallon on
13 June 13, 2022. The price of diesel fuel has been decreasing since
14 June 20, 2022, after it peaked at \$5.76 per gallon. **Houser Exhibit 1**
15 includes the fuel prices by date.

16 I applied the \$3.13 cost per gallon to the Company's average fuel
17 consumption for its rate entities to calculate the fuel for transportation
18 expense. Based on this analysis, the Public Staff recommends the
19 following expense levels for Fuel for Transportation:

20

	<u>Public Staff Recommendation</u>
1	
2	Uniform Water \$185,832
3	Uniform Sewer \$110,868
4	BFFFHTC Water \$ 22,327
5	BFFHTC Sewer \$ 22,854

6 My calculations are shown in **Houser Exhibit 2**.

7 **Q. Describe the applicability of inflator rates to fuel for**
8 **transportation for Rate Years 1 through 3 of the WSIP.**

9 A. CWSNC proposed in its application inflator rates for Rate Year 1
10 between 9.61% and 8.91% across all its rate entities. The
11 Company's inflator rates for Rate Year 2 were lower, ranging
12 between 2.59% and 3.89% for the transportation fuel expense. The
13 inflator rates did not change between Rate Years 2 and 3. These
14 proposed inflator rates are calculated based on two factors, the
15 Company's expected growth as well as expected increased cost.

16 Based on data provided by the Company in response to Public Staff
17 Data Request No. 28, CWSNC's fuel consumption for transportation,
18 by volume, has decreased by approximately 799 gallons, or 2.7%
19 annually, between 2019 and 2022, from an approximate average of
20 9,986 gallons per month in 2019, to approximately 9,187 gallons per
21 month so far in 2022.

1 The State of California Public Utilities Commission issued a
2 memorandum on July 29, 2022, titled "Public Advocates Office:
3 Estimates of Non-labor and Wage Escalation Rates for 2022 through
4 2026 from the July 2022 IHS Global Insight U.S. Economic Outlook."
5 The memorandum is included as **Houser Exhibit 3**. This
6 memorandum includes recommended non-labor inflation rates to
7 2026. The rates recommended by the California Public Utilities
8 Commission are -1.4%, -2.3%, and -0.3% for 2023, 2024, and 2025,
9 respectively. Based on this resource, I do not recommend that a
10 positive inflation rate be used in the calculation of the fuel for
11 transportation adjustment to the test year.

12 Due to a decreasing consumption trend and negative non-labor
13 inflation rate across Rate Years 1, 2 and 3, the Public Staff
14 recommends that an inflator rate, including growth and cost inflation,
15 not be used for the fuel for transportation expense. The Public Staff,
16 however, recommends the fuel for transportation expense levels
17 calculated in **Houser Exhibit 2** be applied to the proposed base case
18 and the Rate Years 1, 2, and 3 of the WSIP.

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

20 A. Yes, it does.

QUALIFICATIONS AND EXPERIENCE

EVAN M. HOUSER

I graduated from North Carolina State University, earning a Bachelor of Science Degree in Environmental Engineering. I am a certified Engineering Intern in the state of North Carolina. I worked for the North Carolina Department of Environmental Quality (DEQ), Public Water Supply Section for approximately three years prior to joining the Public Staff in 2022. Prior to working for DEQ, I worked for an engineering consulting firm: Highfill Infrastructure Engineering, P.C.

My duties with the Public Staff are to monitor the operations of regulated water and wastewater utilities with regards to rates and service. These duties include conducting field investigations, reviewing, evaluating, and recommending changes in the design, construction, and operations of regulated water and wastewater utilities, presenting expert testimony in formal hearings, and presenting information, data, and recommendations to the Commission.

EIA Lower Atlantic (PADD1C) Retail Prices

Date	Gasoline	Diesel
October 12, 2020	\$2.038	\$2.332
October 19, 2020	\$2.015	\$2.316
October 26, 2020	\$1.982	\$2.311
November 2, 2020	\$1.951	\$2.284
November 9, 2020	\$1.922	\$2.296
November 16, 2020	\$1.949	\$2.337
November 23, 2020	\$1.954	\$2.365
November 30, 2020	\$1.971	\$2.400
December 7, 2020	\$2.024	\$2.433
December 14, 2020	\$2.019	\$2.471
December 21, 2020	\$2.081	\$2.533
December 28, 2020	\$2.092	\$2.534
January 4, 2021	\$2.108	\$2.540
January 11, 2021	\$2.201	\$2.608
January 18, 2021	\$2.235	\$2.627
January 25, 2021	\$2.267	\$2.642
February 1, 2021	\$2.270	\$2.675
February 8, 2021	\$2.342	\$2.740
February 15, 2021	\$2.365	\$2.798
February 22, 2021	\$2.523	\$2.921
March 1, 2021	\$2.550	\$3.018
March 8, 2021	\$2.605	\$3.027
March 15, 2021	\$2.723	\$3.064
March 22, 2021	\$2.755	\$3.064
March 29, 2021	\$2.718	\$3.041
April 5, 2021	\$2.699	\$3.018
April 12, 2021	\$2.695	\$3.001
April 19, 2021	\$2.688	\$2.993
April 26, 2021	\$2.671	\$2.980
May 3, 2021	\$2.684	\$3.004
May 10, 2021	\$2.782	\$3.051
May 17, 2021	\$2.873	\$3.130
May 24, 2021	\$2.861	\$3.137
May 31, 2021	\$2.848	\$3.135
June 7, 2021	\$2.841	\$3.163
June 14, 2021	\$2.889	\$3.181
June 21, 2021	\$2.872	\$3.175
June 28, 2021	\$2.883	\$3.191
July 5, 2021	\$2.923	\$3.204
July 12, 2021	\$2.923	\$3.213
July 19, 2021	\$2.924	\$3.211
July 26, 2021	\$2.903	\$3.213
August 2, 2021	\$2.915	\$3.238
August 9, 2021	\$2.946	\$3.230
August 16, 2021	\$2.942	\$3.212
August 23, 2021	\$2.920	\$3.186
August 30, 2021	\$2.907	\$3.201
September 6, 2021	\$2.960	\$3.240
September 13, 2021	\$2.940	\$3.246
September 20, 2021	\$2.986	\$3.266
September 27, 2021	\$2.972	\$3.288
October 4, 2021	\$2.979	\$3.362
October 11, 2021	\$3.085	\$3.484
October 18, 2021	\$3.123	\$3.582
October 25, 2021	\$3.238	\$3.621

