



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

October 30, 2018

M. Lynn Jarvis, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Docket No. W-218, Sub 497

Dear Ms. Jarvis:

Attached for filing is the Public Staff's Proposed Order in the above-referenced docket. On November 2, 2018, the Public Staff will file the Appendices to the Proposed Order and the Certificate of Service.

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

Sincerely,

/s/ William E. Grantmyre
Staff Attorney
william.grantmyre@psncuc.nc.gov

Attachments

Executive Director (919) 733-2435	Communications (919) 733-2810	Economic Research (919) 733-2902	Legal (919) 733-6110	Transportation (919) 733-7766
Accounting (919) 733-4279	Consumer Services (919) 733-9277	Electric (919) 733-2267	Natural Gas (919) 733-4326	Water (919) 733-5610

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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., 202)
MacKenan Court, Cary, North Carolina 27511, for)
Authority to Adjust and Increase Rates for Water and)
Sewer Utility Service in All Service Areas in North)
Carolina)

PROPOSED ORDER
OF THE
PUBLIC STAFF

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

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

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

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

Tuesday, September 11, 2018, at 1:30 p.m., 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, Post Office Box 28085,
Raleigh, North Carolina 27611

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 Eric Galamb (Pro se):

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

For the Using and Consuming Public:

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

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

BY THE COMMISSION: On February 5, 2018, pursuant to Commission Rule R1-17(a), Aqua North Carolina, Inc. (Aqua or the Company), filed a letter notifying the Commission of its intent to file an application for a general rate case.

On March 7, 2018, the Company filed its Application to Increase Rates and Charges (Application), seeking authority to increase its rates for water and sewer utility service in all of its service areas in North Carolina. The Company states in its Application that it serves approximately 78,739 water customers and 17,940 sewer customers in the state.

On April 5, 2018, the Commission issued an Order Establishing General Rate Case, Suspending Rates, Scheduling Hearings, and Requiring Public Notice (Sub 497 Order Establishing General Rate Case). The Sub 497 Order Establishing General Rate Case states that Aqua agreed to extend to November 9, 2018, the

date it would be entitled to place temporary rates into effect under bond pursuant to N.C. Gen. Stat. § 62-135(a). The Sub 497 Order Establishing General Rate Case requires Aqua to file reports addressing all customer service and/or service quality complaints expressed at the public hearings held on May 8, May 9, June 25, and June 26, 2018, within twenty days of the respective hearings. The Sub 497 Order Establishing General Rate Case further requires Aqua to provide applicable customers with the Notice to Customers within fifteen days.

On April 6, 2018, the Commission issued an Errata Order correcting inadvertent errors contained in Appendix C of the Sub 497 Order Establishing General Rate Case.

On April 23, 2018, the Company filed a Certificate of Service of the Notice to Customers.

On May 8, 2018, a public hearing for the purpose of receiving customer testimony was held in the District Courtroom, Davie County Courthouse, 140 South Main Street, Mocksville, North Carolina as scheduled. No customers presented testimony at the public hearing.

On May 9, 2018, a public hearing for the purpose of receiving customer testimony was held in Courtroom 4C of the Gaston County Courthouse, 325 Dr. Martin Luther King Jr. Way, Gastonia, North Carolina as scheduled. Two witnesses presented testimony at the public hearing.

On May 29, 2018, the Company filed a report regarding the public hearings held in Mocksville and Gastonia. The report addresses concerns raised by customers at the Gastonia hearing.

On June 8, 2018, Aqua filed the direct testimony and exhibits of John J. Spanos, Senior Vice President, Gannett Fleming Valuation and Rate Consultants, LLC. The exhibits were depreciation studies of Aqua's water and wastewater plant assets as of September 30, 2017.

On June 25, 2018, a public hearing for the purpose of receiving customer testimony was held in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina as scheduled. Twenty witnesses presented testimony at the public hearing.

On June 26, 2018, a public hearing for the purpose of receiving customer testimony was held in Courtroom 317 of the New Hanover County Courthouse, 316 Princess Street, Wilmington, North Carolina as scheduled. Six witnesses presented testimony at the public hearing.

On July 16, 2018, Aqua filed a report addressing the concerns raised by customers at the public hearing held in Wilmington.

Also on July 16, 2018, the Company filed a motion for an extension of time until July 20, 2018, to file its report addressing the concerns raised by customers at the Raleigh public hearing. On July 17, 2018, the Commission issued an Order granting the Company's motion.

On July 20, 2018, the Company filed a report addressing the concerns raised by customers at the public hearing held in Raleigh.

On July 27, 2018, Aqua filed the direct testimony and exhibits of Shannon V. Becker, President, Aqua; Dr. Christopher Crockett, Chief Environmental Officer, Aqua America, Inc. (Aqua America); Dylan W. D'Ascendis, Director, ScottMadden,

Inc.; Dean R. Gearhart, Manager of Rates and Planning, Aqua; and Robert A. Kopas, Consultant, Aqua Services, Inc.¹

On August 6, 2018, the Company filed the revised direct testimony of its witness Kopas.

On August 10, 2018, the Attorney General filed a notice of intervention in this proceeding. The intervention of the Attorney General is recognized pursuant to N.C. Gen. Stat. § 62-20.

On August 20, 2018, Eric Galamb filed a motion to intervene along with his direct testimony and exhibits.

On August 21, 2018, the Public Staff filed the direct testimony and exhibits of Manasa L. Cooper, Staff Accountant, Public Staff Accounting Division; Lindsay Darden, Utilities Engineer, Public Staff Water Division; Windley E. Henry, Accounting Manager, Water/Communications Section, Public Staff Accounting Division; John R. Hinton, Director, Public Staff Economic Research Division; and Charles Junis, Utilities Engineer, Public Staff Water Division.

On August 23, 2018, Dwight Allen, Brady Allen, and Britton Allen of the Allen Law Offices, PLLC, filed a Notice of Appearance on behalf of Aqua.

On August 24, 2018, Aqua responded and objected to Mr. Galamb's motion to intervene.

On August 30, 2018, Aqua filed a motion for a four-day extension of time, to September 4, 2018, to file its rebuttal testimony. Aqua also moved to postpone

¹ Mr. Kopas retired from his position as Regional Controller for Aqua Services, Inc. on July 1, 2018. Following his retirement, Mr. Kopas served as a consultant through the conclusion of the proceedings in this docket. (T 5 p 240)

the start of the evidentiary hearing for one day, to September 11, 2018, at 1:30 p.m.

On August 31, 2018, the Commission issued an Order granting Aqua an extension of time to 3:00 p.m. on September 4, 2018, to file its rebuttal testimony, and delaying the evidentiary hearing until September 11, 2018, at 1:30 p.m.

Also on August 31, 2018, the Commission issued an Order granting the motion of Mr. Galamb to intervene. The Order specifies that Mr. Galamb's individual service-related complaint is not properly before the Commission in this docket and will not be heard during the evidentiary hearing.

On September 4, 2018, Aqua filed the rebuttal testimony and exhibits of its witnesses Becker; D'Ascendis; Gearhart; Kopas; Amanda Berger, Manager of Environmental Compliance, Aqua; Joseph Pearce, Director of Operations, Aqua; and Bernard F. Thompson, Director of Procurement, Aqua Services, Inc.

On September 5, 2018, the Public Staff filed the testimony and exhibits of Michelle M. Boswell, Staff Accountant, Public Staff Accounting Division, and the supplemental testimony and exhibits of its witnesses Cooper; Henry; and Junis.

On September 6, 2018, Aqua filed a motion to excuse its witness Spanos from appearing at the evidentiary hearing and to admit his testimony and exhibits into the record. The Commission issued an Order granting the Company's motion on September 6, 2018.

Also on September 6, 2018, Aqua filed a motion to strike a portion of the testimony of Public Staff witness Junis on grounds that it is based upon

inadmissible hearsay. On September 7, 2018, the Public Staff responded and objected to Aqua's motion.

Also on September 7, 2018, Aqua filed the supplemental rebuttal testimony of its witness Becker.

On September 11, 2018, the Public Staff filed a motion to recess the evidentiary hearing following rebuttal from the Company's cost of capital witness due to Hurricane Florence which was expected to impact Raleigh later in the week.

The evidentiary hearing began as scheduled at 1:30 p.m. on September 11, 2018, in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina. Prior to the presentation of testimony, the Commission denied Aqua's motion to strike filed September 6, 2018. Thereafter, Mr. Galamb presented his direct testimony. Aqua presented the direct testimony of its witnesses Becker, Kopas, and Gearhart, and the direct and rebuttal testimony of its witness D'Ascendis. The Public Staff presented the direct testimony of its witness Hinton. The hearing was adjourned at 11:38 a.m. on September 12, 2018 due to Hurricane Florence.

On September 13, 2018, the Public Staff filed a motion requesting that the Commission issue an order ruling that excerpts of an audio recording made by the Company's witness Berger are not confidential and accepting them into evidence.

Also on September 13, 2018, the Public Staff filed the revised supplemental exhibits of its witnesses Cooper and Henry.

On September 17, 2018, Aqua and the Public Staff entered into and filed a Partial Settlement Agreement and Stipulation (Stipulation). The Stipulation

resolves some of the issues between the two parties in this docket. However, the following unsettled issues still exist: (1) Return on Equity; (2) Public Staff removal of 50% of four operators' salaries and related benefits; (3) Public Staff reduction of executive compensation and benefits by 50%; (4) Public Staff reduction of board of director fees by 50%; (5) annualization and consumption adjustments; (6) post-test year plant additions; (7) Public Staff removal of 30% of bonuses paid to Aqua North Carolina supervisory employees; (8) adjustment for Neuse Colony sewer expansion; (9) adjustment to costs related to AMR meters and the two meter installation projects; (10) adjustment to excess capacity; (11) adjustment to sludge removal; (12) adjustment to testing; (13) adjustment for water losses from purchased water systems; (14) water quality issues, including reporting and customer complaints; and (15) Consumption Adjustment Mechanism, further described herein (collectively, the Unsettled Issues).

The evidentiary hearing reconvened on September 18, 2018, at 10:30 a.m. Aqua presented the direct testimony of its witness Crockett and the rebuttal testimony of its witnesses Thompson, Gearhart, Pearce, Becker, and Berger. The Public Staff presented the direct and supplemental testimony of its witnesses Boswell, Darden, Cooper, Henry, and Junis.

On September 18, 2018, Aqua filed its response to the Public Staff's motion regarding confidentiality filed September 13, 2018. In its response, Aqua waived its claim of confidentiality regarding the recording that was the subject of the Public Staff's motion and withdrew its objection to the Commission receiving the recording into evidence.

On September 19, 2018, Aqua filed a response to requests made by Presiding Commissioner Brown-Bland and Commissioner Mitchell for late-filed exhibits regarding the Company's communication with DEQ concerning water quality issues.

On October 10 and October 11, 2018, the Public Staff filed late-filed exhibits requested from its witness Junis by Chairman Finley, Presiding Commissioner Brown-Bland, Commissioner Clodfelter, and Commissioner Mitchell. On October 15, 2018, the Public Staff filed a corrected version of its October 11, 2018, filing.

On October 22, 2018, Aqua filed a motion for an extension of time to October 30, 2018, for the parties to file proposed orders in this docket.

On October 23, 2018, the Commission issued an Order Granting Motion for Extension of Time, granting Aqua's motion for an extension of time to 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. Gen. Stat. § 62-135(a) to November 28, 2018.

Based on the verified Application, the Form W-1, the testimony and exhibits received into evidence at the hearings, the Stipulation, and the record as a whole, the Commission makes the following:

FINDINGS OF FACT

General Matters

1. Aqua is a corporation duly organized under the laws of and is authorized to do business in the State of North Carolina. It is a franchised public utility providing water and/or sewer utility service to customers in this State.

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

3. The test period appropriate for use in this proceeding is the twelve-month period ending September 30, 2017, updated for known and measurable changes through July 20, 2018.

The Stipulation

4. On September 17, 2018, Aqua and the Public Staff (Stipulating Parties) entered into and filed the Stipulation resolving some of the issues between the two parties in this docket. Those issues that were not resolved by the Stipulation are referred to herein as the “Unsettled Issues.”

5. The revenue requirement effect of the Stipulation is shown in Settlement Exhibit 1 to Henry Additional Direct Partial Settlement Exhibit 1, which provides sufficient support for the annual revenue required for the issues agreed to in the Stipulation.

6. The Stipulation is the product of the give-and-take in settlement negotiations between the Stipulating Parties, is material evidence in this proceeding, and is entitled to be given appropriate weight in this proceeding, along

with other evidence from the Company and intervenor parties, along with statements from customers of the Company as well as testimony of public witnesses concerning the Company's Application.

7. The Stipulation resolves only some of the disputed issues between the Stipulating Parties. The Unsettled Issues include the return on equity; removal of fifty percent of four operators' salaries and related benefits; reduction of executive compensation and benefits by fifty percent; reduction of board of director fees by fifty percent; annualization and consumption adjustments; post-test year plant additions; removal of thirty percent of bonuses paid to Aqua North Carolina supervisory employees; adjustment for Neuse Colony sewer expansion; adjustment to costs related to AMR meters and the two meter installation projects; adjustment to excess capacity; adjustment to sludge removal; adjustment to testing; adjustment for water losses from purchased water systems; water quality issues, including reporting and customer complaints; and the Consumption Adjustment Mechanism proposed by Aqua. The Unsettled Issues are resolved by the Commission and are addressed later in this Order.

Acceptance of Stipulation

8. The Stipulation will provide Aqua and its ratepayers just and reasonable rates when combined with the rate effects of the Commission's decisions regarding the Unsettled Issues in this proceeding.

9. The provisions of the Stipulation are just and reasonable to all parties to this proceeding and serve the public interest. Therefore, the Stipulation should be approved in its entirety.

Customer Concerns and Service

10. Aqua serves approximately 78,739 water customers and 17,940 wastewater customers. Aqua owns and operates 750 systems consisting of over 1400 wells and 59 wastewater treatment plants in 51 counties in North Carolina.

11. A total of twenty-eight witnesses testified at the four public hearings held for the purpose of receiving customer testimony. One witness at the Gastonia hearing and nineteen of the twenty witnesses at the Raleigh hearing testified about discolored water and other water quality issues such as sediment buildup and sludge related to high concentrations of iron and manganese in the groundwater². A number of customers testified that they had experienced damage to their property including plumbing fixtures, appliances, and laundry due to iron and manganese in their water. Many of the witnesses who testified about water quality issues also testified about problems with Aqua's customer service, including lack of responsiveness to customers' concerns and receiving inaccurate information about flushing and service outages.

12. The water quality issues described by the public witnesses in the present docket are similar to those described by witnesses who testified about water quality issues in the proceeding in the Company's last general rate case, W-218, Sub 363 (Sub 363 Docket), which was filed in 2013.

13. Of the six witnesses at the public hearing in Wilmington, most testified about their opposition to the magnitude of the rate increase sought by

² Approximately fifty-five individuals signed the attendance sheet for the Raleigh public hearing. More than twenty of those individuals yielded their designated time to witnesses Becky Daniel, Don Hess, and Jack Robinson.

Aqua, including the more than fifty percent increase in the sewer rate requested by the Company for the Fairways service area.

14. Pursuant to the Commission's directive set forth in its Sub 497 Order Establishing General Rate Case, Aqua filed reports with the Commission addressing the concerns raised by witnesses at the four public hearings. In its report addressing concerns raised at the Raleigh public hearing, the Company indicated that it began addressing secondary water quality issues related to iron and manganese at the time of its first acquisition in North Carolina in 2000. The Company further indicated that it recently instituted a Water Quality Plan to address secondary water quality issues through assessment, installation of filters, and operational processes such as flushing.

15. As of August 21, 2018, the Public Staff had received approximately fifty-seven written customer statements of position. Of those fifty-seven statements, approximately forty-three discussed water quality issues. In addition to the statements received by the Public Staff, the Commission received approximately twenty-one written statements via electronic mail. These statements primarily discuss opposition to Aqua's proposed rate increase, water quality issues, and customer service issues.

Secondary Water Quality

16. Iron and manganese concentrations are addressed by North Carolina Department of Environmental Quality (DEQ) secondary water quality standards. Secondary water quality standards are primarily concerned with aesthetic qualities of water, such as color. While iron and manganese pose

primarily aesthetic problems, the United States Environmental Protection Agency (EPA) has issued a lifetime health advisory for manganese of 0.3 mg/L, and has suggested that exposure to higher levels may impact the health of children.

17. Iron and Manganese in groundwater can be remediated through filtration, installed either centrally or at customers' residences, chemical sequestration, and flushing, either at the system level or at customers' residences.

18. The chemical sequestration product SeaQuest® is designed to address high concentrations of iron and manganese. One function of SeaQuest® is to dissolve mineral deposits in water pipes. As set out in Aqua's Response to Customer Comments from Raleigh Public Hearing filed by the Company in the Sub 363 Docket, the manufacturer of SeaQuest® recommends flushing systems in which SeaQuest® has been administered at intervals of 30 days, 60 days, 90 days, and 120 days³.

