

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. W-354, SUB 364

In the Matter of)	
Application of Carolina Water Service, Inc.)	REBUTTAL TESTIMONY OF
of North Carolina for Authority to Adjust)	J. BRYCE MENDENHALL
and Increase Rates for Water and Sewer)	ON BEHALF OF CAROLINA
Utility Service in All of its Service Areas in)	WATER SERVICE, INC. OF
North Carolina.)	NORTH CAROLINA

Pre-Filed Rebuttal Testimony
of
J. Bryce Mendenhall

On Behalf of
CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

November 20, 2019

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

2 **A.** My name is J. Bryce Mendenhall, and my business address is
3 4494 Parkway Plaza Boulevard, Suite 375, Charlotte, North Carolina
4 28217.

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

6 **A.** I am Vice President of Operations for Carolina Water Service, Inc. of North
7 Carolina (“CWSNC” or “Company”), Tennessee Water Service, Inc. in
8 Tennessee, and Blue Granite Water Company in South Carolina, all of
9 which are subsidiaries of Utilities, Inc. (“UI”).

10 **Q. ARE YOU THE SAME J. BRYCE MENDENHALL WHO PREVIOUSLY**
11 **TESTIFIED IN THIS PROCEEDING?**

12 **A.** Yes.

13 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

14 **A.** The purpose of my testimony is to respond to the testimony of Lindsay
15 Darden, filed on behalf of the Public Staff. Specifically, I address witness
16 Darden’s testimony as to CWSNC’s purchased water expense, and in
17 particular the Public Staff’s recommendation as to water loss adjustments.

18 **Q. WHAT IS THE PROCEDURAL HISTORY OF WATER LOSS**
19 **ADJUSTMENTS FOR PURCHASED WATER SYSTEMS IN CWSNC’S**
20 **RECENT RATE CASES?**

21 **A.** In its last two rate cases, Sub 356 and Sub 360, the Public Staff proposed
22 a 20% water loss threshold. Sub 356 culminated as a settled case, but

1 following the evidentiary hearing I submitted an Affidavit in Response to
2 Commission Questions. In this Affidavit I supported the rationale for the
3 negotiated agreement to a 20% water loss threshold. In Sub 360, the
4 Public Staff again recommended a 20% water loss threshold. While water
5 loss threshold was a contested item, there was no specific rebuttal
6 testimony addressing the topic, and the reasonableness of such an
7 adjustment does not appear to have been set forth in the Commission's
8 Order. Thus, the rationale for a water loss adjustment has not been
9 addressed by the Commission in CWSNC's two most recent rate cases
10 Orders.

11 **Q. CAN YOU SUMMARIZE WITNESS DARDEN'S TESTIMONY ON THE**
12 **ISSUE OF PURCHASED WATER EXPENSE?**

13 **A.** Yes. The Public Staff asserted that it calculated its purchased water
14 expense recommendation by using the total gallons purchased from
15 invoices provided by the Company and the most current rates to project
16 an annualized cost. The quantities purchased were compared to the
17 gallons sold by the Company for each applicable system. The Public Staff
18 then made a water loss adjustment to five purchase water systems:
19 reducing Zemosa Acres, Whispering Pines, Carolina Forest, and Woodrun
20 to a water loss rate of 15%, and reducing High Vista Estates' water loss
21 rate to 20%. The effect of utilizing these thresholds was to remove more
22 than 30 million gallons from the purchased water expense equation. The

1 result of removing these 30 million gallons is a water loss adjustment
2 reduction of approximately \$111,287.

3 **Q. HOW DID WITNESS DARDEN JUSTIFY THE WATER LOSS**
4 **ADJUSTMENT?**

5 **A.** On page 17, lines 8-10 of her testimony, witness Darden testified that
6 “[t]he Public Staff recommends an allowable water loss of 15% for most
7 purchase water systems and 20% for purchase water systems that are
8 located in the mountain regions of North Carolina.”

9 **Q. DID WITNESS DARDEN PROVIDE ANY OTHER EXPLANATION**
10 **OTHER THAN THIS STATEMENT?**

11 **A.** The only other justification is found in note 1 to Exhibit 4 to witness
12 Darden’s testimony, which exhibit reflects the Public Staff’s purchased
13 water adjustment calculations. Note 1, associated with the column labeled
14 “P.S. Allowable Loss (%)” states “The Public Staff determines an
15 appropriate amount of water loss based on system specific criteria, such
16 as geographic location, unusual circumstances, etc. For the systems
17 shown above, the standard allowable water loss is 20% for systems
18 located in the mountain region and 15% for systems not located in the
19 mountain region.”

20 **Q. DOES IT APPEAR TO YOU THAT PUBLIC STAFF TOOK INTO**
21 **ACCOUNT ANY “SYSTEM SPECIFIC CRITERIA” OTHER THAN**
22 **GEOGRAPHIC LOCATION?**

1 **A.** No. It appears the Public Staff merely allotted its so-called “standard
2 allowable water loss” percentage of 20% for the mountain system, and
3 15% to all the rest. There was no analysis of any other “system specific
4 criteria” such as unusual circumstances, or any other criteria represented
5 by the “etc.” contained in note 1 on Exhibit 4.