EIA Lower Atlantic (PADD1C) Retail Prices

Date	Gasoline	Diesel
November 1, 2021	\$3.242	\$3.631
November 8, 2021	\$3.229	\$3.624
November 15, 2021	\$3.209	\$3.620
November 22, 2021	\$3.237	\$3.595
November 29, 2021	\$3.222	\$3.586
December 6, 2021	\$3.170	\$3.556
December 13, 2021	\$3.137	\$3.521
December 20, 2021	\$3.107	\$3.496
December 27, 2021	\$3.092	\$3.488
January 3, 2022	\$3.087	\$3.490
January 10, 2022	\$3.076	\$3.547
January 17, 2022	\$3.110	\$3.624
January 24, 2022	\$3.122	\$3.686
January 31, 2022	\$3.207	\$3.761
February 7, 2022	\$3.294	\$3.896
February 14, 2022	\$3.339	\$3.980
February 21, 2022	\$3.390	\$4.014
February 28, 2022	\$3.466	\$4.069
March 7, 2022	\$3.972	\$4.919
March 14, 2022	\$4.210	\$5.264
March 21, 2022	\$4.044	\$5.110
March 28, 2022	\$3.982	\$5.145
April 4, 2022	\$3.958	\$5.095
April 11, 2022	\$3.865	\$5.018
April 18, 2022	\$3.817	\$5.033
April 25, 2022	\$3.864	\$5.086
May 2, 2022	\$3.947	\$5.401
May 9, 2022	\$4.038	\$5.580
May 16, 2022	\$4.250	\$5.605
May 23, 2022	\$4.319	\$5.568
May 30, 2022	\$4.355	\$5.552
June 6, 2022	\$4.547	\$5.707
June 13, 2022	\$4.691	\$5.736
June 20, 2022	\$4.615	\$5.762
June 27, 2022	\$4.498	\$5.699
July 4, 2022	\$4.386	\$5.597
July 11, 2022	\$4.273	\$5.479
July 18, 2022	\$4.133	\$5.340
July 25, 2022	\$3.979	\$5.154
August 1, 2022	\$3.832	\$5.027
August 8, 2022	\$3.682	\$4.874
August 15, 2022	\$3.571	\$4.802
August 22, 2022	\$3.476	\$4.795
August 29, 2022	\$3.491	\$4.992
September 5, 2022	\$3.416	\$4.950
September 12, 2022	\$3.346	\$4.865
September 19, 2022	\$3.297	\$4.800
September 26, 2022	\$3.278	\$4.752
October 3, 2022	\$3.183	\$4.716
24 Month Average	\$3.102	\$3.742

Fuel Expense Calculations

1	<u>Gasoline</u>		
2	24 Month Average Price per Gallon	\$3.102	Houser Exhibit 1
3	Percentage of Total Fuel Consumption	95.25%	Calculation based on Data Request No. 28
4	Gas Component of Combined Price per Gallon	\$2.954	Line 2 * Line 3
5			
6	<u>Diesel</u>		
7	24 Month Average Price per Gallon	\$3.742	Houser Exhibit 1
8	Percentage of Total Fuel Consumption	4.75%	Calculation based on Data Request No. 28
9	Diesel Component of Combined Price per Gallon	\$0.178	Line 7 * Line 8
10			
11	Recommended Fuel Cost Per Gallon	\$3.13	Line 4 + Line 9
12			
13	<u>Combined Fuel Consumption</u>		
14	Annual Average Fuel Consumption (gallons) ¹	112,485	Calculation based on Data Request No. 28
15	Total Fuel Expense For Test Year	\$346,663	Calculation based on Data Request No. 28
16	Total Fuel Expense Per Books	\$336,392	Company Application
17	Percentage Allocated to Rate Entities	97.04%	Line 16 / Line 15
18	Average Fuel Consumption for Rate Entities	109,152	Line 14 * Line 17
19			
20	<u>Recommended Expense</u>	\$341,882	Line 11 * Line 18
21			
22	<u>Allocation Percent by Entity</u>		
23	CWSNC Uniform - Water	54.36%	Provided by CWSNC in Data Request No. 28
24	CWSNC Uniform - Sewer	32.43%	Provided by CWSNC in Data Request No. 28
25	BF-FH-TC - Water	6.53%	Provided by CWSNC in Data Request No. 28
26	BF-FH-TC - Sewer	6.68%	Provided by CWSNC in Data Request No. 28
27			
28	<u>Recommended Expense by Entity</u>		
29	CWSNC Uniform - Water	\$185,832	Line 20 * Line 23
30	CWSNC Uniform - Sewer	\$110,868	Line 20 * Line 24
31	BF-FH-TC - Water	\$22,327	Line 20 * Line 25
32	BF-FH-TC - Sewer	\$22,854	Line 20 * Line 26

Note:

(1) DR No. 28 includes Fuel which is not allocated to the CWSNC Uniform or BF-FH-TC entities.

State of California

Public Utilities Commission, San Francisco

MEMORANDUM

Date: July 29, 2022
 To: R. Rauschmeier, Program Manager, Public Advocates Office
 From: R. Keowen, Financial Examiner, Public Advocates Office, Water Branch
 File No. : S-2559
 Subject: Public Advocates Office: Estimates of Non-labor and Wage Escalation Rates for 2022 through 2026 from the July 2022 IHS Global Insight U.S. Economic Outlook

The purpose of the monthly Escalation Memorandum is to inform division management of the trends in the general price level of utility non-labor expenses and wage contracts. Data are provided for 13 years, which include eight historic years, the estimated current year, and four forecasted years.