19. In the Commission's Order Granting Partial Rate Increase, Approving Rate Adjustment Mechanism, and Requiring Customer Notice issued May 2, 2014, in Docket No. W-218, Sub 363 (Sub 363 Order), the Commission states, "Aqua reported that the Company has committed to switch its sequestering agent to SeaQuest® in 2014 and plans to perform the required flushing." (Sub 363 Order p 25)

20. The evidence of record demonstrates that Aqua has failed to consistently comply with the manufacturer recommended flushing schedule when

³ Aqua North Carolina's Response to Customer Comments from Raleigh Public hearing was entered into the record as Public Staff Becker Cross Exam Exhibit 1.

it administers SeaQuest® which has adversely impacted the water quality experienced by customers.

Company Compliance with Sub 363 Order

21. Pursuant to Ordering Paragraph No. 11 of the Sub 363 Order, the Company and the Public Staff were directed to work together to develop and implement a plan to address secondary water quality issues, including filing a biannual report. This report was to include the customers affected and estimated cost of resolving secondary water quality issues through the WSIC where secondary water quality issues affect the lesser of ten percent of customers in a subdivision service area or twenty-five billing customers.

22. The method used by the Company to track customer complaints for the purpose of complying with Ordering Paragraph No. 11 of the Sub 363 Order has resulted in some customer complaints regarding secondary water quality issues not being quantified.

23. While the overall quality of service provided by Aqua is adequate, persistent water quality issues related to high concentrations of iron and manganese and customer service issues including lack of responsiveness to customers' concerns and the dissemination of inaccurate information about flushing and service outages render the quality of service in some of Aqua's systems inadequate.

Rate Base

24. The appropriate level of rate base used and useful in providing service is \$187,090,715 for combined operations:

Plant in Service	\$488,061,240
Accumulated depreciation	(155,018,156)
Contributions in aid of construction (CIAC)	(194,983,782)
Accumulated amortization of CIAC	70,516,785
Acquisition adjustments	2,055,735
Accumulated amortization of acquisition adjustments	1,040,444
Advances for construction	<u>(4,467,841)</u>
Net plant in service	207,204,125
Customer deposits	(379,445)
Unclaimed refunds	(193,255)
Accumulated deferred income taxes	(24,791,481)
Materials and supplies inventory	2,405,967
Excess capacity adjustment	(1,589,551)
Working capital allowance	<u>4,434,355</u>
Original cost rate base	<u>\$187,090,715</u>

25. It is appropriate to make the following adjustments (including applicable accumulated depreciation) of \$2,649,463 to plant in service for combined operations:

Adjustment for post-test year additions	\$8,769,089
Adjustment for costs related to future customers	5,992
Adjustment to remove sewer expansion-Neuse Colony	(2,120,000)
Adjustment to meters and meter installations	<u>(4,005,618)</u>
Total adjustment to plant in service	<u>\$2,649,463</u>

26. Pursuant to Paragraph 15 of the stipulation entered into by Aqua and the Public Staff , and approved by the Commission, in the Sub 363 Docket (Sub 363 Stipulation), the Public Staff and the Company agreed that the Public Staff has the right to challenge the reasonableness, prudence, and cost effectiveness of the Company's investment in AMR meters in future cases.

27. Aqua did not complete a thorough and reasonable cost-benefit analysis justifying its investment of \$3,781,679 in Aqua NC Water and \$1,885,507 in Brookwood for the implementation of automated meter reading (AMR) technology in the replacement of manual read meters.

28. Aqua's investment in AMR technology and contractor installation was unreasonable due to the combination of the price paid per AMR meter and meter installation, lack of expense savings to offset the capital cost, and lack of quantifiable benefits passed along to customers.

29. It is reasonable and appropriate to reduce original cost meter and meter installation rate base for the Aqua NC Water and Brookwood meter replacement projects by the amounts of \$2,834,632 and \$1,399,522, respectively. These amounts may be deferred with no return until the potential benefits are accessible to customers and a thorough and reasonable cost-benefit analysis justifies the recovery of the cost in rates charged to customers.

30. Aqua mismanaged its Flowers Plantation contracts with Johnston County and developers over a period of many years by failing to collect CIAC it was entitled to pursuant to the contracts. This has resulted in uncollected CIAC for the Buffalo Creek Pump Station and Force Main and a costly discrepancy between the wastewater capacity fees collected by Aqua from developers and the capacity fees paid by Aqua to the County, both of which Aqua seeks to recover in rates from customers. The customers should not be forced to indemnify Aqua for Aqua's contractual mismanagement.

31. It is appropriate to make adjustments (including applicable accumulated amortization) of (\$5,174,965) to CIAC for combined operations:

Adjustment for post-test year additions	(\$6,120,695)
Adjustment for Neuse Colony wastewater plant	1,270,414
Adjustment for imputation of CIAC-Neuse Colony wastewater treatment plant	<u>(324,684)</u>
Total adjustment to CIAC	<u>(\$5,174,965)</u>

32. It is appropriate to remove from plant in service the \$2.12 million in capacity fees⁴ paid to the County for 250,000 gallons per day of wastewater capacity and the corresponding \$1.497 million (\$1,270,414 including applicable accumulated amortization) of CIAC paid by Flowers Plantation developers because the capacity is not used and useful as required by N.C. Gen. Stat. § 62-133(b)(1).

33. Aqua did not collect reimbursement for the fifty percent balance of its cost of the construction of the Flowers Plantation Buffalo Creek Pump Station and Force Main according to the Commission approved Amended Purchase Agreement. Therefore, it is appropriate to impute \$315,687 (\$324,684 including the applicable accumulated amortization) of uncollected CIAC for the Buffalo Creek Pump Station and Force Main.

34. It is appropriate to reduce Aqua's NC Sewer rate base by \$1,589,551 for wastewater treatment plant excess capacity.

35. An adjustment to update ADIT to include the deferred tax related to the unamortized balance of rate case expense should be made in this proceeding.

36. ADIT should be adjusted to include the deferred taxes related to post-test year plant additions.

37. It is appropriate to adjust ADIT reflect the deferred taxes related to the unamortized repair tax credit balance.

⁴ This is referred to as "Adjustment to remove sewer expansion-Neuse Colony" in Finding of Fact 25.

Revenues

38. It is appropriate to make adjustments of \$11,520 for Aqua NC Water and \$60,720 for Aqua NC Sewer to reclassify availability revenues from service revenue to miscellaneous revenue.

39. It is appropriate to adjust late payment fees and uncollectibles based on the percentages provided by the Company in the Application.

40. The appropriate level of operating revenues under present rates for use in this proceeding is \$56,553,038, consisting of service revenues of \$55,496,957, late payment fees of \$114,830, and miscellaneous revenues of \$1,355,499, reduced by uncollectibles and abatements of \$414,248.

Operating, Maintenance and General Expenses

41. It is appropriate to update salaries and wages through June 30, 2018.

42. Aqua has historically experienced some turnover in employees, and therefore, will always have some level of open positions on an ongoing basis. It is appropriate to remove open positions from the update amount of salaries and wages.

43. Aqua has contracted United States Infrastructure Corporation (USIC) to perform One Call (a/k/a NC 811) work, essential to the safety of interested parties and to the longevity and condition of Aqua's infrastructure that was previously partially completed by Company personnel.

44. Aqua failed to quantify the cost savings of the outsourced NC 811 work and the avoided cost of additional employees as a result of reassigning the available workforce.

45. It is reasonable and appropriate to reduce the Company's workforce expenses by fifty percent for three field technicians, one from each region, and one supervisor.

46. Overtime pay should be adjusted to reflect each individual employee's updated payroll as of June 30, 2018.

47. It is appropriate to allocate to shareholders thirty percent of Short-Term Incentives (STI) bonuses totaling \$29,648 paid to North Carolina supervisory employees where the bonus metric was based on Aqua America's earnings per share.

48. It is appropriate to allocate to shareholders fifty percent of the compensation, pensions, and benefits of the five top Aqua America executives totaling \$213,756 in compensation and \$80,845 in pensions and benefits.

49. It is appropriate to update pensions and benefits through June 30, 2018.

50. Employee pensions and benefits related to open positions should be deducted from operating expenses.

51. It is appropriate to remove the Company's estimated pro forma adjustment to pensions and benefits and use actual amounts as of June 30, 2018.

52. Aqua's update to pensions and benefits included cost related to Heath Advocate twice in operating expenses. The duplicate Health Advocate expenses should be deducted from updated pensions and benefits.

53. It is appropriate to adjust sludge hauling expenses by \$23,049.

54. It is appropriate to adjust the level of test year testing expense by (\$88,402).

55. It is appropriate to adjust post-test year testing expense by (\$92,112).

56. On August 21, 2018, the Public Staff filed schedules which included an adjustment to decrease the Company's filed purchased water expense of \$1,947,892 by \$73,670.⁵ During discovery, the Company reduced its filed expense to \$1,941,621. The Public Staff adjustment ensures that the recoverable amount of water loss does not exceed fifteen percent, and therefore reduces the Aqua systems that had greater than fifteen percent water loss during the test year.

57. It is inappropriate for customers to pay for excessive water loss due to lack of oversight, maintenance, and repair. Nine of Aqua's purchased water accounts exceeded fifteen percent water loss ranging from nineteen percent to seventy-four percent.

58. Fifteen percent is a reasonable and appropriate amount of recoverable water loss for a purchased water system.

59. The appropriate level of annual purchase water expense is \$1,874,222.

60. It is appropriate to amortize the regulatory commission expense over a five-year period.

⁵ Exhibit B3-b-a to the Application listed a variance of \$49.64 between columns (i) and (j) that was excluded from the Application, however, it was included in the Company's and witness Junis' workpapers. Whether the variance is included or not would impact the filed amount and the recommended adjustment but not the recommended level of expense. For the purposes of discussion, the variance has been reduced ($\$73,719.33 - \$49.64 = \$73,669.69$) from witness Junis' adjustment.

61. It is appropriate to allocate to shareholders fifty percent of the compensation and expenses of the Aqua America Board of Directors totaling \$58,419 in compensation and \$8,691 in benefits.

62. The Aqua Communications Initiative is not a ratemaking expense. This Communications Initiative is a reasonable operating expense and includes startup costs for a completed customer survey and a completed water quality website. As part of the costs are non-recurring, it is appropriate to amortize one-half of the \$83,940 costs (or \$41,970) over three years, resulting in an annual expense of \$13,990.

63. The Public Staff appropriately calculated and applied the annualization and consumption factors to the categories of short-term variable expenses, which are reflected in the Public Staff's adjustments to expenses.

64. In order to have the appropriate level of expense that corresponds to the level of customers included in the revenue calculation, an annualization adjustment in the amount of \$66,608 for water operations and \$91,659 for sewer operations must be made. The applicable annualization factors have been applied to purchased power, chemicals and fuel for production.

65. In order to have the appropriate level of expense that corresponds to the level of consumption included in the revenue calculation, a consumption adjustment in the amount of (\$3,319) for water operations and (\$34,021) for sewer operations must be made. The applicable consumption factors have been applied to purchased power, chemicals, and fuel for production.

66. The appropriate level of operating, maintenance, and general expenses is \$30,636,951 for combined operations.

Depreciation and Amortization Expense

67. It is appropriate to make an adjustment to plant in service in the amount of (\$2,120,000) for the removal of the purchase of additional wastewater capacity for the Neuse Colony wastewater treatment plant.

68. An adjustment to remove \$139,727 of depreciation expense related to meters and meter installations should be made in this proceeding.

69. An adjustment to remove \$42,676 of amortization expense related to the CIAC for the additional wastewater capacity for Neuse Colony wastewater treatment plant should be made in this proceeding.

70. An adjustment of \$8,997 to amortization expense related to the imputation of CIAC for the Neuse Colony wastewater treatment plant should be removed in this proceeding.

71. The appropriate level of depreciation and amortization expense for combined operations used in this proceeding is \$9,986,078.

Other Taxes and Section 338(h) Adjustment

72. Payroll taxes should be calculated on the adjusted level of salaries and wages and the current and the current payroll tax rates.

73. It is appropriate to remove fifty percent of payroll taxes to match the adjustment to salaries and wages related to executive compensation.

74. The appropriate level of payroll taxes for use in this proceeding is \$788,065 for combined operations.

75. The appropriate level of other taxes and Section 338(h) adjustment for use in this proceeding is \$1,712,390 for combined operations, consisting of \$635,463 for property taxes, \$788,065 for payroll taxes, \$308,886 for other taxes, and a reduction of \$20,024 for the Section 338(h) adjustment.

Regulatory Fee and Income Taxes

76. The appropriate level of regulatory fee for use in this proceeding is \$79,174.

77. The appropriate level of state income taxes for use in this proceeding is \$295,538.

78. It is appropriate to calculate income taxes for ratemaking purposes based on the adjusted level of revenues and expenses and the tax rate for utility operations.

79. The appropriate level of federal income taxes for use in this proceeding is \$2,006,711.

Tax Act

80. The Company's revenue requirement shall be adjusted to incorporate the effects of the changes in federal income tax related to the Federal Tax Cuts and Jobs Act (Tax Act), including the reduction of the federal income tax from thirty-five percent to twenty-one percent, on the Company's ongoing income tax expense.

81. The Company's protected federal excess deferred income taxes (EDIT) should be amortized over a period of time equal to the expected lifespan of

the plant, property, and equipment with which they are associated, in accordance with the normalization rules of the United States Internal Revenue Service (IRS).

82. The Company's unprotected federal EDIT should be returned to ratepayers through a levelized rider over a period of three years.

83. The Company's state EDIT recorded pursuant to the Commission's Order Addressing the Impacts of HB 998 on North Carolina Public Utilities issued May 13, 2014, in Docket No. M-100, Sub 138 (Sub 138 Order) should be returned to ratepayers through a levelized rider over a period of three years.

84. The Company's over-collection of federal income taxes related to the decrease in federal tax rates for the period beginning January 1, 2018, and corresponding interest, should be refunded to ratepayers as a credit for a one-year period beginning when the new base rates become effective in the present docket.

Capital Structure, Cost of Capital, and Overall Rate of Return

85. The cost of capital and revenue increase approved in this Order is intended to provide Aqua, through sound management, the opportunity to earn an overall rate of return of 6.92%. This overall rate of return is derived from applying an embedded cost of debt of 4.63%, and a rate of return on equity of 9.2%, to a capital structure consisting of 50% long-term debt and 50% equity.

86. A 9.2 percent rate of return on equity for Aqua is just and reasonable in this general rate case.

87. A 50% equity and 50% debt ratio is a reasonable capital structure for Aqua in this case.

88. A 4.63 percent cost of debt for Aqua is reasonable for the purpose of this case.

89. The rate increase approved in this case, which includes the approved rate of return on equity and capital structure, will be difficult for some of Aqua's customers to pay, in particular Aqua's low-income customers.

90. Continuous safe, adequate, and reliable water and wastewater utility service by Aqua is essential to Aqua's customers.

91. The rate of return on equity and capital structure approved by the Commission appropriately balances the benefits received by Aqua's customers from Aqua's provision of safe, adequate, and reliable water and wastewater utility service with the difficulties that some of Aqua's customers will experience in paying the Company's increased rates.

92. The 9.2% rate of return on equity and the 50% equity capital structure approved by the Commission in this case result in a cost of capital that is as low as reasonably possible. They appropriately balance Aqua's need to obtain equity and debt financing with its customers' need to pay the lowest possible rates.

93. The authorized levels of 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 N.C. Gen. Stat. § 62-133, and are fair to Aqua's customers generally and in light of the impact of changing economic conditions.

Revenue Requirement

94. Aqua's rates should be changed by amounts which, after pro forma adjustments, will produce the following increases (decreases) in revenues:

Aqua NC Water	(\$222,173)
Aqua NC Sewer	590,700
Fairways Water	(32,875)
Fairways Sewer	668,636
Brookwood Water	<u>264,126</u>
Total Aqua	<u>\$1,268,414</u>

These increases (decreases) will allow Aqua the opportunity to earn a 9.20 percent overall rate of return, which the Commission has found to be reasonable upon consideration of the findings in this Order.

Rate Design

95. It is appropriate to design rates in the ratio and structure as reflected in Junis Late-Filed Exhibit 11.

96. The rates and charges included in Appendices A-1, A-2, and A-3, attached hereto, are just and reasonable and should be approved.

Consumption Mechanism Adjustment

97. In its Application, the Company requested Commission approval of a rate adjustment mechanism to account for variability in average monthly consumption per customer, which directly affects revenues.

98. Aqua has failed to provide evidence by the greater weight of the evidence that a consumption adjustment mechanism is justified.

99. The North Carolina General Assembly in the 2017-2018 session did not pass the consumption adjustment mechanism bill, which was introduced at Aqua's request.

Water and Sewer System Improvement Charges

100. Consistent with Commission Rules R7-39(k) and R10-36(k), Aqua WSIC and SSIC surcharges will reset to zero as of the effective date of the approved rates in this proceeding.

101. By law, the cumulative maximum charges that the Company can recover between rate cases cannot exceed five percent of the total service revenues approved by the Commission in this rate case.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 1-3

The evidence supporting these findings of fact and conclusions is contained in the Company's Application and Form W-1, the testimony and exhibits of the witnesses, and the entire record in this proceeding. These findings and conclusions are informational, procedural, and jurisdictional in nature and are not contested by any party.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 4-7

The evidence supporting these findings of fact and conclusions is contained in the Stipulation, and the testimony and exhibits of the witnesses.

