

SANFORD LAW OFFICE, PLLC
Jo Anne Sanford, Attorney at Law

October 30, 2018

Ms. M. Lynn Jarvis, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4325

Via Electronic Delivery

Re: Application by Aqua North Carolina, Inc. for Authority to Adjust and Increase Rates for Water and Sewer Utility Service in All Service Areas in North Carolina
Docket No. W-218, Sub 497 - General Rate Case Proposed Order

Dear Ms. Jarvis:

Aqua North Carolina, Inc. ("Aqua" or "Company") hereby submits for electronic filing in this docket the Company's General Rate Case Proposed Order.

Please note that Aqua has not included proposed Schedules of Rates and Notices to Customers as part of the Company's Proposed Order. If requested to do so by the Commission, the Company will prepare and file such documents at the appropriate time.

As always, thank you and your staff for your assistance; please feel free to contact me if there are any questions or suggestions.

Sincerely,

Electronically Submitted

/s/Jo Anne Sanford
State Bar No. 6831
Attorney for Aqua North Carolina, Inc.

c: Parties of Record

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. W-218, SUB 497

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	
Application by Aqua North Carolina, Inc.,)	AQUA NORTH
202 MacKenan Court, Cary, North Carolina)	CAROLINA, INC.'S
27511, for Authority to Adjust and Increase)	PROPOSED ORDER
Rates for Water and Sewer Utility Service in All)	APPROVING PARTIAL
Service Areas in North Carolina)	SETTLEMENT
)	AGREEMENT AND
)	STIPULATION,
)	GRANTING PARTIAL
)	RATE INCREASE, AND
)	REQUIRING CUSTOMER
)	NOTICE

HEARD: Tuesday, May 8, 2018, at 7:00 p.m., in the Davie County Courthouse, District Courtroom, 140 South Main Street, Mocksville, North Carolina

Wednesday, May 9, 2018, at 7:00 p.m., in the Gaston County Courthouse, Courtroom 4C, 325 Dr. Martin Luther King Jr. Way, Gastonia, North Carolina

Monday, June 25, 2018, at 7:00 p.m., in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina

Tuesday, June 26, 2018, at 7:00 p.m., in the New Hanover County Courthouse, Courtroom 317, 316 Princess Street, Wilmington, North Carolina

Tuesday, September 11, 2018, beginning at 1:30 p.m., and continuing as required through Tuesday, September 25, 2018, in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina

BEFORE: Commissioner ToNola D. Brown-Bland, Presiding; Chairman Edward S. Finley, Jr., and Commissioners Jerry C. Dockham, James

G. Patterson, Lyons Gray, Daniel G. Clodfelter, and Charlotte A. Mitchell

APPEARANCES:

For Aqua North Carolina, Inc.:

Jo Anne Sanford, Sanford Law Office, PLLC, P.O. Box 28085, Raleigh, North Carolina 27611-8085

Robert H. Bennink, Jr., Bennink Law Office, 130 Murphy Drive, Cary, North Carolina 27513

Dwight Allen, Britton Allen, and Brady Allen, Allen Law Offices, PLLC, 1514 Glenwood Avenue, Suite 200, Raleigh, North Carolina 27612

For the Using and Consuming Public:

Elizabeth D. Culpepper, William E. Grantmyre, and Megan Jost, Staff Attorneys, Public Staff – North Carolina Utilities Commission, 4326 Mail Service Center, Raleigh, North Carolina 27699-4326

Teresa Townsend, Special Deputy Attorney General, and Margaret Force, Assistant Attorney General, North Carolina Department of Justice, Post Office Box 629, Raleigh, North Carolina 27602

For Eric Galamb, Pro Se:

Eric Galamb, 12208 Glenvilet Way, Raleigh, North Carolina 27616

BY THE COMMISSION: On February 5, 2018, Aqua North Carolina, Inc. (Aqua or Company) filed a letter notifying the North Carolina Utilities Commission (Commission or NCUC) of its intent to file a general rate case as required by Commission Rule R1-17(a). On March 7, 2018, Aqua filed an application for a general rate increase (the Application) seeking authority: (1) to increase and adjust its rates for water and sewer utility service in all of its service areas in North Carolina; (2) to pass-through any increases in purchased bulk water rates, subject to sufficient proof by Aqua of the increase, as well as any increased costs of

wastewater treatment performed by third parties and billed to Aqua; and (3) to increase certain other charges. Included with this filing was certain information and data required by NCUC Form W-1 (Form W-1).

On April 2, 2018, Aqua filed its Ongoing Three-Year Water and Sewer System Improvement Charge (WSIC/SSIC) Plan in this docket.

On April 5, 2018, the Commission entered an Order Establishing General Rate Case, Suspending Rates, Scheduling Hearings, and Requiring Customer Notice in this docket. By that Order, the Commission declared the matter to be a general rate case pursuant to G.S. 62-137, suspended the proposed new rates for up to 270 days pursuant to G.S. 62-134, required the parties to pre-file testimony and exhibits, scheduled the matter for hearing, and required notice to all affected customers of the proposed rate increase and public and evidentiary hearings. The April 5th Order scheduled public hearings in Mocksville, Gastonia, Raleigh, and Wilmington, North Carolina, for the benefit of customers and for evidentiary hearing in Raleigh, North Carolina.

On April 6, 2018, the Commission issued an Errata Order regarding revisions to Appendix C of its April 5th Order.

The intervention and participation by the Public Staff were made and recognized pursuant to G.S. 62-15(d) and Rule R1-19(e) of the Rules and Regulations of the Commission.

On April 23, 2018, Aqua filed the Commission-required Certificate of Service indicating that the Notices to Customers were served in conformity with

the April 5, 2018 Order Establishing General Rate Case, Suspending Rates, Scheduling Hearings, and Requiring Customer Notice.

Twenty-eight different witnesses testified at the four public hearings. No witnesses attended the public hearing in Mocksville on May 8, 2018. Two customers testified in Gastonia on May 9, 2018. At the Raleigh public hearing, held on June 25, 2018, State Representative Joseph R. John, Sr., who represents House District 40 in the North Carolina House of Representatives, testified, along with 19 customers. Three customer witnesses who spoke on behalf of themselves also represented 16 other customers from their communities, who yielded their time to the ones who testified. The 19 witnesses represented 14 communities located within nine separate water systems. Six customers testified at the Wilmington public hearing, which was held on June 26, 2018.

On May 29, 2018, Aqua filed its Report on Customer Comments from Public Hearing in Mocksville on May 8, 2018 and from Gastonia on May 9, 2018.

On June 8, 2018, Aqua filed the testimony and exhibits of Company witness John J. Spanos.

On July 16, 2018, Aqua filed its Report on Customer Comments from Public Hearing Held in Wilmington, North Carolina on June 26, 2018.

On July 20, 2018, Aqua filed its Report on Customer Comments from Public Hearing Held in Raleigh, North Carolina on June 25, 2018.

On July 27, 2018, Aqua filed the testimony and exhibits of Company witnesses Shannon V. Becker, Dean R. Gearhart, Robert A. Kopas, Dr. Christopher S. Crockett, and Dylan W. D'Ascendis.

On August 6, 2018, Aqua filed revised testimony of Company witness Kopas.

On August 10, 2018, the North Carolina Attorney General's Office filed a Notice of Intervention in this docket pursuant to G.S. 62-20 on behalf of the using and consuming public.

On August 20, 2018, Eric Galamb, an Aqua customer, filed a Motion to Intervene and Prefiled Direct Testimony in this docket.

On August 21 and 22, 2018, the Public Staff filed the testimony and exhibits of Public Staff witnesses Windley E. Henry, Manasa L. Cooper, Charles Junis, Lindsay Darden, and John R. Hinton.

On August 24, 2018, Aqua filed its Response to Motion to Intervene Filed by Eric Galamb.

On August 30, 2018, Aqua filed its Motion for Extension of Time to File Rebuttal Testimony and to Delay Start of Hearing.

On August 31, 2018, the Commission entered an Order in this docket which granted Mr. Galamb's Motion to Intervene for the limited purpose of addressing the issue of whether Aqua's Application for Authority to Adjust and Increase Rates is supported by sufficient evidence.

On August 31, 2018, the Commission also entered an Order which granted Aqua's August 30, 2018 Motion for Extension of time to File Rebuttal Testimony and to Delay Start of Hearing. By that Order, Aqua was granted an extension of time from Friday, August 31, 2018, until 3:00 p.m., Tuesday, September 4, 2018, to file its rebuttal testimony. In addition, the Commission held that the start of the hearing scheduled to begin at 1:30 p.m. on Monday, September 10, 2018, would be delayed until Tuesday, September 11, 2018, at 1:30 p.m., in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina.

On September 4, 2018, Aqua filed the rebuttal testimony and exhibits of Company witnesses Becker, Gearhart, Kopas, D'Ascendis, Amanda Berger, Joseph Pearce, and Bernard F. Thompson.

On September 5, 2018, the Public Staff filed the supplemental testimony and exhibits of Public Staff witnesses Henry, Cooper, Junis and Michele M. Boswell.

On September 6, 2018, Aqua filed a motion requesting that the Commission enter an order excusing Company witness John J. Spanos from appearing at the September 11, 2018, evidentiary hearing and admitting witness Spanos' testimony and exhibits into the record as if given orally from the stand. By Order entered that same day, the Commission granted Aqua's motion to excuse witness Spanos.

On September 6, 2018, Aqua filed a Motion to Strike a portion of the prefiled direct testimony of Public Staff witness Junis; i.e., page 34, line 12 through page

35, line 5, of the Junis testimony. The Public Staff filed a response in opposition to Aqua's Motion to Strike on September 7, 2018.

On September 7, 2018, Aqua filed the Supplemental Rebuttal Testimony of Company witness Becker.

On September 11, 2018, the evidentiary hearing was convened as scheduled in Raleigh, North Carolina. On that same day, the Public Staff filed a Motion to Recess Hearing. Thereafter, the evidentiary hearing continued as necessary until conclusion on Tuesday, September 25, 2018.

On September 12, 2018, the Public Staff filed the Revised Exhibits 1 and 3 of its witness Boswell as well as the original version of Boswell Exhibit 2.

On September 12, 2018, as requested by Presiding Commissioner Brown-Bland, the Attorney General's Office filed copies of their communications with the Department of Environmental Quality concerning Aqua North Carolina, Inc.

On September 13, 2018, the Public Staff filed a Motion on Confidentiality. On that same day, the Public Staff filed the Revised Supplemental Exhibits of its witnesses Cooper and Henry; i.e., Revised Supplemental Exhibit 1 for each witness.

On September 17, 2018, Aqua and the Public Staff filed a Partial Settlement Agreement and Stipulation in this docket.

On September 18, 2018, Aqua filed the Company's response to the Public Staff's Motion on Confidentiality.

On September 19, 2018, Aqua filed certain late-filed exhibits in response to requests from the Commission.

On October 3, 2018, Aqua filed a late-filed exhibit in response to a request made by Commissioner Clodfelter.

On October 4, 2018, Aqua filed a late-filed exhibit in response to requests made by Chairman Finley and Commissioner Clodfelter.

On October 10, 2018, the Public Staff filed certain late-filed exhibits in response to requests made by Commissioner Mitchell, Chairman Finley, and Commissioner Brown Bland.

On October 11, 2018, the Public Staff filed a late-filed exhibit in response to requests made by Commissioner Clodfelter and Chairman Finley. On October 15, 2018, the Public Staff filed a correction to this late-filed exhibit.

On October 22, 2018, Aqua filed a Motion for Extension of Time to File Proposed Orders whereby the Commission was requested to grant all parties an extension until Tuesday, October 30th to file proposed orders in this docket.

On October 23, 2018, the Commission entered an Order Granting Extension of Time on Condition. In that Order, the Commission found good cause to grant Aqua's motion for an extension of time to Tuesday, October 30, 2018, for all parties to file proposed orders in this docket, conditioned upon Aqua's agreement to extend the date upon which it would be entitled to place temporary rates into effect under bond pursuant to N.C.G.S. § 62-135(a) to November 28, 2018. By email, Aqua's counsel subsequently notified the Commission and all

parties to this proceeding that the Company agreed to the condition specified by the Commission.

On October 30, 2018, Aqua, the Public Staff, and the Attorney General's Office filed their respective Proposed Orders.

WHEREUPON, on the basis of the Application; the Partial Settlement Agreement and Stipulation; the public witness testimony; the testimony and exhibits of Pro Se Intervenor Galamb; the testimony and exhibits of Aqua witnesses Becker, Gearhart, Kopas, Crockett, Thompson, Pearce, Berger, D'Ascendis, and Spanos, including the Company's late-filed exhibits; the testimony and exhibits of Public Staff witnesses Cooper, Henry, Boswell, Hinton, Darden, and Junis, including the Public Staff's late-filed exhibits; the late-filed exhibit submitted by the Attorney General's Office; the Partial Settlement Agreement and Stipulation; and the entire record in this proceeding, the Commission makes the following

FINDINGS OF FACT

General Matters

1. Aqua is a corporation duly organized under the law and is authorized to do business as a regulated investor-owned water and sewer public utility in the State of North Carolina. The Company is subject to the regulatory oversight of this Commission. Aqua is a wholly-owned subsidiary of Aqua America, Inc. of Bryn Mawr, Pennsylvania. The Company owns and operates 750 systems comprised of more than 1,400 wells and 59 wastewater treatment plants ("WWTPs") in

51 counties throughout the State of North Carolina, from the coast to the mountains. At the time the Company filed its Application, Aqua served approximately 78,739 water customers and 17,940 wastewater customers---for a total of over 250,000 residents.

2. Aqua is properly before the Commission pursuant to Chapter 62 of the General Statutes of North Carolina seeking a determination of the justness and reasonableness of its proposed rates and charges for its water and sewer utility operations.

3. The test period for this rate case is the 12-month period of time ended September 30, 2017, adjusted for certain known and actual changes in plant, revenues, and costs that were not known at the time the case was filed but are based upon circumstances and events occurring or becoming known through June 30, 2018, as well as up to the close of the evidentiary hearing in this proceeding on September 25, 2018.

4. Aqua's last general rate case was decided by NCUC Order ("2014 Rate Case Order") entered on May 2, 2014, in Docket No. W-218, Sub 363. Aqua's present rates for water and sewer service in all the Company's service areas have been in effect since January 1, 2017, pursuant to the Commission's Order issued on December 20, 2016, in Docket Nos. M-100, Sub 138, M-100, Sub 142, and W-218, Sub 363.

Customer Concerns and Service Related Issues

5. As of the date of the Application, Aqua served approximately 78,739 water customers through more than 750 water systems, from over 1,400 wells (1312 points of entry) as well as 17,940 wastewater customers through 59 wastewater treatment plants, across its 51-county service area in North Carolina.

Public Hearing Process

6. Of Aqua's total customer base at the date of the Application of almost 97,000, twenty-seven (27) customers¹ testified at the four public hearings, nineteen (19) of whom expressed service-related concerns. Virtually all customers opposed the rate increase request. No customers appeared in Mocksville, and of the two witnesses in Gastonia, one brought forward a service complaint. None of the six customers in Wilmington complained of a service issue: they raised questions about flat-rate sewer methodology for rate design, compared their rates unfavorably to the rates of those other providers, and discussed a notice miscommunication.

7. The nineteen (19) witnesses who testified in Raleigh variously complained of issues with water quality, reliability, communications, notice of flushing, and wasted water. The crux of the strongest complaints dealt with objections to the impact on customers of high concentrations of iron and manganese in their water. These customers at the Raleigh hearing were from

¹ Representative Joe John, though not an Aqua customer, appeared at the Raleigh hearing to speak in support of his constituents' concerns.

fourteen (14) communities and represented service by multiple water systems. The concentration of the water quality objections came from subdivisions in the Bayleaf Master System.

8. Overall customer concerns included water quality, in terms of particulate and hardness issues, repair and maintenance issues involving main breaks, road repairs, low water pressure, rate design and customer communications issues.

9. Aqua President Becker attended all the hearings, read all the postings on the Commission website in this docket, and personally reviewed all customer complaints that were raised at the public hearings held in this proceeding.

10. Company representatives reviewed all issues raised by customers at the public hearings, and Aqua management either spoke with each customer after the public hearings or followed-up with a phone call and---in some cases---a field visit.

11. Aqua filed three reports with the Commission, verified by Company President, Shannon V. Becker, addressing the service-related concerns and other comments expressed by the public witnesses who testified at the four public hearings. These reports were mandated by Decretal Paragraph 9 of the Commission's scheduling order of April 5, 2018. Such reports described each of the witnesses' specific service-related concerns and comments, the Company's response, and how each concern and comment was addressed, if applicable. The

reports also addressed general responses to customer issues, including: the fact that rates will be set in this legal proceeding based upon the statutory requirements of proof and after challenge by expert consumer advocates; that Aqua cannot recover on its investment in plant until after that plant is in service to customers, and has been audited by the Public Staff and reviewed by the Commission; that rates must be based upon the audited, actual cost of service, and that the review is subject to a standard of “reasonableness;” and that any meaningful comparisons of rates among different service providers requires analysis of the different characteristics of the providers, particularly including an examination of the economies of scale and the density of the population.

12. The number of customers who submitted written statements of position in this docket and the number of systems represented by those statements have decreased since Aqua’s last rate case, four and one-half (4½) years ago. During the last rate case (Docket No. W-218, Sub 363), witness Junis described 239 customer statements of position expressing similar concerns to those expressed in this case. In this case, the Public Staff received approximately fifty-seven (57) written customer statements of position as of August 21, 2018. The statements were in the form of letters, emails, and facsimile transmissions. Approximately forty-three (43) detailed water quality issues. In addition, the Commission received approximately twenty-one (21) customer statements by email. The focus of the writers was on opposition to the proposed rate increase, water quality, customer service, and the desire for metered sewer rates. The

Commission finds in this some evidence of improvement in water quality and service.

Issues Concerning Iron and Manganese in the Source Water

13. The incidence of iron and manganese in the source supply across Aqua's service territory is significant --- particularly in the Central Region. These minerals are the subjects of Department of Environment Quality ("DEQ") secondary – not primary – water quality standards, and thus do not represent health issues. However, their presence in high concentrations presents aesthetic and other issues to customers, impacting the color and appearance of the water.

- a. Iron and manganese are historically and ubiquitously an attribute of certain sources of groundwater due to the geology of the state. In the Aqua statewide system of more than 1,400 wells, approximately 20% are challenged by elevated levels of iron and manganese in the groundwater supply.
- b. Iron and manganese can be treated or removed in a number of ways, and at a range of costs. The removal technology of choice depends on the mineral concentrations and is influenced by the cost and the production demands on the well.
- c. Aqua employs a range of treatment and removal technologies, including flushing, chemical sequestration, and mechanical filtration (e.g., cartridge and greensand). The Company deploys these treatments in accordance with a priority rationale that has been carefully developed and is supported by its recently developed Water Quality Plan.

14. Approximately one-half of Aqua's discolored water complaints come from fewer than 3% of the 750 systems Aqua owns and operates throughout the state. Approximately eighty (80) of the 1312 points of entry draw from groundwater that has appreciable amounts of iron and manganese, but do not currently have filtration to remove iron and manganese.

Aqua's Water Quality Plan and its Communications Plan

15. Aqua has expended significant resources and commitment towards addressing its service and communications issues---with a specific focus on the water quality and other issues that result from the presence of iron and manganese in the source water in its service territory (particularly in the Central Region). These initiatives include:

- a. utilization of the opportunities for investment in secondary water quality projects, as well as other service-enhancing investment, pursuant to the Water System Improvement Charge and the Wastewater System Improvement Charge ("WSIC/SSIC"); and
- b. Development and deployment of a Water Quality Plan, intended to systematically identify and prioritize, through collaboration with Aqua's regulators, well sites having the greatest negative impact to customer water quality.

16. Aqua has significantly enhanced its protocol for communication with customers via its:

- a. “Close the Loop” program, which improves the level of communications with customers for whom water quality service calls have necessitated follow-up contact(s); and
- b. Communications Plan that is linked to its Water Quality Plan, which is designed to convey to customers the activities associated with Aqua’s water quality remediation efforts, timing and education. The Communications Plan includes a project website at www.ncwaterquality.com and employs a variety of communication forums to educate and accurately inform customers about their service.

17. The Company’s Water Quality Plan, additionally supported by Aqua America resources, is a comprehensive master plan for addressing secondary water quality issues in its service territory in North Carolina.

18. Aqua has addressed a number of secondary water quality issues---significantly enabled by the use of the WSIC mechanism---with investments in secondary water quality projects totaling approximately \$13,000,000 since the last rate case order of May 2, 2014. This includes installation of approximately 80 new filters, including 31 greensand filters, as well as filter upgrades and replacement.

19. Aqua regularly meets with and consults with representatives of the Public Staff and DEQ to address secondary water quality issues and to seek effective solutions for the benefit of the Company’s customers.

20. Aqua has initiated operational changes to better address water quality concerns by installing a tank cleaning program and a requirement to flush, at least annually, those systems with heightened levels of iron and manganese.

21. Aqua has invested more than \$90,000,000 in North Carolina since its last rate case.

Aqua's Regulatory Communications Policies and Practices

22. Aqua engages in a robust, expansive communications exchange with regulators. These filings are generally found on the Commission's website, primarily in the recent rate case dockets and associated reporting dockets (W-218, Sub 319A; W-218, Sub 363A; W-218, Sub 497):

- a. Annual filing of Aqua's ongoing Three-Year WSIC and SSIC Plan (most recently, in W-218, Sub 497);
- b. Quarterly Earnings, WSIC/SSIC Revenues, and Construction Status reports (heretofore in W-218, Sub 363);
- c. Annual Heater Acquisition Incentive Account Report (W-218, Sub 319);
- d. Department of Environmental Quality Quarterly Notice of Deficiency filings (provided to the Public Staff since 2016; more recently filed in this docket);
- e. Secondary Water Quality Filtration Request Executive Summary--- report developed in collaboration with the Public Staff to streamline the request for pre-approval by the Public Staff for WSIC-eligible water filtration installations necessary to address secondary water quality issues (template for utilization in developing applications for pre-approval of WSIC expenditures on secondary water-quality projects);

- f. Semi-Annual Reports Concerning Secondary Water Quality Concerns (W-218, Sub 363A);
- g. Bi-Monthly reports on Water Quality Issues (W-218, Sub 363A); and
- h. Applications for Approval of Water and Sewer System Improvement Rate Charge Adjustments (W-218, Subs 363 and 497).

23. Aqua and the Public Staff engineers, accountants and lawyers engage in regular and extensive conversations about open projects, customer issues, water quality, and other operational issues.

24. Aqua regularly appraises the Public Staff in more formal ways about major projects, such as the Automatic Meter Reading (“AMR”) Meter Program in Spring of 2017, the Johnston County issue in early 2018, the sale of the Northgate system, and the Belmont coal ash issues. Additionally, the Company communicates with the Public Staff and the Commission as needed to alert to or report on operational events, such as hurricane response and significant line breaks.

25. Aqua and the Public Staff stipulated to agreement in the prior rate case, W-218, Sub 363, that Aqua should file bi-monthly reports addressing water quality concerns raised by customers who testified at the public hearings in that case. These reports are useful and should continue. They should be filed at a quarterly frequency rather than the bi-monthly interval which has been the pattern, and which was endorsed by the Public Staff.

26. The Company should continue to file these reports addressing water quality concerns raised by customers in this proceeding, including customers served by the following systems or subdivisions:

- Specific subdivisions within the Bayleaf Master System, including Barton's Creek Bluffs, Coachman's Trail, Stonebridge, Sussex Acres, Swan's Mill, and Wood Valley
- Waterfall Plantation/Thompson Mills
- Saddleridge
- Upchurch Place
- Lake Ridge Aero Park
- Castelli
- High Grove
- Medfield
- Yorkwood Park

These reports shall summarize customer concerns and describe what is being done by Aqua to address water quality issues. The criteria for reporting shall be the same as required in the Sub 363 Docket, and which has been utilized heretofore with the Bi-Monthly Reports.

27. Aqua agrees with the Public Staff that the Company should continue to file the Semi-Annual Report Concerning Secondary Water Quality Concerns, and the Commission finds those reports useful.

28. Aqua does not agree with the Public Staff's recommendation that it make extensive written filings concerning essentially all communications with DEQ

concerning Aqua's water quality issues. Aqua contends---and the Commission finds---that this requirement is burdensome and is an inefficient and unreliable fact-finding tool. In light of the number of interactions it would impact, this requirement would deter rather than promote the kinds of conversations that should take place between Aqua and its environmental regulators. It is fraught with the likelihood of mistake or mis-interpretation which others will dispute, and at best would provide an inherently unreliable picture of the issues. Should the Commission or the Public Staff wish to know specifics about Aqua and DEQ's positions and interactions (including filings), then specific questions may be posed as appropriate and useful.

29. Aqua's Water Quality Plan, including its targeted use of the WSIC, is a concerted application of prioritized, organized, and vigorous capital and operational strategies towards resolution of secondary water quality problems while balancing the need for treatment with their cost and impact on rates. The Commission endorses Aqua's use of this Plan, urges continuous commitment to it by the Company, and requests annual updates on it.

30. As shown by the number and intensity of customer complaints at the Raleigh hearings, it is clear that significant work remains to provide customers, in certain areas, water that is satisfactory from all perspectives----water that meets primary and secondary standards, and which is also free of significant discoloration and other attributes that drive the customer complaints. Continued, additional and persistent attention is required to further address the issues which arise from significantly elevated levels of naturally-occurring iron and manganese in the source water supply in certain Aqua systems.

Adequacy of Aqua's Service

31. Consistent with the statutory requirements of G.S. 62-131(b), the overall quality of service provided by Aqua is adequate, efficient, and reasonable. However, additional attention continues to be required to address the issues which arise from elevated levels of naturally occurring iron and manganese in the source water supply in certain Aqua systems.

Partial Settlement Agreement and Stipulation

32. On September 17, 2018, Aqua and the Public Staff filed a Partial Settlement Agreement and Stipulation in this docket.

33. The Partial Settlement Agreement and Stipulation is the product of the give-and-take settlement negotiations between the Aqua and the Public Staff (the Stipulating Parties), is material evidence in this proceeding, and is entitled to be given appropriate weight in this case, along with other evidence from the Company, the Public Staff, and intervenor parties, as well as testimony of public witnesses concerning the Company's Application.

Rate Case Contested Issues

Automatic Meter Reading Technology and Meter Installations

34. Automatic Meter Reading ("AMR") technology is a transmitter attached to a water meter which sends a radio signal from each meter to a mobile collector which records the meter reading. The meter readings are collected without the meter reader having to visit each customer's property and manually

open a meter box, read the meter, and then record the reading. Instead, AMR meters utilize newer technology whereby the meter technician drives by the meter and the “meter” sends data to the technician’s receiver. Aqua has identified AMR technology as the best available technology at this time to manage customer usage and billing. Converting to AMR technology will significantly reduce the man-hours required to read water meters and will reduce human errors associated with meter reading.

35. Aqua made the decision to install AMR water meters in its Brookwood Water Rate Division to replace aged meters. Aqua installed approximately 9,000 AMR meters throughout the Brookwood service area during the 2012 – 2013 time period at a total cost of \$2.043 million.² The AMR meters installed at Brookwood replaced standard meters that had reached the end of their useful lives. Standard water meters utilize older technology whereby the meter reader has to manually read the meter reading and log the reading on a handheld computer device. Aqua received approximately \$2.1 million of State Revolving Fund (“SRF”) money at zero percent interest which it used to finance the replacement of the aging water meters at Brookwood.³

36. By Commission Order entered on May 2, 2014, in Docket No. W-218, Sub 363 (a general rate case), Aqua was allowed to include the costs related to the Company’s AMR aged meter replacement program in rates paid by its customers in the Brookwood Water Rate Division. However, as part of settlement

² See Public Staff Junis Exhibit 10, Page 1 of 1.

³ See Public Staff Junis Exhibit 5, Page 6.

in that case, Aqua and the Public Staff entered into a Stipulation dated January 17, 2014, which provided, at Paragraph 15, that:

Automated Meter Reading – Radio Frequency. Aqua and the Public Staff disagree about the reasonableness, prudence, and cost-effectiveness of installation of Automated Meter Reading – Radio Frequency (AMR-RF) water meters. The Stipulating Parties agree that although the Public Staff did not recommend an adjustment to Aqua’s current investment for the installation of AMR-RF meters in this proceeding, the Public Staff has the right as a matter of law to challenge the reasonableness, prudence, and cost-effectiveness of Aqua’s investment in AMR-RF meters in future cases.

The Commission approved and incorporated Stipulation Paragraph 15 as Finding of Fact No. 54 of the Sub 363 rate case order.

37. In 2017 and 2018, Aqua installed 17,441 AMR water meters in various service areas of the Aqua Water Rate Division at a total cost of approximately \$3.782 million pursuant to the Company’s aged meter replacement program.⁴ As was the case with the Company’s Brookwood AMR project, these AMR meters replaced standard meters that had reached the end of their useful lives.

38. The AMR meters installed by Aqua have the following noteworthy functionalities which are currently being utilized by the Company to the benefit of customers and to provide better customer service. When the meter is read, the receiver collects the meter reading at that moment, a history of 40 daily readings (recorded at 12:01 a.m. ET), and any indicators. The collected indicators or flags include tamper, high consumption, and zero consumption. The conversion to AMR technology will significantly reduce the man-hours required to read conventional

⁴ See Public Staff Junis Exhibit 10, Page 1 of 1.

water meters as well as reducing human errors associated with meter reading. A reduction in human errors on ongoing meter reading will further benefit customers through a reduction in billing errors and estimated bills, thereby reducing customer complaints, inconvenience, and the need to call the Company for assistance or to complain. AMR meters have also helped Aqua to locate system and customer leaks to the benefit of both the Company and customers.

39. The Public Staff's proposed reductions to rate base for the Company's investments for AMR meters and meter installations for the Aqua Water Rate Division and Brookwood Water Rate Division in the amounts of \$2,853,294 and \$1,563,242, respectively, which together total \$4,416,536, are unjust and unreasonable and must be denied. Likewise, the Public Staff's resulting adjustments to reduce the Company's revenue requirement in this case by a total amount of \$473,571 (including a return on the proposed disallowance of rate base and associated depreciation expense) is unjust and unreasonable and must be denied. In addition, the Commission finds no merit to the alternative position suggested by the Public Staff during the evidentiary hearing to, in effect, adopt the Public Staff's ratemaking position regarding AMR meters in this case, but to expressly allow the Company to relitigate the issue in a subsequent rate case when all functionalities and benefits of the Company's AMR meters have been implemented.