The following table summarizes the major changes in forecasted labor and non-labor inflation for years 2022 through 2026. Data for 2021 are provided as benchmarks. The factors for June 2022 are presented for comparison.

	Labor		Non-Labor	
	<u>July-22</u>	<u>June-22</u>	<u>July-22</u>	<u>June-22</u>
2021	1.2%	1.2%	14.7%	14.7%
2022	4.7%	4.7%	11.1%	7.7%
2023	7.8%	7.5%	-1.4%	-3.3%
2024	3.3%	3.4%	-2.3%	-2.5%
2025	1.9%	1.7%	-0.3%	0.2%
2026	1.9%	2.0%	0.6%	1.0%
Compounded	22.5%	22.2%	23.02%	17.3%

A more extensive explanation of the derivation and use of the above factors and a complete presentation of the escalation factors from 2014 through 2026 are provided in the attached appendix.

APPENDIX: EXPLANATION OF ESCALATION RATES

The recommended NON-LABOR ESCALATION RATES for 2014 through 2026 are presented in Table A. The values for 2014 through 2021 are provided for comparison.

**TABLE
A**

Year	Non-Labor Inflation Rate*
2014	0.9%
2015	-2.8%
2016	-1.1%
2017	3.7%
2018	4.1%
2019	0.1%
2020	-0.5%
2021	14.7%
2022	11.1%
2023	-1.4%
2024	-2.3%
2025	-0.3%
2026	0.6%

* Revised 07/17/97 based on 1995 re-weighted purchases. [Source: BLS, Supplement to Producer Price Indexes, 1995, Table 12]

These escalation rates represent the calendar year average, or alternatively stated, the 12-month-ended spot rate at mid-year. These price factors have not been adjusted for real growth of expensed materials and services. The escalation factors are generated from a composite index of 10 Wholesale Price Indexes (WPI) for materials and supplies expenses and the CPI-U weighted 5% for services and consumer-related items. **These non-labor rates are not applicable to plant, contracted services, loans, insurance, rents, and pensions and other utility employee benefits. Escalation of these expenses is addressed on pages 10-15 of D.04-06-018/R.03-09-005 (Water Rate Case Plan).**

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. W-354, SUB 400

In the Matter of)
Application by Carolina Water Service,)
Inc. of North Carolina for Authority to) **TESTIMONY OF**
Adjust and Increase Rates and) **JAY B. LUCAS**
Charges for Water and Sewer Utility) **PUBLIC STAFF –**
Service in All Service Areas of North) **NORTH CAROLINA**
Carolina and Approval of a Three-Year) **UTILITIES COMMISSION**
Water and Sewer Investment Plan)

October 26, 2022

1 **Q. Please State Your Name, Business Address, And Present**
2 **Position.**

3 A. My name is Jay B. Lucas. My business address is 430 North
4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am the
5 Manager of the Electric Section – Operations and Planning in the
6 Energy Division of the Public Staff – North Carolina Utilities
7 Commission (Public Staff). I am testifying in this general rate case
8 based on my past experience as an engineer in the Public Staff
9 Water & Sewer Division.

10 **Q. Briefly State Your Qualifications And Duties.**

11 A. My qualifications and duties are included in Appendix A.

12 **Q. What Is The Purpose Of Your Testimony?**

13 A. The purpose of my testimony is to provide recommendations to the
14 Commission on the plant-in-service expenditures of Carolina Water
15 Service, Inc. of North Carolina (CWSNC or the Company) in this
16 general rate case proceeding.

17 **Q. Please provide the background for CWSNC's plant-in-service.**

18 A. CWSNC provided the dollar amounts of its gross and net plant-in-
19 service in Appendix 2, Schedule A of its initial application filed on
20 July 1, 2022, which includes the Company's water and sewer

1 systems with uniform rates (Uniform) and its Bradfield Farms,
 2 Fairfield Harbor, and Treasure Cove (BF-FH-TC) rate divisions.
 3 CWSNC provided detailed lists of gross plant-in-service in Appendix
 4 2, Schedule A-1a. Net plant-in-service is gross plant-in-service
 5 minus accumulated depreciation. CWSNC's gross plant-in-service in
 6 its application is summarized in **Lucas Table 1** below:

Lucas Table 1 – CWSNC Appendix 2, Schedule A Gross Plant-In-Service (\$)			
System	Total per Books	Pro-Forma Adjustment	Historical Test Year as Adjusted
Uniform Water	126,050,522	3,409,066	129,459,588
Uniform Sewer	112,861,840	3,105,253	115,967,093
BF-FH-TC Water	7,156,465	227,363	7,383,828
BF-FH-TC Sewer	16,704,595	709,516	17,414,111

- 7 **Q. Which plant-in-service improvement projects did you review?**
- A. A list of plant-in-service projects that I reviewed is shown in **Lucas Exhibit 1**, which includes the description provided by CWSNC.
- 8 **Q. Did you review any of CWSNC's capital improvement plan**
 9 **projects?**
- 10 A. Yes. CWSNC provided a capital improvement plan as Appendix 11
 11 to its application. I assisted Public Staff witness Charles Junis in

1 reviewing the capital improvement projects shown in **Lucas Exhibit**

2 **2.**

3 **Q. Do you recommend any changes to CWSNC's cost recovery of**
4 **plant-in-service improvement projects or capital improvement**
5 **projects that you reviewed?**

6 A. No, I do not.

7 **Q. Do you have any other recommendations for CWSNC?**

8 A. Yes. I recommend that CWSNC require more detailed cost estimates
9 from its engineering consultants. CWSNC had an engineering
10 consultant prepare an estimate for relocating a water line for the
11 Pinnacle Shores system. The cost estimate attached as **Lucas**
12 **Exhibit 3** shows that the consultant did not provide separate
13 estimates for each line item but instead provided a total lump-sum
14 estimate for the project, which in effect prevents CWSNC from
15 determining its accuracy.