On September 17, 2018, Aqua and the Public Staff entered into and filed a Partial Settlement Agreement and Stipulation, which resolves some of the issues in this proceeding between these two parties and provides for a revenue requirement increase of approximately \$1,268,414 for combined operations based on the settled issues. The Stipulation is based upon the same test period as the Company's Application, adjusted for certain changes in plant, revenues, and costs

that were not known at the time the case was filed but are based upon circumstances occurring or becoming known through June 30, 2018.

The key aspects of the Stipulation are as follows:

Capital Structure – The Stipulating Parties agree 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 of 4.63%.

Salaries and Wages – The Company accepts the Public Staff's proposed adjustment to update salaries and wages through June 30, 2018. The Stipulating Parties agree to a revenue requirement impact adjustment in the amount of (\$174,680) for combined operations to remove five open positions as set forth in the supplemental testimony of Public Staff witness Henry. The Company also accepts the Public Staff's proposed adjustment to overtime pay as set forth in the supplemental testimony of Public Staff witness Henry.

Pensions and Benefits – The Company accepts the Public Staff's proposed adjustment to update pensions and benefits through June 30, 2018. The Stipulating Parties agree to a revenue requirement impact adjustment of (\$150,196) for combined operations to remove benefits related to the five open positions. The Company also accepts the Public Staff's proposed adjustment to remove duplicative Health Advocate costs.

Plant in Service – The Public Staff agrees to withdraw its proposed adjustment related to Neuse Colony rate base as reflected on Line 7 of Settlement Exhibit 1. The Company accepts the Public Staff's proposed adjustment to plant related to future customers as set forth in the supplemental testimony of Public

Staff witness Cooper. The Company also accepts the Public Staff's proposed adjustment to re-allocate vehicles as set forth in the supplemental testimony of Public Staff witness Cooper.

Payroll Taxes – The Company accepts the Public Staff's proposed adjustment that reflected the adjusted level of salary wages and current payroll taxes. Payroll taxes have also been adjusted to a matching adjustment to remove 50 percent of executive compensation.

Insurance Expenses – The Company accepts the Public Staff's proposed adjustment to update insurance expenses as set forth in the supplemental testimony of Public Staff witness Cooper.

Miscellaneous Expense – The Stipulating Parties agree to a revenue requirement impact adjustment of \$14,009 for combined operations to allow partial recovery of the Company's costs associated with its communication initiative.

Updated Service Revenues – The Company accepts the Public Staff's proposed adjustment to updated service revenues from customer growth as set forth in the supplemental testimony of Public Staff witness Junis.

Reclassification of Revenues – The Company accepts the Public Staff's proposed adjustment to reclassify availability fees from service revenues to miscellaneous revenues.

Advances for Construction – The Company accepts the Public Staff's proposed adjustment to advances for construction.

Contract Services - Legal – The Company accepts the Public Staff's proposed adjustments to remove pre-test year legal invoices and to remove legal

fees related to fines and penalties. The Company also agrees to the Public Staff's proposed adjustment removing legal fees related to legislation.

Accumulated Deferred Income Taxes (ADIT) and Excess Deferred Income Taxes (EDIT) – The Company agrees to the Public Staff's proposed adjustments to accumulated deferred income taxes (ADIT) regarding unamortized rate case expense, unamortized repair tax credit, post-test year plant additions, and excess deferred income taxes (EDIT).

The Stipulating Parties agree to revise ADIT for any updates made to regulatory commission expenses.

The Company agrees to accept the Public Staff's proposals for addressing 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). The Stipulating Parties agree that the State EDIT that the Company recorded pursuant to the Sub 138 Order will be returned to customers through a levelized rider that will expire at the end of a three-year period.

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.

Acquisition Incentive Adjustments – The Company accepts the Public Staff’s proposed adjustment to acquisition incentive adjustments (AIA) as set forth in the supplemental testimony of Public Staff witness Cooper.

Purchase Acquisition Adjustment (PAA) – The Company accepts the Public Staff’s proposed adjustment to Mid South growth PAA as set forth in the supplemental testimony of Public Staff witness Cooper.

Working Capital Allowance – The Stipulating Parties agree to a revenue requirement impact adjustment of (\$15,972) for combined operations for working capital.

Service Revenues – The Company accepts the Public Staff’s proposed adjustment to late payment fees as set forth in the supplemental testimony of Public Staff witness Cooper.

Uncollectibles and Abatements – The Company accepts the Public Staff’s proposed adjustment to uncollectibles and abatements as set forth in the supplemental testimony of Public Staff witness Cooper.

Transportation Expense – The Company accepts the Public Staff’s proposed adjustment to transportation fuel expense as set forth in the supplemental testimony of Public Staff witness Cooper.

Purchased Power Expense – The Company agrees to the Public Staff’s proposed adjustment to purchased power expense as set forth in the testimony of Public Staff witness Darden.

Chemical Expense – The Company agrees to the Public Staff’s proposed adjustment to chemical expense as set forth in the testimony of Public Staff witness Darden.

Contract Services - Other – The Company agrees to the Public Staff’s proposed adjustment to remove pre-test year invoices from contract services. The Company also agrees to the Public Staff’s proposed adjustment to contract services related to NC 811 locates.

Regulatory Commission Expense – The Stipulating Parties agree to a methodology for calculating regulatory commission expense, also known as rate case expense, and agree to update the number in Settlement Exhibit 1, Line 33 for actual and estimated costs once supporting documentation is provided by the Company. However, Aqua seeks a three-year amortization period; the Public Staff supports a five-year period.

Payroll Taxes – The Stipulating Parties agree to a revenue requirement impact adjustment of \$8,271 for payroll taxes as set forth in the supplemental testimony of Public Staff witness Henry.

As the Stipulation has not been adopted by all of the parties to this docket, its acceptance by the Commission is governed by the standards set out by the North Carolina Supreme Court in State ex rel. Utils. Comm’n v. Carolina Util. Customers Ass’n, Inc., 348 N.C. 452, 500 S.E.2d 693 (1998) (CUCA I), and State ex rel. Utils. Comm’n v. Carolina Util. Customers Ass’n, Inc., 351 N.C. 223, 524 S.E.2d 10 (2000) (CUCA II). In CUCA I, the Supreme Court held that:

[A] stipulation entered into by less than all of the parties as to any facts or issues in a contested case proceeding under [C]hapter 62

should be accorded full consideration and weighed by the Commission with all other evidence presented by any of the parties in the proceeding. The Commission must consider the nonunanimous stipulation along with all the evidence presented and any other facts the Commission finds relevant to the fair and just determination of the proceeding. The 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.

348 N.C. at 466, 500 S.E.2d at 703. However, as the Court made clear in CUCA II, the fact that fewer than all of the parties have adopted a settlement does not permit the Court to subject the Commission’s order adopting the provisions of a nonunanimous stipulation to a “heightened standard” of review. 351 N.C. at 231, 524 S.E.2d at 16. Rather, the Court said that Commission approval of the provisions of a nonunanimous stipulation “requires only that the Commission ma[k]e an independent determination supported by substantial evidence on the record [and] . . . satisf[y] the requirements of [C]hapter 62 by independently considering and analyzing all the evidence and any other facts relevant to a determination that the proposal is just and reasonable to all parties.” Id. at 231-32, 524 S.E.2d at 17.

The Commission gives substantial weight to the testimony of the Company and Public Staff witnesses regarding the Stipulation, and finds and concludes that the Stipulation is the product of the “give-and-take” of the settlement negotiations between Aqua and the Public Staff in an effort to appropriately balance the Company’s need for rate relief with the impact of such rate relief on customers.

The Stipulation is, therefore, material evidence to be given appropriate weight in this proceeding.

Ample evidence exists in the record to support all of the provisions of the Stipulation. Accordingly, the Commission is fully justified in adopting the Stipulation through the exercise of its own independent judgment, and finding and concluding through such independent judgment that the Stipulation “is just and reasonable to all parties in light of all the evidence presented.” CUCA I, 348 N.C. at 466, 500 S.E.2d at 703. The Commission hereby adopts the Stipulation in its entirety, and its conclusions as to the individual provisions of the Stipulation are set forth more fully below.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 8-9

The evidence supporting these findings of fact and conclusions is contained in the Company’s Application and Form W-1, the testimony and exhibits of the Stipulation, and the entire record in this proceeding.

As fully discussed above, the provisions of the Stipulation are the product of the give-and-take of settlement negotiations between Aqua and the Public Staff. Comparing the Stipulation to Aqua's Application, and considering the direct testimony of the Public Staff’s witnesses, the Commission notes that the Stipulation results in a number of downward adjustments to the costs sought to be recovered by Aqua. Further, the Commission observes that there are provisions of the Stipulation that are more important to Aqua, and, likewise, there are provisions that are more important to the Public Staff. Nonetheless, working from

different starting points and different perspectives, the Stipulating Parties were able to find common ground and achieve a balanced settlement.

The result is that the Stipulation strikes a fair balance between the interests of Aqua and its customers. As discussed above, the Commission has fully evaluated the provisions of the Stipulation and concludes, in the exercise of its independent judgment, that the provisions of the Stipulation are just and reasonable to all parties to this proceeding in light of the evidence presented, and serve the public interest. The provisions of the Stipulation strike the appropriate balance between the interests of Aqua's customers in receiving safe, adequate, and reliable water and sewer service at the lowest reasonably possible rates, and the interests of Aqua in maintaining the Company's financial strength at a level that enables the Company to attract sufficient capital. Further, the Commission finds and concludes that the revenue requirement, rate design, and the rates that will result from the Stipulation, subject to the Commission's decisions set forth below on the contested issues, will provide just and reasonable rates for Aqua and its retail customers.

Therefore, the Commission approves the Stipulation in its entirety. In addition, the Commission finds and concludes that the Stipulation is entitled to substantial weight and consideration in the Commission's decision in this docket.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 10-15

The evidence supporting these findings of fact is contained in testimony and exhibits of Aqua witness Becker, Public Staff witness Junis, and the public

witnesses, and in the verified reports filed by Aqua in response to the concerns testified to by the public witnesses.

While the majority of the witnesses at the Wilmington public hearing voiced their opposition to the magnitude of the rate increase sought by the Company, the primary concern voiced by one witness at the Gastonia public hearing and nineteen of the twenty witnesses who testified at the Raleigh public hearing was that the poor quality of the water supplied by the company did not justify the price they were paying for it. The water quality concerns voiced by these witnesses relate to high concentrations of iron and manganese.

Many witnesses at the public hearings testified that they had been contending with secondary water quality issues for several years. Similar to the witnesses who testified in the public hearings held in connection with the Sub 363 Docket, many of the witnesses who testified about secondary water quality issues in the present docket testified that they had sustained damage to their property, including to appliances, plumbing fixtures, and laundry, as a result of secondary water quality issues. Many witnesses also testified that the secondary water quality issues had disrupted their daily activities including cooking, bathing and doing laundry. In addition to the effects of high concentrations of iron and manganese on their property, some witnesses expressed concerns about the potential effects of these constituents on their health and the health of their families. Many witnesses testified that they had installed water filtration systems in their homes at significant cost as a result of the secondary water quality issues they experienced. (T 12 pp 104-09)

Many of the witnesses who testified about secondary water quality issues also testified about issues with the Company's customer service. These issues include lack of responsiveness to customer communications, inaccurate notifications to customers regarding flushing activities and other service interruptions, and concerns that customers' complaints were not being recorded by the Company. (Id.)

Becky Daniel, a resident of Coachman's Trail subdivision in Aqua's Bayleaf system, testified at the Raleigh public hearing. Approximately eight other customers who attended the hearing yielded their time to her. Witness Daniel's testimony was typical of the testimony given by other witnesses at the Raleigh public hearing, and touched on both secondary water quality and customer service issues she had experienced as a customer of Aqua. With respect to secondary water quality, witness Daniel testified that she had experienced issues with discolored water throughout the twelve years she had lived in her home, but that the issues had occurred more frequently since 2017. (T 3 p 29) Witness Daniel testified that, during the second half of 2017, she had flushed for approximately 200 minutes from her home's outdoor spigots to address discolored water and had not received a bill credit. (T 3 pp 29-30)

Witness Daniel also testified about issues with Aqua's customer service, including her concern that automatic messages informing callers that the Company was already aware of service issues in their area discouraged customers from completing their calls, and her concern that the Company is not accurately recording the number of customer calls. Another customer service issue testified

to by witness Daniel was the receipt of inaccurate communications from the Company about service interruptions. Specifically, witness Daniel testified that she had received a telephone message about a service outage that did not apply to her neighborhood, and that she had received a telephone message notifying her that the Company would be flushing one day after the flushing had already commenced. (T 3 pp 30-32)

Aqua addressed customer requests to improve its call center in its Response to Customer Concerns from June 25, 2018 Public Hearing in Raleigh report filed on July 20, 2018. Previously, Aqua's call system utilized an interactive voice response (IVR) function to provide an automated response about the status of service issues based on a caller's zip code. Aqua described the potential problems caused by the IVR function stating, "When a zip code was entered, the automated response could indicate that a general service issue existed for an entered zip code; however, zip codes have large populations and have multiple subdivisions within them. This may result in customers being misinformed or confused about specific issues in their area." The IVR function was eliminated from Aqua's call system effective July 11, 2018. (T 12 p 117)

In the Sub 363 Order, the Commission concluded that service-related concerns expressed by customers, including secondary water quality issues related to high iron and manganese concentrations, necessitated further action by the Company. The Order states, "The Commission requires Aqua to continue its efforts to address the pending matters set forth in its Reports on Customer Concerns and to pursue such actions as timely as practicably possible." (p 20)

Given the volume of testimony given at the public hearings, and the number of written statements related to secondary water quality issues, the Commission concludes that Aqua has still not substantially addressed the secondary water quality issues in some of its systems and the concerns of its customers related to those issues which were the subject of the Commission's directive in the Sub 363 Order. Accordingly, the Commission concludes that Aqua must make further efforts to address secondary water quality-related issues. The Commission requires, as part of its further efforts, that Aqua institute a flushing credit for customers who are directed by the Company to flush from their residences to address secondary water quality issues.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 16-20

The evidence supporting these findings of fact is contained in testimony and exhibits of Aqua witnesses Becker and Crockett, and Public Staff witness Junis.

Aqua witness Crockett testified that iron and manganese are naturally occurring minerals that are present in aquifers in North Carolina. He explained that, when water containing iron and manganese is pumped to the surface, they come into contact with oxygen and present as solid dark-colored particles and can cause discoloration of water and stain household items. (T 7 pp 46-47) Witness Crockett noted that, while iron and manganese pose primarily aesthetic concerns, the United States Environmental Protection Agency has established a lifetime health advisory for manganese and suggests that levels above the advisory have the potential to impact the health of children. (T 7 p 47)

Witness Crockett testified that iron and manganese can be remediated through filtration, installed either centrally or on individual customers' premises, flushing, either by the Company at a system level or by individual home owners, and sequestration using chemicals. He described the Company's Water Quality Plan which is intended to address secondary water quality issues through increased capital investment and improvements to operations including installation of filters and treatment, as well as tank cleaning and flushing. (T 7 p 52-53) Witness Crockett explained that, under the Water Quality Plan, the Company has divided its sites into four groups according the levels of iron and manganese, with Group 1 sites being prioritized for public health protection. (T 7 pp 53-54)

On cross-examination, Aqua witness Becker was referred to Public Staff Becker Rebuttal Cross Exam Exhibits 1 and 2, which state in pertinent part that "the manufacturer of SeaQuest recommends several flushings at intervals such as 30 days, 60 days, 90 days, and 120 days." (T 14 pp 77-79) In reference to Public Staff Becker Rebuttal Cross Exam Exhibit 3, Aqua witness Becker agreed that, for at least multiple points of entry that treat with SeaQuest and have been issued notices of deficiency by NCDEQ, Aqua has not been implementing the manufacturer's recommended flushing schedule. (T 14 pp 80-89) Aqua witness Becker further agreed that if SeaQuest® is breaking loose accumulated iron and manganese and the Company is not flushing, then sediment is going to customers. (T 14 p 83)

The Commission concludes that Aqua has properly operated and maintained most, but not all, of its water systems. This conclusion is based on

evidence that Aqua has not implemented the manufacturer's recommended flushing schedule of 30 days, 60 days, 90 days, and 120 days in its Bayleaf system, and that, for certain systems, Aqua failed to flush even annually after initiating treatment with SeaQuest, with some systems going as long as three years before flushing occurred. The failure to flush according to the manufacturer's recommended schedule and in some cases in multiple years has resulted in iron and manganese sediment adversely impacting the water quality experienced by customers.

On cross-examination, Aqua witness Becker testified that Public Staff witness Junis recommended the Company contact the Town of Holly Springs about the possibility of purchased water as an alternative to greensand type filtration at Brayton Park. Ultimately, the commodity rate of approximately \$13.00 per 1,000 gallons proved cost prohibitive, and the Public Staff recommended the Commission approve WSIC treatment for the filter project. (T 16 pp 95-96) With this being the only example of evaluation of alternative water sources as a method to address secondary water quality and given the duration and widespread nature of secondary water quality concerns in the Bayleaf Master System, the Commission concludes that it is appropriate for the Company to pursue permanent interconnection to the City of Raleigh's water system for the purpose of purchasing water and offsetting wells with documented water quality issues.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 21-23

The evidence supporting these findings of fact is contained in the testimony and exhibits of Aqua witness Becker and Public Staff witness Junis.