40. There is no merit to the Public Staff's contentions that Aqua's decision to hire a contractor for AMR meter exchange and ERT installation was unreasonable and imprudent or that Aqua should have performed its AMR

installation program using in-house labor. To the contrary, the Company's decision to retain an outside contractor using a bid process was reasonable and prudent. It is very customary within the utility industry for utilities to hire contract labor for specific projects. This is a management prerogative, which in this case was exercised by Aqua in a reasonable and prudent manner. Credible testimony indicated that Aqua does not have the flexibility in its staffing or staff with the right skills to be cost effective for large scale, in-house meter exchange replacement projects.

41. It is reasonable and appropriate to include Aqua's entire investment in AMR technology in rates in this proceeding. Aqua's actions, including all costs incurred, in implementing the Company's aged meter replacement program have been reasonable, appropriate, and prudent.

42. It is reasonable, appropriate, and prudent for Aqua to continue to implement its aged meter replacement program, utilizing contractor-provided labor as determined by the Company, whereby standard water meters which have reached the end of their useful lives will be replaced by AMR technology as appropriate. The end of useful life model being utilized by Aqua in its aged meter replacement program is fair and reasonable to both the Company and its customers.

43. Aqua's management decisions on all of the issues related to the installation of AMR meters were demonstrably reasonable, measured, and prudent. The Commission finds no basis in the evidence offered in this case to substitute its judgment for that of Company management. The contrary evidence

offered by the Public Staff in support of its position is insufficient when judged against the case presented by Aqua, the party with the burden of proof.

Flowers Plantation in Johnston County

44. Aqua provides both water and wastewater treatment services to the Flowers Plantation development, which consists of a large number of acres located along the Neuse River and Highway 42 in Johnston County, North Carolina. The development generally includes the western half (“Neuse Colony”), which was originally provided wastewater utility service by a 50,000 gallon per day (“gpd”) WWTP owned and operated by River Dell Utilities, Inc.⁵ The Neuse Colony WWTP has subsequently been expanded to 350,000 gpd and now serves both the western half and the eastern half of the development (“Buffalo Creek”). Heater Utilities, Inc. completed construction of a 250,000 gpd expansion in 2003 for the Neuse Colony WWTP and Aqua expanded the capacity by an additional 100,000 gpd in 2016. The Company recently purchased 250,000 gpd of wastewater capacity from Johnston County to provide additional capacity at the Neuse Colony WWTP to serve Buffalo Creek. The interconnection has been approved by the DEQ and is expected to be interconnected to the Company’s system in the first quarter of 2019.

45. The current available capacity at the Neuse Colony WWTP is 350,000 gpd, which includes a 100,000 gpd capacity upgrade completed in 2016. When the WWTP was originally permitted, it was rated at 360 gpd per residential

⁵ River Dell Utilities, Inc. was subsequently transferred to Heater Utilities, Inc. Heater Utilities, Inc. was acquired by Aqua by transfer of stock on June 1, 2004.

customer. The Company applied for flow reductions that reduced the rating from 360 gpd to 240 gpd, and then again from 240 gpd to the current rating of 180 gpd.

46. As to the Buffalo Creek Lift Station and Force Main, it is inappropriate to impute \$315,687 in uncollected CIAC to offset the Company's existing rate base. The \$220 capacity fee which the Public Staff seeks to impute in this case, related to the cost of the Buffalo Creek lift station and force main, was never included in any of the Company's tariffs or in any of the secondary developer agreements.⁶

47. Based on the remaining amount of actual capacity existing at the Neuse Colony WWTP after applying DEQ flow reduction rates, the Company is utilizing approximately 316,000 gpd of capacity, and it collected contributions in aid of construction ("CIAC") of \$2,294,168. The amount of collected CIAC exceeds the related original plant cost of \$2,166,023, and the WWTP still has capacity remaining to be sold and additional CIAC to be collected.

48. The Company was prudent in its decision to purchase additional wastewater capacity of 250,000 gpd from Johnston County in 2018, and the capacity will be used and useful within a reasonable time after the test period.

49. The Public Staff's proposal to impute approximately \$622,500 of CIAC in this case, based upon its assertion that the Company should have incrementally bought capacity from Johnston County at the time it collected CIAC from developers before such capacity was needed, is inappropriate and would have resulted in a premature reduction of CIAC and increased rates for customers.

⁶ The \$220 capacity fee differs from the \$5.50/gpd and \$6.00/gpd WWTP capacity fees which were specifically included in the Company's secondary developer agreements as referenced in Finding of Fact No. 50 below.

50. The capacity fees of \$5.50/gpd and \$6.00/gpd collected from developers by Aqua were included in each of the secondary developer agreements, which were properly filed with the Commission and allowed to become effective, since they were not suspended or disapproved. In effect, Aqua's secondary developer agreements function as tariffs which specify the capacity charges which the Company is authorized to charge secondary developers.

51. It is reasonable and appropriate for the \$2,120,000 of Buffalo Creek-related capacity purchased from Johnston County in 2018 to remain in plant in service and be netted against the \$2,000,924 in CIAC collected from the closed Buffalo Creek lots which this capacity is intended to service. It is also reasonable and appropriate to allow the full amount of \$908,497 for actual costs incurred by the Company to build the 100,000 gpd Neuse Colony WWTP expansion to be included in rate base in this case, as agreed to by the Public Staff.

Adjustments for Excess Capacity – Sewer Utility Plant in Service

52. It is reasonable and appropriate to make excess capacity adjustments to sewer utility plant in service applicable to Aqua's Carolina Meadows, the Legacy at Jordan Lake, and Westfall (aka Booth Mountain) wastewater treatment plants ("WWTPs"). The reasonable and appropriate percentages for these excess capacity adjustments are 30.63% for the Carolina Meadows WWTP; 38.67% for The Legacy at Jordan Lake WWTP; and 35.56% for the Westfall WWTP. It would be unreasonable to apply the excess capacity adjustment percentage of 30.63% at Carolina Meadows to the Company's post-test year WWTP major modification and rehabilitation upgrade project at that

facility, the cost of which was approximately \$1.7 million. It is reasonable and appropriate to include the entire cost of Aqua's Carolina Meadows WWTP upgrade project in rates in this proceeding.

53. It is reasonable and appropriate to authorize Aqua to utilize deferred accounting treatment with respect to WWTP amounts determined to be excess capacity, and consequently removed from rate base, at the Company's Carolina Meadows, The Legacy at Jordan Lake, and Westfall WWTPs. This accounting treatment will allow the Company to defer the recovery of depreciation and to capitalize carrying costs until the capacity is actually utilized.

54. It is reasonable and appropriate to include as part of the excess capacity adjustments in this case capital costs for improvements in the total amount of approximately \$175,00 incurred at the Company's WWTPs prior to or during the test year. These improvements, which were excluded by the Public Staff as part of its excess capacity adjustment contained in its direct testimony, were, as a result of oversight, not challenged by Aqua in the Company's rebuttal testimony. This specific adjustment is approved by the Commission, subject to the right of Aqua to challenge, without prejudice, such adjustment in its next rate case.

Annualization and Consumption Adjustments

55. The Public Staff's proposed consumption adjustment factors should not be applied to either Aqua's Sewer Rate Division or the Company's Fairways Sewer Rate Division. The consumption adjustment factors proposed by the Public Staff should only be applied to Aqua's three Water Rate Divisions (Aqua Water, Brookwood Water, and Fairways Water).

56. Aqua's sludge hauling expense and materials and supplies expense should be included in the Company's expense annualization adjustment as part of the cost of service in this proceeding. The Public Staff incorrectly and unreasonably excluded these expense items from its proposed annualization adjustment.

Adjustment to Remove One-Half of Updated Labor Costs (Salaries and Benefits) of Four Operational Employees

57. The Public Staff's proposed accounting and engineering adjustment to exclude 50% of the updated labor costs (salaries and benefits totaling \$73,901) of four Aqua field operational employees from the cost of service in this case is unreasonable and inappropriate. All of the employees in question continue to be actively employed by the Company and are fully-utilized performing other work-related duties.

Adjustment to Allocate 30% of North Carolina Supervisory Employee Bonuses to Shareholders

58. The Public Staff's proposed accounting adjustment to allocate 30% of North Carolina supervisory employee bonuses in the amount of \$29,691 to shareholders and thereby exclude those expenses from the cost of service in this case is unreasonable and inappropriate.

Adjustment to Eliminate 50% of the Compensation, Including Pensions and Incentive Plans, of the Top Five Executive Officers of Aqua America, Inc.

59. The Public Staff's proposed accounting adjustment to eliminate 50% of the compensation, including pension and incentive plans, of the top five

executive officers of Aqua America, Inc., thereby excluding those expenses from the cost of service in this case, is unreasonable and inappropriate.

Adjustment to Eliminate 50% of the Compensation and Expenses Associated with the Board of Directors of Aqua America, Inc.

60. The Public Staff's proposed accounting adjustment to eliminate 50% of the compensation and expenses associated with the Board of Directors ("BOD") of Aqua America, Inc., thereby excluding those expenses from the cost of service in this case, is unreasonable, inappropriate, and should be rejected.

Amortization Period for Rate Case Expenses

61. Due to the particular circumstances of this proceeding, the reasonable and appropriate period for amortization of rate case expenses in this case is four (4) years, except for the Company's 2017 depreciation study which shall be amortized over five (5) years.

Adjustment to Lab Testing Expenses

62. The Public Staff's proposed accounting and engineering adjustment to deduct and disallow \$88,420 for lab testing expenses from the cost of service in this case is unreasonable and inappropriate.

Annualization of Post-Test Year Secondary Water Quality Testing Expenses

63. The Public Staff's refusal to annualize post-test year levels of secondary water quality testing expenses in this case is unreasonable and inappropriate. The Company's proposal to include the annualized amount of \$111,538 (without amortization) for secondary water quality testing expenses in the cost of service in this case is just, reasonable, prudent, and appropriate.

Adjustment to Purchased Water Expense

64. The Public Staff's accounting and engineering adjustment proposing a total reduction of \$73,670 in the cost of purchased water for Aqua in this case is unreasonable and inappropriate. Instead, Aqua's purchased water expense should be reduced by only \$6,271 in this case. A reduction in Aqua's purchased water expense of \$6,271 is reasonable and appropriate.

Adjustments to Sludge Expense

65. The adjustments made by the Public Staff proposing a reduction in sludge expenses to \$470,173 for Aqua Sewer and to \$89,209 for Fairways Sewer are unreasonable and inappropriate. The reasonable and appropriate amounts to be included in the cost of service in this case for sludge expense are \$507,699 for Aqua Sewer and \$99,058 for Fairways Sewer.

Consumption Adjustment Mechanism

66. Aqua's proposed Consumption Adjustment Mechanism ("CAM") is an appropriate regulatory tool for managing fluctuations in consumption that vary significantly from the projected level of consumption that is used to set rates; the Commission should exercise its inherent authority to find such a mechanism in the public interest in this case; and it should employ a rulemaking procedure to determine---with the participation of all interested parties---how the mechanism should function.

Capital Structure and Rate of Return Issues

67. The Partial Settlement Agreement and Stipulation filed in this docket on September 17, 2018, by Aqua and the Public Staff, regarding the reasonableness of the stipulated capital structure and cost of long-term debt, adequately supports approval of a reasonable and appropriate capital structure consisting of 50.00% long-term debt and 50.00% common equity and a cost of long-term debt of 4.63% for Aqua. The testimony of Company witness D'Ascendis supports and justifies approval of a cost of common equity of 10.8% for Aqua in this proceeding. This capital structure and the approved costs for long-term debt and equity are just and reasonable and appropriate for use in setting rates in this proceeding. Accordingly, the just, reasonable, and appropriate components of the rate of return for Aqua are as follows:

a. Long-Term Debt Ratio	50.00%
b. Common Equity Ratio	50.00%
c. Embedded Cost of Debt	4.63%
d. Return on Common Equity	10.80%
e. Overall Weighted Rate of Return	7.715%

68. The authorized levels of the overall rate of return and rate of return on equity set forth above are supported by competent, material, and substantial record evidence, are consistent with the requirements of G.S. 62-133, are fair and reasonable, and will not cause unnecessary hardship to the Company's customers in light of changing economic conditions or otherwise.

Metered Water Rate Design Structure

69. It is reasonable and appropriate to utilize Aqua's proposed metered water rate design structure for purposes of designing rates in this proceeding (consistent with the Company's Exhibit Jw to the Application). The new rates approved by the Commission utilize the following ratios for base facility charges ("BFCs") to variable consumption charges: Aqua Water - 44%/56%; Fairways Water – 50%/50%; and Brookwood Water – 44%/56%. This rate design will help to minimize the Company's demonstrated risk which results from consistently declining consumption by customers. The rate design approved herein is still relatively conservative and represents a fair and reasonable balance between fixed and variable costs. It is fair to both Aqua and its customers.

Ratemaking and Revenue Requirement Issues

70. It is reasonable and appropriate to determine the revenue requirement for Aqua using the rate base method as allowed by G.S. 62-133.

71. By its Application, Aqua initially requested a total annual revenue increase in its water and sewer rates of \$4,968,935, a 9.19% increase over the total revenue level generated by the rates currently in effect for the Company.

72. The original cost rate base used and useful in providing service to the Company's customers is \$114,294,571 for Aqua Water operations, \$45,609,673 for Aqua Sewer operations, \$3,276,447 for Fairways Water operations, \$10,455,903 for Fairways Sewer operations, and \$19,487,193 for Brookwood Water operations, for a total rate base for combined operations of \$193,123,787.

73. The appropriate levels of total operating revenues under present rates for use in this proceeding are \$34,566,184 for Aqua Water operations, \$13,459,559 for Aqua Sewer operations, \$1,084,684 for Fairways Water operations, \$1,360,925 for Fairways Sewer operations, and \$5,025,605 for Brookwood Water operations, for a total for combined operations of \$55,496,957.

74. Accumulated depreciation consists of the following balances for water and sewer operations:

Aqua Water Operations:	\$93,391,113
Aqua Sewer Operations:	\$43,120,425
Fairways Water Operations:	\$ 3,301,424
Fairways Sewer Operations:	\$ 2,333,905
Brookwood Water Operations	\$13,099,825

75. Contributions in aid of construction (CIAC), reduced by accumulated amortization of CIAC, consist of the following amounts for water and sewer operations:

Aqua Water Operations:	\$93,199,142
Aqua Sewer Operations:	\$80,464,473
Fairways Water Operations:	\$ 7,430,398
Fairways Sewer Operations:	\$ 7,081,614
Brookwood Water Operations	\$ 7,989,867

76. It is reasonable and appropriate for Aqua to recover total rate case expenses of \$795,814 related to the current proceeding to be amortized and collected over a four-year period, except for the 2017 depreciation study which shall be amortized over five years, for an annual level of rate case expense of \$196,020.

77. It is reasonable and appropriate to use the current statutory regulatory fee rate of 0.14% to calculate Aqua's revenue requirement.

78. It is reasonable and appropriate to use the current state corporate income tax rate of 3% and the applicable 21% federal corporate income tax rate to calculate Aqua's revenue requirement.

79. Aqua is entitled to changes in rates that will produce the following levels of total operating revenues, after pro forma adjustments:

	<u>Service Revenues</u>	<u>Other Rev. & Uncollectibles</u>	<u>Total Operating Revenues</u>
Aqua Water	\$36,503,589	\$ 612,827	\$37,116,416
Aqua Sewer	\$14,808,469	\$ 86,259	\$14,894,728
Fairways Water	\$ 1,115,023	\$ 90,027	\$ 1,205,050
Fairways Sewer	\$ 2,178,847	\$ -8,395	\$ 2,170,452
Brookwood Water	<u>\$ 5,765,484</u>	<u>\$ 244,005</u>	<u>\$ 6,009,489</u>
Total Aqua	\$60,371,412	\$1,024,723	\$61,396,135

These levels of revenues will allow Aqua the opportunity to earn a 7.715% overall rate of return, which the Commission has found to be reasonable upon consideration of the findings in this Order.

80. The Commission-approved rates will provide Aqua with an increase in its annual level of authorized service revenues through rates and charges approved in this case by \$4,842,926, consisting of an increase for Aqua Water operations of \$1,929,078, an increase for Aqua Sewer operations of \$1,345,526, an increase for Fairways Water operations of \$30,260, an increase for Fairways Sewer operations of \$814,643, and an increase for Brookwood Water operations of \$723,419. After giving effect to these authorized increases in water and sewer revenues, the total annual operating revenues for the Company will be

\$61,396,135, consisting of the following levels of just and reasonable operating revenues:

Aqua Water	\$ 37,116,416
Aqua Sewer	\$ 14,894,728
Fairway Water	\$ 1,205,050
Fairways Sewer	\$ 2,170,452
Brookwood Water	\$ 6,009,489

2017 Depreciation Studies and Rates

81. On June 8, 2018, Aqua filed the direct testimony of John J. Spanos, including 2017 water and wastewater plant asset depreciation studies (calculated annual depreciation accruals related to water and wastewater plant as of September 30, 2017). These depreciation studies were prepared under the direction of witness Spanos on behalf of Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") in support of and as part of the Company's rate case filing. The Gannett Fleming depreciation studies encompass group depreciation procedures. The depreciation rates set forth in the Spanos depreciation studies are a reasonable and appropriate basis for setting water and sewer rates in this proceeding and are proper for the Company to use in booking depreciation expenses going forward.

The Federal Tax Cuts and Jobs Act

82. Aqua and the Public Staff reached agreement in the Partial Settlement Agreement and Stipulation regarding the applicable provisions of the Federal Tax Cuts and Jobs Act (the "Tax Act"). The agreements regarding the

applicable provisions of the Tax Act reached jointly by the Company and the Public Staff, as set forth below, are reasonable and appropriate.

83. It is reasonable and appropriate that (a) the unprotected Federal EDIT created by enactment of the Tax Act will be returned to customers through a levelized rider that will expire at the end of a three-year period; (b) the protected EDIT will be flowed back following the tax normalization rules utilizing the average rate assumption method (“ARAM”) required by Internal Revenue Service Code Section 203(e); and (c) if new base rates are not established prior to completion of the refund to customers related to the levelized rider established for the flowback of excess deferred income taxes (approximately 36 months), the Company will file new tariffs for any rate division whose rates exceed the initial increase requested in the Application. The new base rates will be implemented the first month after the credit expires.

The sole purpose of any new tariffs implemented at the time the rider for unprotected Federal EDIT expires is to reduce the rates approved in Docket No. W-218, Sub 497, to a level no greater than the amount noticed for each rate division in that docket. There will be no deferral for recovery of the difference between the originally approved amount and the amount resulting from the new tariffs.

84. It is reasonable and appropriate that the State EDIT which the Company recorded pursuant to the Commission’s May 13, 2014 Order in Docket No. M-100, Sub 138 will be returned to customers through a levelized rider that will expire at the end of a three-year period.

85. The Company's proposal to refund to its ratepayers the overcollection of federal taxes related to the decrease in federal tax rates for the period beginning January 1, 2018, and corresponding interest, as a surcharge credit for a one-year period beginning when the new base rates become effective in the current docket is reasonable and appropriate.

86. Aqua's right to charge a Water System Improvement Charge ("WSIC") and Sewer System Improvement Charge ("SSIC") was initially granted by the Commission in Docket No. W-218, Sub 363 by Order issued May 2, 2014.

87. Pursuant to Commission Rules R7-39(k) and R10-26(k), the WSIC and SSIC mechanisms presently in effect are reset at zero as of the effective date of this Order.

88. The Ongoing Three-Year Plan filed by Aqua in this docket on April 2, 2018, is reasonable and meets the requirements of Commission Rules R7-39(m) pertaining to WSIC and R10-26(m) pertaining to SSIC.

89. The Schedules of Rates (attached hereto as Appendices _____) for water and sewer utility service are just and reasonable and should be approved

90. The Partial Settlement Agreement and Stipulation contains the provision that the Stipulating Parties agree that none of the positions, treatments, figures, or other matters reflected in the agreement should have any precedential value, nor should they otherwise be used in any subsequent proceedings before this Commission or any other regulatory body as proof of the matters in issue.

91. The Partial Settlement Agreement and Stipulation contains the provision that the agreements made therein do not bind the Stipulating Parties to the same positions in future proceedings, and the parties reserve the right to take different positions in any future proceedings. The Partial Settlement Agreement and Stipulation also contains the provision that no portion of the Stipulation is binding on the Stipulating Parties unless the entire Stipulation is accepted by the Commission.

WHEREUPON, the Commission reaches the following

CONCLUSIONS

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 1 – 4 (General Matters)

The evidence supporting these findings of fact is contained in the Application, the testimony and exhibits of the Company and Public Staff witnesses, and the Partial Settlement Agreement and Stipulation. These findings of fact are essentially jurisdictional and procedural in nature and are based on uncontested evidence.

CUSTOMER CONCERNS AND SERVICE

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 5

This finding of fact is essentially informational and pertains to the uncontroverted description of Aqua's statewide system. It is supported by the Application and the pre-filed testimony.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 6 - 31

The evidence for these findings of fact and the following conclusions regarding quality of service and customer concerns is contained in the Application; the Partial Settlement Agreement and Stipulation; the testimony of the public witnesses; Aqua's Report on Customer Comments From Public Hearings Held In Mocksville and Gastonia, North Carolina, filed on May 29, 2018; Aqua's Report on Customer Comments From Public Hearing Held In Wilmington, North Carolina, filed on July 16, 2018; Aqua's Report on Customer Comments From Public Hearing Held In Raleigh, North Carolina, filed on July 20, 2018; the testimony and exhibits of Aqua witnesses Becker, Crockett, Berger and Pearce and Public Staff witness Junis; and the entire record in this proceeding.

Summary of Aqua Testimony

Aqua's three verified reports, filed in response to the customer concerns expressed at four public hearings, addressed specifically the testimony of each witness. Those reports also provided comprehensive explanations of the reasons for rate disparities among various providers of water and wastewater services, as well as explanations of the ratemaking process, the requirements of cost of service ratemaking, and the nature of the strict regulatory oversight that protects customers.

Witness Crockett addressed water and wastewater compliance for Aqua with a focus on secondary water quality. He discussed Aqua's Water Quality Plan and the Company's goal to expedite infrastructure improvements to address

secondary water quality issues for the customers. Dr. Crockett explained the difference between primary and secondary water quality standards and established that Aqua complied with all primary water quality standards, with the exception of a first Quarter, 2018 issue concerning the Town of Pittsboro's delivery of water to Aqua that exceeded the limits for the disinfection by-products Maximum Contaminant Level for Total Trihalomethanes. As to that issue, he explained that the Company and the Town were working to resolve the underlying problems.

Declaring Aqua's belief that the water it delivers should be both safe (a reference to primary drinking water standards) and aesthetically pleasing (secondary water quality standards), Dr. Crockett addressed the impact of high levels of manganese and iron on the customer's experience with their water. He explained the processes for treatment, which generally include removal by filtration or sequestration. Several options for filtration were examined and other techniques were addressed, such as flushing or simply running water until the sediment or color clears. Pros and cons, including relative costs, were discussed. He described the 2016 change in enforcement policy by North Carolina DEQ, which produced a profusion of Notices of Deficiency triggered by exceeding secondary limitations for iron and manganese.

Dr. Crockett described Aqua's Water Quality Plan as a combination of increased capital and operational process improvement to address secondary water quality issues. The Company's plan identifies capital and process needs to address each system's water quality issues and establishes a prioritization methodology. Examples of capital and process improvement needs include (but

are not limited to) treatment options or filtration along with tank cleaning and flushing. This Plan works to develop a common framework to address secondary water quality issues with NC DEQ support, thereby collaboratively engaging regulatory stakeholders. The Plan estimates the installation of 10-15 greensand filter systems annually and would potentially require an estimated \$28,000,000 investment in greensand filtration systems over the next seven years. Aqua's Water Quality Plan prioritizes sites and addresses water quality issues based on three factors: 1) notice of deficiencies; 2) scientific, engineering, and health data; and 3) customer complaints. These factors were analyzed to sort Aqua's systems into four groups associated with water quality needs and anticipated remediation methods were determined for each grouping. Dr. Crockett's Exhibit A, the *Water Quality Plan Summary*, gives an overview of the groupings as suggested by the Plan.

Dr. Crockett also described the Customer Communication Plan, which utilizes a range of approaches, including a website, to educate and communicate with customers.

Witness Becker's testimony also addressed the improvements in service that Aqua has accomplished since the last rate case. He reinforced witness Crockett's testimony concerning the Water Quality and Communication Plans and described the level of investment in the state (over \$90,000,000 since the last rate case), the improvements in flushing and tank cleaning protocols, and the heightened attention to customer communication across the network.

Witness Becker explained the statewide initiative, launched in May 2018, designed to follow up with customers who call about certain service issues, requiring dispatch of a field technician. Named the “Close the Loop” program, it involves an initial follow-up call attempt made by the field technician, after leaving a door tag advising of completion of service, plus a secondary follow-up call made by designated Aqua North Carolina office personnel a week after the service call. The second call by an office employee discusses the customer’s experience, determines if their issue has been addressed, and answers additional questions. The purpose of the “Close the Loop” program is to improve customer awareness of necessary work performed on their water system, as well as to provide a subsequent line of communication to answer questions and address issues.

Summary of Intervenor and Customer Testimony

Twenty-seven (27) customers participated as witnesses in the four (4) public hearings, and by far the most concentration on service quality issues was at the Raleigh hearing, in testimony offered by nineteen customers. Virtually all customers protested the rate increase, some challenged the rate design methodology, several complained about communications deficiencies, including inaccurate and omitted notices---particularly with respect to flushing, and to outage repairs---and a number, concentrated in the Central Region, vigorously protested the continuation of problems associated with iron and manganese in the water. Customers, including Ms. Norris at the Gastonia hearing, along with a significant group at the Raleigh hearing, complained of discoloration in the water and damage done by the water to property. The transcripts of these hearings and the detailed

recitation of the customer concerns expressed in the public hearings in Public Staff witness Junis's testimony all support the findings of continued problems with iron and manganese in various places in Aqua's source water.

Mr. Junis also provided testimony concerning his tracking of Aqua records of water quality complaints, describing the process of collaborative preparation of Semi-Annual Reports Concerning Secondary Water Quality Concerns, which have been prepared and submitted jointly by the Public Staff and Aqua since the Sub 363 Order in 2014. After several years of joint work on these reports, and as a result of inquiry in this case, Mr. Junis determined that some of the after-hours complaints had been understated by the process that Aqua utilized. He was correct, as determined upon Aqua investigation. Witness Junis recommended, based upon this new determination, that the Company be specifically directed to fully incorporate after-hours complaints (which the Company is doing in conjunction with the Public Staff), and that the Seventh and Eighth Semi-Annual Reports be supplemented with additional information about after-hours complaints. Notably, he also recommended that the Commission consider future imposition of penalties for this circumstance - one which had not been noted previously by either Aqua or the Public Staff. He recommended continuation of the current, eight Bi-Monthly and Semi-Annual reports, and urged the Commission to impose on Aqua the additional obligation to extensively report, in writing, all conversations between Aqua and DEQ, including providing copies of all correspondence between Aqua and DEQ regarding water quality issues.

Witness Junis declined to state that Aqua's service is adequate, citing his view that there are areas where it is inadequate (Bayleaf).⁷

Commission Conclusions

1. Aqua's level of service has improved since the last rate case, both with respect to water quality and customer communications. Indicia of improvement include the changes in the numbers, levels and sources of customer communications in the rate case and the evidence of increased filtration and flushing.

2. The Commission concludes that the improvements in Aqua's service performance are associated with:

- (a) the implementation of the WSIC/SSIC mechanism and the work that the Company and the Public Staff have jointly done to accelerate deployment of additional solutions to the secondary water quality issues; and
- (b) Aqua's Water Quality Plan and its companion Communications Plan.

3. These initiatives are appropriate, serve the public interest, meet with the Commission's approval, and should be pursued towards the achievement of

⁷Witness Junis testified in the Sub 363 case (prior to both the initiation of WSIC-enabled investment in secondary water quality projects and to the Water Quality Improvement and Communication plans) that "...Aqua is providing adequate water and wastewater service in its service areas." He also made recommendations for improvements in water quality in certain areas, specifically suggesting reporting requirements. See *Docket No. W-218 Sub 363, Tr. Vol. 3, page 128, lines 1-2, Junis direct testimony.*

continued improvement to water quality, particularly in the areas where iron and manganese persist as significant issues for customers.

4. Aqua's level of outreach and response to customers testifying at the public hearings was appropriate and consistent with the Commission's suggestions about personal contact with customers, set forth in the Order in the Sub 363 rate case.

5. Customers' concerns about Aqua's persistent issues with iron and manganese in the source water in the Central Region remain warranted and are shared by the Commission, Aqua, and the Public Staff. The Commission concludes that the Public Staff and the Company should continue to work together to push for resolutions to these issues, utilizing the various methods available to combine efficiency of result with the least, most reasonable costs.

6. Consistent with the statutory requirements of G.S. 62-131(b), the overall quality of service provided by Aqua is adequate, efficient, and reasonable. However, additional attention continues to be required to address the issues which arise from elevated levels of naturally occurring iron and manganese in the source water supply in certain Aqua systems.

7. Aqua shall continue to file, now on a quarterly basis, the reports previously required as Bi-Monthly Reports on Water Quality Issues, as it has done as a result of and since the Order in the last rate case, W-218 Sub 363. Aqua shall also continue to file the Semi-Annual Secondary Water Quality Reports.

There is no need for Aqua to supplement the Company's Seventh and Eighth Semi-Annual reports as recommended by the Public Staff.