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

17 A. Yes, it does.

QUALIFICATIONS AND EXPERIENCE

JAY B. LUCAS

I graduated from the Virginia Military Institute in 1985, earning a Bachelor of Science Degree in Civil Engineering. Afterwards, I served for four years as an engineer in the U. S. Air Force performing many civil and environmental engineering tasks. I left the Air Force in 1989 and attended the Virginia Polytechnic Institute and State University (Virginia Tech), earning a Master of Science degree in Environmental Engineering. After completing my graduate degree, I worked for an engineering consulting firm and worked for the North Carolina Department of Environmental Quality in its water quality programs. Since joining the Public Staff in January 2000, I have worked on utility cost recovery, renewable energy program management, customer complaints, and other aspects of utility regulation. Since September 2020, I have been the Manager of the Electric Section – Operations and Planning in the Public Staff’s Energy Division. I am a licensed Professional Engineer in North Carolina.

DR#62 - Revised DR#32
 CWSNC W-354, Sub 400

Project #	Project Name	Description
2019029	NC - 2020 - Abington - Abington Sewer - CP 2019029	Project consists of replacing approximately 1,100 LF of existing 8" PVC sanitary line approximately 30 LF away from the existing creek banks and abandonment/removal of existing sewer line in multiple locations within the creek.
2020161	NC - 2021 - Bradfield Farms - WWTP Rehab - Electrical CP 2020161	Based on Elect Engineering's findings, they provided an urgent safety notice on July 21, 2020, indicating the electrical system presents an imminent danger to the health and safety of anyone working on or near the electrical equipment. The report provided immediate corrective actions to be made, which included running copper cable throughout the WWTP to ground the fence and control panels to reduce the potential for electrical shock. Additionally, the report included long term corrective actions, which includes replacing the existing control panels, associated electrical conductors, and appurtenances. The control panels, conductor, and appurtenances are approximately 30 years old and are at the end of their life and are technologically outdated.
2021001	NC - 2021 - Apple Valley - Sewer LS Replacement - CP 2021001	Carolina Water Service, Inc. of North Carolina (CWSNC) provides wastewater service to the Apple Valley community in Lake Lure, North Carolina. The Lift station #1 within this community is a dry can station, which poses a hazard since it is a confined space. CWSNC desires to convert the lift stations by: installing submersible pumps in the existing wet wells, a new valve vault with associated piping, upgraded electrical systems and abandoning the old cannister-style lift stations. The Apple Valley Lift Station will be equipped with a manual transfer switch and portable generator hookup.
2021003	NC - 2021 - Bear Paw - Sewer LS Replacement - LS #3 CP 2021003	Carolina Water Service, Inc. of North Carolina (CWSNC) provides wastewater service to the Bear Paw community in Murphy, North Carolina. The Lift station #3 within this community is a dry can station, which poses a hazard since it is a confined space. CWSNC desires to convert the lift stations by: installing submersible pumps in the existing wet wells, a new valve vault with associated piping, upgraded electrical systems and abandoning the old cannister-style lift stations. The Bear Paw Lift Station will be equipped with a manual transfer switch and portable generator hookup.

2021012	NC - 2021 - Linville Ridge - Split Rock booster replacement CP 2021012	The current pumping station still has some life left except that the parts for the pumps are getting more difficult to find. The inherent features of the original pumping equipment and the check valves include some normal leakage around the pump shafts and from the valve actuation ports. This leakage can keep the atmosphere of the pumping station damp at times, leading to corrosion and other deterioration. It is proposed to install new high efficiency pumps and associated variable speed motors and controls. This change will allow water to be delivered more efficiently and economically and will allow <u>pressure surges in the discharge piping and distribution</u>
2021013	NC - 2021 - Mt. Mitchell - 30k ground storage tank CP 2021013	Carolina Water Service of North Carolina (CWSNC) owns and operates the water system for the Mt. Mitchell community located on Rising Sun Lane in Yancey County, North Carolina. The water system currently serves 234 customers total. The existing 20,000-gallon ground storage tank is past its useful life and is currently leaking due to holes and deterioration and requires replacing.
2021019	NC - 2021 - Sapphire Valley - Sewer LS Replacement CP 2021019	Carolina Water Service, Inc. of North Carolina (CWSNC) provides wastewater service to the Sapphire Valley community in Sapphire, North Carolina. The Lift station #41 within this community is a dry can station, which poses a hazard since it is a confined space. CWSNC desires to convert the lift stations by installing submersible pumps in the existing wet wells, a new valve vault with associated piping, upgraded electrical systems and abandoning the old cannister-style lift stations. The Sapphire Valley Lift Station will be equipped with an automatic transfer switch and permanent generator.

2021084	NC - 2021 - Connetsee Falls WWTP SCADA System CP 2021084	The Connetsee Falls WWTP was constructed in 2018. As a part of the plant construction, an overall SCADA design for the plant was not provided during the course of the project. This SCADA upgrades are intended to provide improved monitoring and control of the plant to ensure regulatory requirements are being met along with providing improved operational efficiency.
2021218	NC - 2021 - Abington WWTP - Generator Replacement CP 2021218	The existing 30+ year old 150kW generator is limited to its capacity and reliability during electrical emergency power service. It has a separate fuel tank with an aluminum overflow tank with copper tubing running under ground to the generator. There has been a high demand for repairs and replacement parts, due to the age of the equipment, replacement parts are becoming hard to find. Well 3 and 4 currently require portable generators being brought onsite to
2021231	NC - 2021 - Watauga Vista - Ground Storage Tank Rehabilitation CP 2021231	Carolina Water Service, Inc. of North Carolina (CWSNC) owns and operates the water system in the Watauga Vista community in North Carolina. The Watauga Vista tank 1, 2, and 3 ground storage tanks (GSTs) are 10,000-gallons each. The Watauga Vista tank 4 is 3,000-gallons. Based on an
2021236	NC - 2021 - Fairfield Harbour - Sound Attenuating Fence CP 2021236	Carolina Water Service of North Carolina (CWSNC) owns and operates the Fairfield Harbour Wastewater Treatment Plant (WWTP) located near 200 Broad Creek Road, New Bern, North Carolina. The system is 15 – 20 years old with 917 connections and a design capacity of 600,000 gallons per day (GPD). CWSNC has received noise complaints related to the aeration blowers within the Fairfield Harbour community and has measured volumes of 85 decibels (dBs).