Ordering Paragraph No. 11 of the Sub 363 Order requires the Public Staff and Aqua to file a semi-annual written report to address secondary water quality concerns affecting the lesser of ten percent or twenty-five customers in an individual subdivision.

Public Staff witness Junis testified that he reviewed Aqua's customer complaint records related to water quality issues from January 2016 through June 2018. He noted that Aqua tracks complaints received during normal business hours separately from those received after business hours, and that the Company records different information in different formats. (T 12 p 115)

Witness Junis testified that the Company issues a LABD, which is a category of work or service order, in response to discolored water complaints received via phone calls made during business hours and online inquiries necessitating a work order. Witness Junis further testified that the Aqua uses LABDs to track, quantify, and report on customer water quality complaints for the purpose of complying with Ordering Paragraph No. 11 of the Sub 363 Order. (T 12 pp 115-16) Based on his comparison of LABD complaints and after-hours complaints reported in the six-month period ending December 31, 2017 contained in the Company's Eighth Semi-Annual Report Concerning Secondary Water Quality Concerns filed in Docket No. W-218, Sub 363A, witness Junis determined that, of the twelve subdivisions or service areas included in the report, six should have had at least one additional complaint reported. Witness Junis further determined based on his comparison that seventeen water quality complaints and seven customers were not included in the twenty-eight water quality complaints

from twenty customers reported by the Company for the Waterfall Plantation/Thompson Mills subdivisions (one system). Witness Junis testified that the omissions he identified through his review of the Company's report raised concerns that customer complaints had been under-quantified in previous reports and that additional individual subdivision service areas met the ten percent/twenty-five customer threshold and should have been reported on pursuant to the Sub 363 Order. (T 12 pp 115-16)

Aqua witness Becker testified on cross-examination that the Company outsources after business hours customer complaint call response for reasons related to cost. He further testified that the customer service agents who respond to calls received after business hours only handle emergency-related calls, and do not have the ability to track calls by issuing LABDs that customer service agents who respond to business hours calls do. Witness Becker testified that the Company could potentially give after business hours customer service agents access to the same call tracking system, but doing so would involve additional expense. Witness Becker acknowledged he understood it was the Commission's intent that the reporting requirements set out in Ordering Paragraph No. 11 apply to all customer complaint calls, not just those received during business hours. He indicated that the Company was testing a procedure to give after business hours customer service agents the ability to issue LABDs. (T 14 pp 101-03)

The Commission concludes that Aqua has failed to fully comply with Ordering Paragraph No. 11 of the Sub 363 Order as evidenced by the testimony of Public Staff witness Junis and Aqua witness Becker described above.

In light of the Commission's findings and conclusions that the Company has not fully addressed secondary water quality issues that persist in some of its systems, it is appropriate that the Company continue to comply with the water quality complaint reporting requirements set out in the Sub 363 Order. Furthermore, it is appropriate that the Commission consider the imposition of a penalty pursuant to N.C. Gen. Stat. § 62-310 should the Company fail to comply with Ordering Paragraph No. 11 of the Sub 363 Order going forward.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 24-37

The evidence supporting these findings of fact is contained in the Application and Form W-1 of Aqua, the testimony of Company witnesses Becker, Thompson, and Kopas and Public Staff witnesses Cooper, Henry, Boswell, and Junis, the Sub 363 Stipulation, and the record in this proceeding.

The following table summarizes the differences between the Company's level of rate base from its Application and the amounts recommended by the Public Staff:

<u>Item</u>	<u>Company Application</u>	<u>Public Staff</u>	<u>Difference</u>
Plant in service	\$485,345,163	\$488,061,240	\$2,716,077
Accumulated depreciation	(154,951,542)	(155,018,156)	(66,614)
Contributions in aid of const.	(189,897,507)	(194,983,782)	(5,086,275)
Accum. amortization of CIAC	70,605,175	70,516,485	(88,690)
Acquisition adjustments	1,925,745	2,055,735	129,990
Accum. amort. of acquis. adj.	1,044,591	1,040,444	(4,147)
Advances for construction	<u>(4,305,936)</u>	<u>(4,467,841)</u>	<u>(161,905)</u>
Net plant in service	209,765,689	207,204,125	(2,561,564)
Customer deposits	(379,445)	(379,445)	0
Unclaimed refunds	(193,255)	(193,255)	0
Accum. deferred income taxes	(35,329,190)	(24,791,481)	10,537,709
Materials and supplies inventory	2,405,967	2,405,967	0
Excess capacity adjustment	(1,233,706)	(1,589,551)	(355,845)
Working capital allowance	<u>4,626,122</u>	<u>4,434,355</u>	<u>(191,767)</u>
Original cost rate base	<u>\$179,662,182</u>	<u>\$187,090,715</u>	<u>\$7,428,533</u>

With the Stipulation and revisions made by the Public Staff in its supplemental testimony and Revised Supplemental Cooper Exhibit I, the Company does not dispute the following Public Staff adjustments to rate base:

Update advances for construction	(\$161,905)
Remove costs related to future customers	6,165
Adjustment for Mountain Ridge AIA	75,090
Update Mid South growth PAA to 6/30/18	54,900
Adjustment to working capital	(191,767)
Adjustment for accumulated deferred income taxes	<u>10,537,709</u>
Total	<u>\$10,320,192</u>

Therefore, the Commission finds and concludes that the adjustments listed above, which are not contested, are appropriate adjustments to be made to rate base in this proceeding.

Based on the testimony of Company witnesses Becker and Thompson, the Company disagrees with the following Public Staff adjustments to rate base:

Adjustment for Neuse Colony sewer expansion	(\$797,913)
Adjustment for post-test year plant additions	2,470,485
Adjustment for excess capacity	(359,140)
Adjustment for meters and meter installations	<u>(4,145,345)</u>
Total	<u>(\$2,831,913)</u>

Excess Capacity Adjustment

Public Staff engineer Junis testified that Aqua's general rate case Application includes excess capacity adjustments for the Carolina Meadows, The Legacy at Jordan Lake, and Westfall (a/k/a Booth Mountain) wastewater treatment facilities. He testified that Aqua's filed capacity percentages are identical to the Commission approved calculations in Aqua's last general rate case, Docket No. W-218, Sub 363. (T 12 p 137)

Public Staff witness Junis testified that, based on the calculation methodology established by the Commission and used in Aqua's prior two general rate cases, he calculated the excess capacity as follows:

Plant Name	Installed Capacity (gpd)	EOP REUs	Flow (EOP x 400 gpd)	Excess Capacity (1 - e/c)
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%

Public Staff witness Cooper implemented in her direct testimony the updated excess capacity percentages and plant, net of accumulated depreciation and

CIAC, to calculate the excess capacity adjustment. (T 8 pp 61-62) Public Staff witness Cooper, in her supplemental testimony, increased the excess capacity adjustment for Carolina Meadow wastewater treatment plant capital spending of \$1.7 million subsequent to September 30, 2017 through June 30, 2018, which increased the plant excess capacity by \$518,095. (T 8 p 83)

Public Staff witness Junis testified on cross-examination that Aqua stated in a data request response that the Carolina Meadows wastewater treatment plant capacity was 350,000 gallons per day and was still permitted at 350,000 gallons per day. (T 10 p 9) He testified Aqua did not provide him any information that the recent capital spending reduced the capacity. (T 9 p 101)

On cross-examination, Public Staff witness Junis further testified the Public Staff has not made excess capacity adjustments against all Aqua plants that are overbuilt. He testified these three plants with excess capacity adjustments are unusual in that Aqua took on the risk from the developer. (T 10 p 8)

In his rebuttal, Aqua witness Becker stated that Aqua does not disagree with the Public Staff's excess capacity calculation as it has been used in prior cases. He testified Aqua does, however, recommend and request that plant amounts determined to be excess, and removed from rate base, should be allowed to receive deferred accounting treatment. He testified this would allow the Company to defer the recovery of depreciation and continue to capitalize carrying costs until the capacity is actually utilized. (T 14 p 40) Aqua witness Becker testified that Aqua requests that it be provided 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. He testified 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. (T 14 pp 42-43)

In his supplemental rebuttal, Aqua witness Becker testified 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. He testified the work was not performed to provide additional capacity of the plant, but simply to maintain the aging and deteriorating asset already in place. As a result, the Public Staff's excess capacity adjustment increased by \$518,095. (T 14 pp 63-64)

Aqua witness Becker in his supplemental rebuttal testimony requested that the Commission disallow the Public Staff's excess capacity adjustment for the Company's 2018 investment at the Carolina Meadows WWTP. He testified this adjustment is inappropriate and unreasonable and the revenue impact of this adjustment is a reduction of \$59,717. (T 14 p 65)

On cross-examination, Aqua witness Becker testified that to his knowledge the Commission has never approved deferred accounting treatment on plant for Aqua. He also testified when Aqua installs plant, that plant is depreciating and deteriorating due to age, even if it is deferred. (T 15 p 67)

Aqua witness Becker testified on cross-examination that Public Staff Becker Rebuttal Cross-Examination Exhibit No. 19 was the application to transfer the

Carolina Meadows wastewater system to purchaser Aqua filed on June 28, 2005, in Docket No. W-218, Sub 216. (T 15 p 72) He testified on page four, line fourteen of the transfer application, it states: "Capacity of Company sewage treatment plant, gallons per day, 180,000 gallons per day, and see number 33 below." (T 15 p 73) He testified on page six, line thirty-three, it states: "See attached contract regarding expansion to 350,000 gallons per day." (T 15 p 73)

Aqua witness Becker testified that one of the transfer application exhibits was the Asset Purchase Agreement dated May 12, 2005, between Chatham Water Reclamation Company and Aqua. He testified on page ten of this agreement (page 24 of Exhibit) in subparagraph H, it states:

Buyer will pay and construct a replacement or upgraded plant with a treatment capacity of 350,000 gallons per day in accordance with plans and specifications and a construction schedule to be approved by seller and Carolina prior to closing, provided, however, that the parties agree that buyer will begin construction of a replacement or upgraded plant with a treatment capacity of 350,000 gallons per day not later than 45 days after the closing date, unless construction schedule approved by the seller and Carolina provides otherwise.

(T 15 pp 75-76)

Aqua witness Becker testified that this was where Aqua assumed the responsibility to expand the wastewater treatment from 180,000 gallons per day to 350,000 gallons per day. He further testified that the agreement was executed for Chatham Water Reclamation Company by Governor's Club Limited Partnership, manager; by Governor's Club Development Corporation, general partner. (T 15 p 76)

Aqua witness Becker further testified another Aqua transfer application exhibit was the Asset Purchase Agreement dated June 2, 2005, between Carolina Meadows, Inc. and Aqua. He testified this agreement also obligated Aqua to build the expansion of the plant for the development from 180,000 gallons per day to 350,000 gallons per day. He testified agreement paragraph G on Exhibit page 50 states:

Buyer will pay for and construct a replacement for an upgraded plant with a treatment capacity of 350,000 gallons per day in accordance with plans and specifications in a construction schedule to be approved by seller and Chatham prior to closing.

(T 15 p 79)

Aqua witness Becker testified that Public Staff Becker Cross-Examination Exhibit 17 is a list of post-test year plant capital expenditures by Aqua for the Canonsgate wastewater system. (T 15 p 68) He testified these capital expenditures totaled \$1.249 million and that the permitted capacity of the wastewater treatment plant is 250,000 gallons per day. (T 15 pp 68-69) He testified as to Public Staff Becker Rebuttal Cross-Examination Exhibit 18 and agreed it contained the information provided by Aqua as of June 30, 2018, showing 27 residential equivalent units at Canonsgate. He testified at 400 gallons per day per residential equivalent unit the used capacity totaled 10,800 gallons per day resulting in 95.7 percent excess capacity. (T 15 p 69)

Aqua witness Becker testified that the developer paid for the initial construction of the Canonsgate 250,000 gallon per day wastewater treatment plant in 2005, and this plant was fully contributed to Aqua. He testified the Public Staff

explained to him that as Aqua did not pay for the initial construction of the wastewater treatment plant and that was the reason why the Public Staff did not recommend a Canonsgate overbuilt plant adjustment. (T 15 p 70)

The Commission concludes that the Public Staff's recommended excess capacity adjustment for the three wastewater treatment plants is reasonable and appropriate and Aqua's request for deferred treatment of the excess capacity plant including accumulating a return on the deferred plant is unreasonable and is denied.

This is the third consecutive Aqua general rate case where there has been an excess capacity adjustment for Carolina Meadows and The Legacy of Jordan Lake, and the second for Westfall. Public Staff witness Junis' uncontroverted testimony was these three plants were unusual in that Aqua took the risk from the developer. The Commission finds credible Mr. Junis' testimony that the Public Staff has not made excess capacity adjustments against all Aqua plants that are overbuilt. An example is the Canonsgate wastewater treatment plant where Aqua made capital improvements subsequent to September 30, 2017, totaling \$1.249 million and the plant was 95.7 percent overbuilt as shown on Public Staff Becker Rebuttal Cross Examination Exhibits 17 and 18. The developer paid for the original Canonsgate construction of the 250,000 gallon per day wastewater treatment plant in 2005 and the plant was contributed to Aqua. Mr. Becker testified that the Public Staff explained to him that as Aqua did not pay for the initial construction of the wastewater treatment plant; that was the reason why the Public Staff did not recommend a Canonsgate overbuilt plant adjustment.

The Commission concludes it is reasonable and appropriate to include in the excess capacity percentage adjustment, the \$1.7 million Aqua spent on the Carolina Meadows wastewater treatment plant subsequent to September 30, 2017, resulting in an additional \$518,095 reduction to plant and results in a total Commission approved excess capacity plant reduction adjustment for the three plants of \$1,589,551. Aqua, in the two above described asset purchase agreements in Public Staff Becker Rebuttal Cross Examination Exhibit 19, agreed in 2005 to expand at Aqua's cost the Carolina Meadows wastewater treatment plant from 180,000 gallons per day to 350,000 gallons per day. Aqua, in doing so, assumed the developer's risk for development. The Commission concludes that customers should not be burdened with the avoidable risks of development.

Aqua presented evidence that the \$1.7 million capital expenditures were for necessary renovations and not expansion. There was no evidence that the Carolina Meadows NCDEQ-DWR permitted capacity had been reduced below 350,000 gallons per day subsequent to these capital expenditures.

Aqua's request for a deferral and earning a return is unreasonable and is denied. Neither the cost nor the nature of Aqua's excess capacity are extraordinary. Aqua, by expanding the Carolina Meadow wastewater treatment plant by 170,000 gallons per day after the 2005 acquisition, should have realized there would be the necessity for future renovations as part of Aqua's assumed risk. The customers should not pay for Aqua's assuming the developer's risks. These plant assets are depreciating and deteriorating with time.

Aqua's requested deferral would upon buildout burden the customers with Aqua's accumulated carrying costs on the excess capacity deferrals. The customers did not assume the development risks and should not pay the costs. Aqua made that choice to assume those risks in the asset purchase agreement executed in 2005 by Aqua President Neil Phillips.

Adjustment for Meters and Meter Installations

In his direct testimony, Company witness Becker stated that the Company communicated with the Public Staff regarding the AMR Meter Program and answered several data requests prior to initiating the meter changeout program. However, the witness did not discuss the input received from the Public Staff. (T 5 pp 38-39)

Witness Becker also stated that the Company would collect hourly meter readings with a forty day history. However, this is not supported by the testimony of Company witness Thompson or the balance of the record of evidence. (T 5 pp 155-56)

On cross-examination, Company witness Thompson testified that when the Company reads a 100W AMR meter it collects only daily reads from 12:01 a.m. for each of the forty days. (T 13 p 31)

Aqua in a response to a Public Staff data request stated it did not base its decision to implement AMR meters on a reasonable cost-benefit analysis, but instead was directed by a company-wide Aqua America initiative. (T 12 p 172)

As alluded to by Company witness Becker and as clarified by the exhibits and testimony of Public Staff witness Junis, the Public Staff expressed concerns

about the costs and benefits associated with Aqua's implementation of AMR meters installed as part of the Brookwood project during the Sub 363 general rate case and prior to the Aqua NC Water project started in 2017. As part of the Sub 363 Stipulation between the Public Staff and Aqua, the Public Staff reserved the right to challenge the reasonableness, prudence, and cost effectiveness of Aqua's investment in AMR meters. (T 12 p 170)

Witness Junis testified that North Carolina is different from many of the other states in which Aqua America provides water utility service in that almost all residential water meters are located out-of-doors in meter boxes located near the street or front property line and are visible with the exception of a limited number of snow covered days. (T 12 pp 172-73) Mr. Junis testified in certain northern states water meters are located within the residences, including basements. Mr. Junis' testimony was unrebutted.