8. Aqua shall not be required to report in writing generally on its conversations and communications with DEQ. However, the Commission reserves the right to require specific reports and communications related to DEQ issues, as needed.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 32 - 33
(Partial Settlement Agreement and Stipulation)

The evidence supporting these findings of fact is contained in the Partial Settlement Agreement and Stipulation and in the testimony of Company and Public Staff witnesses. No party filed a formal statement or testimony indicating opposition to the Stipulation; however, the Attorney General did pursue cross-examination of Company and Public Staff witnesses at the hearing of this matter on contested, non-stipulated issues related to matters such as rate of return and quality of service issues. Pro Se Intervenor Galamb's participation was limited to his presentation of testimony. The Stipulation is binding as between Aqua and the Public Staff, and conditionally resolves certain specific matters in this case as between those two parties. Through the end of the evidentiary process, the Attorney General and Intervenor Galamb neither approved nor overtly disapproved of the partial settlement regarding the specific settled issues reflected in the terms of the Stipulation. There are no other parties to this proceeding.

Under North Carolina law, a stipulation entered into by less than all parties in a contested case proceeding under Chapter 62 "should be accorded full

consideration and weighed by the Commission with all other evidence presented by any of the parties in the proceeding.” *State ex rel. Utilities Commission v. Carolina Utility Customers Association, Inc.*, 348 N.C. 452, 466, 500 S.E. 2d 693, 703 (1998). Further, “[t]he Commission may even adopt the recommendations or provisions of the nonunanimous stipulation as long as the Commission sets forth its reasoning and makes ‘its own independent conclusion’ supported by substantial evidence on the record that the proposal is just and reasonable to all parties in light of all the evidence presented.” *Id.*

The Commission concludes, based upon all the evidence presented, that the Stipulation was entered into by the Stipulating Parties after full discovery and extensive negotiations and represents a reasonable and appropriate proposed negotiated resolution of certain specific matters in dispute in this proceeding and that neither the Attorney General nor intervenor Galamb have voiced any overt opposition thereto. Accordingly, the Commission finds good cause to approve the Partial Settlement Agreement and Stipulation filed by Aqua and the Public Staff.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 34 - 43
(Automatic Meter Reading Technology and Meter Installations)

Summary of Public Staff Testimony

Public Staff witness Junis testified that the stipulation between Aqua and the Public Staff in Docket No. W-218, Sub 363 (Sub 363 Stipulation) stated that “the Public Staff has the right as a matter of law to challenge the reasonableness, prudence, and cost effectiveness of Aqua’s investment in AMR-RF meters in future cases.” Paragraph No. 15 of the Sub 363 Stipulation.

Witness Junis stated that the Public Staff investigated Aqua's implementation of water metering technologies and he then identified and defined the following acronyms associated with water metering technologies.

RF: radio frequency, alternative mediums for data transmittance include cellular and wired.

AMR: automated meter reading, typically used to describe drive-by RF meters. The communication is primarily one-way, that is the "meter" sends data to the receiver.

ERT: encoder receiver transmitter or communication module, functions as the radio and antenna for the meter to send data.

AMI: advanced metering infrastructure, typically used to describe fixed point networks with strategically distributed collectors or receivers that are capable of two-way communication with the meter.

Standard meter: the meter reader has to manually read the meter reading and log it on a handheld computer device.

Aqua NC Water: Aqua North Carolina uniform water rate division.

According to witness Junis, Aqua has invested \$4.039 million in the replacement of 17,441 standard meters with AMR meters and installation of 19,768 ERTs as part of its Meter Replacement Program. The Meter Replacement Program was initiated by Aqua America, Inc. ("Aqua America") and implementation began in 2017. From 2013 through 2016, Aqua averaged 569 Aqua NC Water meter replacements per year. In 2017, the Company replaced 15,760 Aqua NC Water meters or an increase of over 2,600%.

Witness Junis stated that the Public Staff requested a complete and detailed cost-benefit analysis in Public Staff Engineering Data Request ("EDR") 12. In part, the Company's response states, "Aqua NC considers this part of our company-wide (Aqua America) operationally driven Meter Replacement Program."

(Response to EDR 12 Q1) In other words, Aqua America is directing Aqua to implement RF metering technology. Witness Junis continued by stating that in response to a March 2017 Public Staff data request, Aqua states:

The company-wide program for all other states utilizes the use of a mobile AMI (AMR) (RF) technology. As Aqua NC is the only state in the Aqua America (Aqua) footprint not pervasively using AMR technology, an incremental cost benefit analysis was prepared supporting our conversion from manual read meters to RF in coordination with the meter change out program.

See Junis Exhibit 4, Response to Mobile AMR Data Request No. 2 Q1a.

Witness Junis testified that in certain northern states in which Aqua America provides water utility service, some water meters are located inside the customers' homes and there is substantial, both in quantity and duration, snow covering the outdoor meter boxes. AMR meters can be helpful and cost-beneficial in those circumstances; however, these conditions are not typical in North Carolina. North Carolina is different from many of the other states in which Aqua America provides water utility service in that a majority, closer to the entirety, of the residential water meters are located outside in meter boxes, near the street or front property line, and visible with the exception of a limited number of snow-covered days. In comparison, electric utility meters are normally located on the side of a customer's house, sometimes inside fences, and a distance away from the street.

Witness Junis further stated that in response to EDR 22 Q1, the Company provided a cost-benefit analysis calculating a monthly benefit to customers of \$0.11 and with what the Public Staff believes to be significant failings: the assumption that the per meter installation cost is the same for a standard meter

and an AMR meter; the incremental nature does not capture the true cost of multiple AMR meters over the 30.30-year depreciation life determined in the 2017 Depreciation Study prepared by Gannett Fleming Valuation and Rate Consultants, LLC, and filed in this docket on June 8, 2018, with the testimony of Company witness John J. Spanos; and no costs, only benefits, are included for developing and deploying programs and services to utilize the additional data available from the read and flag logging capabilities. See Junis Exhibit 5, Aqua AMR Cost-Benefit.

According to witness Junis, the AMR meters installed by Aqua have the following noteworthy functionalities:

- When the meter is read, the receiver collects the meter reading at that moment, a history of 40 daily readings (recorded at 12:01 am ET), and any indicators.
- The indicators or flags include tamper, high consumption, and zero consumption.

These functionalities are mitigated by the following facts:

- Onsite readers can observe whether a home appears to be occupied, for sale, or vacant, evidence of meter tampering such as tool marks, signs of extensive lawn and shrub irrigation, and signs of a leak. The meter reader can enter these comments into the handheld meter reading computer and be automatically required to verify and re-enter zero or high readings.
- After implementation of AMR/AMI, the meter is not visually inspected each month and over time the meter box can become covered with dirt and/or vegetation making it difficult and time consuming to locate when a manual verification reading or maintenance is necessitated.
- The 40 day read history is **NOT** accessible by customers.
- The customers have **NOT** been notified that Aqua planned to and is collecting the 40 day read history.

- The Aqua billing system generates an estimated bill for accounts with a high consumption or missed read without providing the customer the indicator or flag. Again, the Company is **NOT** sharing the available information to the customer.

Public Staff witness Junis testified that the Public Staff communicated concerns about Aqua's cost-benefit analysis dating back to early 2017. As part of the Public Staff's Mobile AMR Data Request No. 2, the Public Staff created and sent to Aqua a modified version of Aqua's analysis that resulted in an unfavorable additional cost per customer per month of \$0.30, not including any potential costs related to the retirement of Aqua's existing standard meters. Aqua responded by stating in part that the "updated installation price from our national vendor is currently <\$45 per meter" and "the install cost has no net impact on the incremental cost to our customers as there may only be a nominal installation difference when an RF versus a standard meter is installed." (Junis Exhibit 5) First, the Company had already performed a meter replacement program in the Brookwood Water service area in 2012 and 2013 and was invoiced by an outside contractor specific individual installation costs for the meter, meter interface unit (MIU) radio (comparable to the ERT), and mounting rod by Mueller Service Co. See **Junis** Exhibit 6, Sub 363 ADR 55 Q11.⁸ Second, the average Itron installation cost of \$69.84 per AMR meter far exceeds \$45 and Aqua's previous installation costs of standard meters by an independent contractor. The cost-benefit analyses prepared by Aqua materially overstate the labor costs to replace standard meters. Itron, Inc., the previously referenced national vendor, manufactures and sells

⁸ The invoices provided are an excerpt and representative of the all of the invoices provided in response to Sub 363 ADR 55 Q11.

communications equipment and services including the AMR ERTs being purchased by Aqua.

According to witness Junis, by making a singular conservative adjustment to the Company's cost-benefit analysis, the result is an additional cost of \$0.05 per month per customer without any realized benefits to the customers. See Junis Exhibit 7, Aqua Labor Adjusted Cost-Benefit. The adjustment is to simply decrease the installation labor cost of a standard meter from \$71.86 to the still excessive \$57.26 that the Company calculated to be its average installation cost utilizing Aqua personnel. See Junis Exhibit 8, EDR 51 Q1. The exhibit includes Aqua's calculation and the Public Staff's calculations (highlighted in grey). However, Aqua's calculation vastly over quantifies Aqua's labor cost to in-kind replace standard meters. Aqua's installation cost of \$57.26 assumes an average duration of one and a half (1.5) hours per meter replacement and the internal labor cost to be \$21.21 per hour. However, when conducting a meter replacement project, which would likely be entire subdivisions, the laborer would be traveling from house to house with several minutes, at most, in between. Aqua averaged the hourly labor costs for the following field personnel:

Facility Operator Trainee	<u>Utility Technician Laborer</u>
Facility Operator I	<u>Utility Technician</u>
Facility Operator II	<u>Utility Technician I</u>
Facility Operator III	Utility Technician II

<u>Meter Reader</u>	Utility Technician III
<u>Sr. Meter Reader</u>	

Witness Junis stated that the descriptions from job postings on Aqua America's website indicate each underlined above position's responsibilities include either installation of meters or replacement of inoperable meters. The job descriptions for the Facility Operator group do not include installing or replacing customer water meters. Compiling the Utility Technician Laborer, Utility Technician, Utility Technician I, Meter Reader, and Sr. Meter Reader, the average hourly labor rate is \$15.23 compared to the average of \$21.21 for all field employees. By utilizing the average internal labor rate of \$15.23 per hour and 1.86 standard meter replacements per hour, including the 80% loading for allocated costs the same as Aqua, the average labor installation cost per standard meter replaced is calculated to be \$14.80. (EDR 51 Q1) This can be compared to the per meter replacement rates quoted of \$71.86 by Itron and \$57.26 calculated by Aqua.

Witness Junis stated that the Public Staff calculated an average duration of 0.54 hours or 32 minutes per meter replacement, conservatively based upon discussions with three persons with nearly 100 years of combined experience in the water utility industry, including extensive experience replacing standard water meters in Wake and Johnston Counties. In general terms, each stated that, being generous, it should only take approximately 15 minutes, and as quick as 5 minutes, to replace a standard water meter, including flushing the service line and recording the meter serial number, address, and in and out meter readings. Additional time

would be necessary if the meter box, yoke, or other appurtenances required replacement, which the experienced professionals estimated would require about one (1) hour on average.

According to witness Junis, adjusting Aqua's cost-benefit analysis for the Company's actual average costs for the meter, installation, and ERT and the Public Staff's standard meter installation cost of \$14.80, the analysis results in a \$0.66 cost per month per customer for Aqua's AMR deployment. See Junis Exhibit 9, Updated AMR Cost-Benefit Analysis.

Witness Junis further stated that the meters being replaced as part of the program, which are predominantly standard positive displacement meters without batteries, have had an average useful life of 17.63 years per Aqua's response to EDR 40 Q2. This 17.63 year average service life is a 7.37 year or 29% reduction from the former average service life. In response to EDR 12 Q1, Aqua states:

The overall meter retirements have generally been consistent with past practices as the average service life has changed from 25 years to 24 years. Newer technology could shorten the average service life of the meters, however, due to group depreciation; the remaining life method; and the variability of assets within the entire account, the asset value will be recovered over the remaining life of all assets.

See **Junis Exhibit 3**.

According to witness Junis, the industry recognizes a 10- to 20-year useful life before degradation of functionality and accuracy necessitate replacement. As

part of the Environmental Finance Center's final report on Studies (EFC Report)⁹, the Public Staff posed a number of questions including:

12. What is the average change-out period for residential water meters (i.e. 10 years, 15 years, 1 million gallons, etc.) for the more professionally-operated North Carolina government water utilities, such as Raleigh, Durham, OWASA, CMUD, Fayetteville PWC, Greensboro, and Winston-Salem?

See EFC Report, p 12.

The EFC Report stated “[m]ost of the utilities use around 15 years, although two use more than 15 years and one uses less than 15.” (*Id.*) Additional factors such as flow rate, velocity, water quality, and total volume/mileage can all contribute to the degradation of meter accuracy.

Witness Junis testified that the Public Staff calculated the average standard meter replacement to cost \$53.23. Aqua has a Commission approved meter installation fee of \$70 as part of its schedule of rates. The meter cost of \$38.43 is the invoiced amount from 2015 when Aqua was still frequently utilizing standard meters for replacements. The cost does not reflect any potential and likely discount through national or statewide buying power (the Company bought approximately 20,000 meters since its last general rate case). The average labor cost was calculated by the Public Staff to be \$14.80, as described in earlier portions of witness Junis's testimony. The total average cost of standard meter replacement would have been \$53.23 in comparison to the average cost of a meter

⁹ 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>

replacement completed as part of the Aqua NC Water Meter Replacement Program that was \$206.43, including AMR meter, ERT, meter installation, and allocated costs. The average cost of a meter replacement completed in the Brookwood/LaGrange service area was \$246.73, including AMR meter, ERT, meter installation, allocated costs, and additional appurtenances as necessary.

Witness Junis stated that Aqua proposes to include in its new rates the recovery of AMR meter costs. This is in addition to the AMR meter costs being recovered through Brookwood Water rates approved in Sub 363 case. Aqua has not implemented benefits to the customers while materially increasing the cost to customers. The installation of AMR meters was imprudent, unreasonable, and not justified by a realistic and comprehensive cost-benefit analysis. The customers should not pay for the increased costs as a result of unreasonable and imprudent decisions by Aqua management. Witness Junis recommended reductions to rate base for Aqua NC Water and Brookwood in the amounts of \$2,853,294 and \$1,563,242, respectively. The calculations are presented in greater detail in Junis Exhibit 10, AMR Meter Adjustment.

In addition, witness Junis recommended the disallowance of any future increase to the depreciation rate of Water Account 334.00 Meters and Meter Installations due to the early retirements that resulted from Aqua's Meter Replacement Program. This is a potential additional cost not considered by the cost-benefit analyses and a result of the group accounting and depreciation methodologies. According to witness Junis, this is dissimilar to the cases made by Duke Energy Progress and Duke Energy Carolinas, which claimed the retired AMR

assets resulting from the implementation of AMI were an extraordinary expenditure and should be amortized over a period of time shorter than the remaining life.

Summary of Company Testimony

Aqua witness Bernard Thompson testified that he is employed by Aqua Services as Director of Procurement. In that capacity, witness Thompson stated that he is responsible for the procurement of materials and services for Aqua America; that he manages and negotiates meter and meter related material for Aqua; and that he works closely with the Manager of Metrology to set meter standards and on meter related issues. Witness Thompson stated that the purpose of his rebuttal testimony was to rebut the testimony of Public Staff witness Junis as it pertains to AMR capable meters.

Witness Thompson testified that he had reviewed the testimony of Public Staff witness Junis and that he did not agree with the Junis recommendations. Witness Thompson stated that witness Junis makes the following finding: "Aqua has not implemented benefits to the customer while materially increasing the cost to customers." Witness Thompson further stated that witness Junis concluded that: "The installation of AMR meters was imprudent, unreasonable, and not justified by a realistic and comprehensive cost-benefit analysis." Witness Thompson contested and disagreed with Mr. Junis's conclusions. According to witness Thompson, it is inappropriate and shortsighted for the Public Staff to conclude that the deployment of a technology is imprudent before that technology is fully deployed and its benefits can be realized.

Aqua witness Thompson testified that the cost-benefit analyses provided by the Company in response to Engineering Data Request (“EDR”) 22 Q1 demonstrate that the decision to install AMR meters was prudent and reasonable. Witness Thompson further stated that he disagreed with the recommended adjustments or comparative calculations provided by the Public Staff. Witness Junis overlooked the immediate and tangible benefits of the AMR Technology that were provided and summarized in the Company’s responses to multiple EDRs. AMR Technology has provided Aqua with a reduction in estimated bills, availability of data to support customer consumption and billing inquiries, meter reading efficiency, and eliminated manual meter reading errors.

Witness Thompson testified that AMR technology has been shown to reduce the number of estimated bills for Aqua. The Business Case analysis, provided to the Public Staff in discovery, shows that in 2015 Aqua manual read meters had an estimated bill rate of 2.63%, or 22,071 bills per year, which exceeded three times that of Aqua America’s average of 0.75%. Aqua meters for the same period were 14% radio read, while the other Aqua America states averaged 99% radio read meters. This benefit was further defined by providing data that Aqua has had an 18% reduction in estimated bills in Brookwood. Similarly, there was a 42% reduction in estimated bills per year for Aqua’s Water Rate Division in the areas in which it has installed the AMR technology.

Witness Thompson testified that he disagreed with Mr. Junis’s assertion that the noteworthy functionality of the 40 daily readings provided by AMR meters is mitigated by the fact that the 40-day read history is not accessible to customers

and that customers have not been notified that Aqua planned to and is collecting this history. According to witness Thompson, Mr. Junis discounts any operational or customer benefits that are realized by the availability of this data internally; however, this view is contrary to facts understood by utility operators and managers. The 40 daily read history is available with the 100W Endpoint Receiver Transmitter (“ERT”) through the data logging. The 100W ERT stores 40 days of consumption information, which can be collected by the AMR system and leveraged for timely resolution to customer billing inquiries, bill disputes, and potential leak detection. The 40 daily reads stored and collected by the AMR system are used by Aqua in investigating customer inquiries and resolving customer metering issues. These benefits were discussed in Aqua’s response to DR 22 Q3. Witness Thompson stated that the most recent example of this was in August 2018, when Aqua noted a sharp drop in well capacity in one of the Company’s critical systems. Aqua searched the system for leaks, utilizing the AMR that had been installed in this system. In a timely manner, a meter reader captured cycle reads for all the AMR capable meters in the area to determine if there were any customers with high consumption or possible leaks. Within a few hours, Aqua had the information, which included a list of customers that identified abnormal consumption in several customer accounts. Aqua contacted the customers and notified them of a potential leak. Aqua verified significant leaks on two of the identified accounts and turned their water off until repairs could be made. The customers were appreciative of the efforts. This is typical of the successful utilization of the AMR system.

Company witness Thompson testified that new technology takes time to deploy and full utilization and visibility to the customer often does not occur until the Company is able to reach some level of critical mass. The worst decision is to stop deployment. The best decision is to continue deployment and increase functionality as the buildout progresses. The current level of utilization of the data collected by the AMR system is producing tangible operational and customer benefits. The first step in the process is to implement in an organized and efficient manner AMR while aged meters are being replaced. Aqua will continue to refine the business processes surrounding the utilization of data.

According to witness Thompson, many of the “more professionally run” utilities, as defined by Mr. Junis, have communicated to their customers that the benefits of the AMR or AMI technology that they have chosen to use will be realized over time and incrementally, not immediately.

Witness Thompson disagreed with witness Junis’s statement that the noteworthy functionality of the AMR meters to provide indicators and tamper detection is mitigated because customers are not aware of the indicators or flag. According to witness Thompson, Mr. Junis inappropriately discounts the value of operational or customer benefits, simply because the data is available internally at this point, and not directly transmitted to the customer. The indicators and tamper detection collected by the AMR meters is being used by the Company in conjunction with the data logging of the 40 daily reads to prioritize Service Orders and to investigate potential leaks, broken or frozen meters, and theft of service. In addition, witness Thompson stated that the tamper indicators are available

immediately to the meter reader and by the next day to customer service representatives and other staff through the automated report. These benefits have been discussed in detail with the Public Staff.

Company witness Thompson also testified that AMR technology provides for more efficient meter reading. Aqua's Business Case analysis provided to the Public Staff in EDR Q1 shows that the projected read rate from AMR meter reads versus manual reads was projected to increase over 600%, from 37.5 reads an hour to 264 reads an hour. This information was used by Aqua to judge the reasonableness of the decision to implement an AMR system.

Mr. Thompson also testified that he did not agree with the Public Staff's contention that the functionalities of the AMR system are mitigated because onsite meter readers can observe whether a home appears to be occupied, whether it is for sale or vacant, evidence of meter tampering, and signs of leaks. This type of observation and recording of such observation would significantly impact the meter reader's read rate, dropping to less than 37.5 reads an hour. This would require more meter reading hours and would detract from the meter reader's ability to perform work on other service orders, like meter maintenance and customer inquiry.

Witness Thompson further testified that there are additional benefits of AMR technology that witness Junis failed to acknowledge in his testimony. Employee safety and business efficiency are additional strategic and intangible benefits of the AMR program. Reducing the hours required for meter reading decreases the opportunities for accidents both onsite and in transit, such as insect/snake/dog

bites, slips, trips, and falls. The AMR program also limits Aqua's reasons for having to enter a customer's property, due to the ability to read the meter from a distance. Aqua America is standardizing companywide to an AMR system, which provides economies of scale that are beneficial to North Carolina customers. By implementing a companywide program, the cost of the AMR program is reduced per customer as fixed and semi-variable costs, such as software, process development and troubleshooting, are spread across a broader customer base. Further, an evolving AMR program will continue to provide more timely and accurate data, increased data integrity, and advanced analytics for improved operations and service.

Witness Thompson stated that there are also future benefits to be realized incrementally as Aqua America and Aqua become a 100% AMR system. The industry recognizes a 10- to 20-year useful life before degradation of functionality and accuracy necessitates replacement. Aqua has optimized the value of aged replacement within the recognized useful life to upgrade to AMR metering technology. Although the full benefits of this program will not be realized immediately, it is prudent to install the new technology as the Company's manual meters reach the end of their useful lives in preparation for a full utilization of the AMR technology. Otherwise, a newly installed manual meter would become obsolete before its useful life has been reached resulting in an unnecessary cost to customers.

In addition, Aqua witness Thompson testified that the Company is converting to AMR technology in a manner that will facilitate upgrades to Advanced

Metrology Infrastructure (“AMI”) technology as that technology becomes more cost effective. Aqua has ensured that the meters and meter reading and data logging technology, ERTs that are being installed as part of this program can also be utilized if later evaluations should justify an upgrade to AMI technology. Aqua does not believe the additional cost of AMI (repeaters, cell towers, security) are cost justified, presently. Furthermore, the meters being currently installed are both AMR and AMI capable, as are the 100W ERTs that are currently being used to implement the AMR program. The 100W ERTs offer an advanced two-way meter data collection using handheld (AMR), mobile (AMR), fixed network (AMI), and combination hybrid solutions. The meter and the 100W ERTs include AMI functionality with no change required on the premise. All programming can be completed remotely should it be justified where a dense customer base supports the added fixed network cost.

According to witness Thompson, the functionality of the AMR program will increase over time and will include significant coordination with customer operations and other Company-wide initiatives, such as customer account portal and other tools to improve the overall customer experience. Internal work flows are being tested and upgraded to increase the Company’s ability to utilize all the daily data collected in a timely manner with systemic business processes.

In response to witness Junis’s reference to “more professionally run” utilities,” witness Thompson stated that Raleigh, Durham, Charlotte Water, and Greensboro are all using AMR Technology. Fayetteville PWC, OWASA, and Winston-Salem are investing in AMI Technology. Witness Thompson stated that

he was also aware that Durham, OWASA, and Fayetteville PWC all used outside contractors to install the new technology.

Witness Thompson testified that he did not agree with Mr. Junis's adjustments to the Company's cost benefit analysis as shown in Exhibits 7 and 8 of the Public Staff's testimony. The AMR Cost-Benefit Analysis, completed by Aqua and provided to the Public Staff in response to EDR 22 Q1, demonstrated the cost benefit of installing AMR meters in comparison to installing manual meters. Mr. Junis's adjustment, shown in Junis Exhibit 7, replaces the contractor costs for installation of manual meters with an Aqua-calculated cost estimate of internal labor cost for a large-scale meter replacement project. Mr. Junis's adjustment, shown in Junis Exhibit 8, replaces the contractor costs for installation of manual meters with a Public Staff-calculated cost estimate of internal labor costs for a large-scale meter replacement project. The adjustment also adjusts the cost of the manual meter. Mr. Thompson testified that he disagreed strongly with the overall intent and integrity of the Public Staff's adjustments. The Company's Cost-Benefit Analysis was not intended to demonstrate the prudent and reasonable choice to have contractors install the AMR meters; rather, it was showing the benefit of AMR meters over manual meters. Aqua does not even have the internal resources to complete a large-scale meter replacement project. Finally, witness Thompson stated that he also disagreed with the magnitude of the Public Staff's adjustments.

Witness Thompson testified that he disagreed with Mr. Junis's estimate of \$38.43 for a manual meter as referenced in the Public Staff's testimony. For

information, Mr. Thompson stated that he attached to his testimony, as *Thompson Exhibit 1*, a sales quote from Mueller Systems dated March 27, 2017. The per unit pricing for a 5/8"x3/4" Manual Water Meter is \$44.64 (plus tax). This pricing does include any discounts that would be available using Company buying power. The quote shows a minimum order of 12,000 units. Even despite the low demand for manual meters company-wide, Aqua and Aqua America have a strong relationship with Mueller for discount direct manufacturer pricing. Alternatively, Aqua is paying \$53.85 (plus tax) for an RF capable Badger Pit Meter of the same size. Witness Thompson stated that he attached the Badger Price List as *Thompson Exhibit 2*. Material costs of the meter boxes (pits), pit lids, resetters, and other miscellaneous material that may be required to exchange a meter were not discussed by witness Thompson, because they are required regardless of the choice to upgrade to AMR technology.

Witness Thompson further stated that he disputed parts of the Public Staff's Calculation of Average Duration Meter Exchange and Public Staff Adjusted Calculation of Average Labor Costs per Aqua Meter Exchange, shown on Junis Exhibit 8. Mr. Junis states that the average time required to change a meter is 0.54 hour. Additionally, he states that additional plumbing work that may be required with a meter exchange, replace or repair meter box, lid, or replace resitter could take up to 1 hour of an experienced professional's time. Regarding these issues, witness Thompson testified that he might agree with the Public Staff's analysis, provided that the personnel assigned to such work would always be dedicated and specialized to do meter exchange work 8 hours a day. In EDR 51,

Aqua determined an average time to change a meter is 1.5 hours. This estimate was based on current Aqua skill level and was consistent with the labor rate used in the calculation. This analysis also assumed that meter exchanges would be completed as time allowed throughout the day and while answering other priority service calls and incurring more travel time.

Witness Thompson stated that he disagreed that the labor associated with such efficiency could be paid at a rate on average of \$15.23 per hour. The labor cost used in this calculation ignores the fact that a more qualified and higher paid professional could be required to perform additional work. This partially results because installation of approximately 25% of meters will require additional work associated with the meter pit, etc.

Witness Thompson further testified that the Public Staff's notion that the adjusted calculation of average labor costs per Aqua meter exchange is comprehensive of all costs that would be incurred if the Company were to perform AMR meter installation in-house is simply not accurate. Mr. Junis calculates an average cost of \$14.80 per install. *Junis Exhibit 8*. This is based on an average labor rate of \$15.23 per hour. Mr. Thompson stated that he did not think the average labor rate of \$15.23 per hour used in Mr. Junis's testimony is appropriate because it is not representative of the labor rate of a specialized and experienced professional that would be required to achieve the time efficiencies stated in the testimony duration calculation. In *Thompson Exhibit 3*, witness Thompson stated that he had reflected the salary ranges for Meter Service Technicians I, II and III. The Meter Service Technician I position has a median rate of \$23.50/hour and a

job description that states "...refers more complex issues to higher level staff". The Meter Service Technician III, with an average rate of \$35.80/hour, best represents the skill level of the technicians used in the 2017 AMR Meter Exchange Project and has a job description that states, "...handles complex issues and problems, and refers only the most complex issues to higher-level staff. Possess comprehensive knowledge of subject matter."

According to witness Thompson, Aqua replaced an average of 562 meters per year prior to the 2017 AMR Meter Exchange Project. For Aqua to have completed 15,000 exchanges in 2017 (May–December), additional short-term staff would have been required. There would be added cost to hire, train, and terminate, temporary staff. Additional vehicles, equipment, and staff to provide project management and oversight would also be required. These costs were not included by the Public Staff in its labor cost per hour.

Witness Thompson stated that he also disagreed with Mr. Junis's contention that Aqua's decision to hire a contractor for AMR meter exchange and ERT installation was unreasonable and imprudent. To the contrary, the Company's decision in that regard was reasonable and prudent. It is very customary within the utility industry to hire contract labor for specific projects. It is efficient, reduces liability, and avoids the need for later layoffs and perhaps workman's compensation payments. Contractor labor costs for the 2017 AMR Meter Replacement Project were \$44.51 per install, excluding tax. The description of work with Itron, using Field Deployment Manager ("FDM") software required a specific installation Work Flow to be followed to minimize service order errors,

ensure accurate reading upon installation, and minimize rework. The contractor's staff specializes in meter exchange programs and achieved the efficiencies stated in previous testimony. Aqua utilized a competitive bid process to award this contract, ensuring that the contractor costs were reasonable and at fair, market value for the work to be performed. Aqua purchasing policy requires three bids with qualified supplier vetting. Bid awards are granted on price, experience and qualifications. The average cost of \$69.84 per install referenced on page 32 of the Junis testimony and provided by Aqua in EDR 29, included AMR meter installations of sizes ranging from 5/8" to 4", additional plumbing work associated with the Meter Pit (Box), Pit Lid, Setter Replacement, and other tasks as outlined on project invoices are shown on the Project Summary submitted as *Thompson Exhibit 4*.

Commission Conclusions Regarding AMR Meters

The Commission reaches four primary conclusions regarding the Public Staff's proposed ratemaking adjustments for AMR meters and meter installations under consideration in this case.