2022005	NC - 2022 - Connestee Falls - line replacement CP 2022005	McKim & Creed did leak detection locations. They provided physical marks where leaks were discovered. Ops Team then met with our contractors that did the physical work to repair the leaks. Replaced short pieces of pipe, installed repair bands or couplings, replaced leaking valves or blow off hydrants.
2022014	NC - 2022 - Hemby Acres - Replace clay pipe and rehab manholes CP 2022014	Carolina Water Service, Inc. of North Carolina (CWSNC) provides wastewater service to the Hemby Acres community in Indian Trail, North Carolina. The system consists of 726 customers including the Oak Grove Subdivision. The wastewater collection system (WWCS) was built in late 1960s and needs repair due to end of useful life. The pipe material is vitrified clay pipe (VCP). CWSNC desires to replace old or broken pipes and line manholes with CTR coating. The manhole lining will be approximately 98 vertical feet and consists of the following manhole numbers: MH8, MH9, MH20, MH21, MH25, MH28, MH44, MH45, MH46, MH51, MH 68, MH69, MH70, MH88, MH 89, MH 90, MH102, MH137.
2022025	NC - 2022 - Sherwood Forest - Leak Detection/Water line replacement CP 2022025	Carolina Water Service, Inc. of North Carolina (CWSNC) owns and operates the water system in the Sherwood Forest community in Brevard, North Carolina. The Sherwood Forest community has 272 connections for the water system and was installed in the 1960s. The Sherwood Forest water system experiences water loss along several roadways identified by operations. The lines need to have accurate leak detection <u>location performed and potentially replace lines and</u>
2022067	NC - 2022 - Sapphire Valley - Ph 2 Booster Pump CP 2022067	Carolina Water Service, Inc. of North Carolina (CWSNC) owns and operates the water system in the Sapphire Valley community in North Carolina. The Sapphire Valley community has 968 connections for the water system. The Sapphire Valley well #10 hydrotank is a 5,000-gallon tank erected in 2007 located at Cherokee Trail in Sapphire, North Carolina. CWSNC desires to complete the project in 2 phases. Phase 1 will consist of 1) removing well #10 hydrotank, 2) expanding existing wellhouse at 2195 Cherokee trail to accommodate <u>future VFD Booster pump, and 3) updating the piping for the</u>

2022230	NC - 2022 - Carolina Trace - Bridge Gravity Sewer Line Replacement CP 2022230	A normally submerged sewer line was found damaged during recent inspection while lake was lowered. Select sections of the line with hangers need to be replaced ASAP prior to lake fill. Activities to be performed under this project will involve the mobilization of equipment, transport / disposition of material, laying of 40 tons of stone, providing concrete support block and replacing approximately 120' of ductile 8" pipe.
2025020	NC-2025-Sapphire Valley-Sewer LS Improvement-#40 stationary generator CP2025020	Carolina Water Service, Inc. of North Carolina (CWSNC) provides wastewater service to the Sapphire Valley community in Sapphire, North Carolina. The Sapphire Valley wastewater collection system has 1,748 connections and the age of the system is approximately late 1960s. The Lift station #40 within this community is located near a waterway and it is a hazard for the lift station to lose electricity due to the proximity to the waterway. CWSNC desires to add a concrete pad, stationary generator, propane storage and automatic transfer switch to LS #40.

Project #	Project Name	Description
2024006	Danby WWTP replacement	Replace existing 630,000 gallon per day wastewater treatment plant with a 630,000 gallon per day sequencing batch reactor plant.
2018048	Brandywine Bay WWTP	Replace existing 150,000 gallon per day wastewater treatment plant with a 300,000 gallon per day sequencing batch reactor plant.
2021007	Crystal Mountain Booster	Replace existing booster pumps with new variable speed pumps.
2022031	Whispering Pines Chemical Feed	Add orthophosphate chemical feed system.
2021006	Crestview Well Fracking	Hydrofracturing of Well No. 1 to improve flow rate.
2022002	Bent Creek Drill and Develop Well	Drill new well and support structures including water treatment system.
2022020	Kings Grant WWTP Improvement	Electrical system upgrade, partial replacement of plant equipment including ultraviolet light system.
2021013	Mt. Mitchell – ground storage tank	Replace 30,000 gallon ground level storage tank.
2020163	The Pointe – Interconnect with Town of Mooresville	Discharge from water softener system will be connected to the Town of Morrisville.
2025001	Abington Rehab manholes and lift station	Add coating to the manholes and lift station to prevent inflow and infiltration of water.
2022023	Pinnacle Shores Water Main relocation – DOT road widening	Build new water lines and valves to accommodate DOT road widening.
2025013	Grandview – Replace main and valves	Replace main and valves and eliminate sections of system that do not have customers.
Various	Wastewater collection system improvements	Clean, video, rehabilitate, and repair various wastewater collection systems.