Witness Junis described the cost-benefit analysis prepared by the Company and its deficiencies such as its failure to include costs for developing and deploying programs and services to utilize the additional data available from the forty daily reading history and indicator logging capabilities. Additional functionalities are mitigated by the decreased physical presence and the onsite inspection of a meter reader. Mr. Junis testified the biggest flaw of the current status of the Company's implementation of AMR meters, dating back to 2012 in North Carolina, is the lack of data shared with customers. (T 12 pp 173-74) During cross-examination, Company attorney Dwight Allen asked witness Junis about the

power of information and witness Junis responded that the power is in the Company's hands, not in the customers' hands. (T 10 p 59)

Witness Junis testified and filed supporting documentation that effectively refuted the Company's claim that the install cost has no net impact on the incremental cost to customers, as there may only be a nominal installation difference when a radio frequency or AMR meter is installed versus a manual read or standard meter. As part of the Brookwood Water meter replacement program in 2012 and 2013 the outside contractor, Mueller Service Co., invoiced individual installation cost line items for the meter, meter interface unit (MIU, also known as an ERT) radio, and the mounting rod. (T 12 p 175) The contractor charged \$29.00 per meter installation and an additional \$9.50, or approximately thirty-three percent more, for the ERT and mounting rod.⁶

Witness Junis effectively and persuasively presented an alternative cost-benefit analysis based on information known and available at the time and on Aqua's own quantification of internal labor cost of \$61.39 to install an AMR meter that indicates the Company acted unreasonably by contracting the meter installations. (T 12 p 176)

Witness Junis determined the average time necessary to replace a standard meter to be 0.54 hours or thirty-two minutes based on detailed and conservative inputs, which were informed by approximately 100 years of professional experience.⁷ Furthermore, witness Junis calculated a lower and more accurate

⁶ The invoices were entered into the record as Public Staff Junis Exhibit 6.

⁷ The meter replacement time and internal labor cost calculations were entered into the record as Public Staff Junis Supplemental Exhibit 2, Revised Junis Exhibit 8.

internal meter installation cost of \$15.87 based on a realistic, systematic, and efficient meter replacement program which benefits from going house to house instead of conducting intermediate replacements throughout the workday. (T 12 pp 176-78)

During cross-examination, witness Junis was asked a number of questions about the costs, with emphasis on allocated costs⁸, considered when calculating the internal labor rate for the replacement of meters. Witness Junis testified that the Company is sole proprietor of company-specific cost considerations for hiring and project management. The information provided by the Company to the Public Staff in response to discovery shows the Company did not perform the necessary due diligence expected of a reasonable utility prior to a significant capital investment such as a meter replacement program. (T 10 pp 40-46)

On redirect, after being cross-examined on the time to replace a meter and in recognition of the Company's motion to strike, witness Junis demonstrated a meter replacement from the witness stand. It took witness Junis approximately four minutes and twenty seconds to perform the meter replacement. (T 11 p 13) This timing was corroborated by a video presented by the Public Staff from Riverdale, California demonstrating the process and time necessary to change out a residential water meter.

⁸ The development of the Company's response pertaining to allocated costs and internal labor as determined and utilized by the Company was entered into the record as Junis Late-Filed Exhibits 1 through 8.

The meters retired as part of the Aqua NC Water Meter Replacement Program had an average service life of 17.63 years, a twenty-nine percent reduction from the former average service life of twenty-five years. (T 12 p 179)

In response to Commissioner Mitchell's examination, witness Junis explained the standard meter cost of \$38.43, which was the amount invoiced to Aqua in 2015, was appropriate to utilize when evaluating the costs incurred to complete the Brookwood and Aqua NC Water meter replacement projects in 2012-2013 and 2017-2018. (T 12 p 54)

Witness Junis explained that the calculated average cost of \$54.30 for in-kind standard meter replacement, including manual read meter, installation, and allocated costs, is comparable to the Meter Replacement Program projects completed for Aqua NC Water and Brookwood/LaGrange at average costs of \$206.43 and \$209.66, respectively, including AMR meter, ERT, installation, and allocated costs. (T 12 pp 180-81)

Witness Junis presented an alternative net present value cost comparison utilizing the \$152.00 cost difference between the Public Staff's calculated standard meter replacement and Aqua's actual AMR meter replacement program. (T 12 pp 181-82)

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 the Sub 363 Docket. Through its meter replacement program, Aqua has materially increased the cost to customers, but has not conferred any benefits on customers. The installation of

AMR meters was unreasonable and not justified by a realistic and comprehensive cost-benefit analysis. Witness Junis concluded that customers should not pay for the increased costs as a result of the Company's unreasonable actions and reductions to rate base for Aqua NC Water and Brookwood Water in the amounts of \$2,834,632 and \$1,399,522, respectively, are appropriate and justified. (T 12 p 182)

In his rebuttal testimony, Company witness Thompson disagreed with witness Junis' conclusions and recommendations pertaining to AMR capable meters. He asserted that it was 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. He further asserted that the cost-benefit analysis provided by the Company demonstrated that the decision to install AMR meters was prudent and reasonable. (T 13 p 10)

Witness Thompson asserted that he disagreed with witness Junis' recommended adjustments or comparative calculations and that the analysis overlooked immediate and tangible benefits such as 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. In 2015, when Aqua meters were 14% radio read, the estimated bill rate was 2.63% overall, and the Company quantified reductions in estimated bills in Brookwood and Aqua NC Water of 18% and 42%, respectively. (T 13 pp 10-11)

Witness Thompson asserted that he disagreed with witness Junis that the functionality of the forty daily meter reading history is mitigated because the data

is not accessible by customers and customers were not notified that the Company is collecting the forty daily meter reading history. He stated the data is used in investigating customer billing inquiries and in the detection of potential leaks. He provided an example from August 2018 when Aqua noted a sharp drop in well capacity in a critical system. He stated the meter reader captured cycle reads for all the AMR capable meters and the data was utilized to identify and contact customers with potential leaks. (T 13 p 12)

On cross-examination, witness Thompson was asked to read Public Staff Data Request No. 59 Q2⁹ that stated “the drop in well capacity was first noted on August 21st, 2018. . . . [O]n August 22nd a leak was found in Wildwood Green section of Stonehenge. . . . From an 8-inch water main running into a storm drain, which made it difficult to detect. The repair was made at once, and the run times returned to normal.” (T 13 p 33) Witness Thompson then agreed that the cause of the sharp drop in well capacity was the leak from the eight-inch water main and not the customer usage. (T 13 p 38)

Witness Thompson asserted 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 a level of critical mass. He further asserted the Company will continue to refine the business processes surrounding the utilization of data. (T 13 p 13) However, on cross-examination, witness Thompson testified that Aqua America started using AMR technology in approximately 2000 and the customers of Aqua do not have access to the AMR data. (T 13 pp 38, 40)

⁹ The data request response was entered into the record as Public Staff Thompson Rebuttal Cross Exam Exhibit Number 1.

Witness Thompson asserted that Public Staff witness Junis inappropriately discounted the value of operational or customer benefits realized from the indicators and tamper detection being used in conjunction with the data logging of the forty daily meter reads because the data is not directly transmitted to customers. (T 13 pp 13-14) This assertion is contrary to the record in that both the Company's and Public Staff's cost-benefit analyses are based on the same operations and maintenance expenses reductions associated with meter reading efficiency and field service orders.¹⁰

Witness Thompson asserted that the utilization of AMR technology reduces the hours required for meter reading which, in turn, decreases the opportunities for employee accidents to occur both onsite and in transit, such as insect/snake/dog bites, slips, trips, and falls.¹¹ (T 13 p 15) On cross-examination, witness Thompson indicated the Company had begun a new process with AMR technology, which would negate some of the previously claimed reduction in time and decrease in opportunities for accidents. When the meter reader is driving through the service area and a leak detection is indicated, the meter reader will stop, get out of the vehicle, and place a door hanger at the residence notifying the customer of a potential leak. (T 13 p 37)

Witness Thompson testified that the AMR meters installed by the Company are both AMR and AMI capable and he does not believe the additional cost of AMI,

¹⁰ The cost-benefit analyses were entered into the record as Junis Exhibit 5 and Junis Supplemental Exhibits 1 and 3.

¹¹ The Company's response to Public Staff Data Request No. 59 Q6 stated "Aqua does not track accidents at meter reader level" and was entered into the record as Public Staff Thompson Rebuttal Cross Exam Exhibit 2.

including repeaters, cell towers, and security, are not cost justified, presently. (T 13 p 16)

Witness Thompson disagreed with witness Junis' adjustments to the cost-benefit analyses as shown in Junis Exhibits 7 and 8.¹² He explained his disagreement was with the replacement of the estimated contractor costs for installation of manual meters with an Aqua-calculated cost estimate of internal labor cost for a large-scale meter replacement project, shown in Junis Exhibit 7, and with the adjustment to the cost of the manual meter, shown in Junis Exhibit 8. He concluded that Aqua does not have the internal resources to complete a large-scale meter replacement project and also disagreed with the magnitude of the adjustments detailed by witness Junis. (T 13 pp 17-18) However, on cross-examination, witness Thompson agreed that Aqua America has a market capitalization of approximately \$6.8 billion, which is larger than that of SCANA Corporation. (T 13 p 47)

Witness Thompson cited a sales quote from Mueller Systems dated March 27, 2017, that listed a price of \$44.64 plus tax for a residential sized, 5/8"x3/4", manual read water meter in an attempt to rebut witness Junis' manual meter price of \$38.43. (T 13 p 18)

Witness Thompson stated he might agree with the average time required to change a meter of 0.54 hour as determined by witness Junis, provided that the personnel assigned to such work were always dedicated and specialized to do meter exchange work eight hours per day. He noted that, in response to Public

¹² The adjusted cost-benefit analyses prepared by witness Junis were entered into the record as Junis Exhibits 7 and 9 and revised versions as Junis Supplemental Exhibits 1 and 3.

Staff EDR 51, Aqua estimated the average time to change a meter as 1.5 hours. He explained that this estimate was based on current Aqua skill level and was consistent with the labor rate used in the calculation. He further explained the analysis 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.¹³ (T 13 pp 19-20)

Witness Thompson asserted that the average labor cost of \$14.80¹⁴ per meter replacement as calculated by witness Junis was not accurate and the average labor rate of \$15.23 per hour was not representative of the labor rate of a specialized and experienced professional that would be required to achieve the time efficiencies detailed in witness Junis' meter replacement duration calculation. He cited a survey done by Payfactors, one of Aqua's primary salary survey services, for an average rate of \$35.80 per hour for a Meter Service Technician III, which he asserted was the best representation of the skill level of the workers contracted for the 2017 AMR meter Exchange Project.¹⁵ (T 13 pp 20-21)

On cross-examination, witness Thompson reiterated that Aqua never intended to use internal labor to perform the Meter Replacement Program. (T 13 p 53) In addition, witness Thompson stated the Payfactors survey of natural gas meter technicians was exemplary of the labor rate to change out water meters even though it makes no mention of water. (T 13 p 54)

¹³ The assumption was not presented as part of the response to PS EDR 51, which was entered into the record as part of Junis Exhibit 8 and revised version as Junis Supplemental Exhibit 2, which include the Public Staff's calculation of the average labor cost per meter exchange.

¹⁴ The amount was revised to \$15.87 per the supplemental testimony of Public Staff witness Junis.

¹⁵ The Payfactors survey was entered into the record as Thompson Exhibit 3.

Witness Thompson asserted the average cost of \$69.84 per meter installation included AMR meters of sizes ranging from 5/8" to 4". (T 13 p 22) On cross-examination, witness Thompson agreed that 99.93 percent of the meter replacements performed as part of the Aqua NC Water Rate Division Meter Replacement Program were either 5/8", 3/4", or 1" in diameter.¹⁶ (T 13 p 58)

The Commission recognizes that any amount of investment included in the Sub 363 proceeding with regard to AMR meters was the result of a stipulated agreement. Paragraph No. 15 of the Sub 363 Stipulation specifically states, "The Stipulating Parties agree that although the Public Staff did not recommend an adjustment to Aqua's current investment for installation of AMR-RF meters in this case, 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."

After a careful review of all the evidence in this case, the Commission concludes that Aqua's investment in AMR meters was unreasonable based on a thorough and realistic cost-benefit analysis and that the rate base adjustments recommended by Public Staff witness Junis are appropriate. The fact that the adjustment was not made in the prior rate case proceeding is not relevant as the parties previously agreed that the Public Staff had the right to challenge the investment in future cases, which was a clear signal to the Company and its investors.

¹⁶ The breakdown of the meter sizes was entered into the record as Public Staff Thompson Rebuttal Cross Exam Exhibit 5.

The Commission concludes that Aqua has not demonstrated by the greater weight of its evidence that the increased AMR meters costs provide reasonable corresponding customer benefits. Public Staff witness Junis testified that Aqua does not share the daily reading with its customers and Aqua customers have not been notified this information is available. Aqua witness Thompson testified that new technology takes time to deploy and full utilization and visibility to the customer often does not occur until Aqua is able to reach a level of critical mass. He also testified that, although the full benefits of the AMR program will not be realized immediately, it is prudent to install the new technology. He further testified that the functionality of the AMR program will increase over time and will include significant coordination with customer operations. Mr. Thompson further testified that Aqua will continue to refine the business processes surrounding the utilization of the AMR data. He testified on cross-examination that Aqua America started using AMR technology in approximately 2000. However, in 2018 the Aqua customers in North Carolina still do not have access to the AMR data.

Witness Thompson testified that the AMR meter reader immediately as driving by can notify customers of potential leaks. However, on cross-examination he agreed a meter reader reading meters on foot, based upon leak alarms indicated on the meter reading computer device, can also immediately notify the customer of a potential leak.

The Commission concludes that the increased capital costs to install the AMR meters shall be deferred without a return until Aqua has more fully utilized the AMR functions and Aqua can demonstrate to the Commission that Aqua's

customers are benefiting by the increased costs and do get increased benefits, which are beneficial to customers.

Johnston County

In his direct testimony, Company witness Becker stated that the Company engaged the Public Staff to proactively discuss the purchase of Johnston County wastewater capacity. (T 5 p 39)

Public Staff witness Junis provided background that the western half of the development (Neuse Colony side) was to be served by Aqua's wastewater treatment plant and the eastern half (Buffalo Creek side) was to be served by purchased wastewater capacity from Johnston County. He elaborated that, functionally, wastewater from both the Neuse Colony side and the Buffalo Creek side would flow to the Neuse Colony WWTP site where it could be diverted to Johnston County based on operational needs. (T 12 pp 138-39)

For background, witness Junis cited the Neuse Colony II Purchase Agreement¹⁷ dated January 14, 1999, a three-party agreement between River Dell Utilities, Inc., Rebecca Flowers Finch (d/b/a River Dell Company), and Heater Utilities, Inc. (collectively, the Parties) for the purchase of the water and wastewater utility systems serving the Neuse Colony side. Paragraph 10.I., starting on page 36 of the agreement, provides in pertinent part that, "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 the last WWTP expansion including

¹⁷ The Neuse Colony II Purchase Agreement was entered into the record as Junis Exhibit 12.

regulatory mandated upgrades to the wastewater treatment process.” (T 12 pp 139-40)

In support of the Public Staff’s position, witness Junis cited the Parties’ Amended Purchase Agreement¹⁸ dated May 14, 2002, which addresses the purchase of the water and wastewater utility systems serving the Buffalo Creek side. Paragraph 7.G.iii., on page 18 of the agreement, provides in pertinent part that “Heater shall pay \$75,000 plus 50% of the balance of the cost of the construction of the Pump Station and Force Main” and “Heater shall be reimbursed for this 50% . . . equally from the first 2,000 single-family equivalents.” (T 12 p 140)

Witness Junis also cited Amended Purchase Agreement Paragraph 7.I., starting on page 19, which provides in pertinent part that “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 the execution of this Amended Agreement is \$5.50 per gallon.” (T 12 p 141)

Witness Junis testified that Aqua had sold approximately 561,001 gallons per day (gpd) of wastewater capacity to developers on the Neuse Colony side, which is over 200,000 gpd of capacity beyond the permitted maximum allowable flow of the 350,000 gpd Neuse Colony WWTP. (T 12 p 143) Witness Junis testified that Aqua has collected \$128,145 of CIAC or six percent more than the

¹⁸ The Amended Purchase Agreement, including the Bulk Wastewater Agreement, was entered into the record as Junis Exhibit 13.

original cost of the utility plant in service (UPIS), while overselling the plant capacity by approximately 211,000 gpd or sixty percent. (T 12 p 145)

Witness Junis testified and was uncontroverted that, after removing Heater's contractually allowable investment of \$75,000, overhead, and interest costs from the \$1,079,301 total cost of the Buffalo Creek Pump Station and Force Main, Heater's fifty percent of the balance is \$440,816. Witness Junis further testified that \$440,816 divided equally among 2,000 single-family residential equivalents (SFREs), per the Purchase Agreement, would be \$220.41 per SFRE. Aqua failed to invoice developers for CIAC in the amount of \$315,687¹⁹ for their portion of the Pump Station and Force Main cost. (T 12 pp 145-46) On examination by Chairman Finley, witness Junis testified that approximately one-third of the CIAC for the Buffalo Creek Pump Station and Force Main should have been collected prior to the end of the Sub 363 update period. (T 12 p 32) Witness Junis provided a late-filed exhibit clarifying that \$218,999 of this Pump Station and Force Main CIAC was not invoiced and collected by Aqua from developers subsequent to the update cutoff of October 31, 2013, in the Sub 363 rate case.²⁰

Witness Junis testified that Aqua had sold approximately 333,671 gpd of wastewater capacity to developers on the Buffalo Creek side. Witness Junis further testified that Aqua charged developers \$5.50 per gpd the first time the Company sold wastewater capacity on the Buffalo Creek side in 2006, and subsequently charged \$6.00 per gpd. Witness Junis asserted that the wastewater

¹⁹ Through June 2018, Aqua had received wastewater capacity payments from 1,432.27 SFREs. (1432.27 SFREs x \$220.41 per SFRE = \$315,687)

²⁰ The calculation and supporting documentation for the uncollected CIAC was entered into the record as Junis Late-Filed Exhibit 9.

capacity fee to be paid to the County is a negotiated rate and had been provided by the County to Aqua a minimum of four times – in 2002, in 2009, and twice in 2018. (T 12 p 146)

Witness Junis testified that Aqua was paid \$1,497,400²¹ for 250,000 gpd of wastewater capacity between January 11, 2006, and November 10, 2017²². Aqua purchased 250,000 gpd of capacity from the County for \$2,120,000 on June 21, 2018. Witness Junis concluded that the wastewater capacity purchased by Aqua from the County is not “used and useful” as Aqua has not made the connection to Johnston County’s wastewater collection system. He testified that the capital cost of \$2.12 million and the associated CIAC of \$1.497 paid by developers for 250,000 gpd should be removed from rate base. (T 12 pp 148-50) Witness Junis explained that Aqua could have avoided creating rate base if it had simply tracked the quantities of capacity being sold to developers on each side of Flowers Plantation, updated the capacity fee to Johnston County’s then current rate, and incrementally and timely purchased capacity from the County as it received the CIAC from developers. (T 12 pp 151-52)

In his rebuttal testimony, Company witness Becker disagreed with witness Junis that the Company had oversold capacity in the Neuse Colony WWTP and asserted that witness Junis incorrectly based his opinion on the amount of sold capacity per books rather than on the actual flow capacity. (T 14 p 21) Witness Becker expanded upon this assertion and stated, “Mr. Junis utilizes the 360 gpd

²¹ The difference of \$1,500 in CIAC collected for the 250,000 gpd listed in Table 9 versus later references is a payment for “water capacity posted incorrectly in Power Plan” as indicated by Aqua in the data, row 9 Peachtree, provided to compile Junis Exhibit 16.