First, the Commission concludes that the Public Staff's proposed ratemaking adjustments are unreasonable and inappropriate under the facts of this case. More specifically, the Commission concludes that the following AMR meter-related ratemaking adjustments proposed by the Public Staff are unjust and unreasonable and must be denied: (a) the Public Staff's proposed reductions to rate base for the Aqua NC Water Rate Division and Brookwood Water Rate Division in the amounts of \$2,853,294 and \$1,563,242, respectively; (b) the

Public Staff's proposed reductions to the Company's revenue requirement in this case by a total amount of \$473,571 (including a return on the proposed disallowance of rate base and associated depreciation expense); and (c) the alternative position suggested by the Public Staff during the evidentiary hearing to, in effect, adopt the Public Staff's ratemaking position regarding AMR meters in this case, but to expressly allow the Company to relitigate the issue in a subsequent rate case when all functionalities and benefits of the Company's AMR meters have been implemented.

Second, the Commission concludes that it is reasonable and appropriate to include Aqua's entire investment in AMR technology in rates in this proceeding. Aqua's actions, including all costs incurred, in implementing the Company's Meter Replacement Program to date have been reasonable, appropriate, and prudent.

Third, the Commission concludes that the AMR meters installed by Aqua have the following noteworthy functionalities which are currently being utilized to the benefit of the Company's customers and to provide better customer service. When the meter is read, the receiver collects the meter reading at that moment, a history of 40 daily readings (recorded at 12:01 a.m. ET), and any indicators. The collected indicators or flags include tamper, high consumption, and zero consumption. The conversion to AMR technology will significantly reduce the man-hours required to read conventional water meters as well as reducing human errors associated with meter reading. A reduction in human errors will further benefit customers through a reduction in billing errors and estimated bills, thereby helping to avoid customer complaints, inconvenience, and the need to call the Company

for assistance or to complain. AMR meters have helped Aqua to locate system and customer leaks to the benefit of both the Company and customers.

Fourth, the Commission concludes that it is reasonable, appropriate and prudent for Aqua to continue to implement its aged meter replacement program, using contractor-provided labor, whereby standard water meters which have reached the end of their useful lives will be replaced by AMR technology as appropriate.

The Commission reaches these conclusions for several reasons.

1. The Commission finds the rebuttal testimony offered by Aqua witness Thompson entirely convincing in support of the Company's position on this matter and more persuasive than the evidence offered by the Public Staff.

2. The Commission agrees with witness Thompson that the cost-benefit analyses provided to the Public Staff by Aqua demonstrate that the Company's decision to install AMR meters was prudent and reasonable. The recommended adjustments and/or comparative calculations provided by the Public Staff appear somewhat arbitrary and unreasonable to the Commission and designed to reach a clear objective; i.e., to substantiate the Public Staff's stated position in opposition to AMR implementation program cost recovery by the Company.¹⁰ The Public Staff has raised multiple charges of imprudence against Aqua regarding this issue. The Commission does not find those charges of

¹⁰ The Commission accords minimal weight to Public Staff witness Junis's demonstration regarding installation of an AMR meter in view of the fact that it was not performed under actual field conditions. The demonstration was informative, but not determinative as evidence of any factual issues in this case.

management imprudence to be persuasive. To the contrary, Aqua's management decisions on this issue were demonstrably reasonable, measured, and prudent. The Commission is, in effect, being asked to substitute its judgment for that of Company management based upon the evidence offered by the Public Staff and the Commission declines to do so in this particular instance. The contrary evidence offered by the Public Staff in support of its position is insufficient when judged against the case presented by Aqua, the party with the burden of proof. In addition, the Commission agrees with witness Thompson that it is inappropriate and shortsighted for the Public Staff to conclude that the deployment of a technology is imprudent before that technology is fully deployed and all of its benefits can be realized.¹¹

3. The Commission concludes, in essential agreement with witness Thompson, that witness Junis failed to give adequate recognition to the immediate and tangible benefits of the AMR technology that were provided in the Company's evidence in this case, including EDRs provided to the Public Staff. AMR technology has provided Aqua with a reduction in estimated bills, availability of data to support customer consumption and billing inquiries, meter reading efficiency, and elimination of manual meter reading errors. Witness Thompson also offered credible testimony that AMR technology has been shown to reduce

¹¹ The Commission notes that Company witness Amanda Berger, in her testimony regarding non-revenue water loss, stated that the AWWA Manual 36 lists AMR/AMI technology as a primary method for addressing apparent losses for small water utilities because it limits "systematic data handling errors in customer billing systems, customer metering inaccuracies, and unauthorized consumption...." This is another apparent benefit of AMR technology which would benefit both the Company and its customers.

the number of estimated bills for Aqua based upon the statistical evidence which he cited in support of his contention.

4. Witness Thompson provided substantial credible evidence to contest the Public Staff's contention that the noteworthy functionality of the 40 daily readings provided by AMR meters is mitigated by the fact that the 40-day read history is not accessible to customers and that customers have not been notified that Aqua planned to and is collecting this history. The Commission agrees with witness Thompson, that the Public Staff's position inappropriately discounts the value of operational or customer benefits, simply because the data is available internally at this point, and not directly transmitted to customers. Witness Thompson affirmatively testified that indicators and tamper detection collected by the AMR meters are being used by the Company in conjunction with the data logging of the 40 daily reads to prioritize Service Orders and to investigate potential leaks, broken or frozen meters, and theft of service. In addition, witness Thompson stated that the tamper indicators are available immediately to the meter reader and by the next day to customer service representatives and other staff through the automated report. These are current, tangible benefits that inure to the benefit of both the Company and its customers through the deployment, to date, of AMR technology which cannot and should not be ignored. Likewise, the Commission concurs with the testimony offered by witness Thompson that AMR technology provides for more efficient meter reading, which is another significant tangible benefit to the Company and customers alike.

5. Witness Thompson also offered credible testimony that there are additional benefits of AMR technology that witness Junis failed to acknowledge. The Commission agrees that employee safety, business efficiency, program standardization, and economies of scale, as detailed by witness Thompson, are additional strategic and intangible benefits of the AMR program. By implementing a companywide program, the cost of the AMR program is reduced per customer as fixed and semi-variable costs, such as software, process development and troubleshooting, are spread across a broader customer base. Further, an evolving AMR program will continue to provide more timely and accurate data, increased data integrity, and advanced analytics for improved operations and service. In addition, witness Thompson delineated future benefits to be realized incrementally as Aqua America and Aqua become a 100% AMR system and explained that Aqua has optimized the value of aged replacement of standard water meters within the recognized useful life to upgrade to AMR metering technology. In this regard, the Commission agrees that it is prudent for Aqua to install the new technology as the Company's manual meters reach the end of their useful lives in preparation for a full utilization of the AMR technology.

6. The Commission further concludes that it is prudent for the Company to convert to AMR technology in a manner that will facilitate upgrades to AMI technology as that technology becomes more cost effective. In addition, the Commission finds witness Thompson's testimony entirely credible, which indicates that the functionality of the AMR program will increase over time and will include significant coordination with customer operations and other Company-wide

initiatives, such as customer account portal and other tools to improve the overall customer experience and the Company's ability to utilize all the daily data collected in a timely manner with systemic business processes.

7. The Commission finds no merit to the Public Staff's contention that Aqua's decision to hire a contractor for AMR meter exchange and ERT installation was unreasonable and imprudent. Likewise, the Commission finds unconvincing the Public Staff's position that Aqua should have performed its AMR installation program using in-house labor for the many credible reasons testified to by Company witness Thompson. To the contrary, the Company's decision to retain an outside contractor was reasonable and prudent. The testimony offered by Company witness Thompson on this point is credible and was supported by substantial evidence.

The Commission accepts that is very customary within the utility industry for utilities to hire contract labor for specific projects. Witness Thompson testified that such practice is efficient, reduces liability, and avoids the need for later layoffs and perhaps workers' compensation payments. Witness Thompson testified that Aqua does not have the flexibility in its staffing or staff with the right skills to be cost effective for large scale meter exchange replacement projects. In addition, witness Thompson described in convincing detail the Company's rationale for hiring an outside contractor in this instance. That detail included descriptions of the contractor's qualifications and labor costs; description of work performed by the contractor which was designed to minimize service order errors, ensure accurate reading upon installation, and minimize rework; the fact that the contractor's staff

specializes in meter exchange programs and achieved the required efficiencies; the fact that Aqua utilized a three-bid competitive bid process to award this contract, ensuring that the contractor costs were reasonable and at fair, market value for the work to be performed; and the fact that Aqua's bid awards are granted on price, experience and qualifications.

Aqua's management decisions on this issue were demonstrably reasonable, measured, and prudent. The Commission is, in effect, being asked to substitute its judgment for that of Company management based upon the evidence offered by the Public Staff and the Commission declines to do so in this particular instance. The contrary (and largely theoretical and hypothetical) evidence offered by the Public Staff in support of its position is insufficient when judged against the case presented by Aqua, the party with the burden of proof. The Commission finds that the Public Staff's theoretical model was incomplete and gave insufficient consideration to certain costs and appropriate business and other "real life" factors. In addition, Aqua's expertise and operational experience as a provider of public utility service in North Carolina carries great weight with the Commission regarding the AMR ratemaking decisions which the Commission is required to make in this case. Upon careful consideration of the Company's AMR evidence, the Commission is convinced that the right decision is to trust Aqua's operational expertise on this critical issue in contrast to the Public Staff's more theoretical case which is not based, materially, in practical real-life experience and business application.

Accordingly, for the reasons set forth above, the Commission concludes that the findings of fact reached regarding the AMR meter and meter installation issues are reasonable and appropriate and supported and justified by the evidence in this case, particularly the rebuttal testimony offered by Company witness Thompson.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 44 - 51
(Flowers Plantation in Johnston County)

Evidence and Conclusions in Support of Findings of Fact Nos. 44 - 45

These findings of fact are essentially informational and pertain to the uncontroverted description of the Flowers Plantation development in Johnston County, North Carolina and the current capacity and flow reduction changes to the Neuse Colony WWTP. These findings are supported by the Application and the pre-filed testimony of Public Staff witness Junis and the pre-filed rebuttal testimony of Company witness Becker.

Evidence and Conclusions in Support of Finding of Fact No. 46

The evidence supporting this finding of fact and conclusion is contained in the Company's verified Application, the testimony and exhibits of Company witness Becker and Public Staff witness Junis, and the entire record in this proceeding.

This finding of fact revolves around a series of contracts entered into between 1999 and 2002 between River Dell Utilities, Inc., Rebecca Flowers Finch (d/b/a River Dell Company), and Heater Utilities, Inc. ("Heater"). Pursuant to the

January 14, 1999 Agreement, Heater was responsible for the “construction of all necessary expansion to the WWTP up to the DWQ [now, DEQ] permitted discharge of 750,000 gpd.” (Junis Exhibit 12, p. 21). Additionally, the January 14, 1999 Agreement states in pertinent part:

There shall not be a purchase price for Existing Wastewater Facilities as Heater shall be responsible to construct all WWTP expansion and the existing 50,000 gpd WWTP shall be transferred to River Dell, at River Dell’s sole option, without any purchase payment to Heater, once Heater has constructed the first expansion to the WWTP which will probably be 250,000 gpd. *Id.* at 15.

The January 14, 1999 Agreement further states:

Secondary Developer shall pay to Heater a cash contribution in aid of construction the same dollar amount per gallon that Heater paid for the cost of design, engineering, and construction of the last WWTP expansion including regulatory mandated upgrades to the wastewater treatment process. *Id.* at 36-37.

On May 14, 2002, River Dell Utilities, Inc., Rebecca Flowers Finch (d/b/a River Dell Company), and Heater entered into an Amended Purchase Agreement for the purchase of the water and wastewater utility systems serving the Buffalo Creek side. The Amended Purchase Agreement states that Heater “will treat the wastewater from the land at Flowers Plantation Sections I, II and IIIB on an interim basis at Heater’s WWTP at the Neuse River, and then in the future have the County provide bulk wastewater treatment for Heater.” (Junis Exhibit 13, p. 40). This required construction of a pump station and force main to deliver the wastewater from the Buffalo Creek side to Heater’s Neuse Colony WWTP.

Additionally, the Amended Purchase Agreement states:

Heater shall pay \$75,000 plus 50% of the cost of the construction of the Pump Station and Force Main ... Heater's 50% payment of the balance shall be recovered equally from the first 2,000 single-family equivalents.

...

Secondary Developer shall pay to Heater a cash contribution in aid of construction the same dollar amount per gallon as the County's then current bulk wastewater capacity fee, which at the time of execution of this Amended Agreement is \$5.50 per gallon. This payment shall be made by Secondary Developer to Heater at the time Heater executes the application to DWQ for approval of the plans and specifications for that phase of the wastewater collection system. *Id.* at 18-20.

Summary of Company Testimony

Witness Becker testified that the Company failed to include a pro rata portion of the cost of construction of the pump station and force main as outlined in the May 14, 2002 Amended Purchase Agreement in secondary developer contracts between 2006 and 2018, which resulted in approximately \$315,000 of capacity fees not being collected from developers. Witness Becker explained that part of the reason for this oversight was the complicated and unusual nature of the multi-party contracts. Mr. Becker also noted that when the Company acquired Heater in 2005, much of the management team of Heater--including people who were familiar with the terms of the 2002 contract, including current employees of the Public Staff--left the Company. Throughout this time period, Mr. Becker noted that at least four rate cases and numerous contiguous extension filings have since occurred that included opportunity for regulatory oversight of the developer contracts in question.

Armed with the benefit of hindsight, the Public Staff now seeks to impose a significant penalty on the Company due to an oversight that initially occurred more than a decade ago and which has been available for review and action for years. In response to questions from the Commission, witness Becker noted that Aqua does not have a uniform connection fee and that it does fluctuate by area. He further testified that before a lot can be connected to a wastewater collection system, it must be approved by the Commission through a Certificate of Public Convenience and Necessity or a Notification of Contiguous Extension. According to witness Becker, the Commission Rules require a package of documents to be filed and they are subject to review by the Public Staff as well as the Commission. Witness Becker testified that it is simply not appropriate to impute approximately \$315,000 of uncollected capacity fees as a reduction to the Company's rate base through an after-the-fact review so far removed from the time at which the oversight occurred, particularly when ample opportunity for regulatory oversight or correction existed in the interim.

Summary of Public Staff Testimony

Witness Junis testified that Aqua failed to invoice developers for their portion of the lift station and force main cost of \$220.41 per single-family residential equivalent, which resulted in unrecovered CIAC amounts of \$315,687. He stated that Aqua's wastewater retail customers should not pay for the Company's imprudence in failing to collect this CIAC from developers. In response to a question from the Commission, witness Junis acknowledged that these secondary developer contracts would have been filed with the Commission before service

could have been provided and that those contracts did not carry forward the same language from the 2002 contract that referred to the cost recovery of the pump station and force main. Witness Junis also acknowledged that before a secondary developer can sell lots, the contract has to be filed with the Commission in a contiguous extension notification or a request for a certificate of public convenience and necessity. He agreed that the process is procedurally handled by the Public Staff bringing those notifications and requests to the Commission and commenting upon what those contracts say with respect to contributions in aid of construction.

Commission Conclusions

The Commission's Orders are important and, as witness Becker testified, it is important that they can be relied upon by investors and lenders. The Commission finds that it is inappropriate and unwarranted in this case to impute the uncollected CIAC in the amount of \$315,687 to offset the Company's existing rate base. Such action would effectively amount to a \$315,687 penalty to Aqua when the Company was acting based on secondary developer contracts appropriately filed with this Commission and subject to review by the Public Staff. In its February 27, 1998 Order of Clarification in Docket No. W-354, Sub 118, the Commission stated, "The presence of a contract, approved by the Commission and on file with Commission, provides CWS [the utility] the justification it needs to charge a connection fee that varies from its uniform connection fee. ... in the case where different connection fees are specified in an approved contract, the contract

governs. In the absence of an approved contract, the uniform connection fees govern.”

In a late-filed exhibit filed with the Commission by the Public Staff on October 11, 2018, the Public Staff attempted to excuse its failure to bring these issues before the Commission by discounting the importance of the secondary development contracts filed with the Commission and, instead, focusing on the original 2002 Amended Purchase Agreement (“master agreement”). The Commission notes that the Amended Purchase Agreement approved by the Commission in Docket No. W-274, Sub 538 on April 11, 2006, does not specify the number of lots, specific subdivisions or any amount to be charged for each lot. The master agreement provided only a template of terms for future secondary developer agreements. The details regarding matters such as number of lots, specific subdivisions, and amount to be charged for each lot were covered in the series of secondary development contracts and are the only means that Aqua had to collect from developers. Those contracts were filed with the Commission and were subject to review by the Public Staff. However, over the last 12 years, the \$220 capacity fee, which was not included in Aqua’s tariff, was never mentioned or discussed during the course of several rate cases and numerous filings of contiguous extension notifications. Effectively, a filed tariff for the \$220 capacity fee did not exist, either as a formal tariff filing or as part of a secondary developer agreement.

Two of the secondary developer contracts filed with the Commission include a \$5.50/gpd capacity fee and the remainder included a \$6.00/gpd capacity fee.

None of the Company's secondary developer contracts contained the \$220 capacity fee. Because there were no capacity fees included in the filed formal tariffs for either Heater or Aqua, the Commission finds that the Company was reasonable in concluding that the filed secondary developer contracts governed the fees that could be charged. Here, the Company correctly charged the \$5.50/gpd and the \$6.00/gpd capacity fees as specified in secondary developer contracts filed with the Commission. None of the secondary developer contracts contained the \$220 capacity fee; thus, that fee was not charged by Aqua. For these reasons, the Commission concludes that it is simply not reasonable to ignore approximately 12 years of filings and decisions, which are routinely processed by the Public Staff and the Commission, and impute CIAC when the investment and financial communities have relied for more than a decade on Company management, regulatory oversight and Commission decisions that have been entered after the execution of these contracts.

Although all general rate cases are different, the Public Staff's proposed imputation adjustment in this case, from a timing perspective, is similar to adjustments that the Public Staff proposed in Docket No. W-354, Sub 118 which were rejected by the Commission by Order issued on March 22, 1994. In that case, as in this one, the Public Staff sought to propose adjustments even though it has had ample opportunity for more than a decade to propose similar adjustments in general rate cases and other filings for approval of contiguous extensions. The Commission noted in the 1994 case that it had never ordered punishment by imputation of connection fees and that it was wholly inappropriate

to order such punishment in an *ex post facto* fashion. That same rationale holds true in this case with respect to the \$220 capacity fee imputation being sought by the Public Staff.

While it is unfortunate that this oversight occurred, the regulatory compact does not require perfection, and the Commission concludes that the Company's reliance on the previous actions of the Commission was reasonable under the circumstances presented in this case.

Evidence and Conclusions for Finding of Fact No. 47

The evidence supporting this finding of fact is supported by the Application, the testimony of Public Staff witnesses Junis, the testimony of Company witness Becker, the exhibits of the witnesses, and the entire record in this proceeding.

Summary of Company Testimony

Witness Becker testified that the current available capacity in the Neuse Colony WWTP is 350,000 gpd, which includes the recent 100,000 gpd capacity upgrade completed in 2016. The WWTP was originally permitted at 360 gpd per residential customer. Over time, the Company applied for flow reductions that reduced the rating from 360 gpd per residential customer to 240 gpd, and then again from 240 gpd to the current rating of 180 gpd. According to witness Becker, this reduction in flow ratings maximizes the number of units that can be served and sold within an area served by the WWTP.

In rebuttal, witness Becker testified that witness Junis mistakenly based his opinion of the amount of sold capacity that appears on the Company's books rather than the actual flow capacity that results, which is the proper basis on which business decisions to build or buy capacity are and should be made. Witness Becker stated that witness Junis utilized the 360 gpd and 240 gpd ratings that were initially used to sell capacity but failed to consider the updated WWTP re-rating that uses actual current flows for these lots and for which decisions to build or buy are made. Using the current flow rating of 180 gpd, witness Becker stated that the Company is only utilizing approximately 316,000 of the total 350,000 gpd of capacity and that it collected CIAC of \$2,294,168, which exceeds the original plant cost of \$2,166,023.

Summary of Public Staff Testimony

Witness Junis argued that the Company has sold 561,001 gpd of wastewater capacity to developers through connection fees and capacity fees, including amounts sold by Heater prior to the Company's acquisition. By collecting CIAC from developers for over 200,000 gpd of capacity sold beyond the permitted maximum allowable flow of the present day 350,000 gpd Neuse Colony WWTP, witness Junis states the Company is obligated to provide treatment of wastewater that its current infrastructure may not be able to properly store and treat. He states that if the obligated flow is realized in a short period of time, there is an increased risk of wastewater overflows and/or incomplete treatment and contaminant exceedances. Further, witness Junis testified that the Company collected 6% more than the original cost of the utility plant in service for CIAC, while overselling

the plant capacity by approximately 60%, which will result in a CIAC shortage when the Company is necessitated by actual flows and DEQ's 80-90 rules to further expand the WWTP or purchase capacity from the County.

Commission Conclusions

The Commission is persuaded that it is more appropriate to calculate the capacity of the Neuse Colony WWTP based on actual flows and current ratings rather than using sold capacity based on unadjusted design gallonage ratings that exceed actual flows. To adopt the Public Staff's methodology would result in significant unused capacity and rate base at the facility, which would never be able to be utilized, and is ultimately not in the interest of the Company or consumers. In the final analysis, this is a matter of property rights and a question of which party owns the facility. The Neuse Colony WWTP is owned by Aqua and not by the developers who develop the lots. There is simply no evidence to show that the policy followed by the Company has or is likely to result in the overflows, incomplete treatments or contaminant exceedances predicted by the Public Staff. Flow reductions have doubled the capacity available for the Company to sell, which increases the potential for capacity fees and revenues, which is a benefit not only to the Company but also to its customers. Accordingly, the Commission concludes that the Company has not sold capacity in excess of what is available at the Neuse Colony WWTP.

Evidence and Conclusions in Support of Findings of Fact Nos. 48 - 51

The evidence supporting these findings of fact is supported by the Application, the testimony of Company witness Becker, the testimony of Public Staff witness Junis, the exhibits of the witnesses, and the entire record in this proceeding.

Summary of Company Testimony

Witness Becker testified that the Flowers Plantation is expected to grow by approximately 300 lots per year. Based on this anticipated growth, the Company began reviewing its capacity needs for Buffalo Creek based on actual flows in 2017. While considering plans to expand the Neuse Colony WWTP, the Company decided to examine the option of purchasing wastewater capacity from Johnston County. Aqua is contractually obligated to provide the full 500,000 gallons of capacity reserved for Flowers Plantation by the County. The Company's option to purchase wastewater capacity from the County expires in 2022. The Company determined that the prudent approach was to begin acquiring and using the Johnston County capacity before it expired.

In a Bulk Wastewater Service Agreement between Heater and the County dated May 14, 2002, it was agreed that at some future date (possibly after Heater built out its 750,000 gpd Neuse Colony wastewater treatment plant), Heater would purchase bulk wastewater from the County and pay the County's then prevailing capacity fee. The Bulk Wastewater Service Agreement provided that the County's then current capacity fee was \$5.50/gpd which would be adjusted by the County

in the future, based on the County's cost of construction of its wastewater treatment plant.

According to witness Becker's testimony, in 2009, the County quoted a price of \$6.29/gpd for capacity, which included \$4.83/gpd for wastewater treatment capacity and \$1.46/gpd for transmission fees to upgrade the County collection system. The Company did not consider this to be a prevailing rate as referred to in the 2002 Bulk Wastewater Service Agreement, but rather it was considered to be an initial price quote. Aqua reached this conclusion because Johnston County does not have published (prevailing) rates for wastewater capacity but rather states in its guidelines that wastewater capacity fees are determined on a negotiated basis.

In 2018, the County quoted a rate of \$8.48/gpd to Aqua, which included a \$5.34/gpd charge for wastewater treatment capacity and \$3.14/gpd for transmission fees to upgrade the County's collection system. Aqua needed to begin the process of purchasing capacity in 2018 and paid the \$8.48/gpd. However, the Company interpreted the County's proposal to be \$5.34/gpd for capacity and a separate and distinct quote of \$3.14/gpd for transmission fees to upgrade the County's collection system, which was contemplated to be billed to the Company on a monthly basis as provided in the 2002 Bulk Wastewater Agreement. While the Agreement provided for a monthly charge, the amount has never been billed because Aqua has thus far processed all wastewater at its Neuse Colony WWTP and did not purchase any wastewater capacity from the County until June 2018.

Nonetheless, the Agreement clearly states that the County would invoice monthly for bulk wastewater transmission service through a usage charge and is silent as to transmission fees being included as part of an up-front capacity fee anywhere in the Agreement. Because Aqua had been collecting \$6.00 per gpd from most of the developers, the Company concluded that it had appropriately charged and received sufficient funding to purchase the capacity. The Company viewed the \$5.34/gpd charge for capacity to be reasonable, but not the \$3.14/gpd transmission fee, because the initial contract provided that the capacity fee could be adjusted based only on the cost of construction for the County's WWTP and the Company was of the opinion that the WWTP had not been upgraded since 2006.

While Mr. Junis criticized the Company for not making periodic purchases over the last decade, witness Becker testified that the capacity was not in fact needed at that time and that it would have been imprudent to purchase additional capacity before it was needed. For that reason, witness Becker further argued that it is inappropriate to impute \$622,500 of CIAC as recommended by the Public Staff because Aqua did not purchase unneeded capacity in increments over the past 12-year period.

Witness Becker testified that it is appropriate to include these costs in rate base because the capacity will be used within a reasonable time frame after the close of the evidentiary hearing. He stated that he has been advised that North Carolina courts have held that customers could be assessed costs for future customers when the costs were based on a short-term projection. He added that it is obvious that the capacity purchased by the Company from Johnston County

benefits ratepayers and will be used within a reasonable time after the test period, or on the basis of a short-term projection. Therefore, he argued that it is appropriate to include this purchase in rate base, but, at the very least, the Company should be allowed to create an asset held for future use and recover carrying charges on the amount of the purchase. Witness Becker further testified that the problem results because Public Staff witness Junis removed \$2.12 million from plant in service, but only \$1.497 million of CIAC, resulting in approximately \$620,000 of imputed CIAC.

Summary of Public Staff Testimony

Witness Junis testified that the wastewater capacity is a negotiated rate between the Company and Johnston County and that the fee has been provided by the County to the Company a minimum of four times in 2002, 2009 and twice in 2018. In his view, comparing like kind rates over time, the wastewater capacity fee has been \$5.50 in 2002, \$6.29 in 2009, and \$8.48 in 2018. Witness Junis stated that developers who built on the Buffalo Creek side paid to the Company an average of \$5.99 per gpd for 250,000 gpd of capacity from January 11, 2006 through November 10, 2017.

Witness Junis testified that Aqua purchased 250,000 gpd of capacity from the County for \$8.48 per gpd on June 29, 2018¹², for a total cost of \$2,120,000, which is \$621,100 more than the \$1,498,900 that the Company collected in CIAC using the sold capacity volumes. Witness Junis concluded that the Company

¹² This capacity was actually purchased on June 29, 2018.

imprudently sold wastewater capacity to developers and collected CIAC at rates below the cost to construct and/or purchase capacity necessary to serve those customers. He stated that if the Company had purchased the Johnston County wastewater capacity in increments as it was receiving the CIAC from developers, the Company would have known the correct dollar amount of Johnston County wastewater capacity fees and could have collected the correct amount of CIAC from developers. Instead, witness Junis argues that the Company's imprudence resulted in Aqua paying \$8.48 per gpd while collecting over an 11-year period an average of \$5.99 per gpd and a developer CIAC shortfall of \$621,000, which ratepayers should not have to pay.

Additionally, witness Junis testified that the project to interconnect the capacity that the Company purchased from Johnston County in 2018 will not have completed construction until the first quarter of 2019. Therefore, the Company will be unable to send customer's effluent to the County within a reasonable time after the test period in this case.

Commission Conclusions

Resolution of the multiple issues associated with the Company's 2018 purchase of wastewater treatment capacity requires an analysis of the May 14, 2002 Bulk Wastewater Service Agreement ("May 14, 2002 Agreement"), which is included in the record as part of Public Staff Junis Exhibit No. 13 and Aqua Junis Cross Examination Exhibit No. 3. Paragraph 9, page 10 of that Agreement references specifically the capacity fee and provides that the capacity fee to be

paid by Heater (subsequently Aqua) is \$5.50 per gallon per day, and that the capacity fee paid by the developer to Heater shall be adjusted in the future based on the County's cost of construction of the County's wastewater treatment plant. The record is clear that no upgrades have been made by the County to the WWTP since 2006. Significantly, Paragraph 7, page 4 of the May 14, 2002 Agreement includes a separate and distinct provision applicable to charges for transmission and treatment service and provides that the County shall bill the Company monthly for those charges based on monthly wastewater meter readings.

The Commission notes that the published Johnston County Water and Sewer Policies do not establish a prevailing rate for wastewater treatment capacity but provide on page 19 that the capacity fee shall be a negotiated fee per gpd of average flow based on cost of infrastructure improvements. A negotiated fee contemplates some interaction between the parties and envisions that a mutual decision will be reached between the parties. It is possible that sometime after the May 14, 2002 Agreement, the County changed its policy such that increases in the capacity fee would be negotiated based on costs of infrastructure improvements, including its collection system, and not based upon cost of construction of its WWTP.

However, if such policy changes were made by the County, they do not negate the contractual obligations accepted by the County in the May 14, 2002 Agreement. An analysis of the rate proposals offered by the County in 2009 and 2018 must be reconciled with the provisions of the May 14, 2002 Agreement, which clearly contemplates that the capacity fee and the charges for transmission and

treatment services are separate and distinct. The 2009 letter from Johnston County to the then Aqua President (Aqua Junis Cross Examination Exhibit No. 4) clearly distinguishes the \$4.83/gpd capacity cost as being based on the unit capital cost of the County's most recent wastewater treatment facilities expansion, which is consistent with the original Agreement. The \$1.46 per gpd for transmission cost was stated as another charge, separate and distinct from the capacity charge, and is not related to treatment as specifically referenced by the agreement.

A review of the July 18, 2018 letter from the County to Mr. Becker (Aqua Junis Cross-Examination Exhibit No. 4) leads to a similar conclusion. Although the total fee proposal was \$8.48/gpd, it was separated into a proposed capacity fee of \$5.34 for WWTP capacity based on the cost of the last expansion, which occurred in 2006, again consistent with the intent of the May 14, 2002 Agreement. The email from Johnston County to the Company on August 23, 2018, supports this interpretation. (Aqua Junis Cross-Examination Exhibit No. 6) Accordingly, the Commission concludes that the Company's contention that the rates quoted by the County in 2018 included a capacity fee of \$5.34/gpd for capacity and a separate charge of \$3.14/gpd for transmission is reasonable.