ESTIMATION FOR THE UTILITIES, INC.						
DEWBERRY ENGINEERS INC. 2610 Wycliff Road Suite 410 Raleigh, NC 27607 919-881-9939		DESCRIPTION & LOC. CITY COUNTY STATE PROJECT NO. CALC'D BY CHEK'D BY		Highway 150 from Catawba Co crossing Lake Norman in to Town of Mooresville		SHEET 1 OF 1
				Mooresville		
				Iredell / Catawba		
				R-2307B		
				Owen Britt	Date:	
L. Mitchell	Date:	1/14/2019				
ITEM NO.						
LINE NO.	DESC. NO.	SECT. NO.	ITEM DESCRIPTION	UNIT	QUAN	AMOUNT
1	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPA	TON	1	
2	5325600000-E	1510	6" WATER LINE	LF	1799	
3	5325800000-E	1510	8" WATER LINE	LF	5877	
4	5329000000-E	1510	FITTINGS	LB	15000	
5	5540000000-E	1515	6" VALVE	EA	6	
6	5546000000-E	1515	8" VALVE	EA	6	
7	5571800000-E	1515	8" TAP SLV & VALVE	EA	1	
8	5648000000-N	1515	RELOCATE WATER METER	EA	1	
9	5672000000-N	1515	RELOCATE FIRE HYDRANT	EA	4	
11	5800000000-E	1530	ABANDON 6" UTILITY PIPE	LF	60	
12	5801000000-E	1530	ABANDON 8" UTILITY PIPE	LF	5396	
13	5835700000-E	1540	16" ENCASEMENT PIPE	LF	432	
14	5835900000-E	1540	20" ENCASEMENT PIPE	LF	240	
15	5871400000-E	1550	6" TRENCHLESS INSTALL (IN SOIL)	LF	432	
16	5871500000-E	1550	8" TRENCHLESS INSTALL (IN SOIL)	LF	240	
TOTAL						\$ 1,339,150.00

EXHIBIT B.

ESTIMATION FOR UTILITIES, INC.

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. W-354, SUB 400

In the Matter of)
Application by Carolina Water Service,)
Inc. of North Carolina for Authority to) **TESTIMONY OF**
Adjust and Increase Rates and) **SHASHI M. BHATTA**
Charges for Water and Sewer Utility) **PUBLIC STAFF –**
Service in All Service Areas of North) **NORTH CAROLINA**
Carolina and Approval of a Three-Year) **UTILITIES COMMISSION**
Water and Sewer Investment Plan)

October 26, 2022

1 **Q. Please state your name, business address, and present**
2 **position.**

3 A. My name is Shashi Bhatta. My business address is 430 North
4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am a
5 Utilities Engineer with the Water, Sewer, and Telephone Division of
6 the Public Staff – North Carolina Utilities Commission (Public Staff).

7 **Q. Briefly state your qualifications and duties.**

8 A. My qualifications and duties are included in Appendix A.

9 **Q. Briefly explain the scope of your investigation regarding this rate**
10 **increase application.**

11 A. My areas of investigation in this proceeding have been the review of
12 company records of Carolina Water Service, Inc. of North Carolina
13 (CWSNC or the Company), Department of Environmental Quality
14 (DEQ) records, and customer complaints. I have also assisted the
15 Public Staff Accounting Division with the review of chemicals and
16 maintenance testing expenses.

17 **Q. Briefly describe your review of CWSNC's customer service.**

18 A. My review of CWSNC's customer service is based on the following:
19 CWSNC's customer statements filed in Docket No. W-354, Sub
20 400CS; the Company's customer complaint log, which was included in
21 CWSNC's response to Public Staff Data Request No. 51; and the

1 Public Staff Consumer Services Division's (Consumer Services)
2 complaint logs.

3 On September 2, 2022, the Commission issued an Order Scheduling
4 Hearing, Establishing Intervention and Testimony Due Dates and
5 Discovery Guidelines, and Requiring Notice providing for, among other
6 things, five hearings across the State for the purpose of receiving
7 public witness testimony from CWSNC's customers. The five
8 scheduled public witness hearings are as follows:

9 Monday, October 3, 2022, Raleigh, North Carolina
10 Wednesday, October 19, 2022, Virtual Hearing
11 Thursday, October 20, 2022, Boone, North Carolina
12 Tuesday, October 25, 2022, Jacksonville, North Carolina
13 Wednesday, October 26, 2022, Charlotte, North Carolina

14 **Customer Statements**

15 As of October 19, 2022, 24 customer statements have been filed in
16 Docket No. W-354, Sub 400CS. All the customer statements oppose
17 the proposed rate increase. The reasons provided by customers in
18 opposition to the proposed rate increase include:

- 19 • The Company has already received multiple rate increases
20 recently;

- 1 • Rates are too high, excessive, out of line, unwarranted, unfair
2 to the customers, and do not reflect accurate cost-of-living
3 adjustments and inflation;
- 4 • The rate increase does not provide any customer benefits;
- 5 • CWSNC's rates are already higher than the other utility
6 provider rates such as other nearby water/wastewater utility
7 (mostly municipalities);
- 8 • The Company has not made any improvements to their
9 systems (physical or water quality) to warrant increasing their
10 rates;
- 11 • The Company may be using their funds improperly and needs
12 to be investigated;
- 13 • Water quality had not improved and that they must purchase
14 bottled water for drinking, and therefore the Company does not
15 need an additional rate increase;
- 16 • Instead of approving the rate increase, their system should be
17 taken over by a nearby municipality;
- 18 • The fixed sewer rate is not fair because their second homes are
19 not occupied year-round and fixed charges must be paid even
20 when there is no usage;

1 Of the five complaints related to water quality issues, two complaints
2 were about frequent water outages and multiple boil water notices
3 within a short period at two Uniform water systems, Connestee Falls
4 and Linville Ridge. CWSNC sent a letter to the customers regarding
5 these issues explaining that there had been power outages due to
6 storms that led to the water system outages at both systems, as well
7 as water main breaks due to the age of the systems. The Company
8 provided Connestee Falls customers a list of maintenance projects
9 that had been recently completed for their system and the total
10 amount invested in system improvements. The Company also stated
11 that it would continue to make improvements to the Connestee Falls
12 system.