²² The supporting documentation was entered into the record as Junis Exhibit 16.

and 240 gpd ratings that were initially used but fails to consider the updated WWTP rerating.” (T 14 p 22) Witness Becker testified that it was Aqua’s position that the flow reductions have essentially doubled the capacity available to sell. (T 14 p 23) On examination by Chairman Finley, witness Becker contradicted his prefiled rebuttal testimony by describing a capacity fee as “buying capacity at a plant,” which directly supports the position of Public Staff witness Junis that developers bought and own wastewater capacity. (T 16 p 26) Public Staff Becker Rebuttal Cross Exam Exhibit 8 demonstrates that Aqua gave a credit of \$176,600 for wastewater gpd previously purchased by developer Rebecca Flowers after Aqua received a flow reduction from DWR.

Witness Becker asserted that he disagreed with witness Junis’ adjustment to impute approximately \$315,000 of uncollected CIAC for the Buffalo Creek Pump Station and Force Main. He stated that the three-party agreement was entered into in 2002, much of the Heater management team left the Company in early 2005, and the first developer contract was not entered into until 2006. Witness Becker admitted that, as a result of these changes and due to an oversight during the transition, Aqua failed to include a pro rata portion of the capacity fees in developer contracts between 2006 and 2018, which resulted in approximately \$315,000 of capacity fees not being collected from developers. He concluded that with hindsight and numerous filings later the Public Staff is seeking what amounts to a \$315,000 write-off of rate base and penalty to Aqua. (T 14 pp 24-25)

In a late-filed exhibit²³, the Public Staff stated the Amended Purchase Agreement for Flowers Plantation Sections I, II, and III-B, dated May 14, 2002, and a secondary developer contract were filed with the Commission on February 7, 2006, and approved²⁴ by the Commission in Docket No. W-218, Sub 538, by Order dated April 6, 2006. The Public Staff cited Paragraphs G.i. and G.iii. on pages 17 and 18 of the Amended Purchase Agreement that describe the Pump Station and Force Main and Heater's investment and recoverable costs from secondary developers.

The point of delivery to the County's collection system, as originally contracted in the three-party agreement, was across Highway 42 from the Neuse Colony WWTP.²⁵ Upon examination by Commissioner Clodfelter and then follow-up by Public Staff Attorney Grantmyre, witness Becker did not dispute that the originally contracted point of delivery to the County's collection system was approximately ten miles as the crow flies from the County's WWTP. (T 16 pp 41, 101)

On cross-examination by the Public Staff on September 24, 2018, witness Becker stated and then reaffirmed that the Company had received the necessary engineering approvals from NCDEQ to move forward and construct the interconnection. (T 15 p 54)

²³ On October 11, 2018 and corrected on October 15, 2018, the Public Staff entered into the record its Public Staff Late Filed Exhibit Relating to the Flowers Plantation Contributions In Aid Of Construction Issues.

²⁴ Ordering Paragraph 5 of the Commission's Ordering Recognizing Contiguous Extension and Approving Rates states "[t]hat Heater's agreements with developer, Walker Woods Development, LLC, and the developer River Dell Utilities, Inc., and River Dell Company, are hereby approved."

²⁵ The three-party agreement was entered into the record as Aqua Junis Cross Exam Exhibit 3.

On October 3, 2018, the Company, as requested by Commissioner Clodfelter, filed late-filed exhibits with a cover letter that stated “the permit for the construction of Aqua’s wastewater collection system extension” interconnecting the Neuse Colony WWTP and the County’s collection Force Main was issued September 28, 2018 (four days after witness Becker’s testimony).²⁶ While not specifically requested by the Commission, yet informative, the Company provided a letter²⁷ from witness Pearce in response to a request for information from NCDEQ that stated “[i]t is currently estimated that the engineering plan submittal for the Pump Station will be submitted to NCDEQ before August 15, 2018 and for the interconnect construction to be completed by March 31, 2019.” However, the request for an Authorization to Construct²⁸ was received on September 4, 2018 and the application for the Wastewater Collection System Extension Permit was received on September 4, 2018 and additional information was received on September 11, 2018. The submittals were received at minimum 20 days later than previously estimated in the response letter and as a result creates uncertainty as to the estimated completion date of March 31, 2019 (the last day of the first quarter of 2019).

Witness Becker asserted that based on the most recent peak flow calculations utilized in the last plant rerating of 154 gpd instead of the per book capacity sold to developers, that on the Buffalo Creek side Aqua has not oversold

²⁶ The Wastewater Collection System Extension Permit was entered into the record as Aqua Johnston County Late-Filed Exhibit 3.

²⁷ The response letter was entered into the record as Aqua Johnston County Late-Filed Exhibit 1.

²⁸ The Authorization to Construct was entered into the record as Aqua Johnston County Late-Filed Exhibit 2.

capacity. (T 14 pp 25-26) Witness Becker failed to reconcile that until the interconnection is completed and the purchased capacity is functional then there has been capacity sold without the corresponding construction or purchase of that capacity. In addition, it would be unfair and unreasonable to charge earlier developers \$2,160 for 360 gpd and then more recently charge \$1,080 for 180 gpd to serve comparable 3-bedroom homes.

Witness Becker asserted that the 2002 agreement does not explain how the capacity fee of \$5.50 per gpd was determined or how it is defined. He added that the capacity fee to be paid to the County “shall be adjusted in the future based on the County’s cost of construction of the County’s wastewater treatment plant” and to the Company’s knowledge, no construction of the County’s WWTP has occurred since 2006. (T 14 p 27) In juxtaposition, witness Becker also stated the initial capacity fee did not include the costs of upgrades for the transmission system. He concluded that the current County capacity fee charge should be \$5.34 per gpd instead of \$8.48 per gpd Aqua paid Johnston County. (T 14 p 29)

Witness Becker testified that based on the rapid growth rate of Flowers Plantation and the 2022 sunset clause for the option to purchase wastewater capacity from the County, it was determined that Aqua needed the capacity and paid \$8.48 per gpd for 250,000 gpd. He explained that “Aqua decided to purchase as much capacity as could be purchased using the CIAC received from Buffalo Creek developments of \$2,000,925” for 333,671 gpd. (T 14 p 30)

Witness Becker summarized witness Junis’ position that Aqua should have bought capacity incrementally as CIAC was collected from developers and that

since \$8.48 per gpd was paid to the County and only an average of \$5.99 per gpd was collected, then Aqua overpaid. He stated that by hindsight witness Junis effectively proposed to impute money (the shortage of approximately \$2.49 per gpd) that Aqua never collected. (T 14 pp 30-31)

Witness Becker stated that the Bulk Wastewater Service Agreement was filed with the Commission in Docket No. W-274, Sub 392. He further stated that had the provisions for recovery of the cost of the Pump Station and Force Main and capacity fees to be collected from developers and paid to the County been included in Heater's tariff then it would have been less likely that those provisions "would have been overlooked." Witness Becker stated "[t]he Commission's Orders are important, and they are relied upon by investors." (T 14 pp 32-33) The Public Staff in its late-filed exhibit confirmed that the Bulk Wastewater Service Agreement was filed with the Commission and was approved²⁹ by the Commission's Order in Docket No. W-274, Sub 392. The Agreement was not found to be filed in any other dockets.

Witness Becker disagreed with witness Junis' adjustment to remove the wastewater capacity fee payment of \$2.12 million from plant in service. He stated that witness Junis chose not to remove a corresponding amount of CIAC, but instead, chose to remove only \$1.497 million of CIAC. (T 14 p 34) Witness Becker did not dispute that the Company "only collected an average of \$5.99 per gpd from

²⁹ Ordering Paragraph 5 of the Commission's Ordering Granting Franchise and Approving Rates states "[t]hat Heater's agreement with Johnston County and the developer, Rebecca Flowers, d/b/a River Dell Company, is hereby approved."

developers over the past 12 years for the first 250,000 gallons” of wastewater capacity on the Buffalo Creek side. (T 14 p 31)

Witness Becker testified that while the Company submits that the purchased wastewater capacity from the County will be used and useful within a reasonable amount of time after the test period and it would be appropriate to include the full amount in rate base, 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. (T 14 p 35)

Witness Becker asserted that Aqua has increased CIAC cost recovery and reduced costs to developers by obtaining flow reductions from the State to allow more houses to be served by the existing capacity, which he claimed would produce more revenues and more CIAC for the Company and customers. (T 14 p 36) The Commission finds and concludes this logic is flawed as the wastewater capacity is sold per gpd as a capacity fee and not a connection fee per lot or SFRE.

The Commission concludes that Aqua mismanaged its agreements with Johnston County and developers and that the rate base adjustments recommended by Public Staff witness Junis are appropriate. The Company created the risk for and realization of a discrepancy between the amounts collected for wastewater capacity from developers and the capacity fees owed and paid to the County by not incrementally purchasing the capacity and/or communicating with the County. Aqua received notices from Johnston County on four occasions prior to Aqua’s purchase of 250,000 gpd of capacity on June 21, 2018, that the capacity fee was a different amount than the \$6.00 Aqua was collecting from

developers. Aqua's PowerPoint presentation to the Public Staff in April 2018, stated the Johnston County wastewater capacity fee was \$8.48 per gpd as shown on Public Staff Becker Rebuttal Cross Exam Exhibit 6.

The Commission finds and concludes that Aqua should have exercised reasonable diligence periodically to discuss with Johnston County and ascertain the then current Johnston County Wastewater capacity fees. Instead, Aqua failed to do so and continued to undercollect at \$6.00 gpd and then in June 2018 paid Johnston County \$8.48 gpd. The customers should not be responsible for Aqua's undercollection of CIAC due to Aqua's failure to reasonably administer its Johnston County Bulk Wastewater Agreement.

The Commission concludes that the \$2.12 million paid for the 250,000 gpd capacity shall be excluded from rate base as the plant is not used and useful as the interconnection to the Johnston County wastewater collection system has not been constructed. The updated test period ended June 30, 2018. N.C. Gen. Stat. § 62-133(b)(1) allows to be included in rate base a public utility's property used and useful, or to be used and useful within a reasonable time after the test period. The Aqua evidence was the construction of the interconnection to Johnston County was expected to be completed in the first quarter of 2019 prior to March 31, 2019. This interconnection completion would be nine months after the end of the test period and therefore **not** within a reasonable time period. In addition, there must be a matching with revenues so an increased wastewater customer growth revenue adjustment would need to match the used and useful in service date.

The Commission concludes that Aqua did not exercise reasonable diligence by not collecting the construction reimbursement CIAC totaling \$324,684 for the Buffalo Creek Pump Station and Force Main. The Commission takes judicial notice of Commission Order dated May 26, 2004, in Docket No. W-274, Sub 465, whereby the Commission approved the transfer to Aqua America of all the Heater common stock. Aqua by acquiring all the common stock of Heater assumed all of Heater's contract benefits and responsibilities. The Bulk Wastewater Agreement was approved by the Commission in 2002, prior to the Heater acquisition by Aqua America. However, in the Notification of Contiguous Extension filed on February 7, 2016, in Docket No. W-274, Sub 538, the Aqua management (the prior Heater management having left in early 2005 as testified to by Aqua witness Becker) attached to the Notification of Contiguous Extension as an exhibit the May 14, 2002, Amended Purchase Agreement which contained and clearly stated the obligation for the collection of the CIAC for the Buffalo Creek Pump Station and Force Main from the developers. There was nothing ambiguous or confusing about this simple requirement. The Commission concludes it was not reasonable and prudent for Aqua management to fail to read, understand and comply with contracts Aqua files with the Commission as exhibits in support of Aqua's applications for certificates of public convenience and necessity and Notifications of Contiguous Extensions. This Amended Purchase Agreement was approved by the Commission by Order dated April 6, 2006, and Aqua was required to comply with the terms of this Commission approved agreement.

Aqua's customers should not experience reduced developer paid CIAC as advocated by Aqua due to Aqua's mismanagement of its contracts.

ADIT

The difference in the level of ADIT is due to the differing levels of unamortized rate case expense, post-test year plant additions, unamortized repair tax credit, and EDIT recommended by the Company and the Public Staff. Based on the conclusions reached elsewhere in the Order regarding the levels of revenues and expenses, the Commission concludes that the appropriate level of federal income taxes for use in this proceeding is \$2,006,711.

Summary Conclusion

Based on the foregoing, the Commission concludes that the appropriate level of rate base for combined operations for use in this proceeding is as follows:

<u>Item</u>	<u>Amount</u>
Plant in service	\$488,061,240
Accumulated depreciation	(155,018,156)
Contributions in aid of const.	(194,983,782)
Accum. amortization of CIAC	70,516,485
Acquisition adjustments	2,055,735
Accum. amort. of acquis. adj.	1,040,444
Advances for construction	<u>(4,467,841)</u>
Net plant in service	207,204,125
Customer deposits	(379,445)
Unclaimed refunds	(193,255)
Accum. deferred income taxes	(24,791,481)
Materials and supplies inventory	2,405,967
Excess capacity adjustment	(1,589,551)
Working capital allowance	<u>4,434,355</u>
Original cost rate base	<u>\$187,090,715</u>

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 38-40

The evidence supporting these findings of fact is contained in the testimony of Public Staff witnesses Cooper and Junis, and Company witness Gearhart. The

following table summarizes the differences between the Company's level of operating revenues under present rates from its Application and the amounts recommended by the Public Staff:

<u>Item</u>	<u>Company Application</u>	<u>Public Staff</u>	<u>Difference</u>
Service revenues	\$54,039,950	\$55,496,957	\$1,457,007
Late payment fees	113,213	114,830	1,617
Miscellaneous revenues	1,283,259	1,355,499	72,240
Uncollectibles & abatements	<u>(404,234)</u>	<u>(414,248)</u>	<u>(10,014)</u>
Total operating revenues	<u>\$55,032,188</u>	<u>\$56,553,038</u>	<u>\$1,520,850</u>

With the Stipulation and the revisions made by the Public Staff in its supplemental testimony and Revised Supplemental Cooper Exhibit I, the Company does not dispute the following Public Staff adjustments to operating revenues under present rates:

Reflect Company pro forma level of service revenues	\$1,457,007
Adjustment to late payment fees	1,617
Adjustment to reclassify availability revenues	72,240
Adjustment to uncollectibles & abatements	<u>(10,014)</u>
Total	<u>\$1,520,850</u>

Therefore, the Commission finds and concludes that the adjustments listed above, which are not contested, are appropriate adjustments to be made to operating revenues under present rates in this proceeding.