6 **Q.** **IN YOUR OPINION, ARE THERE ANY SYSTEM SPECIFIC CRITERIA**
7 **ON ANY OF THESE FIVE SYSTEMS THAT SHOULD RESULT IN A**
8 **DIFFERENT WATER LOSS PERCENTAGE?**

9 **A.** Yes. The Whispering Pines system in particular involves certain very
10 unique circumstances related to water loss. It should be first understood
11 that the Whispering Pines system is the dead-end of the distribution line
12 for the supplier, Town of Southern Pines. An important maintenance task
13 is to ensure water movement through the system. Dead-end mains,
14 typically in cul-de-sacs, at the end of rural streets, or via lengthy line
15 extensions from a remote provider, are known problem areas for water
16 stagnation, resulting in aesthetic complaints. Therefore, water quality is a
17 primary focus. Additionally, Whispering Pines was originally designed and
18 supplied by a system of production wells that, in order to increase water
19 quality, created small usage zones which lead to multiple ‘dead-end’ water
20 mains that are not connected. The Company performs an unusually high
21 level of operational maintenance with the Whispering Pines system,
22 including implementation of a water flushing regimen based on fluctuating

1 chlorine residual readings to maintain high-quality water through the
2 system. In fact, during the Test Year for Whispering Pines, the Company
3 utilized approximately 14.27 million gallons of water (of the 125.7 million
4 total gallons purchased) for the prudent step of flushing this system.
5 These operational needs related to the Whispering Pines system are
6 therefore a significant driver in what the Public Staff considers “water
7 loss”, but are necessary to maintain proper service to customers and are
8 outside the control of the Company. It is simply a system’s unique
9 circumstances that result in reasonable and prudent operational activities
10 that materially impact its water loss calculation. As such, a proper
11 analysis of the Whispering Pines system would result in the conclusion
12 that its true “water loss,” following the prudent water flushing regimen, is
13 within the 15% water loss threshold advanced by the Public Staff; thereby,
14 requiring no adjustment in this case.

15 **Q. DOES IT APPEAR THE PUBLIC STAFF TOOK ANY OF THESE**
16 **UNIQUE CIRCUMSTANCES INTO CONSIDERATION?**

17 **A.** No, not from witness Darden’s testimony. It appears the Public Staff
18 simply held Whispering Pines to the “standard allowable water loss” of
19 15% applied to other non-mountain region systems. This is despite the
20 Public Staff’s awareness of Whispering Pines’ unique circumstances that
21 result in water loss levels beyond the default level recommended by the
22 Public Staff.

1 **Q. WERE THERE UNIQUE CIRCUMSTANCES AT ANY OTHER SYSTEM**
2 **THAT WERE NOT TAKEN INTO ACCOUNT BY THE PUBLIC STAFF?**

3 **A.** Yes. The Company completed a main replacement project in High Vista
4 Estates in 2018. In addition, performance of the leak detection studies at
5 Carolina Forest, Woodrun, and Zemoso Acres, which I discuss further
6 below, entails the use of additional water.

7 It is widely accepted in the water industry that costs to address water loss
8 can exceed the benefits gained by doing so, especially in smaller systems
9 such as Woodrun, Carolina Forest, and Zemoso Acres, which combined
10 amount to 922 Equivalent Residential Connections ("ERCs"). The
11 Company therefore has implemented incremental steps to address water
12 loss in these smaller systems, and material improvements in water loss
13 may not occur immediately. However, these unique circumstances should
14 not be ignored in the water loss analysis.

15 **Q. IS THERE ANYTHING ELSE YOU WOULD LIKE TO MENTION WITH**
16 **REGARD TO THE WATER LOSS AND OTHER NON-REVENUE**
17 **WATER ISSUES?**

18 **A.** Yes. As I explained in my direct testimony, the Company has continued to
19 implement its utility-wide Non-Revenue Water ("NRW") Strategy in an
20 effort to reduce water loss. This strategy is consistent with the principles
21 of the American Water Works Association ("AWWA") M36 Manual ("Water
22 Audits and Loss Control Programs"). In short, the purpose of the NRW

1 strategy is to address NRW based upon the system-specific economic
2 level of intervention ("ELI"), otherwise referred to as the economic level of
3 leakage ("ELL"). The Company's strategy includes or anticipates (1) the
4 completion of a "top-down" water audit for each system on an annual
5 basis; (2) assessment of source meter accuracy; (3) customer billing and
6 data audits; (4) large meter replacements; (5) plans for system-specific
7 evaluations of the cause(s) of real losses; and (6) the development of
8 NRW-related key performance indicators. The Company reviews and, as
9 necessary, updates its strategy on a regular basis which has included
10 (1) vacancy report reviews; (2) zero consumption report reviews; and
11 (3) identification of the oldest meters per system coupled with usage
12 reviews.

13 **Q. HAVE THERE BEEN TANGIBLE RESULTS OF THESE EFFORTS?**

14 **A.** Yes, as noted in my Direct Testimony in this proceeding, the remaining
15 four systems beyond Whispering Pines which witness Darden adjusts for
16 water loss were addressed via leak detection studies in 2019 to identify
17 and address causes of water loss and non-revenue water. While the
18 Company anticipates improvements in water loss for these systems based
19 on its efforts, additional data will need to be gathered in the coming
20 months to determine the success of its efforts and the prudence of further
21 investments in this area.

1 **Q. WHAT IS YOUR RECOMMENDATION FOR THE COMMISSION AS TO**
2 **THE WATER LOSS ISSUE?**

3 **A.** I recommend the Commission not include any of the purchased water loss
4 adjustments advanced by Public Staff. The Public Staff indicated no issue
5 with the invoices demonstrating the amount of water purchased for these
6 systems, but merely applied “standard” water loss percentages across the
7 systems in question. Other than mountain versus non-mountain regions,
8 the Public Staff did not make any individualized assessment of the unique
9 characteristics of the various systems - either systemic or specific to the
10 Test Year period being analyzed - nor took into account the Company’s
11 targeted efforts to tackle water loss. For these reasons, the Public Staff’s
12 water loss adjustments should be rejected.

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

15 **A.** Yes.

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

17 **A.** Yes, it does.