13 Regarding outages in the Linville Ridge system, in addition to the
14 previously mentioned power outages due to storms, there were
15 water main breaks that required repairs. The Company also stated
16 that when water main repairs are performed on a system, the
17 Company's standard procedure is to issue a boil water notice until
18 the repair work is complete and the bacteriological sample results
19 meet DEQ standards.

20 The other two water quality customer concerns were a complaint that
21 a Fairfield Harbour customer's water had a rotten egg smell and a
22 complaint of low water pressure from a system near West Jefferson.

23 The Company's field representative collected a lead and copper

1 sample from the Fairfield Harbour customer's residence at the
2 customer's request, flushed the water line along the customer's
3 street, and also field-tested other water quality parameters (chlorine,
4 phosphate, iron and manganese, which were all found to be within
5 the allowable Safe Drinking Water Act limits). Regarding the low-
6 pressure issue at a system near West Jefferson, the Company
7 explained that this occurred due to a power outage that led to the
8 water outage.

9 In response to Public Staff Data Request No. 51, CWSNC provided the
10 Company's customer complaint log for water quality, which showed
11 approximately 65 water quality-related complaints between April 2022
12 to September 2022. Out of 65 complaints, 62 were regarding cloudy,
13 milky, and/or discolored water. Two complaints were related to foul
14 odor, and one complaint was regarding low system pressure. Multiple
15 complaints were received for the Sapphire Valley (7), Wood Trace (5),
16 The Point (5), Treasure Cove (4), and Belvedere Plantation (4) service
17 areas. It appears the Company took a responsive action for each
18 complaint received to address the customers' complaints.

19 My investigation to date indicates that CWSNC has generally
20 addressed customers' complaints properly and tried to correct the
21 problems, working towards a solution in a timely manner. Normally,
22 the Public Staff incorporates customers' testimony from the public
23 hearings into its written testimony, but not all public hearings have

1 pro forma adjustments are reasonable. The Public Staff agrees with
2 the following Maintenance Testing expense levels requested by the
3 Company in its Application:

	<u>Total Expense</u>
4 Uniform Water	\$195,388
5 Uniform Sewer	\$305,558
6 BF/FH/TC Water	\$10,196
7 BF/FH/TC Sewer	\$24,179

9 **Chemicals**

10 I reviewed CWSNC's expense for chemicals for both its water and
11 wastewater operations. Based on CWSNC's response to Public Staff
12 Data Request No. 8, I reviewed the expense amounts to determine
13 whether the application's pro-forma adjusted amounts reflect the latest
14 chemicals pricing. Using the invoices provided in CWSNC's response
15 to Public Staff Data Request No. 43 and the chemical supplier
16 statements, I verified the updated chemical pricing and effective date.
17 If CWSNC was not able to provide a chemical invoice, then I used the
18 most recent chemical cost based on the Company's per book amount.

19 I reviewed the quantity and the cost of the chemicals purchased during
20 the test year and compared it to the General Ledger information and
21 the chemical suppliers' sales report provided by the Company.
22 Waterguard is the main chemical supplier and "non-waterguard" is the

1 designation for chemicals purchased through other suppliers. The
2 Public Staff calculated its chemical expense recommendation based
3 on the expense total using the quantity of chemicals purchased during
4 the test year and the verified updated chemical cost.

5 The Public Staff does not agree with the Company's proposed pro-
6 forma adjustment. The Company calculated its pro forma adjustment
7 by taking the difference in price of the chemicals purchased during the
8 test year and the adjusted price of the same amount of chemicals.
9 Since the adjusted chemicals cost already includes the increased
10 chemicals cost, a pro-forma adjustment is not required. If the proposed
11 pro-forma adjustment is added to the Company's already adjusted
12 chemicals price, the cost of chemicals would be double counted.

13 To accurately capture the updated chemicals pricing, the Public Staff
14 used the quantity of chemicals purchased in the test year and applied
15 the current rates to determine the total chemicals expense for each
16 rate entity. Based on this analysis, the Public Staff recommends the
17 following for expense levels for Chemicals:

		<u>CWS Application</u>	<u>Public Staff Recommendation</u>
1			
2			
3	Uniform Water	\$395,380	\$330,832
4	Uniform Sewer	\$587,472	\$575,879
5	BFFFHTC Water	\$ 62,926	\$ 86,200
6	BFFHTC Sewer	\$ 48,489	\$ 62,703

7 My calculations are shown in **Bhatta Exhibit 1**.

8 **Q. Does this conclude your testimony?**

9 A. Yes, it does.

QUALIFICATIONS AND EXPERIENCE

SHASHI M. BHATTA

I graduated from Michigan State University, earning a Bachelor of Science Degree in Chemical Engineering and a Master of Science degree in Environmental Engineering. I am a licensed Professional Engineer in the State of North Carolina. I am also certified as a B-Well Operator by the North Carolina Water Treatment Facility Operators Certification Board. Prior to joining the Public Staff in April of 2022, I worked for the North Carolina Department of Environmental Quality (DEQ), Public Water Supply Section - Raleigh Regional Office for three and a half years primarily inspecting water systems, and in DEQ's Public Water Supply Section - Central Office for 16 years, primarily reviewing engineering design of water systems' construction. Prior to working for DEQ, I worked for an environmental consulting company, Malcolm Pirnie, Inc. for two and a half years.

My duties with the Public Staff are to monitor the operations of regulated water and wastewater utilities with regard to rates and service. These duties include conducting field investigations, reviewing, evaluating, and recommending changes in the design, construction, and operations of regulated water and wastewater utilities, presenting expert witness testimony in formal hearings, and presenting information, data, and recommendations to the Commission.