Summary Conclusion

Based on the foregoing, the Commission concludes that the appropriate level of operating revenues under present rates for combined operations for use in this proceeding is as follows:

<u>Item</u>	<u>Amount</u>
Service revenues	\$55,496,957
Late payment fees	114,830
Miscellaneous revenues	1,355,499
Uncollectibles & abatements	<u>(414,248)</u>
Total operating revenues	<u>\$56,553,038</u>

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 41-66

The evidence supporting these findings of fact is contained in the Application and Form W-1 of Aqua, the testimony of Public Staff witnesses Cooper, Henry, Boswell, Junis, and Darden, and Company witnesses Gearhart, Becker, Kopas, Pearce, and Berger.

The following table summarizes the differences between the Company's level of operating and maintenance (O&M) and general and administrative (G&A) expenses from its Application and the amounts recommended by the Public Staff:

<u>Item</u>	<u>Company Application</u>	<u>Public Staff</u>	<u>Difference</u>
Salaries and wages	\$10,582,933	\$10,048,145	(\$534,788)
Employee pensions and benefits	3,307,897	3,021,650	(286,247)
Purchased water/sewer	2,390,335	2,316,616	(73,719)
Sludge removal	536,333	559,382	23,049
Purchased power	3,660,633	3,570,667	(89,966)
Fuel for power production	26,809	26,809	0
Chemicals	1,403,799	1,521,967	118,168
Materials and supplies	505,720	505,720	0
Testing fees	971,148	902,172	(68,976)
Transportation	919,149	919,149	0
Contractual services – eng.	2,750	2,750	0
Contractual services - acctg	188,101	188,101	0
Contractual services - legal	263,190	196,144	(67,046)
Contractual services - other	4,258,718	4,199,984	(58,734)
Rent	309,942	309,942	0
Insurance	963,266	650,674	(312,592)
Regulatory commission expense	224,568	92,562	(132,006)
Miscellaneous expense	1,497,272	1,444,151	(53,121)
Interest on customer deposits	32,388	32,388	0
Annual. and consumption adj.	<u>7,051</u>	<u>127,978</u>	<u>120,927</u>
Total O&M and G&A expense	<u>\$32,052,002</u>	<u>\$30,636,951</u>	<u>(\$1,415,051)</u>

With the Stipulation and the revisions made by the Public Staff in the supplemental testimony and Revised Supplemental Cooper Exhibit I, the Company does not dispute the following Public Staff adjustments to O&M and G&A expenses:

Update salaries & wages through 6/30/818	(\$40,329)
Remove open positions	(174,436)
Adjustment to reflect actual overtime pay	(18,568)
Update pensions & benefits through 6/30/18	(36,587)
Remove benefits related to open positions	(149,986)
Adjustment to remove original pro forma allocated benefits	6,364
Remove duplicate Health Advocate benefits	(9,445)
Adjustment to insurance expense	(312,592)
Adjustment to communication initiative	13,989
Adjustment to remove legal invoices before test year	(12,942)
Adjustment for legal fees related to fines and penalties	(10,099)
Adjustment to purchased power	(89,966)
Adjustment to chemicals	118,168
Adjustment to contract services to remove pre-test yr. invoices	(1,366)
Adjustment to contract services for NC 811 locates	(57,368)
Remove legal fees related to legislation	(44,005)
Adjustment to payroll taxes	<u>8,260</u>
Total	<u>(\$810,908)</u>

Therefore, the Commission finds and concludes that the adjustments listed above, which are not contested, are appropriate adjustments to be made to the O&M and G&A expenses in this proceeding.

The Company disagrees with the following Public Staff adjustments to O&M and G&A expenses, as evidenced by the testimony of Company witnesses Gearhart, Becker, Kopas, Pearce, and Berger.

Remove ½ of operators' salaries	(\$58,051)
Adjustment to remove 30% of bonuses	(29,648)
Adjustment to allocate executive compensation to shareholders	(213,756)
Remove ½ of four operators' benefits	(15,748)
Adjustment to allocate executive benefits to shareholders	(80,845)
Adjustment to board of directors fees	(67,110)
Annualization and consumption adjustment	120,927
Adjustment to sludge removal	23,049
Adjustment to testing	(68,976)
Adjustment to regulatory commission expense	(132,006)
Adjustment to purchased water	<u>(73,719)</u>
Total	<u>(\$595,883)</u>

These contested adjustments affect salaries and benefits, miscellaneous expense, sludge removal, testing, regulatory commission expense, and purchased water.

Salaries and Benefits

With the Stipulation and revisions made by the Public Staff in its supplemental testimony and Revised Supplemental Cooper Exhibit I, the Company does not dispute the following Public Staff adjustments to salaries and wages:

Update through June 30, 2018	\$ (40,329)
Remove open positions	(174,436)
Actual overtime payroll	<u>(18,568)</u>
Total	<u>\$ (233,333)</u>

Therefore, the Commission finds and concludes that the adjustments listed above, which are not contested, are appropriate adjustments to be made to salaries and wages in this proceeding.

Based on the testimony of Company witnesses Kopas, the Company disagrees with the following Public Staff adjustments to salaries and wages:

Remove Operators' salaries	\$ (58,051)
Remove 30% of STI bonus	(29,648)
Remove 50% of Executive Compensation	<u>(213,756)</u>
Total	<u>\$ (301,455)</u>

The difference in the level of employee pensions and benefits is due to the differing levels of salaries and wages recommended by the Company and the Public Staff. Based on the conclusions reached elsewhere in the Order regarding the levels of salaries and wages, the Commission concludes that the appropriate level of employee pension and benefits for use in this proceeding is \$3,021,650.

The Public Staff and the Company disagree on the following items concerning salaries and benefits: (1) an adjustment to salaries and wages and related benefits that quantifies the expense savings as a result of USIC performing the One Call/NC 811 work previously performed by Aqua personnel; (2) an adjustment to remove 30 percent of employee bonuses that are related to earnings per share; and (3) an adjustment to allocate executive compensation and related benefits to shareholders.

Operators' Salaries and Benefits

In his direct testimony, Company witness Gearhart testified that the Company added a new contract in 2018 for USIC to perform 811 responsibilities. He stated the filing amount was based on estimated calculations and a pending contract with the contractor. He further stated that, during discovery, the Company

submitted the executed contract and the initial invoices received from USIC to the Public Staff. (T 5 p 221)

Public Staff witness Junis testified that Aqua filed a pro forma adjustment to the Contract Services – Other expense in the amount of \$507,880, which he cited to Column (g) of Exhibit B3-m, for USIC to perform utility locates and other activities in response to the NC 811 system. (T 12 p 152)

Witness Junis described the Public Staff’s recommended adjustment to normalize the annual expense to an amount of \$450,511, based on actual locate tickets received during the months of May and June 2018, after USIC started to perform the responsibilities. (T 12 p 153) The Company agreed to witness Junis’ proposed adjustment as part of the Stipulation.

Witness Junis cited the Company’s response to Public Staff EDR 28 Q4³⁰, which provides in pertinent part that, “Aqua has not quantified expense savings associated with having a contractor conduct NC 811 locates.” (T 12 p 153) Witness Junis stated that the Public Staff sent multiple data requests³¹ to the Company in an effort to quantify the expense savings as a result of USIC performing the NC 811 work previously deficiently performed by Aqua personnel. Witness Junis cited the Company’s responses and stated that the Company was originally planning to hire six full-time employees to fully perform the work, which excluded supervisor time necessary to conduct a cursory review and assign workable tickets, and later witness Pearce estimated the avoided expense to be

³⁰ The Company’s full response to Public Staff EDR 28 Q4 was entered into the record as Junis Exhibit 20.

³¹ Public Staff EDR 33 Q2 and EDR 45 Q1 were entered into the record as Junis Exhibits 21 and 22, respectively.

\$693,667, which included the fully loaded costs of ten field staff and one supervisor. (T 12 p 154)

Witness Junis further cited the Company's response to Public Staff EDR 45 Q1, which provides in pertinent part that, "Approximately 10% of 811 work orders are currently being worked . . . the remaining 90% are not being addressed timely" and "[t]his delinquency has exposed ANC to fines/penalties, lawsuits, and significant repair costs necessary to fix damaged unmarked lines." (T 12 p 154)

Witness Junis recommended reducing the salary, wages, and benefits expenses by fifty percent of a Field Supervisor I's workload and fifty percent of three Utility Technicians' workloads, one from each of the three regions, to pass the savings of Aqua personnel no longer performing a portion of the NC 811 locates. (T 12 p 155)

In his rebuttal, Company witness Becker disagreed with witness Junis' adjustment and testified that the staff time previously spent addressing NC 811 tickets had been reassigned to other core services. (T 14 p 43) Witness Becker explained that, in 2017, the Company's operations management team recommended outsourcing the line locate work and on February 26, 2018, the Company executed a contract for USIC to begin handling the NC 811 call volume starting on May 1, 2018. (T 14 p 44)

Witness Becker specifically disagreed with witness Junis' recommended reduction of one-half of one supervisor's time. He asserted that an assumption of one-half of one supervisor's time being spent managing the NC 811 process was

incorrect due to the lack of supervisory staff being a driver for the need to outsource the program. (T 14 p 46)

Witness Becker asserted the proposed reduction of the expenses for employees showed indifference on the part of the Public Staff to, among other things, the Company's opportunity to retain and use existing staff for legitimate purposes rather than having to hire new employees. (T 12 p 47)

On cross-examination, witness Becker stated that the Company did not know how many lines have been cut because of the Company's failure to locate and mark its water and sewer lines. (T 15 p 85) Furthermore, witness Becker agreed that the Company sought in this proceeding to recover in rates the costs or increased costs, which are either expensed or capitalized, to repair or replace lines damaged due to the Company's failure to locate. (T 15 pp 85-86) Witness Becker agreed that the Company did not quantify the cost savings and then conceded that, while the USIC contract resulted in no "true cost savings," there was an incremental savings. (T 15 p 87)

The Commission finds that Witness Becker did not provide any evidence as to the number of employees hired since the last rate case and the number of new employee hires avoided due to the reassignment of time from NC 811 responsibilities previously deficiently performed by Company personnel.

Based on the evidence, the Commission finds and concludes that it is reasonable and appropriate to reduce the Company's workforce expenses by fifty percent for three field technicians and one supervisor.

Employee Bonuses related to Earnings per Share

Public Staff witness Henry testified that Aqua's Application included bonuses paid to North Carolina employees during the test year, including Short-Term Incentive (STI) bonuses and achievement awards. He testified after examining Aqua's bonus policies, the Public Staff removed thirty percent of the STI bonus paid to the North Carolina employees. He further testified 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. He testified earnings per share directly benefit the shareholders' value instead of being for the ratepayers' benefit. He testified the Public Staff removed thirty percent of the bonuses from expenses and allocated them to Aqua's shareholders.

Public Staff witness Henry in his supplemental testimony updated from his original direct testimony as a result of information provided by Aqua subsequent to the filing of his direct testimony. Public Staff Henry Supplemental Exhibit 1, Schedule 2, line 6 shows the Public Staff recommended adjustment to allocate to shareholders thirty percent of the North Carolina supervisors' bonuses related to Aqua America earnings per share totaling \$29,648.

Aqua witness Kopas testified on rebuttal that he disagreed with the Public Staff adjustment that thirty percent of bonuses paid to North Carolina supervisory employees should be allocated to shareholders. He testified the North Carolina supervisory employee STI is part of the total compensation paid to attract and retain qualified supervisory employees at Aqua. He testified this financial metric

reinforces to employees that it is their responsibility to serve the customers in a prudent and efficient manner. He further testified 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. He testified the STI 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.

The Commission concludes it is reasonable and appropriate to allocate to shareholders thirty percent of the STI bonuses paid to North Carolina supervisors based upon the bonus metric of Aqua America's earnings per share. Earnings per share directly benefit the shareholders' value instead of being for the ratepayers' benefit.

The Commission does not discourage incentive pay for Aqua's North Carolina supervisors. However, the incentive metrics should benefit Aqua's customers, and possible examples are: reducing customer water quality complaints; reducing other customer service complaints including billing; compliance with PWSS issued water permits and DWR issued wastewater permits; safety including reduction in lost-time accidents; reducing unaccounted for non-revenue water; and environmental compliance.

Executive Compensation and Benefits related to Shareholders

Public Staff witness Henry testified that the Public Staff made an adjustment to remove fifty percent of the compensation, including pension and incentive plans,

of the top five executive officers of Aqua America as listed in the 2017 Annual Meeting of Shareholders Proxy Statement. He testified Aqua America is the second largest investor owned water and wastewater utility in the United States with its shares traded on the New York Stock Exchange (NYSE) having a \$6.709 billion market capitalization at the August 17, 2018, market close as reported by Morningstar. He testified Aqua America's market capitalization is larger than the cumulative market capitalization of \$6.297 billion of the next four largest investor owned water utilities which are American States Water Co. (NYSE), California Water Service Group (NYSE), SJW Group (NYSE), and Connecticut Water Service, Inc. (NASDAQ).

Witness Henry testified that the 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. He testified the Public staff recommendation is not based on the premise that the compensation of the Aqua America executive officers the Public Staff selected are excessive or should be reduced. Public Staff witness Henry testified the Public Staff recommendation is based on the Public Staff's belief that it is appropriate and reasonable for the shareholders of the very large water and wastewater utilities to bear some of the cost of compensating those individuals who are most closely linked to furthering shareholder interests, which are not always the same as those of ratepayers. He testified executive officers have fiduciary duties of care and loyalty to shareholders, but not to

customers. Consequently, the Company's executive officers are obligated to direct their efforts not only to minimizing the costs and maximizing the reliability of Aqua's service to customers, but also to maximizing the Company's earnings and the value of its shares. He testified 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.

Public Staff witness Henry testified in addition to salaries and pensions, these five executive officers receive incentive plans compensation, including Annual Cash Incentive Awards which for 2016 was based upon Aqua America's budgeted annual net income and in 2017 had sixty percent based upon Earnings Per Share. He testified there are also Long-Term Incentive Awards in the form of Performance Share Awards of Aqua America shares, which for 2016 were weighted 60% based on Total Shareholder Return and in 2017 were weighted 45% based upon Total Shareholder Return. He further testified their Stock Options are based upon achieving at least an adjusted return on equity equal to 150 basis points below the return on equity granted by the Pennsylvania Public Utility Commission during Aqua America's Pennsylvania subsidiary's last rate proceeding.

Witness Henry testified that the 2017 Proxy Statement on page 46 states:

The Compensation Committee [of the Board of Directors] believes that by providing the named executive officers with the ability to earn stock options, the named executive officers' interests are aligned with the shareholders' interests as the value of the stock option is a function of the price of the Company's stock.

Public Staff witness Henry testified in his supplemental testimony as a result of information provided by Aqua after he filed his direct testimony, that Public Staff Henry Supplemental Exhibit 1 Schedule 2 Revised, Line 8 lists for the top five Aqua America executives the 50% executive compensation be allocated to shareholders totaling \$213,756, and Public Staff Henry Supplemental Exhibit 1 Schedule 3 Revised, line 8 lists the Public Staff recommended adjustment for 50% of the five Aqua executives pensions and benefits be allocated to shareholders totaling \$80,845.

Public Staff witness Henry testified that in each of the respective recent general rate cases, both Duke Energy Progress LLC, (DEP) in Docket No. E-2, Sub 1142, and Duke Energy Carolinas LLC (DEC) in Docket No. E-7, Sub 1146, excluded in their E-1 filings fifty percent of the compensation of the top four executive officers, as shown on Public Staff Henry Redirect Exhibit 1. He testified in both cases the Public Staff took out a fifth executive being the chief legal officer. He testified DEP, DEC, and the Public Staff stipulated to removing the fifty percent of the compensation and benefits of these five top officers in recognition of the work done on behalf of shareholders. He testified it is the Public Staff's principled position that work and loyalties are divided between shareholders and customers.

Aqua witness Kopas testified on rebuttal that Aqua America sets compensation levels for its executives to attract and retain qualified personnel and to remain competitive in the market. He testified the efforts of Aqua America's executives ultimately benefit ratepayers through controlling costs and managing a strong overall company which allows it to attract capital at lower costs. He testified

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. He testified executive compensation is a necessary part of the Company's overall cost of service to meet the needs of its customers, and a reduction of fifty percent to Aqua America executive compensation is not warranted.

Mr. Kopas testified that in Aqua's 2011 rate case, Docket No. W-218, Sub 319, with Order dated November 3, 2011, the Public Staff proposed an adjustment to remove fifty percent of executive compensation for the top four executive officers of Aqua America. The Commission, in that proceeding, stated that the Public Staff's proposed adjustment was not reasonable based upon the factors articulated by the Public Staff. Instead, the Commission ordered that an adjustment of twenty-five percent to the executive compensation expense item was reasonable in that case. Mr. Kopas testified if the Commission concludes that an accounting adjustment to executive compensation is justified in this case, Aqua, as an alternative proposal, requests that the percentage disallowance be set at no greater than the twenty-five percent utilized in the Sub 319 docket.

Aqua witness Kopas on cross-examination testified on the executive compensation provisions of the Aqua America 2018 Annual Meeting of Shareholders Proxy Statement (Proxy Statement) being Public Staff Kopas Cross Exam Exhibit 2, which was filed with the United States Securities and Exchange Commission. He read into the record that page 25 of the Proxy Statement stated

an objective of the Aqua America executive compensation program was to align the interests of the named executive officers and shareholders.