The Public Staff alleges that it was unreasonable for the Company to not purchase capacity from the County over time or to adjust the amount of CIAC charged to developers based on the rates provided by Johnston County over time. However, to accept the Public Staff's argument, the Commission must ignore the existing contractual provision that the capacity charge and the transmission charge are separate and distinct charges, which is a position the Commission cannot

accept. Even if the May 14, 2002 Agreement was subject to different interpretations, the Commission is unable to conclude that Aqua's interpretation is unreasonable and further notes that the Company's interpretation of the contract has remained consistent since 2002. The Agreement also states, "Heater shall pay to the County the County's then prevailing capacity fee for bulk wastewater. The current fee is \$5.50 per gallon, which shall be adjusted by the County in the future, based on the County's cost of construction of the County's wastewater treatment plant."

The final capacity fee was clearly the result of a negotiated rate. Therefore, the Commission concludes that it would have been unreasonable for Aqua to ignore the contractual provisions that offered financial protection to the Company and its ratepayers and simply raise the \$6.00/gpd charge to secondary developers to match what amounted to mere offers received from the County. Similarly, it would have been unreasonable for Aqua to purchase capacity on a piecemeal basis when the Company did not yet have a need to purchase capacity. Furthermore, the approximate \$6.00 CIAC capacity charge has been subject to review by both the Public Staff and the Commission in numerous rate cases and numerous filings for contiguous extensions.

It would be inappropriate for the Commission to now impute additional CIAC to Aqua when the Company was acting in accordance with provisions of numerous secondary developer agreements, Commission Orders, the provisions of the May 14, 2002 Agreement, and the various communications from the County, which can be reasonably interpreted to be consistent with that Agreement. The capacity

fees collected by Aqua were included in each of the secondary developer agreements, which were properly filed with the Commission and allowed to become effective, since they were not suspended or disapproved. In effect, Aqua's secondary developer agreements function as tariffs which specify the capacity charges which the Company is authorized to charge secondary developers.

As to whether the capacity will be used and useful within a reasonable time after the test period under N.C. Gen. Stat. § 62-133(b)(1), the Commission concludes that the first quarter of 2019 is within a reasonable time after the test period. A public utility is under a present duty to anticipate, within reason, demands to be made upon it for service in the near future. *State ex rel. Utilities Com. v. General Tel. Co.*, 282 N.C. 318, 353, 189 S.E.2d 705, 728 (1972). Substantial latitude must be allowed the directors of the utility in making the determination as to what plant is presently required to meet the service demand of the immediate future, since construction to meet such demand is time consuming and piecemeal construction programs are wasteful and not in the best interests of either ratepayers or stockholders. *Id.*

It is established that present customers can be assessed costs for future customers when the costs are based on short-term projections. *State ex rel. Utilities Commission v. Carolina Water Service*, 335 N.C. 493, 439 S.E.2d 127 (1994). North Carolina General Statute 62-133(c) states that "... the Commission shall consider such relevant, material and competent evidence ... tending to show actual changes in costs, revenues or the cost of the public utility's property used and useful, or to be used and useful within a reasonable time after the test period,

in providing the service rendered to the public within this State ... which is based upon circumstances and events occurring up to the time the hearing is closed." Here, the Company included ratemaking adjustments in conjunction with its Application based upon its estimates of certain changes in costs that were anticipated to occur up to the time the hearing is closed, including the capacity purchased from Johnston County in 2018.

It is not disputed that the area in question is rapidly growing and that the additional capacity is needed. It is not disputed that the capacity will be used and useful in the immediate future. The only question is whether it will be used and useful within a reasonable time. Since the capacity was purchased within one year of the close of the test period, but months prior to the beginning of the evidentiary hearing, and since the capacity will be connected at an anticipated maximum of six months of the close of the evidentiary hearing, the Commission concludes that the capacity is used and useful and should be included in plant in service. As a practical matter, including the \$2.12 million in rate base will have minimal impact on customers because of the \$2,000,924 million of CIAC already recorded on the Company's books related to this capacity.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 52 - 54
(Adjustment for Excess Capacity to Sewer Utility Plant in Service)

Summary of Public Staff Testimony

Public Staff witness Junis testified that Aqua's general rate case filing in this docket included excess capacity adjustments for the Carolina Meadows, The Legacy at Jordan Lake, and Westfall (aka Booth Mountain) wastewater treatment

facilities. He stated that the excess capacity percentages are identical to the calculations done in Aqua's last general rate case, Docket No. W-218, Sub 363. See Aqua Exhibit C-1-ANC-10.

Witness Junis then stated that, based on the calculation methodology established by the Commission and used in Aqua's prior two general rate cases, he calculated the Company's wastewater excess capacity as follows:

Table 4

<u>Plant Name</u>	<u>Installed Capacity (gpd)</u>	<u>EOP REUs</u>	<u>Flow (EOP x 400 gpd)</u>	<u>Excess Capacity (1 – e/c)</u>
Carolina Meadows	350,000	607	242,800	30.63%
The Legacy at Jordan Lake	120,000	184	73,600	38.67%
Westfall (BM)	90,000	145	58,000	35.56%

Witness Junis further stated that Public Staff witness Henry implemented the updated excess capacity percentages and plant, net of accumulated depreciation and contributions in aid of construction (CIAC), to calculate the excess capacity adjustment proposed herein by the Public Staff.

Witness Junis also testified, in pertinent part, that on July 27, 2018, he and witness Darden inspected the wastewater treatment plant at Carolina Meadows. Regarding his inspection of the Carolina Meadows WWTP, witness Junis noted

that the Company completed a major modification and rehabilitation project in May 2018. Existing tankage was converted into a 90,000-gallon EQ tank and a separate 60,000-gallon digester. In addition, a mechanical fine screen was installed to improve sanitation and to help prevent rags and other debris from damaging equipment and decreasing the efficacy of the treatment process. The building was remodeled to address mold and facilitate operational testing and chemical storage. Witness Junis further stated that Aqua has converted to reclaimed water for process water needs to reduce purchased water expense.

In her direct testimony, Public Staff witness Cooper testified that there was an error made by the Company in its calculation of excess capacity for this proceeding. The Company used the wrong depreciation rate in determining the net plant in service and depreciation expense subject to an excess capacity adjustment for the Carolina Meadows wastewater treatment plant. Witness Junis corrected this error by reducing the depreciation rate from 5% to 4%.

Next, witness Cooper stated that she applied Public Staff witness Junis' excess capacity percentage of 30.63%, 38.67% and 35.56% to remove from rate base the percentage of plant and accumulated depreciation related to excess capacity for the wastewater treatment plants at Carolina Meadows, The Legacy at Jordan Lake, and Westfall Subdivision, respectively.

On September 5, 2018, witness Cooper filed supplemental direct testimony wherein she stated that excess capacity had been adjusted to reflect activity

through June 30, 2018. As a result, the Public Staff's excess capacity adjustment increased by \$518,095.

Summary of Company Testimony

In his rebuttal testimony, Aqua President Becker testified that the Company did not disagree with Public Staff witness Junis's excess capacity calculation (as it had been used in prior cases). However, witness Becker testified that Aqua recommended and requested that plant amounts determined to be excess, and removed from rate base, should be allowed to receive deferred accounting treatment. This would allow the Company to defer the recovery of depreciation and continue to capitalize carrying costs until the capacity is actually utilized. According to witness Becker, Aqua's proposal would provide a better matching of the new customer revenues that are utilizing the capacity with the actual costs to economically build the capacity. He further stated that Aqua would review on an annual basis the amount of new capacity being utilized and the deferral treatment will stop being recorded on the Company's books for any portion once it is actually being utilized.

Witness Becker testified that deferred accounting treatment does not harm current customers. He stated that portions of assets determined to be excess would continue to be removed from rate base and related expenses associated with such portions of the assets would be excluded from the Company's current revenue requirement. He stated that allowing deferral accounting treatment will do no harm to current customers and may, in fact, provide a benefit. The current

treatment of excess capacity promotes short-term decision-making on projects that may otherwise realize savings opportunities from utilizing economies of scale, a result which can ultimately result in increased costs to current customers. In contrast, utilization of deferred accounting treatment for “excess” assets would likely benefit current customers through a reduced revenue requirement via realized savings that result from a company’s ability to take advantage of economies of scale when building plant.

Witness Becker continued by stating that a simple example of why utilizing deferred accounting treatment for excess capacity should be beneficial to current customers would be a utility’s decision to build a 100,000-gallon plant capacity that could serve current customers and expected growth for the next three years, versus building a 200,000-gallon expansion that could be utilized for current customers and expected growth over the next six years. The 200,000-gallon expansion project is likely to be much more cost effective, even when considering the time value of money, than completing two separate 100,000-gallon capacity expansion projects to a wastewater treatment plant. This is true even though you end up with the same capacity in the end. The second 100,000 gallons of the single 200,000-gallon project, however, is also likely to be considered excess and the utility will be prevented from recovering any depreciation expense or carrying costs until it is determined to no longer be excess when using the current excess capacity treatment. In this example, a utility is disincentivized from taking advantage of any economies of scale and prompted to make a short-term decision to build the smaller capacity plant. Management is likely to take advantage of all

economies of scale that ultimately benefit customers, but the disincentive that exists from excess capacity treatment adds an unnecessary financial penalty to the utility for so doing.

President Becker testified that Aqua requested deferred accounting treatment with respect to the excess capacity recommended for adjustment by Public Staff witness Junis that results in a \$32,940 reduction of the revenue requirement in this rate case. The financial impact to rates that would result from deferred accounting treatment in this rate case is zero, as only the prospective related depreciation expense and any carrying costs will be deferred until the excess capacity is actually being used.

On September 7, 2018, Aqua President Becker filed supplemental rebuttal testimony in this docket. In that supplemental rebuttal, witness Becker testified that he had reviewed the excess capacity adjustment that Public Staff witness Cooper made in her supplemental testimony filed in this docket on September 5, 2018. President Becker stated that, in her supplemental testimony, witness Cooper stated that the Public Staff's initial excess capacity adjustment had been further adjusted to reflect activity through June 30, 2018. As a result, the Public Staff's excess capacity adjustment increased by \$518,095.

President Becker further testified that witness Cooper did not describe the nature of and reason for her additional proposed supplemental ratemaking adjustment, but that she simply stated that a supplemental adjustment had been made and she then set forth the dollar amount of the adjustment.

Witness Becker testified that he was subsequently able to determine the nature and reason for the Public Staff's additional supplemental adjustment, which he described as follows. Subsequent to the test year in this case, which ended on September 30, 2017, Aqua completed an upgrade project at its Carolina Meadows wastewater treatment plant ("WWTP"). The total cost of this project was approximately \$1.7 million. This project was necessary to prevent further degradation and failure of the current equalization basin. The existing equalization basin was rehabilitated, which included metal restoration, sandblasting and painting. Additional work included replacement of the degraded handrails, installation of new blowers, piping and diffusers. The digester was rehabilitated, and the existing malfunctioning mechanical fine screen was replaced with a new Huber fine screen. This work was not performed to provide additional capacity at the plant, but simply to maintain the aging and deteriorating asset already in place.

According to Aqua witness Becker, these upgrades or improvements substantially benefitted current customers and were not required for the purpose of serving future customers. In the exhibits to its direct testimony, the Public Staff included the entire cost of this project in the Company's rate base; i.e., in effect agreeing that the project is used and useful and appropriate for inclusion in Aqua's cost of service. Public Staff Witness Cooper did not make an excess capacity adjustment for this project in her direct testimony but has now done so in her supplemental testimony.

President Becker testified that he disagreed with the adjustment. He further stated, in his rebuttal testimony, that he did not disagree with Public Staff witness

Junis's excess capacity calculation (as it has been used in prior cases) but did request that plant amounts determined to be excess, and removed from rate base, should be allowed to receive deferred accounting treatment. This continues to be the Company's position. However, by his supplemental rebuttal testimony, witness Becker stated that he was then requesting that the Commission disallow the Public Staff's excess capacity adjustment for the Company's 2018 investment at the Carolina Meadows WWTP. President Becker testified that this adjustment is inappropriate and unreasonable. He stated that the revenue impact of this adjustment is a reduction of \$59,717.

In the case of Carolina Meadows and any of the other 58 WWTPs that Aqua owns and maintains, President Becker testified that WWTP rehabilitation is often needed to maintain and preserve the plant's overall condition. At Carolina Meadows, Aqua spent approximately \$1.7 million in making necessary rehabilitations and upgrades. These types of needed plant upgrades should not be subject to an excess capacity adjustment that effectively disallows 30.63% of this upgrade immediately after this investment was made by the Company. Such adjustments for these types of capital expenditures are unreasonable and unfair to Aqua and, ultimately, to the Company's current customers who are served by and benefitted by WWTP rehabilitations and upgrades.

Witness Becker continued by stating that the Public Staff also included as part of its initial excess capacity adjustment a similar adjustment for capital costs incurred for improvements at the Company's WWTPs prior to or during the test year for this case. In that regard, the Company included approximately \$175,000

for WWTP improvements which fall into that category and which were excluded by the Public Staff as part of the excess capacity adjustment made in its direct testimony. Through oversight, Aqua failed to challenge that portion of the Public Staff's initial excess capacity adjustment. For that reason, witness Becker stated that Aqua would accept the Public Staff's initial adjustment for purposes of this case due to the Company's failure to challenge it in its rebuttal testimony, but that the Company reserves the right to contest such adjustment in its next rate case. According to witness Becker, the Company views this accommodation as a reasonable compromise at this point in the rate case. The Company does, however, request that the Public Staff's supplemental excess capacity adjustment related to the post-test year WWTP rehabilitations and upgrades at the Carolina Meadows WWTP be rejected and disallowed.

On cross-examination by Public Staff attorney Grantmyre (Tr. Vol. 15, pp. 67-81), President Becker conceded that he was unaware of the Commission having ever approved deferral accounting for Aqua related to plant. In response to cross-examination questions regarding the Company's Cannonsgate WWTP (a fully-contributed plant), witness Becker reiterated his position that plant upgrade costs, which are not part of the initial capacity buildout of a plant, are different from the initial costs because they are required to benefit customers. President Becker further testified on cross-examination that he was seeking full ratemaking recovery for the Carolina Meadows post-test year upgrade project amount of approximately \$1.7 million because application of the Public Staff's proposed excess capacity adjustment to that upgrade project would cost the Company to lose or write-off

30% of the upgrade costs. Witness Becker concluded by stating that Aqua is seeking “some kind of acceptable treatment where we're not losing a third of everything we spend.”

Commission Conclusions Regarding WWTP Excess Capacity Issues

The Commission reaches four primary conclusions regarding the WWTP excess capacity issues under consideration in this case. First, the Commission concludes that the excess capacity adjustment percentages of 30.63% for the Carolina Meadows WWTP, 38.67% for the Legacy at Jordan Lake WWTP, and 35.56% for the Westfall WWTP proposed by the Public Staff and which were agreed to by Aqua should be approved. Second, the Commission concludes that it would be unreasonable to apply the excess capacity adjustment percentage of 30.63% at Carolina Meadows to the Company's post-test year WWTP upgrade project at that facility, the cost of which was approximately \$1.7 million. The entire cost of Aqua's Carolina Meadows WWTP upgrade project will be included in rates in this proceeding. Third, the Commission concludes that Aqua should be authorized to utilize deferred accounting treatment with respect to WWTP amounts determined to be excess capacity, and consequently removed from rate base, at the Company's Carolina Meadows, The Legacy at Jordan Lake, and Westfall WWTPs. Fourth, the Commission concludes that it is reasonable and appropriate to include as part of the excess capacity adjustments in this case capital costs for improvements in the total amount of approximately \$175,00 incurred at the Company's WWTPs prior to or during the test year; provided, however, that such

approval is subject to the right of Aqua to challenge, without prejudice, such adjustment in its next rate case.

The Commission reaches these conclusions for several reasons. First, the Commission finds the rebuttal and supplemental rebuttal testimony offered by Company President Becker to be more persuasive on the WWTP excess capacity adjustment issues than the testimony offered by the witnesses for the Public Staff.

Second, Aqua has been reasonable in its approach to the excess capacity issues in this case, specifically by stating in its testimony that the Company did not contest Public Staff witness Junis's excess capacity calculation (as it had been used in prior cases) for the three specified WWTPs. In essence, Aqua does not challenge the concept of an excess capacity adjustment if correctly applied under specific factual circumstances as are present in this case with regard to the three specified WWTPs.

Third, Aqua submitted substantial and credible evidence through the rebuttal testimony of Company President Becker in support of its request that plant amounts determined to be excess capacity, and removed from rate base, should be allowed to receive deferred accounting treatment. The fact that the Commission may not have heretofore approved deferred accounting for Aqua related to plant is not determinative in this case, in view of the fact that this is likely a case of first impression for the Company. The Commission concludes that deferred accounting treatment is reasonable under these circumstances since it will fairly allow the Company to defer the recovery of depreciation and capitalize

carrying costs until the capacity is actually utilized. The Commission agrees with witness Becker that Aqua's proposal would provide a better matching of the new customer revenues that are utilizing the capacity with the actual costs to economically build the capacity.

Fourth, we agree with President Becker that deferred accounting treatment does not harm current customers in view of the fact that portions of assets determined to be excess would continue to be removed from rate base and related expenses associated with such portions of the assets would be excluded from the Company's current revenue requirement. The financial impact to rates that would result from deferred accounting treatment in this rate case is zero, as only the prospective related depreciation expense and any carrying costs will be deferred until the excess capacity is actually being used.

Fifth, the Commission agrees with Aqua witness Becker that, not only will allowing deferral accounting treatment will do no harm to current customers, it may, in fact, provide a benefit. The current treatment of excess capacity very likely promotes short-term decision-making on projects that may otherwise realize savings opportunities from utilizing economies of scale, a result which can ultimately result in increased costs to current customers. In contrast, we agree with President Becker that utilization of deferred accounting treatment for "excess" assets would likely benefit current customers through a reduced revenue requirement via realized savings that result from a company's ability to take advantage of economies of scale when building plant.

Sixth, the Commission concludes that President Becker's supplemental rebuttal testimony fully supports including the entire cost (approximately \$1.7 million) of the Carolina Meadows post-test year WWTP upgrade project in rates in this proceeding. The Commission finds reasonable and determinative witness Becker's detailed testimony on direct and during cross-examination which described the nature and need for the rehabilitation work that was accomplished and the fact that this work was not performed to provide additional capacity to the plant, but simply to maintain the aging and deteriorating asset already in place. We likewise find determinative the testimony of witness Becker that the upgrades or improvements in question substantially benefitted current customers and were not required for the purpose of serving future customers. In the case of Carolina Meadows and any of the other 58 WWTPs that Aqua owns and maintains, President Becker testified that WWTP rehabilitation is often needed to maintain and preserve the plant's overall condition. The Commission also notes that Public Staff witness Junis himself described the Carolina Meadows upgrade project as being "a major modification and rehabilitation project." Accordingly, the Commission concludes that these types of needed plant upgrades should not be subject to an excess capacity adjustment which effectively disallows 30.63% of this "major modification and rehabilitation project" immediately after this investment was made by the Company. Such an adjustment for these types of capital expenditures is unreasonable and unfair to Aqua and, ultimately, to the Company's current customers who are served by and benefitted by WWTP rehabilitations and upgrades.

Seventh, the Commission agrees with the position set forth by witness Becker in his supplemental rebuttal testimony that it is a reasonable compromise to include as part of the excess capacity adjustments in this case capital costs for improvements in the total amount of approximately \$175,000 incurred at the Company's WWTPs prior to or during the test year; provided, however, that such approval is subject to the right of Aqua to challenge, without prejudice, such adjustment in its next rate case. This ratemaking treatment is fair to both customers and the Company in that it, in effect, penalizes Aqua for failing to recognize and litigate this issue as part of its rebuttal testimony, while allowing the Company to relitigate this issue, if it chooses to do so, without prejudice in its next rate case.

Accordingly, for the reasons set forth above, the Commission concludes that the findings of fact reached regarding the WWTP excess capacity issues are reasonable and appropriate and supported and justified by the evidence in this case, particularly the rebuttal and supplemental testimony offered by Company President Becker.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 55 - 56
(Annualization and Consumption Adjustments)

Summary of Public Staff Testimony

In his direct testimony, Public Staff witness Junis testified that updating the test year billing data to the 12-month period ending June 30, 2018, resulted in a higher level of bills than reflected in the originally filed application for the 12-month test year period ending September 30, 2017. He stated that he had adjusted the

consumption for the updated data using a three-year average (July 2015 through June 2018) compared to only using the 12 months ended June 30, 2018. According to witness Junis, the consumption adjustment resulted in a 0.47% decrease for Aqua NC Water, 1.85% decrease for Aqua NC Sewer, 1.21% increase for Brookwood Water, 2.97% increase for Fairways Water, and 0.91% decrease for Fairways Sewer to reflect the difference between the test year per customer usage and the three-year average for the period ended June 30, 2018.

Witness Junis further testified that using the data in his billing analysis exhibit updated through June 30, 2018, Public Staff witness Henry was able to calculate the growth and consumption factors referred to in his testimony. In addition, witness Junis stated that he recommended that Public Staff witness Henry apply the growth and consumption factors to the sewer and water short-term variable expenses identified by the Environmental Finance Center. (EFC Report, pp. 6 and 11) The exceptions were for sludge removal, purchased wastewater treatment, and purchased water expenses. Witness Junis stated that the sludge removal expense was calculated by Public Staff witness Darden to be the annual average of the updated two-year period ending June 2018, which includes recent growth and changes in consumption. According to witness Junis, short-term variability of the purchased wastewater treatment and purchased water expenses are almost entirely matched by variability of the commodity revenues of those systems.

Summary of Company Testimony

Aqua witness Gearhart testified that he disagreed with the Public Staff's annualization and consumption adjustments. According to witness Gearhart, the purpose of this adjustment is to update variable expenses to match Aqua's period-end (June 30, 2018) customer count using a calculated "Annualization Factor" along with a "Consumption Factor" that is calculated using current consumption levels versus Aqua's three-year average consumption. Witness Gearhart further stated that the methodology to apply these factors has been consistently applied over Aqua's last two rate cases; however, the Public Staff has changed from its prior methodology in three areas, as follows:

1. The "Consumption Factor" has been applied in this case to Aqua's two Sewer Rate Divisions; whereas the consumption factor should only apply to Aqua's three Water Rate Divisions.

Witness Gearhart testified that in Aqua's two previous rate cases (Docket Nos. W-218, Sub 319 and W-218, Sub 363), the Consumption Factor was not applied to either the Aqua Sewer or Fairways Sewer rate entities. According to witness Gearhart, the variable expenses for these sewer entities is primarily customer driven, while the consumption factor is designed to apply to only water rate entities.¹³

¹³ In response to question 1 of Public Staff Engineering Data Request No. 60 (entered in the record in this case as Public Staff Gearhart Rebuttal Cross Exhibit 1), witness Gearhart responded that:

The basis for this contention was the fact that the consumption factor used in this adjustment is based on customer gallons billed. Applying that factor to sewer entities where the vast majority of customers are flat rate and have no billed consumption would seem to be inappropriate.

This factor has not been applied to sewer entities for any Aqua NC rate cases dating back to at least 2007 and neither the company nor the Public Staff have disagreed on this concept.

Witness Gearhart further stated that, as a result, on Cooper Exhibit I, Schedule 3-5(a)(1), the Consumption Factor on line 2 for Aqua Sewer, should be changed from -1.85% to 0.00% and that line 4 for Fairways Sewer should be changed from -0.91% to 0.00%.

2. Adjustments for Sludge Hauling expense that have been part of the annualization calculation in each of Aqua's last two rate cases (Docket Nos. W-218, Sub 319 and W-218, Sub 363) have been excluded from the annualization calculation in this rate proceeding.

Aqua witness Gearhart stated that Public Staff witness Junis recommended that an annualization and consumption adjustment should be applied to items identified as short-term variable expenses by the Environmental Finance Center ("EFC") study, filed on March 31, 2016, with the Commission in Docket No. W-218, Sub 363A. ([Click here for link to EFC study on www.ncuc.net](http://www.ncuc.net)), pages 6 and 11. Witness Gearhart testified that Mr. Junis, however, specifically excludes sludge expense, which is (a) recommended by the EFC study on page 6 and (b) included in the prior Public Staff rate case calculations mentioned above.

Witness Gearhart further stated that, despite Aqua's disagreement with the Public Staff's position on the sludge adjustment in witness Darden's testimony and as described in Aqua witness Pearce's testimony, the annualization factor is a separate calculation to take the historic balances (or averages) and annualize them for current end-of-period customer counts.

According to witness Gearhart, sludge hauling is the removal of wastewater solids from a treatment plant. The increase in wastewater based on the Company's current customer count (as of June 30, 2018) will result in the

requirement to remove more sludge material. Public Staff witness Junis has excluded sludge hauling from his calculation, citing the fact that sludge removal expense was calculated separately by the Public Staff to be the annual average of the two-year period ending June 2018. The mid-point of these two years is June 2017. Since Aqua NC's total sewer customer count has increased by 4.2% since June 2017, witness Gearhart testified that this does not represent the expense levels that will be incurred using the current customer count of June 30, 2018. He stated that an average understates the actuality of an end-of-period number and undermines the intent of the annualization adjustment and the Company's opportunity to recover the costs associated with these customers.

Witness Gearhart further stated that witness Junis's reasoning to selectively exclude an expense line that is directly related to customer counts from the annualization adjustment because it was separately updated using an average is flawed.

For the reasons stated, witness Gearhart requested that Sludge Hauling Expense be added to the Annualization Adjustment calculation for this case, consistent with practice in the Company's two prior rate cases.

On cross-examination by the Public Staff, witness Gearhart testified that, while he agreed that if water customers use less water, there would be less wastewater and less sludge produced, he further stated that because only a small population of Aqua's sewer customers are metered sewer customers "...it's not appropriate to apply the [consumption] adjustment to the entire population of the sewer rate entities...both historically and logically, to the Company's way of

thinking.” (Tr. Vol. 13, Page 109, Lines 17-24)

3. Materials and Supplies Expense has been erroneously excluded from the Annualization and Consumption Adjustment despite being included in the previous two rate orders cited above.

Witness Gearhart testified that Materials and Supplies expense is a variable expense where a large portion of the annual amounts increases with both the number of customers served and the level of annual consumption supported. Neither the Company nor the Public Staff has disputed this position in previous rate proceedings; however, witness Junis excluded these expenses from his annualization calculation.

Witness Gearhart requested that Materials and Supplies expense be added to the Annualization and Consumption Adjustment calculation for this case.

Witness Gearhart concluded by stating that Mr. Junis’s exclusion of certain variable expenses effectively reduces revenues to which Aqua is entitled, and excludes legitimate costs associated with the number of customers which the Company serves as of June 30, 2018, at its current level of consumption. Per the Company’s calculations, the impact of failing to apply the Annualization and Consumption Adjustment factors to the three items enumerated above reduces the expenses which the Company is entitled to recover in this case.

Commission Conclusions Regarding Annualization and Consumption Adjustments

Based on the totality of the evidence of record, the Commission concludes that:

1. The Public Staff's proposed consumption adjustment factors should not be applied to either Aqua's NC Sewer Rate Division or the Company's Fairways Sewer Rate Division. The consumption adjustment factors proposed by the Public Staff should only be applied to Aqua's three Water Rate Divisions (Aqua NC Water, Brookwood Water, and Fairways Water).

2. Aqua's sludge hauling expense and materials and supplies expense should be included in the Company's expense annualization adjustment as part of the cost of service in this proceeding. The Public Staff incorrectly and unreasonably excluded these expense items from its proposed annualization adjustment.

The Commission reaches these conclusions for several reasons. First, the Commission finds the rebuttal testimony offered by Company witness Gearhart to be more persuasive on the annualization and consumption adjustment issues than the testimony offered by Public Staff witness Junis.

Second, a consumption adjustment factor was not applied to either of the Aqua's Sewer Rate Divisions in the Company's two prior rate cases and the Commission does not find good cause to depart from that treatment in this case. The Commission agrees with Aqua witness Gearhart that the variable expenses for the Company's Sewer Rate Divisions are primarily customer driven while the consumption factor is designed to apply only to water rate entities.

Third, annualization adjustments for sludge hauling expense and Materials and Supplies expense were applied in the Company's two prior rate cases. Here again, the Commission does not find good cause to depart from that treatment in

this case. The Public Staff has not offered adequate justification in support of its proposal to convince the Commission to change precedent and exclude sludge hauling expense and Materials and Supplies expense from the annualization adjustment in this case. In addition, the Commission has been influenced by the fact that the EFC Study (at page 6) recognizes sludge removal as a variable expense, which, in our view, should continue to be part of the annualization adjustment for ratemaking purposes. The Commission also agrees with witness Gearhart that the Public Staff's proposal to selectively exclude sludge expense from the annualization adjustment because it was separately updated by use of a two-year average, is flawed and should be rejected.

Fourth, the Commission agrees with witness Gearhart that Materials and Supplies expense is a variable expense where a large portion of the annual amounts increases with both the number of customers served and the level of annual consumption supported. The Public Staff has not shown any contrary evidence on this point.

Fifth, the impacts of the Public Staff's proposed changes to annualization and consumption adjustments in this case are financially material to the Company and would have the effect of denying recovery of legitimate cost-based expenses as part of the cost of service in this case.