Chemicals Expense

Item Description	Uniform - Water	Uniform - Sewer	BF-FH-TC - Water	BF-FH-TC - Sewer
HYPOCHLORITE SOL - BULK- GALS	\$ 27,272.75	\$ 89,821.30	\$ 29,824.50	\$ 4,661.00
HYPOCHLORITE SOL- 5 GAL DRUM	\$ 59.40	\$ 24,393.60	\$ 534.60	\$ -
HYPOCHLORITE SOL 15 GAL DRUM	\$ -	\$ 33,985.80	\$ -	\$ -
HYPO 5.25% BULK GALS	\$ -	\$ 1,404.25	\$ -	\$ -
CALCIUM HYPO GRANULAR, 100#	\$ -	\$ 4,624.00	\$ -	\$ 544.00
CALCIUM HYPO GRANULAR, 25#	\$ -	\$ 1,885.00	\$ -	\$ -
BIO-SANITIZER -45# DRUM	\$ 529.20	\$ 15,082.20	\$ -	\$ 2,513.70
SOD HEXAMETAPHOSPHATE - 50#(G)	\$ -	\$ 439.00	\$ -	\$ -
OP37- 5 GAL DRUM	\$ 29,761.10	\$ -	\$ -	\$ -
OP37 - 15 GAL DRUM	\$ 20,500.20	\$ -	\$ -	\$ -
FERROQUEST- BULK, GALLONS	\$ -	\$ -	\$ 51,516.00	\$ -
CORRGUARD 939 - BULK, GALLONS	\$ 2,290.40	\$ -	\$ -	\$ -
SODIUM BISULFITE 40% -BULK GAL	\$ -	\$ 24,897.00	\$ -	\$ 3,386.25
SODIUM BISULFITE 25%- BULK, GA	\$ -	\$ 21,505.50	\$ -	\$ -
SODIUM BISULFITE 25%- 15 GAL (\$ -	\$ 2,587.50	\$ -	\$ -
DECHLOR-C , BULK GAL	\$ -	\$ 33,045.50	\$ -	\$ -
AMMONIUM SULFATE 40%, GAL	\$ 3,494.40	\$ -	\$ -	\$ -
CAUSTIC SODA 25% - BULK, GALS	\$ 1,290.30	\$ 38,239.80	\$ -	\$ -
CAUSTIC SODA 25% - 15GAL DRUM	\$ 31,036.50	\$ -	\$ -	\$ -
CAUSTIC SODA BEADS - 50# BAG	\$ 210,816.00	\$ -	\$ -	\$ -
WGC-1743, POLYMER 5GAL PAIL	\$ -	\$ 13,386.00	\$ -	\$ -
MICROC 2000, GAL	\$ -	\$ 83,429.50	\$ -	\$ 13,790.00

Chemicals Expense

Item Description	Uniform - Water	Uniform - Sewer	BF-FH-TC - Water	BF-FH-TC - Sewer
SODIUM BICARBONATE - 50# BAG	\$ -	\$ 1,400.00	\$ -	\$ -
SODA ASH LIGHT -50# BAG	\$ -	\$ 13,260.00	\$ -	\$ -
FERRIC SULFATE LIQUID- GAL	\$ -	\$ 59,247.75	\$ -	\$ 37,292.10
FERRIC CHLORIDE SOLUTION -	\$ -	\$ 60,888.00	\$ -	\$ -
ALUMINUM SULFATE, BULK, GALS	\$ -	\$ 9,958.30	\$ -	\$ -
LIME, HYDRATED-50# BAG	\$ -	\$ 25,278.00	\$ -	\$ -
DELIVERY SURCHARGE	\$ 1,110.00	\$ 5,625.00	\$ 975.00	\$ 390.00
CAUSTIC SODA 25% - 5 GAL DRUM*	\$ 1,712.00	\$ -	\$ -	\$ -
Salt, Solar (white) - 50# Bag*	\$ 428.75	\$ -	\$ -	\$ -
PD051-A30HI LMI PUMP*	\$ 530.25	\$ -	\$ -	\$ -
BIO-NEUTRALIZER - 45# DRUM*	\$ -	\$ 4,917.15	\$ -	\$ -
DEPOSIT 2.5 GAL*	\$ -	\$ 770.00	\$ -	\$ -
LB04SA-VTC1-XXX*	\$ -	\$ 1,530.95	\$ -	\$ -
BIOTIFX ULTRA, 10KG PAIL*	\$ -	\$ 375.00	\$ -	\$ -
DASK PRO BAC GT/BACTERIA BLOCK*	\$ -	\$ 432.00	\$ -	\$ -
BIOREMOVE FOG BOOST 25# PAIL*	\$ -	\$ 478.50	\$ -	\$ -
HYPOCHLORITE SOL -4X1 GALS-CAS*	\$ -	\$ 38.00	\$ -	\$ -
SODIUM BISULFITE 40% - 55 GAL*	\$ -	\$ 230.45	\$ -	\$ -
PRESTOFLOC C-100, 55GAL DRUM*	\$ -	\$ 414.00	\$ -	\$ -
PRESTOFLOC C-100, GAL*	\$ -	\$ 2,310.00	\$ -	\$ -
Freight (HDLPE Tanks)*	\$ -	\$ -	\$ 500.00	\$ -
275 GAL HDLPE DOUBLE WALL TANK*	\$ -	\$ -	\$ 2,850.00	\$ -

Chemicals Expense

Item Description	Uniform - Water	Uniform - Sewer	BF-FH-TC - Water	BF-FH-TC - Sewer
EMERGENCY DELIVERY (Muriatic Acid)*	\$ -	\$ -	\$ -	\$ 100.00
MURIATIC ACID - 4X1 GAL CASE*	\$ -	\$ -	\$ -	\$ 26.00
TOTAL	\$ 330,831.25	\$ 575,879.05	\$ 86,200.10	\$ 62,703.05

Notes:

1. The Company's total chemicals purchased during the test year were calculated per the "Working Sales Report" from the Company's books. Then, the total chemicals purchased during the test year were multiplied by the new/higher cost of the chemicals to obtain the total price for each chemical on this table.
2. * - These items were in the "Working Sales Report" but not in the Company's overall chemicals summary.