Accordingly, for the reasons set forth above, the Commission concludes that Aqua has met its burden of proof with respect to its position regarding the appropriate annualization and consumption adjustments in this case. The Public Staff's proposals are unreasonable and inappropriate, unsupported by the facts, and unjustified. Aqua's position on these issues is compelling and fully justified. Therefore, The Public Staff's proposed consumption adjustment factors should not be applied to either Aqua's NC Sewer Rate Division or the Company's Fairways Sewer Rate Division and Aqua's sludge hauling expense and materials and supplies expense should be included in the Company's expense annualization adjustment as part of the cost of service in this proceeding.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 57
(Adjustment to Remove One-Half of Updated Labor Costs [Salaries and Benefits]
of Four Operational Employees)

Summary of Public Staff Testimony

In his direct testimony, Public Staff witness Henry stated that, based on the recommendation of Public Staff witness Junis, he removed one-half of the updated labor costs of four operators from Aqua's salaries and wages expense. In his direct testimony, Public Staff witness Junis stated that Aqua contracted with USIC Locating Services, LLC ("USIC") to perform utility locates and other activities in response to the "One Call/NC 811" system. According to witness Junis, in an effort to quantify the expense savings as a result of USIC performing the "One Call/NC 811" work previously performed by Aqua personnel, the Public Staff made multiple data requests. See Junis Exhibit 21, EDR 33 Q2 and Junis Exhibit 22, EDR 45 Q1. Witness Junis testified that Aqua management originally planned

to hire six full-time employees to fully perform the work the Company had been deficient in completing. The evaluation had excluded supervisor time necessary to conduct a cursory review and assign workable tickets in the Company's service territory. Witness Junis stated that Mr. Joe Pearce, Aqua's Director of Operations, estimated the expense to Aqua avoided by contracting USIC to be approximately \$693,667, which includes the fully loaded costs of ten field staff and one supervisor. Furthermore, the Company stated:

Approximately 10% of 811 work orders are currently being worked...the remaining 90% are not being addressed timely. This delinquency has exposed ANC to fines/penalties, lawsuits, and significant repair costs necessary to fix damaged unmarked lines.

(EDR 45 Q1, p 1)

Based on an allegation of Aqua's inability to quantify the actual expense incurred in the test year to address One Call/NC 811 tickets, the responses referenced above, and the fact that the Company has stated approximately 40% of all the tickets were workable and only 10% of those were being completed, Public Staff witness Junis recommended reducing workforce expense for 50% of a Field Supervisor I's workload and 50% of three Utility Technicians' workload, one from each of the three regions, to complete tickets that the Company responded to prior to contracting with USIC.

Summary of Company Testimony

In his rebuttal testimony, Aqua President Becker testified that he disagreed with the Public Staff's proposed adjustment to reduce the Company's workforce labor and benefits expense by 50% for four positions, due to Aqua's decision to contract with USIC to do line locates. Witness Becker asserted that witness Junis

seeks to arbitrarily eliminate part of Aqua's workforce---overriding a responsible management decision to re-deploy employees to other tasks---due to management's decision to employ an outside vendor to comply with "One Call/NC 811" work. According to witness Becker, Mr. Junis's adjustment is essentially the elimination of two full time employees ("FTEs"), and that adjustment should be summarily rejected as it (a) reflects an unsupportable and inappropriate intrusion into management decisions; (b) ignores Aqua's demonstrated need and prerogative to contract with outside vendors for completion of a range of activities which are not the Company's core competencies, specifically including line locates; and (c) ignores the fact that there was no staff reduction, as staff time was reassigned to other core services.

Witness Becker further stated that Aqua began looking at the possibility of outsourcing the "One Call/NC 811" work in 2017. During that year, the Company's operations management team made and supported a recommendation to outsource line locate work related to "One Call/NC 811" requirements. The Company determined that these functions are more reasonably managed and handled by outside vendors who specialize in the activity. The contract with USIC was executed on February 26, 2018, and USIC began to handle Aqua's 811 call volume on May 1, 2018.

Company President Becker testified that certain factors supported the Company's decision to rely on an outside vendor to meet this function. Specifically, witness Becker stated that management focused on the choices and

the evaluation of alternatives---including hiring more FTEs to perform the work internally---and decided to outsource this activity based on the following factors:

- The skill-set necessary to complete line locates is different than those of water and wastewater professionals;
- Using Aqua's water and wastewater professionals to complete the large volume of line locates is disruptive to their normal work schedules;
- This work is episodic and includes emergency locate requirements;
- It is an inefficient use of a water/wastewater supervisor's time to continuously manage this effort; and
- Using a firm with statewide coverage, specific expertise, and ongoing activity in our areas of operation provided efficiencies and assurance of consistency.

According to President Becker, it was clear to Aqua management that use of outside, specialized resources was the most appropriate option. The decision to contract line locate work additionally included---but was not limited to--- consideration of benefits of avoiding additional hires for line locates, elimination of the responsibility of managing a non-core service, and reduction of risk and liability related to unaddressed line locates. Time previously spent by Aqua employees to respond to line locate work orders is now used for other water and wastewater duties which are more directly in line with Aqua's core services. These services--- the need for which is increasing over time, not decreasing---include maintenance on filters, pumps, lift stations, wastewater treatment plant equipment, collection and distribution lines, reporting requirements, environmental regulatory compliance, flushing initiatives, sludge hauling, testing, "Close the Loop" initiatives, and meeting customer expectations.

Witness Becker continued by stating that, in his opinion, the Public Staff has not made or supported any claim in this case that Aqua is overstaffed. To the contrary, Aqua's field workforce and supervisors are fully utilized daily to handle their workload. Mr. Junis's testimony does not state that Aqua has either an excessive field supervisory or field staff workforce. Moreover, prior to the Public Staff's filing of testimony in this rate case, Mr. Becker stated that he had never heard anyone from the Public Staff or other regulatory agency state that Aqua is overstaffed for field personnel. Witness Becker asserted that he could confidently state that the Company's field staff employees are fully utilized. To the contrary, the Public Staff has, on several occasions in public forums in the past year, stated that Aqua was significantly understaffed in some respects.

Witness Becker stated that Aqua's intent related to line locate work was and is to cost-effectively meet regulatory requirements and reduce the Company's risk of asset damage and liability.

President Becker further testified that he disagreed with witness Junis's assumption that an Aqua supervisor was spending half of his/her time managing the One Call/NC 811 process. He stated that such assumption was incorrect and that, in fact, the lack of a supervisor - or half of a supervisor - was one of the drivers for the need to outsource this program.

Company witness Becker testified that he could not say at this time whether there will be repair savings by having reduced contract claims, because that cannot be known at this time. He asserted that any attempt to meaningfully correlate use of outside vendors with a change in the repair cost experience is, at this point,

sheer hypothesis and is definitely not known and measurable. That said, the program has just begun, results will be tracked and monitored, and those results will be available for a future audit. In the meantime, President Becker asserted that the proposed reduction of the expenses for employees who are actually on payroll and fully deployed doing necessary work shows indifference on the part of the Public Staff to (a) management's prerogative to make deployment decisions; (b) the reality of Aqua's need for the staff; and (c) the fact that this is an opportunity to retain and use existing staff for legitimate purposes, rather than having to hire new employees.

President Becker recommended that the Commission reject---as inappropriate and unwarranted---all recommendations associated with reduction in workforce due to Aqua's decision to contract with a professional, specialized outside vendor to perform line locate services. The amount of labor previously expended addressing line locates was minimal; however, all previous time spent by these Aqua field staff and supervisors related to the provision of line locate services was filled with work on other core water and wastewater services necessary for operations. Making an adjustment to eliminate 50% of three field technicians and 50% of one supervisor, all of whom continue to be actively employed performing other work-related duties, is nonsensical.

Witness Becker further noted that it is essential to Aqua, as a regulated utility, that regulation observe the difference between proper regulatory oversight and attempts to supplant management's obligation to prudently run the business. President Becker concluded his rebuttal testimony by stating his opinion that

rejection of this adjustment and of the Public Staff's insufficient rationale is appropriate. He also stated that such action would provide needed guidance about the proper balance that should be struck between the regulator and the regulated, with respect to the responsibility to manage the business on a day-to-day basis.

Commission Conclusions

The Commission concludes that the Public Staff's proposed adjustment to exclude 50% of the updated labor costs of four Aqua field operational employees from the cost of service in this case is unreasonable and inappropriate for the reasons testified to by Company President Becker.

First, the Commission agrees that it was a prudent management decision for Aqua to contract with USIC in 2018 in view of the Company's demonstrated need and prerogative to contract with outside vendors for completion of a range of required activities which are not the Company's core competencies, specifically including, in this instance, "One Call/NC 811" line locates. Aqua began looking at the possibility of outsourcing the "One Call/NC 811" work in 2017. During that year, the Company's operations management team made and supported a recommendation to outsource line locate work related to "One Call/NC 811" requirements. The Company determined that these functions are more reasonably managed and handled by outside vendors who specialize in the activity. The Commission concurs with the Company's assessment in that regard.

Second, the Commission agrees with and finds reasonable witness Becker's testimony which recites the five factors which led the Company to retain

USIC as an outside vendor to perform the required “One Call/NC 811” line locates. The Company was entirely prudent in making this decision; a decision which the Public Staff does not challenge.

Third, The Commission agrees with President Becker that time previously spent by Aqua employees to respond to line locate work orders can now be used for other water and wastewater duties which are more directly in line with Aqua’s core services. These services, which according to witness Becker, the need for which is increasing over time, not decreasing, include maintenance on filters, pumps, lift stations, wastewater treatment plant equipment, collection and distribution lines, reporting requirements, environmental regulatory compliance, flushing initiatives, sludge hauling, testing, “Close the Loop” initiatives, and meeting customer expectations.

Fourth, the Commission agrees with witness Becker that the Public Staff has not made or supported any claim in this case that Aqua is overstaffed, particularly in view of the testimony offered by President Becker that Aqua’s field workforce and supervisors, including the four positions at issue, are otherwise fully utilized daily to handle their workload.

Fifth, the Commission concurs with Aqua’s stated intent to perform line locate work in a manner designed to cost-effectively meet regulatory requirements and reduce the Company’s risk of asset damage and liability. The prudence of this decision is obvious.

Sixth, the Commission agrees that it is the prerogative of Aqua's management to make deployment decisions based the reality of the Company's need for the staff and the fact that this is an opportunity to retain and use existing staff for legitimate purposes, rather than having to hire new employees.

Accordingly, for the reasons set forth above, the Commission concludes that the Public Staff's proposed adjustment to eliminate 50% of the salaries and benefits of three field technicians and one supervisor (totaling \$73,901), all of whom continue to be actively employed performing other work-related duties, is unreasonable, unsupported by the facts in this case, and unjustified. Aqua's position on this issue is compelling and fully justified. Therefore, the Public Staff's proposed adjustment is hereby denied.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 58
(Adjustment to Allocate 30% of North Carolina Supervisory Employee
Bonuses to Shareholders)

Summary of Public Staff Testimony

In his direct testimony, Public Staff witness Henry stated that the Company's application included bonuses paid to North Carolina employees during the test year, including Short-Term Incentive ("STI") bonuses and achievement awards. After examining Aqua's bonus policies, witness Henry testified that he removed 30% of the STI bonuses paid to the North Carolina employees. According to Aqua's most recent policies for the STI Plan, 60% of the metric weight depended on financial while 50% of the 60% is directly related to Aqua America's earnings per share. Earnings per share directly benefit the shareholders' value instead of

ratepayer's benefit. Therefore, Mr. Henry testified that he removed 30% of the bonuses from expenses and allocated them to the Company's shareholders.

Summary of Company Testimony

Aqua witness Kopas testified on rebuttal that he disagreed with Public Staff witness Henry that 30% of bonuses paid to North Carolina supervisory employees should be allocated to shareholders. Witness Kopas stated that, for the reasons set forth in his testimony regarding Aqua's opposition to the Public Staff's accounting adjustment to executive compensation, the short-term incentive ("STI") is part of the total compensation paid to attract and retain qualified supervisory employees at Aqua. This financial metric reinforces to employees that it is their responsibility to serve Aqua's customers in a prudent and efficient manner. The Company's ability to provide reliable service to its customers is directly related to its financial viability and linking a portion of those employees' compensation to a financial target encourages employees to achieve customer-based objectives in a cost-efficient manner. Mr. Kopas testified that the STI (or supervisory bonus) program for Aqua has been in place without any ratemaking adjustment having been proposed or made in the Company's last two rate case proceedings.

Commission Conclusions

The Commission concludes that the Public Staff's proposed adjustment to exclude 30% of the bonuses paid to North Carolina supervisory employees in the amount of \$29,691 from the cost of service in this case is unreasonable and inappropriate for the reasons testified to by Company witness Kopas.

First, the Commission is convinced by the rebuttal testimony offered by witness Kopas that Aqua's STI is part of the total compensation paid to attract and retain qualified supervisory employees who actually work for Aqua in North Carolina and directly provide service to customers in this State in a manner designed to ensure that those customers are served in a prudent and efficient manner at all times – during normal business hours, after hours, and during hurricanes.

Second, the Commission agrees with witness Kopas that linking a portion of the compensation of North Carolina supervisory personnel to a financial target, as is the case with the STI, clearly encourages those employees to achieve customer-based objectives in a cost-effective manner.

Third, the Commission disagrees with Public Staff witness Henry's testimony which emphasizes his earnings per share analysis as essentially benefiting only the Aqua America shareholders' value with no stated benefit to ratepayers. It is commonly understood that a financially healthy utility benefits customers, employees, and shareholders alike. Employee compensation packages that include financial metrics appropriately incentivize individuals to achieve goals that support strong operations necessary to attain these goals.

Finally, the Commission concludes that the Public Staff's position on this issue, if approved, would send the wrong message to Aqua and its North Carolina-based supervisory personnel. The Public Staff does not propose to exclude any of the salaries or other benefits earned by Aqua's North Carolina supervisory

personnel in this case and the Commission finds no reasonable basis to exclude any portion of the STI program from the Company's cost of service in this proceeding.

Accordingly, for the reasons set forth above, the Commission concludes that the Public Staff's proposed adjustment to allocate 30% of North Carolina supervisory employee STI bonuses in the amount of \$29,691 to shareholders and thereby exclude those expenses from the cost of service in this case is unreasonable and inappropriate, unsupported by the facts in this case, and unjustified. Aqua's position on this issue is compelling and fully justified. Therefore, the Public Staff's proposed STI adjustment is hereby denied.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 59
(Public Staff Adjustment to Remove 50% of the Compensation---Including Pension and Incentives---of Aqua America's Top Five Executive Officers)

Summary of Public Staff Testimony

Public Staff witness Henry addressed this issue in his Direct and Supplemental testimony, as well as from the stand. His Direct testimony contained an adjustment to remove from cost of service 50% of the compensation, including pension and incentive plans, of the top five executive officers of Aqua America, Inc. as listed in the 2017 Annual Meeting of Shareholders Proxy Statement. Focusing on Aqua America, Inc.'s size, as the second largest investor owned water and wastewater utility in the United States, Henry noted that its market capitalization is larger than the cumulative market capitalization of \$6.297 billion of the next four largest investor owned water utilities.

The top five executives are the President and Chief Executive Officer, the Executive Vice President and Chief Financial Officer, the Executive Vice President and Chief Operating Officer, the Executive Vice President, Strategy and Corporate Development, and the Senior Vice President, General Counsel and Secretary. The related compensation allocated to Aqua North Carolina totaled \$533,697, of which the Public Staff recommends a 50% adjustment to cost of service, totaling \$266,848.

The Public Staff does not contend that the level of compensation for these executives is excessive; rather, it asserts that the shareholders of the very large water and wastewater utilities should bear some of the cost of compensating those individuals who are most closely linked to furthering shareholder interests, which the Public Staff distinguishes from the interests of ratepayers. Witness Henry contends that officers have fiduciary duties of care and loyalty to shareholders. He sums the Public Staff view that it is reasonable to expect that management will serve the shareholders as well as the ratepayers, therefore, a portion of management compensation and pension should be borne by the shareholders.

Applying this rationale not only to salaries and pensions, witness Henry also makes the same adjustment to the executives' incentive plans compensation. These include Annual Cash Incentive Awards and Long-Term Incentive Awards in the form of Performance Share Awards of Aqua America shares.

Summary of Company Testimony

Aqua witness Kopas, on rebuttal, contested Public Staff witness Henry's removal of 50%---including pension and incentives---of the portion of Aqua

America's top five executives' compensation that is allocated to Aqua North Carolina. Kopas stated that Aqua America sets compensation levels for its executives to attract and retain qualified personnel and to remain competitive in the market. Noting witness Henry's acknowledgement that the Company's executive officers are obligated to direct their efforts to minimizing the costs and maximizing the reliability of Aqua's service to customers, Kopas framed differently than witness Henry the value to ratepayers of the executives' obligation to support earnings and share value. He focused on the extent to which the efforts of Aqua America's executives benefit ratepayers through controlling costs and managing a strong overall company which allows it to attract capital at lower costs. Kopas asserted that Aqua America officers have a responsibility not only to all investors in the Company, which include both shareholders and bondholders, but also to employees and "most of all--to customers." Noting the extent of regulation both on the environmental and financial side, Kopas explained that Aqua America officers are charged with the responsibility of meeting these standards of providing safe and reliable water and wastewater service to customers served by Aqua North Carolina. Only upon its success in serving ratepayers is Aqua afforded an opportunity to earn a reasonable return on the dollars invested by shareholders. Kopas offered his opinion that the ability of Aqua as a public utility to meet the needs of its customers is the highest priority of all Company employees, and that only then will the financial returns be achieved to attract both debt and equity capital needed in the business. He maintained that executive compensation is a

necessary part of the Company's overall cost of service to meet the needs of customers.

Finally, witness Kopas testified that in the 2011 Aqua rate case (W-218 Sub 319), the Commission rejected the Public Staff's argument to remove 50% of the executive compensation for the top four Aqua America, Inc. executives. The Commission did conclude that a 25% adjustment to the executive compensation expense was reasonable in that case. Aqua requested herein that, should the Commission conclude that an accounting adjustment is appropriate, it be no more than the 25% adjustment that was imposed in the Sub 319 case.

Commission Conclusions

The Commission concludes that the Public Staff's proposed adjustment to exclude from cost of service 50% of Aqua's share of the costs of compensation to Aqua America, Inc.'s top five executives (including pensions and incentives), in the amount of \$266,848 is inappropriate for the reasons testified to by Company witness Kopas.

First, the Commission is convinced by the rebuttal testimony offered by witness Kopas that adequate compensation plans are necessary to attract and retain qualified executive leadership.

Second, the Commission agrees with witness Kopas that the interests of Aqua North Carolina ratepayers and Aqua America, Inc. shareholders are aligned in terms of the necessity to attract very large amounts of capital at reasonable cost. Shareholders provide the capital that is essential to this capital-intensive industry,

and thus, ratepayers depend on corporate leadership to attract the shareholders whose investment is essential to the ability to serve those ratepayers. To be clear, ratepayers rely on executive management to secure adequate and reasonably priced capital, which is necessary to support the enormous investments associated with the infrastructure required to safely and reliably build, maintain, and operate water and wastewater systems.

Third, the Commission disagrees with Public Staff witness Henry's characterization of the obligations of duty and care exercised by Aqua America, Inc. executives, and believes it is too narrowly framed. Aqua management would undermine its ability for an opportunity to earn a reasonable rate of return on investment in North Carolina if it failed to meet its obligations to ratepayers--- compliance with those obligations is the *sine qua non* of adequate recovery in rates. Under the regulatory construct that exists in North Carolina, there simply is no adequate, persistent, long-term opportunity for a regulated public utility to recover necessary expenses and earn a reasonable return on investment, absent provision of adequate service to ratepayers. Over time, the shareholders only benefit if the ratepayers are properly served.

Accordingly, for the reasons set forth above, the Commission concludes that the Public Staff's proposed adjustment to exclude from cost of service 50% of the expenses associated with executive compensation, in the amount of \$266,848, is inappropriate, unsupported by the facts in this case, and unjustified. Aqua's position on this issue is justified. Therefore, the Public Staff's proposed executive compensation adjustment is hereby denied.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 60
(Adjustment to Eliminate 50% of the Compensation and Expenses Associated with
the Board of Directors of Aqua America, Inc.)

Summary of Public Staff Testimony

The Public Staff's position is expressed in Witness Henry's Direct and Supplemental testimony, and in the examination of him at hearing. The support for his adjustment to remove 50% of Aqua North Carolina's allocation of the compensation and expenses associated with the Board of Directors of Aqua America, Inc. ("BOD" or "Board") is closely linked to the premise of the adjustment made by the Public Staff related to executive compensation. Essentially, the Public Staff asserts that Aqua America's shareholders should bear a portion of the costs of compensating those individuals who---in the Public Staff's view---have a fiduciary duty to protect the interests of shareholders, which the Staff distinguishes from the interests of ratepayers.

Noting that Aqua America allocated to Aqua North Carolina \$116,838 for BOD compensation and \$17,381 for BOD expenses, the Public Staff recommended removal from the revenue requirement of 50% of BOD compensation, totaling \$58,419, and 50% of BOD expenses, totaling \$8,691.

Summary of Aqua Testimony

Witness Kopas on rebuttal opposed this adjustment for the same reasons he opposed the 50% adjustment to the compensation of the top five executive officers. Essentially, his position is that the Board's fiduciary responsibilities inure to the benefit of ratepayers, in terms of assuring the provision of sufficient capital at reasonable costs to support this capital-intensive industry. As an alternative to full recovery in cost of service of Board fees and expenses, he recommended that

at most the Commission impose a 25% adjustment, consistent with the one made regarding executive compensation (with respect to the four top executives) in 2011, in the Sub 319 case.

Commission Conclusions

For the reasons set forth above in response to the proposed reductions to Aqua's cost of service based upon executive compensation, the Commission concludes that the Public Staff's recommendation to adjust Board fees and Board expenses by 50%, in the amounts of \$58,419 and \$8,691 (respectively) is inappropriate.

The rationale set forth hereinabove with respect to executive compensation is adopted by reference in support of this conclusion. In summary:

- adequate compensation is required to attract extremely competent, qualified members of a Board of Directors to lead a company such as Aqua America, Inc.
- North Carolina ratepayers and Aqua America, Inc. shareholders share a mutual interest in a highly skilled and qualified Board. Though less intuitively understood, it is nonetheless true that ratepayers' best interests depend on a regulated utility's ability to attract capital---in this instance---to support the extraordinary level of investment required by Aqua as a regulated water and wastewater service provider in this state. These financial and investment decisions are made at the parent company level and are integrally related to and supportive of the local company's ability to provide safe and reliable service.

- the primary focus of the Board, as of management, for this regulated utility must be to assure the provision of safe and reliable service at reasonable rates---else, the Company risks failure to achieve recovery of its expenses plus a reasonable opportunity to earn a fair return. The long-term survival and health of the Company---and of shareholder value---depends first and foremost on adequate service to customers.

Accordingly, for the reasons set forth above, the Commission concludes that the Public Staff's proposed adjustment to exclude from cost of service 50% of the expenses associated with Board of Directors' compensation and expenses, in the amounts of \$58,419 and \$8,691, is inappropriate, unsupported by the facts in this case, and unjustified. Conversely, Aqua's arguments in support of recovery justify a decision in the Company's favor regarding inclusion of these dollars in the cost of service. Therefore, the Public Staff's proposed adjustments to expenses and fees of the Board of Directors is hereby denied.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 61
(Public Staff Adjustment to Expand Amortization Period for Rate Case Expenses
from Three Years to Five)

Summary of Public Staff Testimony

The Public Staff's evidence pertaining to the period of amortization of regulatory commission expense is found in the direct and rebuttal testimony of witness Manasa Cooper, in the examination of the Public Staff's accounting panel (witnesses Cooper, Feasel, and Henry), and in the cross-examination by Aqua of Public Staff witness Junis.

Chronology of the Public Staff position regarding amortization period for regulatory commission expenses. Witness Cooper's direct testimony, filed on August 21, 2018, recommended a three-year amortization period for rate case expense (except for the depreciation study). See *Cooper Exhibit 1, Schedule 3-5, column B*. This is the amortization period contained in Aqua's Application. Witness Cooper acknowledged on cross-examination her understanding that it has been usual and customary for the Public Staff to recommend utilization of a three-year amortization period for regulatory commission expense in water and wastewater cases. Witness Cooper alluded to the latest KRJ Utilities rate case as one prompt for consideration of an exception to the three-year period. However, she acknowledged that the amortization period actually used for these types of expenses in that case was three years, despite the facts that the utility had not been in for rate relief in some time and that the Commission had inquired about the amortization period. The Public Staff in the KRJ case stipulated to a three-year amortization period, the Commission approved the stipulation, and witness Cooper described the three-year period as "typical" and as the Public Staff standard.

On September 5, 2018, a day after Aqua's rebuttal testimony was filed and in a supplemental filing by witness Cooper, the Public Staff's position on this amortization period for regulatory commission expenses changed to five years, from three.

Drivers of Public Staff Position. Upon examination in the hearing about the change of position, witness Cooper explained (and witness Henry agreed) that:

- the Commission's question in the KRJ case was a consideration, but not the primary reason for the position change;
- the recognition of increased legal fees due to the association of additional counsel was a primary factor in the decision, as was the expectation that the WSIC would afford Aqua a longer time lag between cases, in that the company is recovering certain costs incrementally. The anticipation of increased legal fees was specifically related to Aqua's association of additional counsel on August 23, 2018.

Impact of amortization period on cash flow. Witness Cooper agreed on cross-examination that the length of the amortization period for items such as rate case expense has cash flow implications for Aqua and other utilities. By reference to her Schedule 2-7, the cash working capital schedule, she explained that between the time a company has to pay an expense and the time that it receives the revenue to operate, there is a time lag, and that a longer amortization period could affect the Company's cash flow.

On cross-examination, witness Cooper explained the impact on cash flow of differing amortization periods---3 years vs. 5 years---by use of a hypothetical in which a regulatory commission expense was assumed to be \$375,000. If that amount were to be amortized over three years, the Company would be allowed an annual expense allowance in rates of \$125,000. However, witness Cooper agreed that the allowed annual expense with a five-year amortization would be

\$75,000---producing a difference of \$50,000, and thus a commensurate impact on cash flow.

Additional Public Staff testimony. Witnesses Cooper and Henry agreed it was possible that Aqua would hit the 5% cap on WSIC before the next five years lapse, in light of the emphasis on investment in the conversations about solutions to secondary water quality.

Mr. Henry testified that this case has imposed a major workload on both the Public Staff and the Company, acknowledged (implicitly) the participation of multiple Public Staff attorneys, and agreed that a largely unsettled case of this sort would be expected to result in increased legal fees. He asserted the Public Staff's interest in smoothing out that financial impact to customers by amortizing those fees over a longer period, and he also acknowledged the potential of a cash flow impact for the Company.

Summary of Company Testimony

Aqua's evidence regarding this issue is found in the Application, the testimony at hearing of witness Gearhart, the direct and rebuttal testimony plus the examination (cross and redirect) of witness Becker, and in the cross-examination of witness Junis and the Public Staff accounting panel.

Aqua's Application, consistent with filings, settlements, and orders in prior rate cases, utilized a 3-year amortization for regulatory commission expenses, also referred to as "rate case expenses." Witness Gearhart testified on examination by the Public Staff that in the Company's initial schedules, the amortization period

was listed as three years, except for the depreciation study, which was five. Referring to the relevant pages from the rate case Orders of 2009, 2010, 2011, 2012, and 2014, he noted that the amortization period for these kinds of expenses was three years in all instances, except for expenses associated with depreciation studies. Witness Gearhart disagreed with the Public Staff's change in methodology, stating that it does not reflect the amount of time that historically existed between rate cases. He stated that this is the first time during his tenure where Aqua's rate case interval has exceeded three years, and argued that this interval was an outlier, noting that the Company was "...spending a lot of money." He testified that the Company's Three Year WSIC plan has a \$27,000,000 cap, and that the cap is anticipated to be met in the next three years.

Witness Becker agreed on cross-examination that Aqua continued to collect in its revenue requirement for rate case expenses that were amortized for three years in the last rate case (Sub 363, with an Order date of May 2, 2014). However, he noted this is the first time the Company has been able to stay out that long, that the continuation of revenues based on the prior amortization has helped the Company hold off on a rate case filing, and that it has offset increases in other expenses that have not been updated since the last rate case. He agreed on cross-examination that with respect to that single item, one could say the Company had "over-recovered."

Witness Becker, on redirect examination, discussed the efforts, commitment of resources, and difficulty associated with attempting to respond to discovery requests that delved into events that occurred as far back as 2005, for

purposes of meeting challenges posed in this case. The effort to “reconstruct the history and the inputs into Aqua’s decisions over this period of time from 2005 until now...” was comprehensively undertaken and very difficult. *Tr. Vol. 15, page 19, lines 2-4*). He also discussed, on redirect examination of his rebuttal testimony, a series of examples of the magnitude and pace of the discovery process, which started late and continued through the Friday before the hearing.

Witness Becker discussed the decision to associate legal counsel in the context of the realization, very late in the course of the case, of either the certainty or the likelihood that: (a) there would be no global settlement discussions of any kind prior to the Public Staff filing its testimony; (b) certain significant issues were not going to settle, under any foreseeable circumstances; (c) the Company would have ten days from receipt of the Public Staff’s testimony to respond, attempt to negotiate, and develop extensive rebuttal testimony, (d) significant impacts on company rate base were at stake; (e) little time would remain after the filing of rebuttal to prepare for a fully-litigated case; and (f), the Company was accused by the Public Staff of mismanagement, thus heightening and sharpening the obligation of defense. Additionally, witness Gearhart spoke to the volume of discovery in this case, which required internal response and legal support. Mr. Becker testified that Aqua had conducted the case up to that point with the assistance of two consulting attorneys and had no internal staff---legal or otherwise---dedicated entirely to regulatory support.

Commission Conclusions

The Commission has weighed the facts and circumstances of this case and reaches a decision, limited to this case, that the appropriate and reasonable amortization period for regulatory commission expenses (except for the depreciation study) shall be four (4) years. The depreciation study amortization period shall remain at five (5) years, consistent with Aqua's Application and practice before the Commission with respect to this Company.

Aqua's proposal to amortize rate case expenses over three (3) years is consistent with prior practice, and the Commission specifically does not by this ruling reject the standard practice. The Public Staff's proposal, revised from its original position in its supplemental testimony, to apply a five (5) year amortization period to Aqua's regulatory ratemaking expenses in this case, is a recognition of the significantly increased costs of this case, driven by the parties' exercise of their right to fully litigate these significant issues.

The costs of defense of any proceeding before this Commission are influenced in great measure by two factors: the vigor of the opposition of the consumer advocate and other intervenors, and the extent of the possibility of settlement of some or all of the contested issues. In this case, costs were clearly driven by a vigorous application of Public Staff resources on behalf of the ratepayers, whether measured by personnel, by amount or complexity of discovery, or by the sheer scope of the investigation, in terms of the duration of the period of examination. Similarly, the Company mounted an extensive and committed effort to contest and litigate a full slate of issues before this

Commission. The case was unlike any water and wastewater litigation before this Commission in recent memory, and illustrates the proposition that parties are entitled to try their cases. There are costs to such undertakings; so long as reasonably incurred they should be recoverable in a timely fashion.

The Commission is also mindful of the testimony that suggests that the length of the interval since Aqua's last case is an anomaly, and that---given the magnitude of current expenditures on water quality improvements---the interval until the next rate case may not be of such duration. Specifically, the Company suggested that its WSIC expenditures will cap in about three years.

Therefore, in this case, for good cause shown, and without suggesting a change to the standard three-year amortization period, the Commission concludes it is reasonable and appropriate to utilize a four-year amortization period for all allowable rate case related costs, except for the depreciation study which shall be amortized over five years.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 62 (Lab Testing Expenses)

The evidence for this finding of fact is supported by the Company's Application and the testimony of Company witness Berger and Public Staff witness Darden.

Summary of Public Staff Testimony

In her direct testimony, Public Staff witness Darden stated that she recommended an adjustment totaling \$88,402 to Aqua's contractual lab testing expenses divided between systems in the following manner.

Aqua NC Water -	(\$90,737)
Brookwood Water-	(\$19,552)
Fairways Water-	(\$ 5,407)
Aqua NC Sewer-	\$29,364
Fairways Sewer-	(\$ 2,070)

Witness Darden testified that she did not agree with Aqua's use of per book amounts or the manner in which the Company calculated pro forma adjustments. Witness Darden further stated that the Company's calculations did not account for the variation in the frequency with which specific water quality tests must be performed, as some tests are conducted with different frequencies of every three, six, or nine years, and therefore should be annualized by the number of years. Witness Darden stated that, using the information Aqua provided the Public Staff with the compliance frequency schedule, lab expense was calculated using current testing schedules going forward, amortizing the expenses of the various tests for the number of years using the current unit costs of the tests.

Witness Darden removed from Fairways Sewer costs associated with Dolphin Bay WWTP, which was retired in 2017, and added to Aqua NC Sewer testing expenses for Legacy and Westfall WWTPs, which started operation in 2018, following the test year. On cross-examination, witness Darden acknowledged that her calculations did not include operational testing and were based on EDR #3. Witness Darden stated the Public Staff believes that operational testing should be recovered so long as it is reasonable and cost effective. Witness Darden further testified that the Public Staff asked for the operational costs from Aqua, that Aqua was not able to provide it at the time, and that operational testing that improved water quality may be worth extra expense.

Summary of Company Testimony

Company Witness Berger testified on rebuttal that she disagreed with the adjustments made by Public Staff witness Darden and noted that witness Darden began her inquiries by requesting, in EDR #3, “the minimum water system testing test type and frequency as determined by DEQ”. Witness Berger testified that the information requested does not provide a full picture and did not contain sufficient information to warrant the adjustments made by Public Staff witness Darden.

Witness Berger stated that the information requested by the Public Staff in EDR #3 and the follow-up request on August 3, 2018, only accounted for minimum testing compliance required by DEQ. Witness Berger further testified that compliance testing is designed to determine compliance with the rules and regulations at a moment in time, not just the time in which the compliance testing occurred. Witness Berger then explained the difference between compliance testing and operational testing, noting that operational testing is utilized by the operator to determine the effectiveness of treatment and for proactive identification of issues.

Witness Berger testified that operational testing is performed continuously based on need and judgment of the operator. Regulatory agencies do not establish operational testing requirements but expect the utility to understand the treatment methods used to ensure the delivery of drinking water that meets regulatory requirements. Witness Berger testified that the Company’s actual annual expenses were \$1,057,364 in 2017, \$988,032 in 2016, and \$1,042,720 in

2015. This information was included in the Application at Item #12B for water and wastewater. The data provided in Item #12B demonstrated a higher lab testing expense than the Public Staff recommends.

Witness Berger testified that the Public Staff never challenged or inquired about operational testing and EDR #3 and follow-up inquiries specifically asked for minimum testing requirements per DEQ regulations. EDR #3 omitted the operational testing requirements to efficiently and proactively operate a water system. Witness Berger explained the importance of operational testing, the absence of which creates a situation where a water utility is operating based on complaints and regulatory violations.

Witness Berger further stated that she disagreed with Public Staff witness Darden's adjustment annualizing the tests over three, six, and nine-year schedules. Witness Berger testified that these tests are already adjusted, pre-paid and amortized by the Company over the relevant period.

Witness Berger testified that she was not asked by the Public Staff for a breakdown of operational versus compliance expenses until September 5th, a week before the start of the hearing. Witness Berger stated that this request would have required her to go line by line through each monthly invoice---typically 150-250 pages each. To comply with the Public Staff's request as best as possible within the short time frame, witness Berger testified that a software package was utilized to provide approximately 85-90% of the data requested up to August 31, 2018.

Commission Conclusions

The Commission concludes that the Public Staff's proposed lab testing adjustment totaling \$88,402 fails to adequately address the issue of operational testing in particular and is, therefore, unreasonable. Although the Public Staff could have asked for operational testing information on a more-timely basis, the use of the compliance testing data provided in response to EDR #3 presented a limited and incomplete account of the actual testing expenses incurred by the Company.

The Commission recognizes the distinction between compliance testing and operational testing and believes that operational testing is essential to the proper operation of a water utility. During the course of the hearing in this matter, there was much discussion about the need to maintain and improve water quality. Operational testing is an essential part of that effort. Without adequate funding for operational testing, Aqua would be relegated to operating its systems on a reactive basis in response to DEQ violations and complaints from customers. Operational testing must continue to be a utility decision to maintain effective and efficient operations and cannot be dictated by a schedule to determine the minimum amount of testing needed. The Commission recognizes and agrees with the Company that a reasonable program of operational testing improves water quality and is a prudent expense. This is a proposition with which the Public Staff also appears to agree.

While the Commission recognizes that the Public Staff may need to differentiate between accounting for operational testing expenses and compliance testing expenses, the Commission concludes that the Data Request sent to Aqua by the Public Staff on September 5th was too late for the Company to make a complete response and that the response made by the Company was reasonable under the circumstances. The Commission concludes that the value of operational testing is of sufficient importance to the proactive provision of adequate water quality that any adjustment to the Company's operational testing expense is outweighed by the value which operational testing provides to customers.

Accordingly, the Commission concludes that the Public Staff's proposed adjustment in this case to reduce Aqua's lab testing expenses by \$88,402 is unreasonable, inappropriate, and not justified by the evidence of record. The rebuttal testimony offered in this case by Aqua witness Berger is credible and supports and substantiates the Company's position on lab testing expenses. The Public Staff's adjustment is too restrictive and would deny the Company sufficient funds to do needed and necessary operational and compliance testing on an ongoing basis. The Commission recognizes and appreciates the proactive nature of the Company's Secondary Water Quality Plan, the success of which is dependent upon water quality sampling to ensure operational improvement in water quality to the benefit of customers. The Commission agrees with Aqua witness Berger that long-term sampling is required to ensure effective secondary water quality treatment and effective operation of the Company's wells and treatment devices.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 63
(Annualization of Post-Test Year Secondary Water Quality Testing Expenses)

The evidence for this finding of fact is supported by the Company's Application and the testimony of Company witness Berger and Public Staff witness Darden.

Summary of Public Staff Testimony

Witness Darden testified that Aqua filed updated testing expenses for a post-test year sampling program in Aqua's Central Cary area as a result of Notices of Deficiency ("NODs") for approximately fifty systems. DEQ and Aqua set up short-term sampling for the sites that were issued NODs.

Witness Darden testified that the Public Staff reviewed the sampling schedule and testing invoices for Aqua for the period of time from January 2018 - June 2018. Aqua stated that its testing cost for secondary water quality samples was \$55,769 for the six months ended June 30, 2018. Witness Darden disagreed with the annualization of Aqua's testing costs for the period of January 2018 - June 2018 because, in her view, the post-test year testing cost is not an on-going expense and could be reduced drastically after September 2018. On cross-examination, witness Darden acknowledged this testing was still ongoing as of the hearing date.

Witness Darden further testified that Aqua's sampling schedule and costs will likely decrease in the near future. Witness Darden recommended that these future costs can be updated in a future rate case to reflect the actual testing requirements. Rather than recognizing the operational testing expense as an

ongoing expense, witness Darden noted that the amount of \$58,278 will be added by the Public Staff to the testing expense category as a sub-category for NOD site testing. For ratemaking purposes, the amount will be amortized by the Public Staff's proposal over three years as a sub-category to testing expense.

Summary of Company Testimony

On rebuttal, Company witness Berger testified that the Public Staff was incorrect in concluding that the post-test year sampling program was not a continuing expense. Witness Berger testified that pursuant to 15 Regulation A. NCAC 18C. 1511 and 18C. 1512, for iron and manganese, respectively, samples and analysis shall be taken on an ongoing basis. Witness Berger further testified the testing is required until the Company can demonstrate that the installed treatment of either chemical, filtration, or other operational improvements are made that satisfy the regulations. Witness Berger stated that this is an ongoing regulatory requirement without an established time frame and there is no basis to conclude that the processes will be discontinued after September 2018. Once water quality has been addressed, witness Berger stated that Aqua may petition PWSS at DEQ to reduce or stop the sampling, but only one site had been approved to stop at the time of the hearing.

Witness Berger further testified the Company, in cooperation with DEQ and the Public Staff, has developed a Secondary Water Quality Plan as a proactive response to monitor its systems, improve operations, curtail instances of NODs throughout the State, and, most importantly, improve water quality for its

customers. Witness Berger testified that the Public Staff has made no objection to the Secondary Water Quality Plan and prudence is determined by evaluating the success of the selected treatment, such as filtering. The only way to assess the operational circumstances and determine the most effective remedial action is through continued testing at the NOD and Secondary Water Quality Plan sites.

Commission Conclusions

The Commission concludes that the Public Staff's decision not to annualize the post-test year testing expense is unreasonable and contrary to North Carolina regulations based on the testimony of Company witness Berger and Public Staff witness Darden. The record is clear that the presence of manganese and iron in ground water is present at high levels in certain parts of the Company's service area and that the ability of the Company to address this issue will be enhanced by a process of systematic testing. Accordingly, the Commission notes that testing has continued through September 2018, and only one site had been discontinued as of the date of the hearing. Other sites will continue to be added by Aqua to the sampling schedule to determine how best to address water quality concerns. It seems inconsistent for the Public Staff to recommend that the Company continue to work on improving water quality but reduce the expenses for testing to the minimums. Accordingly, the Commission concludes that the Public Staff's proposal to deny recovery of operational testing expenses beyond June 2018 and to amortize those six-month costs over a period of three years is unreasonable and not in the best interest of consumers who are concerned about water quality issues.

The Commission also agrees with Company witness Berger that this testing is without an established time frame and will continue until DEQ is satisfied the regulatory standards are met. That has not yet happened. To suggest that Aqua should absorb such expenses until its next rate case would provide disincentives for the Company to continue a prudent operational testing program. The Commission notes the benefits of the Secondary Water Quality Plan and believes that it creates an additional ongoing expense which is reasonable and prudent and for the benefit of customers. Such testing is necessary for Aqua to demonstrate the prudence of its responses to treatments including filtration.

In, *State ex rel. Utilities Com. v. Durham*, 282 N.C. 308, 320, 193 S.E.2d 95, 104, (1972), the North Carolina Supreme Court ruled, "The basic, underlying theory of using the company's operating experience in a test period, recently ended, in fixing rates to be charged by it for its service in the near future is this: Rates for service, in effect throughout the test period, will, in the near future, produce the same rate of return on the company's property, used in rendering such service." The Commission believes that the period of September-December 2018, clearly represents the "near future" and, thus, concludes that the post-test year testing expenses should be annualized and should not be amortized over three years.

Accordingly, the Commission finds and concludes that the Public Staff's refusal to annualize post-test year levels of secondary water quality testing expenses in this case is unreasonable and inappropriate. The Company's proposal to include the annualized amount of \$111,538 (without amortization) for

secondary water quality testing expenses in the cost of service in this case is just, reasonable, prudent, and appropriate.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 64
(Purchased Water Expense)

The evidence for this finding of fact is contained in the Company's Application and the testimony of Company witness Berger and Public Staff witness Junis.

Summary of Public Staff Testimony

Public Staff witness Junis testified that he reviewed purchased water expenses filed in Aqua's Application and found the total expense level filed in Exhibit B3-b totaling \$1,947,892 to be excessive. Mr. Junis proposed to reduce Aqua's purchased water expense by \$73,670 in this case. Witness Junis stated that for nine of the third-party water provider accounts, Aqua operations resulted in test year water losses exceeding 15%, the highest being the City of Asheville (74%) and the City of Concord (64%). Witness Junis further testified that Aqua buys approximately half of the Company's overall purchased water from Johnston County and sells that purchased water to the Flowers Plantation development, a relatively new and leak free distribution system. Using an acceptable water loss of 15%, witness Junis calculated and proposed to apply reductions in the quantity of water purchased from the nine third-party providers. Witness Junis stated that Aqua's customers should not pay for excessive water loss due to lack of oversight, maintenance and repair. Witness Junis stated that Aqua indicated that the water losses for the last seven months for the City of Asheville have been 15%.

Summary of Company Testimony

Aqua presented the rebuttal testimony of Company witness Berger on this issue. Although Company witness Berger agreed with an adjustment of \$6,270.54 to test year volume and vendor prices for seven systems, she disagreed with the majority of adjustments to purchased water expenses made by Public Staff witness Junis. Witness Berger disagreed with witness Junis's assumption to utilize a maximum system specific acceptable overall water loss of 15% because it fails to consider the size, age or operating characteristics of individual systems.

Further, witness Berger disagreed with Mr. Junis's use of the Unaccounted for Water ("UAW") method because it is an outdated measure of water loss and is no longer recommended by the American Water Works Association ("AWWA"). In addition, witness Berger noted that witness Junis failed to consider that the Company, out of necessity, must incur a certain amount of water loss to perform necessary system processes and to maintain compliance with DEQ regulations. Witness Berger discussed the operating circumstances and background for each of the systems for which witness Junis made an adjustment.

For example, the City of Asheville system serves 26 customers and a leak was identified through routine analysis. However, the leak could not be located because the line was placed in rock and did not present itself at the surface. Witness Berger noted that a decision was made to replace the water main because the existing facility was near the end of its useful life. The non-revenue water loss has been significantly reduced as a result of the change.

In the City of Concord system, a leak could not be found using traditional methods due to the type of pipe material (“PVC”) used during installation. Aqua eventually determined the leak was draining into a storm drain and it was immediately repaired.

The Harnett County-Woodlake system has an ongoing Disinfection By-Product (“DBP”) issue that requires routine flushing. While flushing is often used to promote the health and safety of consumers and water quality generally, the method used by Mr. Junis fails to recognize that flushing is an integral part and necessary cost of operating a water company.

Aqua witness Berger testified that the City of Hendersonville system had four main breaks and is being evaluated for prioritization under Aqua’s main replacement program. The City of Pittsboro system also has significant issues with Disinfection By-Products and requires additional flushing.

Witness Berger further testified that Aqua proactively reviews purchased water calculations each month and when discrepancies occur, the operations panel investigates to determine the reason for any non-revenue water. Witness Berger stated that Public Staff witness Junis’s 15% standard ignores the reality that there are other reasons non-revenue water exists in a prudently run water company.

Witness Berger testified that witness Junis’s methodology cannot accurately reflect the true cost of non-revenue water, is unduly narrow, and ignores the reality of operational reasons that cause the existence of some non-revenue

water. Witness Berger testified that this methodology would undermine the Company's opportunity to earn any authorized return approved by the Commission, and that it is unfair to deny cost recovery for necessary expenses.

Witness Berger stated that while considering the age of systems is one factor for evaluating water loss, it is not the only factor. Weather and water pressure changes from the water provider can have large impacts on water loss. North Carolina has had a significant amount of natural disasters and extreme temperatures recently and these can also contribute to water loss.

Witness Berger testified that since 2003, the AWWA has recommended that state agencies avoid the use of Unaccounted for Water and instead employ the standard of non-revenue water. Witness Berger explained Aqua's non-revenue water processes. First, the Company reviews water purchased versus water billed just as Witness Junis did. However, Aqua takes an additional step and requires its operations group to investigate or provide explanations (e.g. flushing program). Witness Berger testified that one of these investigations led to the discovery of the issues with the City of Asheville system.

Witness Berger stated that the Company performs water audits in accordance with the AWWA Manual 36, Water Audits and Loss Control Programs, specifically Chapter 9, "Considerations of Small Systems". Witness Berger testified that each water system identified by witness Junis is considered a small system with the exception of Flowers Plantation.

Witness Berger testified that under Mr. Junis's analysis, system flushing would be considered unbilled authorized consumption. Witness Berger testified that DEQ requires this flushing and in some cases the purchase water purveyor exceeds the DBP limits. Outside of treatment (e.g.) filters, the only solution available to Aqua is flushing.

Witness Berger also disputed witness Junis's recommendation as impermissibly denying Aqua recovery for necessary and prudent expenses and ignoring necessary obligations, which support the health and well-being of the Company's customers. Witness Berger testified that while witness Junis's calculations produced the substantial penalties he was seeking, they do not reflect the current standards by which to calculate water loss.

Commission Conclusions

While a certain level of water loss for a system would be unreasonable for customers, the Commission concludes that a flat across-the-board standard ignores differences in systems and operational realities. Specifically, the 15% standard recommended by Mr. Junis is arbitrary and not supported by the evidence. The Commission notes that in Public Staff Gearhart Cross Examination Exhibit 2, the Public Staff placed particular emphasis on water losses in the City of Asheville and Concord systems, both of which are extremely small systems. There is a policy issue involved that the Commission must consider in determining this issue. On occasion, companies like Aqua purchase or are even encouraged to purchase smaller systems that are sometimes under distress. Such purchases

are often critical to providing services to consumers and it would be unreasonable for the Commission to adopt policies that single out these systems for adverse treatment and create disincentives for such purchases.

While the Commission urges the Company to minimize unnecessary water losses, on balance, it concludes that Aqua has managed its systems to avoid water losses in a reasonable and prudent manner. The Commission finds Aqua witness Berger's testimony credible and compelling in explaining the operational reasons for water loss in Aqua's systems, including aging systems, flushing, and weather-related issues. Further, it appears to the Commission that Aqua audits and investigates water losses in a proactive manner and where an unacceptable level of water loss occurs, the Company corrects the cause as efficiently as possible.

Further, the Commission is concerned that the method used by the Public Staff does not involve the best practice as outlined by the AWWA and fails to consider the importance of necessary processes such as flushing in its analysis. Public witnesses appeared before the Commission to express concerns about water quality issues, which can often be corrected in the most cost-effective manner by increased flushing. For the Commission to accept an approach that discourages flushing would simply not be in the best interest of the Company or its customers. Accordingly, the Commission concludes that the Public Staff's proposed adjustment to purchased water expenses should be denied. The Commission further finds that the Company acts prudently to determine the best

are necessary for maintaining and improving water quality generally and for compliance with regulations and the health and well-being of customers.

Accordingly, the Commission concludes that the Public Staff's accounting and engineering adjustment proposing a total reduction of \$73,670 in the cost of purchased water for Aqua in this case is unreasonable and inappropriate. Instead, Aqua's purchased water expense should be reduced by only \$6,271 (the amount agreed to and recommended by Aqua witness Berger). A reduction in Aqua's purchased water expense of \$6,271 is reasonable and appropriate based on the evidence in this case.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 65 (Adjustments for Sludge Expense)

The evidence for this finding of fact is supported by the Company's Application and the testimony of Company witness Pearce and Public Staff witness Darden.

Summary of Public Staff Testimony

In her testimony, Public Staff witness Darden stated that there is uncertainty whether the increase in hauling expense experienced by Aqua late in the test year represents a peak, due to the Company's efforts to catch up on sludge inventory at plants, or is a general trend. In making her proposed adjustment, witness Darden used a two-year average from July 2016 through June 2018 for the Cary-NC plant region combined with annualized expected sludge hauling quantities for The Legacy WWTP and Westfall WTP to recommend a reduced recovery of \$470,173 for Aqua Sewer and a reduced recovery of \$89,209 for Fairways Sewer.

On cross-examination, witness Darden acknowledged that the Public Staff did not make any specific allowances for operational changes made by Aqua.

Summary of Company Testimony

Aqua witness Pearce testified on rebuttal that in 2016, 2017 and early 2018, Aqua wastewater treatment operators maintained a relatively high amount of sludge. Witness Pearce further testified that during dry periods, the wastewater treatment plants would function properly but during storm events the clarifiers could not manage the high flow and would “burp” sludge, which would be discharged from the treatment plants.

Witness Pearce stated that Aqua developed new processes and operations for handling sludge following difficulties with burping or discharge of sludge from wastewater treatment plants during storm events. To improve operations and environmental compliance, the Company reduced the concentration of mixed liquor suspended solids. Lower mixed liquor suspended solids result in a reduction of solids retention times from 30 days to 19 days. Lower solids retention times increase sludge production.

Witness Pearce testified that witness Darden’s analysis was speculative and ignored the recent operational improvements made by Aqua and that witness Darden’s recommendation conflicts with Aqua’s actual operational experience. Using the most recent 12 months of data for the Company’s sludge disposal between July 2017 and June 2018, witness Pearce recommended that Aqua be allowed to recover sludge expense of \$507,699.28 for Aqua Sewer and \$99,057.50

for Fairways Sewer. Witness Pearce further testified that use of a more recent twelve-month period is more representative of Aqua's current operations and future expenses than the two-year historical approach used by the Public Staff.

Commission Conclusions

The Commission is persuaded by the testimony of Mr. Pearce that the Company has adopted reasonable operational changes needed to correct burping and improve environmental compliance. Because these operational changes have occurred more recently, the Commission concludes that the best method of determining the representative level of sludge expense for ratemaking purposes in this case is to utilize the most recent twelve-month period used and recommended by witness Pearce rather than the two-year historical analysis and average recommended by the Public Staff. Accordingly, the Commission finds good cause to determine and approve sludge expense cost recovery in this case based on the reasonable and appropriate amounts recommended by Aqua witness Pearce. In so ruling, the Commission agrees with witness Pearce that the Public Staff's two-year average, which includes a period prior to the Company's operational improvements when sludge disposal was significantly lower, is faulty and, therefore, less reliable.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 66

(Aqua's Request for The Commission to Adopt a Consumption Adjustment Mechanism to Address Significant Fluctuations in Consumption)

Summary of Public Staff Testimony

Witness Junis addressed the CAM in his direct testimony, as well as in response to questions from the stand.

He recalled that by stipulation in Aqua's last general rate case, Aqua and the Public Staff agreed that Aqua would fund a study of mechanisms that address the rate impact to customers and the revenue impact to Aqua from significant changes in customer consumption patterns, such study to be conducted by the EFC at the same time as it conducted the volumetric sewer rate study. He noted that Aqua and the Public Staff were to work together with the EFC to determine the parameters of the study and to jointly oversee the performance of the study, and recited generally that such was done prior to the production of the aforementioned EFC Report, which was published and filed in Docket No. W-218, Sub 363A on March 31, 2016.

Mr. Junis disputes the representation that consumption is significantly declining, and he posed three primary objections to the implementation of a CAM in this case:

1. the Public Staff's view, as a matter of principle, that any new rate mechanism, such as the CAM, should be authorized by the North Carolina General Assembly before being considered by the Commission for rulemaking;

2. that the General Assembly had an opportunity to specifically authorize this mechanism during the 2017-2018 session, but it did not and thus the Commission should not; and
3. the Public Staff has concerns about the 1% threshold and the possibility that growth could trigger over-earning, cautioning that customers should be credited with increased revenues from increased usage or customer growth.

Summary of Company Testimony

Witness Becker, in his pre-filed direct testimony, addressed the wide variations in average consumption per customer due to environmental factors, conservation, and pricing impact. He asserted Aqua's persistent argument that customer habits are changing and, that overall, consumption is declining. The Environmental Finance Center ("EFC") at the UNC School of Government in its March 28, 2016 "Studies of Volumetric Wastewater Rate Structures and a Consumption Adjustment Mechanism for Water Rates of Aqua North Carolina, Inc."¹⁴ concluded, in pertinent part at page 58, that:

"The analysis demonstrates that water use has declined significantly among Aqua water customers, relative to test year average water use, although has recently stabilized close to 5,000 gallons/month average for ANC customers. The drop in average consumption reduced the water revenues

¹⁴ The EFC Report was filed jointly by Aqua and the Public Staff in NCUC Docket No. W-218, Sub 363A on March 31, 2016.

generated below the rate case revenue requirements for most years (despite a growth in customers).”

Upon questioning from Presiding Commissioner Brown-Bland, witness Becker contested the 2016 conclusion by the EFC that consumption had stabilized, based on his experience in Virginia and noting the price elasticity of demand. Becker asserted that the phenomenon of reduced consumption is almost universally experienced among both public and private water providers, and that one of the drivers of the instant case is reduced consumption per customer. Conversely, though the trend is one of declining consumption, witness Becker observed that consumption can also increase significantly during extended periods of warm weather; therefore, fluctuation is a factor that should also be addressed.

Witness Becker attributed declining consumption to several persistent factors, including more efficient plumbing fixtures and household appliances, governmental programs encouraging greater efficiency in water use, changes in landscaping patterns, and consumer responses to these price signals.

Becker noted the utility's reliance on the accuracy of the rate design adopted in this---or any---rate case, in order to have a realistic opportunity to achieve its authorized return. Key to this opportunity is reasonable accuracy in the derivation of consumption figures. Consumer consumption levels that are above rate case projections could provide excess revenues, while consumption levels that are below levels derived in a rate case could result in a deficit. Mr. Becker asserted that the persistent decline in consumption has eroded Aqua's opportunity to earn its authorized return and he proposed a mechanism that Aqua believes will

minimize the impact of significant swings in customer consumption patterns and will protect both the Company and its customers.

As proposed, the “Consumption Adjustment Mechanism” would establish the average monthly consumption per metered bill. Annually, the actual average monthly consumption per metered bill would be compared to the average monthly consumption calculated for use to determine rates within the previous rate case. If the actual average monthly consumption for a 12-month period is within a range of 1%, plus or minus, to the average monthly consumption established in the last rate case, no surcharge adjustment is required. If the actual average monthly consumption for a 12-month period is outside of a range of 1% plus or minus, the total annual revenue excess or shortfall (excess or shortfall gallons times the consumption tariff rate) is computed and divided by the number of bills and then divided by 12 to establish the monthly CAM to be applied to the monthly bills for all metered accounts. The Company would complete this annual computation with the proposed 12-month adjustment to be applied to all residential and commercial bills, if needed. If an adjustment is needed, it will be applied to all metered customer accounts, starting after the end of the annual measurement period, assessed for the next 12 months.

In rebuttal, witness Becker described the genesis and path of CAM proposals, from Aqua’s origination of it in the Sub 363 case, through the Environmental Finance Center’s (“EFC”) study and 2016 Report, to the Company’s effort to secure legislation to confirm and reiterate the Commission’s existing

authority to implement such a mechanism.¹⁵ The Public Staff's objections, as set forth in witness Junis's testimony, are essentially three, none of which present an impediment to the Commission, according to witness Becker. In his rebuttal, witness Becker refutes the Public Staff's three primary objections as follows:

First, the Public Staff's policy preference that ratemaking mechanisms be very specifically authorized by the General Assembly before being considered by the Commission is understood, but that policy preference is not determinative of the issue of whether the Commission has inherent authority to implement a CAM. Witness Becker set forth Aqua's position that the Commission has such authority in a rate case, and that adequate reason exists to do so based on the clear evidence of declining consumption.

Second, the Public Staff's concerns about the threshold and the calculation methodology proposed by Aqua are easily met in a rulemaking, which would be required of this mechanism.

Finally, any concerns about the possibility of growth contributing to an over-earning scenario can readily be anticipated and handled in the rulemaking that would be essential to establishing the mechanics of this regulatory tool.

¹⁵ House Bill 752 passed out of the House on April 25, 2017 and was referred to the Committee on Rules and Operations of the Senate on April 26, 2017

Commission Conclusions

The Commission concludes that a Consumption Adjustment Mechanism shall be deemed to be in the public interest in this case, and that a rulemaking proceeding shall be convened by separate docket.

First, the Commission is convinced that declining consumption is an issue to be addressed in rate design. The mode of dealing with it should address both the phenomenon of declining and of fluctuating consumption, in fairness both to the utility and the ratepayer.

Second, the Commission acknowledges its inherent authority in a rate case to find such a mechanism in the public interest and to proceed to rulemaking to implement it. The Commission is sensitive to the Public Staff's policy preference for specific authorization by the General Assembly; it also notes that the Public Staff did not directly challenge the Commission's authority to adopt such a mechanism. In this instance, the Commission believes its inherent authority is sufficient to authorize it to proceed to rulemaking in the matter. There are other ways to deal with the issue of declining consumption, such as adjustments to base facilities charges. However, the Public Staff offers no alternative means of addressing the persistent and founded concerns about the trend of declining consumption, and the Company has pressed for relief in various ways since its 2011 rate case. It is time to proceed to consider a regulatory solution that is fair to ratepayers and the utility.

Third, the concerns expressed by the Public Staff dealing with the construct and operation of the mechanism (for example, the 1% threshold and the impact of growth) can be dealt with in a comprehensive rulemaking proceeding, established by separate docket and open to all interested parties.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 67 - 68
(Capital Structure and Cost of Capital)

These findings of fact concern the Company's capital structure, its embedded cost of debt, and its cost of common equity. The evidence to support these findings is set forth in the testimony of Aqua witness Dylan W. D'Ascendis and Public Staff witness John R. Hinton and the Partial Settlement Agreement and Stipulation filed in this docket by Aqua and the Public Staff on September 17, 2018.

In its Application, the Company requested an overall cost of capital of 7.82%. That request was based on a proposed capital structure of 50.00% long-term debt, 50.00% common equity, an embedded cost of debt of 4.74%, and a return on common equity of 10.90%. Pursuant to the Partial Settlement Agreement and Stipulation filed in this docket on September 17, 2018, Aqua and the Public Staff have agreed that a capital structure consisting of 50.00% long-term debt and 50.00% common equity and an embedded cost of debt of 4.63% is appropriate for use in this proceeding. Aqua and the Public Staff do not, however, agree on the appropriate cost of equity in this case.

Capital Structure and Cost of Long-Term Debt

Witness D'Ascendis testified on direct that the Company's proposed capital structure containing 50.00% long-term debt and 50.00% common equity

is conservative compared with the historical capital structures maintained, on average, by the water utility industry, as proxied by his eight water companies. Likewise, D'Ascendis Direct Exhibit No. 1, Schedule DWD-2, shows that witness D'Ascendis' proxy group maintained an average long-term debt ratio of 53.13% for the five years ending 2017, which encompassed the time periods of the Company's last three rate settlements. Public Staff witness Hinton, in his direct testimony, accepted the Company's proposal on both capital structure and its long-term debt cost rate, which was updated as of June 30, 2018, to 4.63%.

The Partial Settlement Agreement and Stipulation, as filed in this docket, provides, in pertinent part, that the capital structure appropriate for use in this proceeding is a capital structure consisting of 50.00% common equity and 50.00% long-term debt at a cost rate of 4.63%.

The Commission finds and concludes that the stipulated capital structure agreed to by Aqua and the Public Staff comprised of 50.00% common equity and 50.00% long-term debt is reasonable and appropriate for determining an allowed rate of return for the Company in this proceeding. In addition, the Commission further find and conclude that the stipulated long-term debt cost rate of 4.63% is reasonable and appropriate for Aqua in this proceeding.

Common Equity Cost Rate

In his rebuttal testimony, Aqua witness D'Ascendis proposed a common equity cost rate of 10.80%. Witness Hinton proposed a common equity cost rate of 9.20%.

In his direct testimony, Company witness D'Ascendis testified that, because Aqua's common stock is not publicly traded, a market-based common equity cost rate cannot be determined directly for the Company. Consequently, in arriving at his recommended common equity cost rate of 10.80%, he assessed the market-based common equity cost rates of companies of relatively similar, but not necessarily identical risk, i.e., proxy group(s) for insight into a recommended common equity cost rate applicable to Aqua and suitable for cost of capital purposes. Mr. D'Ascendis noted that no proxy group(s) can be selected to be identical in risk to Aqua. Therefore, the proxy group(s)' results must be adjusted, if necessary, to reflect the unique relative financial and/or business risk of the Company.

Mr. D'Ascendis' recommendation results from the application of market-based cost of common equity models, the Discounted Cash Flow ("DCF") approach, the Risk Premium Model ("RPM") and the Capital Asset Pricing Model ("CAPM") for the proxy group of nine water companies whose selection will be discussed subsequently. In addition, witness D'Ascendis selected a group of domestic, non-price regulated companies comparable in total risk to the proxy group of water companies, applying the DCF, RPM and CAPM to them in accordance with the opportunity cost standards articulated in Federal Power

Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944), and Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 262 U.S. 679 (1922).

The results of these models, as set forth by witness D'Ascendis in his direct testimony, are as follows:

	<u>Utility Proxy Group</u>
Discounted Cash Flow Model	8.95%
Risk Premium Model	11.07%
Capital Asset Pricing Model	10.39%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	<u>11.57%</u>
Indicated Common Equity Cost Rate Before Adjustments	10.60%
Size Adjustment	0.20%
Flotation Cost Adjustment	0.11%
Indicated Common Equity Cost Rate Cost Rate After Adjustments	<u>10.91%</u>
Recommended Common Equity Cost Rate After Adjustments	<u>10.90%</u>

After reviewing the cost rates based upon these models, witness D'Ascendis asserted in his direct testimony that a common equity cost rate of 10.60% is indicated before any adjustment for business risk related to Aqua NC's smaller size relative to the proxy group of eight water companies. The indicated common equity cost rate based upon the eight water companies was upward by 20 basis points (0.20%) to reflect Aqua's increased business risk as

noted above and upward by 11 basis points (0.11%) for flotation costs. After adjustment, the risk-adjusted common equity cost rate is 10.91% for the water company proxy group which, when rounded to 10.90%, supported Mr. D'Ascendis' recommended common equity cost rate for Aqua.

In rebuttal testimony, witness D'Ascendis eliminated his adjustment for flotation costs and his amended recommended common equity cost rate was 10.80%.

Mr. D'Ascendis disagreed with Public Staff witness Hinton that a 9.20% common equity rate is appropriate for Aqua and stated that the Public Staff's recommendation would not be sufficient to maintain the integrity of presently invested capital and permit the attraction of needed new capital at a reasonable cost in competition with other firms of comparable risk.

Witness D'Ascendis also disagreed with Mr. Hinton's exclusion of the CAPM and comparable earnings model ("CEM") both of which he used as a check on his DCF and RPM in a previous proceeding involving Aqua (Docket No. W-218, Sub 319). According to witness D'Ascendis, both the academic literature and the Commission support the use of multiple models in determining a return on common equity. Mr. D'Ascendis then supplemented Mr. Hinton's analysis with a CAPM and CEM, which had indicated results of 11.02% and 12.23%, respectively.

Witness D'Ascendis objected to Mr. Hinton's DCF analysis and he also took issue with Mr. Hinton's use of historical growth rates in earnings per share ("EPS"), dividends per share ("DPS") and book value per share ("BVPS") as well as his use of projected growth rates in DPS and BVPS. He asserted that it is appropriate to

rely exclusively upon security analysts' forecasts of EPS growth rates in a DCF analysis for multiple reasons.

First, Individual investors who could potentially invest in utility stocks generally have more limited informational resources than institutional investors and are therefore likely to place greater significance on the opinions and projections expressed by financial information services such as Value Line Investment Survey (Value Line). Reuters, Zacks and Yahoo! Finance, which are all easily accessible and/or available on the Internet and through public libraries. Security analysts have significant insight into the dynamics of the industries and individual companies they analyze, as well as company's abilities to effectively manage the effects of a changing industry, economic or market environment. Second, over the long run, there can be no growth in DPS without growth in EPS. Security analysts' earnings expectations have a more significant, but not exclusive, influence upon market prices than dividend expectations, providing a better matching between investors' market price appreciation expectation and the growth component of the DCF model. Third, there is academic support for the superiority of analysts' forecasts of growth in EPS as the growth component in the DCF model. Mr. D'Ascendis asserted that witness Hinton should have relied exclusively upon the Value Line and Yahoo! Finance EPS forecasts.

Mr. D'Ascendis also disagreed with Mr. Hinton's application of his RPM because of his use of annual average authorized returns on equity for water companies instead of using individual cases and his use of current interest rates instead of projected interest rates. According to witness D'Ascendis. using current

or historical measures, such as interest rates, are inappropriate for cost of capital and ratemaking purposes because they are both prospective in nature.

In addition, Mr. D'Ascendis disagreed with Mr. Hinton on risk. Witness D'Ascendis emphasized that because it is the rate base of a specific regulated jurisdictional utility to which a regulatory allowed rate of return will be applied, it is the unique risk of that rate base which needs to be reflected in the allowed rate of return, including any additional risk due to small size. In addition, the corporate structure of the owners of that rate base is irrelevant as it is the use of the funds which gives rise to the investment risk, not the source of those funds. It matters not whether the rate base is held privately, by a municipality, by a large holding company, by a small holding company, by an equity investment fund, multiple shareholders or a single shareholder. Only the riskiness of the particular rate base is relevant. The size of any given jurisdictional rate base is not arbitrary, it is what it is, and it is imminently relevant relative to the size of any publicly traded utilities from whose market data a common equity cost rate recommendation is derived. Therefore, there is no incentive for "large existing utilities to form subsidiaries when merging or even to split-up into subsidiaries" because it is the risk of the regulated rate base which is relevant.

Mr. D'Ascendis testified that Mr. Hinton's corrected cost of common equity analysis results in a common equity cost rate of 10.57% for Mr. Hinton's comparable group of water utilities before adjustment for Aqua's increased risk relative to the proxy group.

In his direct testimony, Public Staff witness Hinton testified that to determine the fair rate of return, he performed a cost of capital study consisting of three steps. First, he determined the appropriate capital structure for ratemaking purposes, i.e., the proper proportions of each form of capital. Utilities normally finance assets with debt and common equity. Because each of these forms of capital have different costs, especially after income tax considerations, the relative amounts of each form employed to finance the assets can have a significant influence on the overall cost of capital, revenue requirements, and rates. Thus, the determination of the appropriate capital structure for ratemaking purposes is important to the utility and to ratepayers. Second, witness Hinton stated that he determined the cost rate of each form of capital. The individual debt issues have contractual agreements explicitly stating the cost of each issue. The embedded annual cost of debt may be calculated by simply considering these agreements and the utility's books and records. The cost of common equity is more difficult to determine, because it is based on the investor's opportunity cost of capital. Various economic and financial models or methods are available to measure the cost of common equity. Third, by combining the appropriate capital structure ratios for ratemaking purposes with the associated cost rates, witness Hinton testified that he calculated an overall weighted cost of capital or fair rate of return.

Witness Hinton testified that he used the DCF model and the Risk Premium model to determine the cost of equity for the Company. Based upon his DCF analysis, witness Hinton determined that a reasonable expected dividend yield is 2.1% with an expected growth rate of 6.1% to 7.1%. As such, the analysis

produced a cost of common equity for the comparable group of water utilities of 8.20% to 9.20%.

Witness Hinton testified that his summary data of risk premiums shown on Exhibit JRH-4, page 1 of 2 indicated that the average risk premium is 4.95% with a maximum premium of 5.78% and minimum premium of 3.73%, which when combined with the last six months of A-rated bond yields produces yields with an average cost of equity of 9.11%, a maximum cost of equity of 9.94%, and a minimum cost of equity of 7.89%. Witness Hinton further stated that he performed a statistical regression in order to quantify the relationship of allowed equity returns and bond costs. He stated that his Exhibit JRH-4, page 2 of 2 is a regression analysis of the data that indicated a significant statistical relationship of the allowed equity returns and bond costs, such that a one percent decrease in the bond cost corresponds to an increase of approximately 26 basis points in the equity risk premium. While various studies on the cost of equity capital have differed on the level of the negative relationship of interest rates and risk premiums there has been agreement that as interest rates fall, there is an increase in the premium. Witness Hinton stated that applying this relationship to the current utility bond cost of 4.16% resulted in a current estimate of the cost of equity of 9.69% which reflects a risk premium of 5.53%.

Witness Hinton stated that, based on all of the results of his DCF model that indicate a cost of equity from 8.2% to 9.2% with a central point estimate of 8.70% and Risk Premium model that indicates a cost of equity of 9.69%, he determined that the investor required rate of return for Aqua is between 8.70% and 9.69%.

Witness Hinton than stated that he further concluded that 9.20% was his single best estimate of the Company's cost of common equity.

In regard to reasonableness assessment with financial risk, witness Hinton stated that he considered the pre-tax interest coverage ratio produced by his cost of capital recommendation. Based on the recommended capital structure, cost of debt, and equity return of 9.20%, the pre-tax interest coverage ratio is approximately 3.7 times. According to witness Hinton, this level of pre-tax interest coverage should allow Aqua to qualify for a single "A" bond rating.

Commission Conclusions Regarding Common Equity Cost Rate
and Overall Cost of Capital

Prominent among the disputed issues in this case are the questions of the just, reasonable, and appropriate rates of return on common equity and the overall return on rate base to be used in setting the Company's rates. The Commission has hereinabove approved a capital structure consisting of 50% long-term debt and 50% common equity for Aqua and a cost of long-term debt of 4.63%. In addition, the Commission must allow the Company the opportunity, by sound management, to produce a fair return for its shareholders in this case, considering changing economic conditions and other factors, including, but not limited to, the ability to compete in the market for capital funds on terms that are reasonable and fair to its customers and to its existing investors. Based on the record in this case, Aqua maintains that the Commission should provide the Company the opportunity to earn a return on rate base of 7.715% and

a return on common equity of 10.8%. The Public Staff recommends a return on common equity for Aqua of 9.20%.

The testimony of Aqua's expert witness, Dylan W. D'Ascendis, established that because the Company's common stock is not publicly traded, a market-based common equity cost rate cannot be determined directly for the Company. Consequently, in arriving at his recommended common equity cost rate of 10.80%, Mr. D'Ascendis assessed the market-based common equity cost rates of companies of relatively similar---but not necessarily identical---risk [i.e., proxy group(s)] for insight into a recommended common equity cost rate applicable to Aqua and suitable for determination of a reasonable and appropriate cost of capital. Witness D'Ascendis noted that no proxy group(s) can be selected to be identical in risk to Aqua. Therefore, the proxy group(s)' results must be adjusted, if necessary, to reflect the unique relative financial and/or business risk of the Company.

Mr. D'Ascendis' recommendation results from the application of market-based cost of common equity models, the DCF approach, the RPM, and the CAPM for the proxy group of eight water companies. In addition, Mr. D'Ascendis selected a group of domestic, non-price regulated companies comparable in total risk to the proxy group of water companies, applying the DCF, RPM and CAPM to them in accordance with the opportunity cost standards established in relevant legal decisions.

Mr. D'Ascendis disagreed with Public Staff witness Hinton's view that a 9.20% common equity rate is appropriate for Aqua and stated that Mr. Hinton's recommendation would not be sufficient to maintain the integrity of presently invested capital and permit the attraction of needed new capital at a reasonable cost in competition with other firms of comparable risk. The Commission agrees with Aqua witness D'Ascendis on this point.

Mr. D'Ascendis explained that the indicated common equity cost rate based upon the eight water companies was upward by 20 basis points (0.20%) to reflect Aqua's increased business risk as noted above. After that adjustment, the Company's risk-adjusted common equity cost rate is 10.90% for the water company proxy group which, when rounded to 10.90%, supports Mr. D'Ascendis' recommended common equity cost rate for Aqua NC. In rebuttal testimony, Mr. D'Ascendis eliminated the flotation costs from his recommendation, which results in an amended recommended common equity cost rate of 10.80%

After applying various financial models to the market data of proxy companies, Mr. D'Ascendis recommended, in his rebuttal testimony, that a common equity cost rate of 10.60% is indicated before a business risk adjustment of 0.20% to reflect Aqua NC's smaller size relative to the proxy group. Witness D'Ascendis testified that Mr. Hinton failed to include a business risk adjustment due to Aqua NC's smaller size relative to the water companies he selected for use in his proxy group. Thus, in rebuttal testimony, witness D'Ascendis eliminated his prior adjustment for flotation costs and his amended recommended common equity cost rate was 10.80%.

Risk is a legitimate component of the analysis that the Commission must make in fixing a rate of return for Aqua that will allow the Company to compete in the market for capital funds on terms that are reasonable and that are fair to its customers and to its existing investors.

As a practical matter, apart from constitutional right, the utility must be able to attract from volunteer investors additional capital, as required from time to time for the expansion or improvement of its service. Here, the principles of the Free Enterprise System do come into play, for the utility must win the favor of the free, volunteer investor in competition with all other investment options available to him. This the utility does by offering the investor an opportunity to earn on his investment at a rate which, considered together with the risk of loss of part or all of the principal of his investment, outweighs, in his opinion, the corresponding prospects and risks in those other types of investment.

State ex rel. Utilities Commission v. General Telephone Co., 281 N.C. at 337 (citations omitted).

As shown in Mr. D'Ascendis' testimony, implementation of those adjustments yields an appropriate common equity cost rate for Aqua of 10.80%. When applied to the proposed Aqua 50/50 capital structure and the Company's long-term debt cost rate of 4.63%, this results in an overall cost of capital for Aqua of 7.715%. Based on the record in this proceeding, the Commission finds good cause to accept and approve witness D'Ascendis' recommendation on common equity and find that that the Company should be authorized a return on common equity of 10.8% and an overall return on rate base of 7.715%.

G.S. 62-133(b)(4) requires the Commission to fix rates for service which will enable a public utility, by sound management, to produce a fair profit for its stockholders, in view of current economic conditions, maintain its facilities and services and compete in the market for capital, and no more. This is the ultimate

objective of ratemaking. Utilities Commission v. General Telephone Company, 281 N.C. 318, 189 S.E.2d 705 (1972). The Commission is of the opinion that there is adequate evidence in the record to support witness D'Ascendis' proposed return on equity of 10.8% and that such return should allow Aqua to properly maintain its facilities and services, provide adequate service to its customers, and produce a fair return, thus enabling the Company to attract capital on terms that are fair and reasonable to its customers and investors. Consequently, the Commission finds and concludes that a return on common equity of 10.80% and an overall rate of return of 7.715% for Aqua in this case are just and reasonable and should be approved, considering the impact of changing economic conditions on customers and relevant statutory and case law.

Regarding consideration of the impact of changing economic conditions on customers, Aqua witness D'Ascendis, in his direct testimony, provided an excellent review of that issue, including a comprehensive assessment and analysis. Witness D'Ascendis noted that as the Commission has stated, it "...is and must always be mindful of the North Carolina Supreme Court's command that the Commission's task is to set rates as low as possible consistent with the dictates of the United States and North Carolina Constitutions."¹⁶ In that regard, the cost of common equity should be neither excessive nor confiscatory; it should be the

¹⁶ State of North Carolina Utilities Commission, Docket No. E-7, Sub 1026, Order Granting General Rate Increase, Sept. 24, 2013 at 24; see also DEC Remand Order at 40 ("the Commission in every case seeks to comply with the North Carolina Supreme Court's mandate that the Commission establish rates as low as possible within Constitutional limits.").

minimum amount needed to meet the *Hope* and *Bluefield* Comparable Risk, Capital Attraction, and Financial Integrity standards.

In his analysis, witness D'Ascendis correctly noted the Commission also has found that the role of cost of capital experts is to determine the investor-required return, not to estimate increments or decrements of that return in connection with consumers' economic environment:

...adjusting investors' required costs based on factors upon which investors do not base their willingness to invest is an unsupported theory or concept. The proper way to take into account customer ability to pay is in the Commission's exercise of fixing rates as low as reasonably possible without violating constitutional proscriptions against confiscation of property. This is in accord with the "end result" test of *Hope*. This the Commission has done.¹⁷

The Supreme Court agreed, and upheld the Commission's Order on Remand.¹⁸ The Supreme Court also made clear, however, that "in retail electric service rate cases the Commission must make findings of fact regarding the impact of changing economic conditions on customers when determining the proper ROE for a public utility."¹⁹ The Commission made such additional findings of fact in its Order on Remand.²⁰ In light of the *Cooper I* decision, witness D'Ascendis testified

¹⁷ State of North Carolina Utilities Commission, Docket No. E-7, Sub 989, Order on Remand, October 23, 2013, at 34 - 35; see also DEC Remand Order at 26 (stating that the Commission is not required to "isolate and quantify the effect of changing economic conditions on consumers in order to determine the appropriate rate of return on equity").

¹⁸ State ex rel. Utils. Comm'n v. Cooper, 366 N.C. 484, 739 S.E.2d 541 (2013) (*Cooper I*)).

¹⁹ State of North Carolina ex rel. Utilities Commission v. Cooper, 758 S.E.2d 635, 642 (2014) ("*Cooper II*").

²⁰ State of North Carolina Utilities Commission, Docket No. E-22, Sub 479, Order on Remand, July 23, 2015, at 4-10.

that he presented the following measures of economic conditions in the State and in the nation for the Commission to consider:

- (i) Unemployment rates from the United States, North Carolina, and the counties comprising Aqua North Carolina's service territory;
- (ii) The growth in Gross National Product ("GDP") in both the United States and North Carolina;
- (iii) Median household income in the United States and in North Carolina; and
- (iv) National income and consumption trends.

Witness D'Ascendis then discussed each of these measures and concluded that, in its Order on Remand in Docket No. E-22, Sub 479, the Commission observed that economic conditions in North Carolina were highly correlated with national conditions, such that they were reflected in the analyses used to determine the cost of common equity.²¹ Witness D'Ascendis testified in this case that those relationships still hold: economic conditions in North Carolina continue to improve from the recession following the 2008/2009 financial crisis, and they continue to be strongly correlated to conditions in the U.S., generally. In particular, unemployment, at both the State and county level, continues to fall and remains highly correlated with national rates of unemployment. Real Gross Domestic Product recently has grown faster in North Carolina than the national rate of growth, although the two remain fairly well correlated. Additionally, median household income has grown faster in North Carolina than the rest of the Country,

²¹ State of North Carolina Utilities Commission, Docket No. E-22, Sub 479, Order on Remand, July 23, 2015, at 39.

and remains strongly correlated with national levels. In sum, the correlations between State-wide measures of economic conditions noted by the Commission in Docket No. E-22, Sub 479 remain in place and as such, they continue to be reflected in the models and data used to estimate the cost of common equity.

The Commission agrees with Mr. D'Ascendis' assessment of the impact of changing economic conditions in this case. Accordingly, for all of the reasons set forth above, the Commission finds and concludes that (a) the Partial Settlement Agreement and Stipulation filed in this docket on September 17, 2018, by Aqua and the Public Staff, regarding the reasonableness of the stipulated capital structure and cost of long-term debt, adequately supports approval of a reasonable and appropriate capital structure consisting of 50.00% long-term debt and 50.00% common equity and a cost of long-term debt of 4.63% for Aqua; (b) the testimony of Company witness D'Ascendis supports and justifies approval of a cost of common equity of 10.8% for Aqua in this proceeding; (c) this capital structure and the approved costs for long-term debt and equity are just and reasonable and appropriate for use in setting rates in this proceeding; and (d) the just, reasonable, and appropriate components of the rate of return for Aqua, considering the impact of changing economic conditions on customers and relevant statutory and case law, are as follows:

a. Long-Term Debt Ratio	50.00%
b. Common Equity Ratio	50.00%
c. Embedded Cost of Debt	4.63%
d. Return on Common Equity	10.80%
e. Overall Weighted Rate of Return	7.715%

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 69
(Metered Water Rate Design Structure)

In its Proposed Order, Aqua stated that the Company and the Public Staff did not negotiate rate design issues during their settlement discussions and there are no provisions governing rate design structure in the Partial Settlement Agreement and Stipulation filed by those parties. Aqua further stated that, to the best of its knowledge, there was no specific narrative testimony filed by either the Company or the Public Staff or cross-examination which directly addressed rate design structure issues. Aqua cited Exhibit Jw to the Company's Application in support of its proposed rate design and requested that the Commission design new rates in this proceeding utilizing the following ratios of base facilities charges to variable consumption charges: Aqua Water – 44%/56%; Fairways Water – 50%/50%; and Brookwood Water – 44%/56%.

In its Proposed Order Aqua further requested that the Commission adopt and approve the Company's proposed rate design, rather than the Public Staff's rate design reflected in the bill analysis contained in Junis Late-Filed Exhibit 11 and Table 2 (Average Monthly Residential Bill Calculations) of the late-filed exhibit, both filed on October 10, 2018. Aqua also asserted that its proposed meter water rate design ratios will help to minimize the Company's demonstrated risk which results from consistently declining consumption by customers.

Commission Conclusions

The Commission concludes that Aqua's proposed metered water rate design request is reasonable and appropriate and should be approved, consistent

with Aqua Exhibit Jw. In so ruling, the Commission agrees with Aqua that the Company's proposed metered water rate design ratios will help to minimize the Company's demonstrated risk which results from consistently declining consumption by customers. The Commission further notes that the rate design approved herein is still relatively conservative and represents a fair and reasonable balance between fixed and variable costs. It is fair to both Aqua and its customers.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 81
(2017 Depreciation Studies and Rates)

On June 8, 2018, Aqua filed the direct testimony of John J. Spanos, including 2017 water and wastewater plant asset depreciation studies (calculated annual depreciation accruals related to water and wastewater plant as of September 30, 2017). These depreciation studies were prepared under the direction of witness Spanos on behalf of Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") in support of and as part of the Company's rate case filing. The Gannett Fleming depreciation studies encompass group depreciation procedures.

After carefully reviewing the testimony offered by Aqua witness Spanos in support of the Gannett Fleming water and wastewater depreciation studies, the Commission concludes that the depreciation rates set forth in those depreciation studies are reasonable and appropriate to use in setting water and sewer rates in this proceeding and are proper for the Company to use in booking depreciation expenses going forward. None of the parties to this case expressed any opposition

to approval of the Gannett Fleming depreciation studies, including their use in setting new rates in this case.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 82 - 85
(The Federal Tax Cuts and Jobs Act)

The evidence in support of these findings of fact is contained in the testimony offered by Aqua witness Kopas and Public Staff witness Boswell and the Partial Settlement Agreement and Stipulation filed by the Company and the Public Staff on September 17, 2018.

The Partial Settlement Agreement and Stipulation contains the following provisions and agreements related to the Tax Act as set forth in Paragraphs II, JJ, and KK thereof:

II. The Company agrees to accept the Public Staff's proposals for addressing the Federal Tax Cuts and Jobs Act (the Tax Act). The unprotected Federal EDIT created by enactment of the Tax Act will be returned to customers through a levelized rider that will expire at the end of a three-year period. The protected EDIT will be flowed back following the tax normalization rules utilizing the average rate assumption method (ARAM) required by IRC Section 203(e).

JJ. The State EDIT that the Company recorded pursuant to the Commission's May 13, 2014 order in Docket No. M-100, Sub 138 will be returned to customers through a levelized rider that will expire at the end of a three-year period.

KK. The Stipulating Parties agree to the Company's proposal to refund to the ratepayers the overcollection of federal taxes related to the decrease in federal tax rates for the period beginning January 1, 2018, and corresponding interest, as a surcharge credit for a one-year period beginning when the new base rates become effective in the current docket.

The Commission, having carefully reviewed the testimony offered by witnesses Kopas and Boswell and the applicable provisions of the Partial Settlement Agreement and Stipulation, finds and concludes that the above-

referenced settlement provisions regarding the applicable provisions of the Tax Act are reasonable and appropriate and should be approved. The Commission's decision to approve these provisions is fair and reasonable to both the Company and its ratepayers under the facts of this case and is fully supported by the evidence of record.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 86 - 88
(Water System Improvement Charge (WSIC) and
Sewer System Improvement Charge (SSIC))

In the Company's general rate case proceeding in Docket No. W-218, Sub 363, the Commission found it to be in the public interest to authorize Aqua to implement and utilize a rate adjustment mechanism (WSIC/SSIC rate adjustment mechanism) to recover the incremental depreciation expense and capital costs related to eligible investments in water and sewer infrastructure projects completed and placed in service between general rate case proceedings, as provided for in the then-newly enacted G.S. 62-133.12. Thus, Aqua was authorized to implement a WSIC/SSIC rate adjustment mechanism for recovery of such costs applicable to all of the Company's customers.

The Ongoing Three-Year WSIC/SSIC Plan filed by Aqua in this docket on April 2, 2018, is reasonable and meets the requirements of Commission Rules R7-39(m) pertaining to the WSIC and R10 26(m) pertaining to the SSIC.

The Commission's previously-authorized water and sewer system improvement charge rate adjustment mechanism for Aqua continues in effect, although, pursuant to Commission Rules R7-39(k) and R10-26(k), it has been

reset at zero as of the effective date of this Order. Aqua may, under the Rules and Regulations of the Commission, next apply for a WSIC/SSIC rate surcharge on February 1, 2019, to become effective April 1, 2019. The WSIC/SSIC mechanism is designed to recover, between rate case proceedings, the costs associated with investment in certain completed, eligible projects for system or water quality improvement. The WSIC/SSIC surcharge is subject to Commission approval and to audit and refund provisions. Any cumulative system improvement charge recovered pursuant to the WSIC/SSIC mechanism may not exceed 5% of the total annual service revenues approved by the Commission in this general rate case proceeding.

Overall Conclusions

The Commission, having carefully reviewed the Partial Settlement Agreement and Stipulation and all of the evidence of record, finds and concludes: that the Stipulation is the product of the give-and-take settlement negotiations between Aqua and the Public Staff; that it constitutes material evidence; that it is entitled to be given appropriate weight in this proceeding, along with all other evidence in the record; and that it is fully supported by competent evidence in the record. Accordingly, based on the foregoing findings of fact and the entire record in this proceeding, the Commission concludes that all of the provisions of the Stipulation, which are incorporated herein by reference, are just and reasonable and should be approved.

IT IS, THEREFORE, ORDERED as follows:

1. That the provisions of the Partial Settlement Agreement and Stipulation are incorporated by reference herein and are hereby approved in their entirety.

2. That all of the findings, conclusions, and decisions reflected in this Order are hereby affirmed and are so ordered for compliance purposes.

3. That the Schedules of Rates, attached hereto as Appendices _____ are hereby approved and deemed to be filed with the Commission pursuant to G.S. 62-138.

4. That the Schedules of Rates, attached hereto as Appendices _____ are hereby authorized to become effective for service rendered on and after the issuance date of this Order.

5. That the Notices to Customers, attached hereto as Appendices _____ shall be mailed with sufficient postage or hand delivered to all affected customers in each relevant service area, respectively, in conjunction with the next regularly scheduled billing process.

6. That the 2017 water and wastewater depreciation studies and rates filed by Aqua in this docket are reasonable and appropriate for use in setting water and sewer rates in this proceeding and are proper for the Company to use in booking depreciation expenses going forward. The 2017 water and wastewater depreciation rate studies are hereby approved as filed.

7. That Aqua shall file the attached Certificate of Service, properly signed and notarized, not later than 10 days after the Notices to Customers are mailed or hand delivered to customers.

8. That the Partial Settlement Agreement and Stipulation, and the parts of this Order pertaining to the contents thereof, shall not be cited or treated as precedent in future proceedings.

9. That all late-filed exhibits filed by Aqua, the Public Staff, and the Attorney General are hereby admitted in evidence.

ISSUED BY ORDER OF THE COMMISSION.

This the _____ day of _____, 2018.

NORTH CAROLINA UTILITIES COMMISSION

M. Lynn Jarvis, Chief Clerk

CERTIFICATE OF SERVICE

I hereby certify that on this the 30th day of October 2018, a copy of the foregoing **General Rate Case Proposed Order** in Docket W-218 Sub 497 has been duly served upon all parties of record by electronic service.

Electronically Submitted

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