Mr. Kopas testified on page 27 of the Proxy Statement it states that Equity Incentives are:

Designed to reward named executive officers for enhancing our financial health, which also benefits our customers. Improving our long-term performance from both revenue increases and cost control and achieving increases in the Company's equity and in absolute shareholder value and shareholder value relative to peer companies, as well as helping to retain executives due to the long-term nature of these incentives.

Mr. Kopas testified that page 28 lists the components of executive compensation paid to executive officers in 2017 and Long-Term Equity Incentive Awards lists restricted stock units, performance shares and options. He testified page 28 states the compensation objective for restricted stock units as: "Align executive interest with shareholder interests; retain key executives."

For the performance share units compensation objective, page 28 states: "Align executive interests with shareholder interests; create a strong financial incentive for achieving or exceeding long-term performance goals."

He further testified for options compensation objective, page 28 states: "Align executive interests with shareholder interests; through performance-based nature, provide strong incentives to achieve "core company goals".

Aqua witness Kopas testified on page 33 that it states for the 2017 annual cash incentive award metrics that sixty percent of the award is based upon earnings per share. He testified that for the annual incentive award earnings per share metric, the five executives received a 110 percent payout. He testified that

page thirty-six reveals that all five of the executives' actual 2017 cash incentives were substantially over the 2017 target cash incentives.

Mr. Kopas testified for the performance share awards the Proxy Statement on page thirty-seven states:

The performance goals to be achieved under the PSU awards have been based on the following performance goals, with the weighting of each goal assessed each year. The Company's total shareholder return at the end of the performance period as compared to the TSR of other large investor-owned water companies, American Water Works Company, American States, Connecticut Water, Cal Water Service Company, Middlesex Water Company, and SJW Corporation. The Company's TSR compared to the TSR for the companies in the S&P Midcap Utilities Index, Appendix A; The achievement of maintaining Operating and Maintenance expenses within the Company's regulated operations over the performance period; and, The achievement of a three-year cumulative internal earnings before taxes in non-Aqua Pennsylvania subsidiaries.

Mr. Kopas testified for the total shareholder return compared to the S&P 400 Utilities Index there was a 127.78 percent payout to the five executives.

Aqua witness Kopas testified that Proxy Statement page 41, states:

Stock Options. In 2017, the Compensation Committee added performance-based stock options to the grants to the named executive officers. The Compensation Committee believes that the award of stock options, when paired with the performance of service-based stock awards, completely aligns the interests of name executive officers with those of the shareholders.

The Compensation Committee believes that by providing the named executive officers with the ability to earn stock options, the name executive officers' interests are aligned with the shareholders' interest as the value of the stock option is a function of the price of the Company's stock. In addition, stock options provide the use of an additional performance metric for the earning of long-term equity compensation.

Mr. Kopas testified that the five executive positions in the Proxy Statement are the five positions that the Public Staff recommended removal of the fifty percent of their salaries and bonuses.

The Commission concludes it is appropriate and reasonable to allocate fifty percent of the top five Aqua America executives compensation, pensions and benefits to shareholders. The Commission finds credible, probative, and entitled to substantial weight the evidence from the cross-examination of Aqua witness Kopas contained in the Proxy Statement, being Public Staff Kopas Cross Exam Exhibit 2. He testified on page 25 of the Proxy Statement it states an objective of the Aqua America executive compensation program was to align the interests of the named executive officers and shareholders.

Aqua witness Kopas testified that page 28 lists the components of executive compensation paid to executive officers in 2017 and Long-Term Equity Incentive Awards lists restricted stock units, performance shares and options. He testified Proxy Statement page 28 states the compensation objective for restricted stock units as: **“Align executive interest with shareholder interests; retain key executives.”** (emphasis added) The performance share units compensation objective, on page 28 states: **“Align executive interests with shareholder interests; create a strong financial incentive for achieving or exceeding long-term performance goals.”** (emphasis added) He further testified the options compensation objective, on page 28 states: **“Align executive interests with shareholder interests; through performance-based nature, provide strong incentives to achieve “core company goals”.** (emphasis added)

Aqua witness Kopas testified on page thirty-three that it states for the 2017 annual cash incentive award metrics, that sixty percent of the award is based upon earnings per share. He testified that for the annual incentive award earnings per share metric, the five executives received a 110 percent payout.

Aqua witness Kopas testified for the performance share awards the Proxy Statement on page thirty-seven states the performance goals to be achieved under the PSU awards have been based on performance goals, including Aqua's total shareholder return, compared to the TSR for the companies in the S&P Midcap Utilities Index, Appendix A.

Aqua witness Kopas testified for the total shareholder return compared to the S&P 400 Utilities Index there was a 127.78 percent payout to the five executives.

Aqua witness Kopas testified that Proxy Statement page forty-one, states:

Stock Options. In 2017, the Compensation Committee added performance-based stock options to the grants to the named executive officers. **The Compensation Committee believes that the award of stock options, when paired with the performance of service-based stock awards, completely aligns the interests of name executive officers with those of the shareholders.**

(emphasis added)

The five executive positions in the Proxy Statement are the five positions that the Public Staff recommended removal of the fifty percent of their salaries and bonuses.

The Commission concludes it is clear that the executive compensation program for the top five Aqua America executives is substantially designed to align

the interests of these executives and shareholders. This alignment is repeated numerous times in the Proxy Statement. The combined pay out of the incentive based PSU, RSU, Option Awards, and Annual Cash Incentive plans as shown on Proxy Statement Summary Compensation Table on page forty-six, materially exceed the salary of each of the five executive officers.

The Commission accepts as credible, probative and entitled to great weight that Aqua America, a New York Stock exchange company, with a market capitalization on September 7, 2018, of \$6.65 billion, has a market capitalization exceeding the combined market capitalization of next four largest investor owned water companies at \$6.287 billion, and also the market capitalization of SCANA of \$5.22 billion as shown on Public Staff D'Ascendis Direct Cross Examination Exhibit 1. Aqua America is a large growing company.

The Commission concludes this 50% executive compensation, pension and benefits allocation to shareholders adjustment, is consistent with the Commission approved 50% adjustments for DEP in its Order Accepting Stipulation, Deciding Contested Issues and Granting Partial Rate Increase issued February 23, 2018, in Docket No. E-2, Sub 1142 (2018 DEP Rate Order), and for DEC in its Order Accepting Stipulation, Deciding Contested Issues, and Requiring Revenue Reduction issued June 22, 2018, in Docket No. E-7, Sub 1146 (2018 DEC Rate Order). The Commission concludes that \$213,756 of the executive officers' compensation and \$80,845 of their pensions and benefits should be allocated to shareholders.

Miscellaneous Expense

Public Staff witness Henry testified that the Public Staff made an adjustment to remove fifty percent of the compensation and expenses associated with the Board of Directors (BOD) of Aqua America that have been allocated to Aqua. The allocations to Aqua encompass the BOD's compensation and other miscellaneous expenses. He testified that the premise of this adjustment is closely linked to the premise of the adjustment made by the Public Staff related to executive compensation. He testified that the Public Staff believes it is appropriate and reasonable for the shareholders of the very large water and wastewater utilities to bear a reasonable share of the costs of compensating those individuals who have a fiduciary duty to protect the interests of shareholders, which may differ from the interests of ratepayers. (T 8 pp 39-40)

Public Staff witness Henry testified that the Aqua America Board of Directors Corporate Governance Guidelines (BOD Guidelines) state in Section II:

RESPONSIBILITIES OF THE BOARD

1. It is the responsibility of the Board to provide guidance and direction on the Corporation's general business goals and strategy, and to provide general oversight of, and direction to, management so that the affairs of the Corporation are conducted in the long-term interests of all of its shareholders.

Public Staff witness Henry testified that Aqua America allocated to Aqua \$116,838 for BOD compensation and \$17,381 for BOD expenses. He testified that the Public Staff recommends 50% of BOD compensation totaling \$58,419, and 50% of BOD expenses totaling \$8,691 be removed as a shareholder expense. (T 8 p 40)

Aqua witness Kopas testified on rebuttal that, for the reasons he testified regarding executive compensation, the Company requests that the Commission also reject the Public Staff's position on this issue. He testified that BOD fees have been a part of the Company's revenue requirement in the past and removing a portion from cost of service represents a departure from past precedent. He testified that, at most, the Commission should exclude a maximum of only 25% of those fees from the Company's cost of service, consistent with the disallowance percentage of 25% used in the Company's 2011 Sub 319 rate case for executive compensation. (T 8 p 199)

On cross-examination, Mr. Kopas testified that Public Staff Kopas Redirect Cross Exam Exhibit 1 is the Aqua America BOD Guidelines. He testified that on Page one it states:

The following corporate governance guidelines will provide the principles by which the Board of Directors, called the Board, of Aqua America, the Corporation, will organize and execute its responsibilities, along with the requirements of the Corporation's Articles of Incorporation's bylaws and laws and regulations governing the Corporation and the Board.

(T 8 p 201)

Witness Kopas further testified that on page six under Roman Numeral II, Responsibilities of the Board, Number 1, it states:

It is the responsibility of a Board to provide guidance and direction on the Corporation's general business goals and strategy and to provide general oversight of and **direction to management so that affairs of the Corporation are conducted in the long-term interest of all its shareholders.**

(emphasis added) (T 8 p 201)

Mr. Kopas also testified on page eight, paragraph ten, it states:

The Executive Compensation Committee will periodically review the compensation package for directors and make recommendations to the Board for any changes. Such reviews shall take place annually. The Board shall make changes in its directors' compensation and upon recommendations by the Executive Compensation Committee and after discussion and approval by the Board. Both the Executive Compensation Committee and the Board shall be guided by the following principles: Compensation" -- should be "should fairly pay directors for work required. **Compensation should align directors' interests with the long-term interests of shareholders**, while not calling into question their objectivity, and the structure of the compensation should be simple, transparent, and easy for shareholders to understand.

(emphasis added) (T 8 p 202)

Mr. Kopas testified that he accepted subject to check that the word "customer" does not appear even once in the Aqua America BOD Guidelines. (T 8 pp 202-03)

The Commission concludes that the Public Staff's recommendation to allocate to shareholders 50% of the Aqua America BOD compensation and 50% of the BOD expenses is reasonable and appropriate. The Commission approves the allocation to shareholders of \$58,418 of BOD compensation and \$8,691 of BOD expenses as shown on Public Staff Henry Supplemental Exhibit 1, Schedule 4, lines 1 and 2.

The Commission finds as credible, probative, and entitled to substantial weight the BOD Guidelines. The word "customer" does not appear in the BOD Guidelines and the Commission concludes a substantial responsibility of the BOD is to provide general oversight and direction to management so that the affairs of the Corporation are conducted in the long-term interests of all its shareholders and that the compensation to directors should align the directors' interests with the

long-term interests of shareholders. Therefore, it is reasonable and appropriate to allocate fifty percent of the BOD compensation and expenses to shareholders.

The Commission takes judicial notice that in both the 2018 DEP Rate Order and the 2018 DEC Rate Order the Commission approved allocating to shareholders fifty percent of the BOD's compensation and expenses.

Sludge Removal

The Public Staff and the Company disagree as to the appropriate amount of expenses related to sludge hauling. This disagreement centers on the time period that should be used to calculate the expenses.

The Company's Application stated a sludge expense of \$536,333 for the test year. On July 20, 2018, the Company provided a post-test year update to sludge expense that included an increase in sludge disposal amounts in the Central/Cary region in 2018. The Company update proposed an increase of \$89,875 to the test year sludge expense which reflects the initial sludge update filed by the Company. On September 4, 2018, Company witness Pearce filed rebuttal testimony proposing an increase of \$70,424 to the test year sludge expense, which reflects the one-year average of sludge hauling records ending in June 2018. On August 21, 2018, the Public Staff filed schedules, which included an adjustment to increase sludge expense by \$23,049 to incorporate updated sludge expense amounts provided by the Company. With this adjustment, the Public Staff's recommended sludge expense reflects the two-year average of sludge hauling records ending in June 2018 and reflects the projected annual costs for two wastewater treatment plants, The Legacy and Westfall, that began

producing sludge in 2018 after the test year. The projected annual costs for the two wastewater treatment plants were based on available historical data for 2018 provided by the Company.

Public Staff witness Darden testified in her prefiled direct testimony that the Company's sludge hauling data from the Company's Cary/Central region shows an increase in the quantity of sludge hauled in the post-test year period from January 2018 through June 2018 as compared to the test year. Witness Darden further testified that more significant increases occurred in March, April, and May 2018, and that there was a return to a level closer to the two-year average in June 2018. (T 9 p 24) On redirect examination, witness Darden testified that data provided by the Company for July 2018 showed a return to a sludge hauling level below the two-year average. (T 9 p 47) Public Staff Darden Redirect Exam Exhibit 1 is a graph showing monthly sludge hauling quantities for the Company's Central/Cary region from July 2016 through July 2018. (T 9 Exhibits p 44) Horizontal lines on the graph show the two-year average sludge hauling quantity advocated by the Public Staff, which is approximately 300,000 gallons, and the one-year average quantity advocated by the Company, which is approximately 350,000 gallons. The graph shows an increased volume of sludge hauled during the months of March through May 2018 ranging between approximately 425,000 gallons and 600,000 gallons. It also shows a decrease to a level of approximately 325,000 gallons in June 2018, and a further decrease to a level of approximately 290,000 gallons in July 2018.

Witness Darden noted that increased sludge hauling could be a response to sludge storage approaching full capacity and an attempt to prevent associated compliance and operational issues. Witness Darden explained that, if this were the case, sludge hauling could return to regular maintenance levels once sludge levels were reduced. (T 9 p 24) Witness Darden testified that operational changes could also affect sludge hauling levels. (T 9 p 36)

Witness Darden testified that, due to the short time frame over which the most significant increases in the Company's sludge hauling occurred, it was unclear whether these increases represented a peak or a trend. (T 9 pp 24-25) Due to the uncertainty as to whether the comparatively significant increases in sludge hauling that occurred in March through May 2018 would continue going forward, and in order to avoid annualizing what could be an isolated peak in sludge hauling levels, witness Darden advocated the use of a two-year average ending in June 2018 to determine sludge expenses. (T 9 p 25) Witness Darden noted that the two-year average takes into account The Legacy wastewater treatment plant and Westfall wastewater treatment plant, which both began producing sludge in 2018. (Id.) Witness Darden further noted that the two-year average accounts for the operational changes the Company indicated it made at wastewater treatment plants by incorporating sludge hauling data provided by the Company through June 2018. (T 9 pp 32-33)

Aqua witness Pearce testified in prefiled rebuttal testimony that the Company had made changes to its wastewater treatment plant operations to reduce mixed liquor suspended solids concentrations that would, in turn, increase

sludge production. (T 13 p 122) Witness Pearce provided an example calculation to demonstrate how decreasing mixed liquor suspended solids results in an increased sludge production rate. (T 13 p 123) The calculation assumes a number of values including values for wastewater treatment plant operating capacity, hydraulic retention time, and mixed liquor suspended solids concentration. Witness Pearce did not indicate the source of the values used in his example calculation. Witness Pearce also included in his rebuttal testimony a graph from the 1992 edition of the Water Environment Federation Manuals of Practice showing net sludge production as compared to solids retention time. (T 13 pp 123-24) Witness Pearce extrapolated from the graph that a greater than 10 percent increase in sludge production would result from improving the pollutant removal efficiency of wastewater treatment plants. Like the example calculation provided by witness Pearce, the graph and extrapolation assume values the source of which witness Pearce does not disclose. Witness Pearce gives no indication in his prefiled rebuttal testimony that the values upon which his example calculation and extrapolation are based come from actual operational data from one or more of the Company's wastewater treatment plants. It was not until he was questioned about the source of the assumptions on cross-examination that witness Pearce asserted that his example calculation and extrapolation were based on actual data from an Aqua wastewater treatment plant. (T 13 p 134) Witness Pearce recommended sludge expenses totaling \$606,756.78 based on data from July 2017 through June 2018. (T 13 p 125) This amount represents an increase of \$70,424 over the amount of sludge expenses stated in the Company's Application.

On cross-examination, witness Pearce verified that, based on the extrapolation from the graph included in his rebuttal testimony, operational changes made the second week of April 2018 would result in an approximately ten percent increase in sludge production. When confronted with the fact that the Company's actual sludge hauling data shows an increase in sludge hauling far in excess of ten percent, witness Pearce testified that the ten percent increase he estimated would be accurate "over the 12-month period." (T 13 pp 135-36) Witness Pearce acknowledged that the actual sludge hauling levels for eight of the twelve months that make up the test period advocated by the Company were lower than the Company's one-year average level. (T 13 p 131)

On redirect examination of witness Pearce, the Company introduced Aqua Pearce Redirect Exhibit 1. The exhibit is a graph showing monthly sludge hauling quantities for the Company's Central/Cary region from July 2016 through August 2018. (T 9 Exhibits p 65) Witness Pearce testified that he had received the Company's sludge hauling logs for the month of August 2018, and that the level of sludge hauled during the month of August 2018 was higher than the two-year average advocated by the Public Staff. (T 13 p 145) The Company did not provide the August 2018 sludge hauling data on which Aqua Pearce Redirect Exhibit 1 is based.

The Commission has carefully reviewed the evidence in this docket and concludes that it is appropriate to adjust sludge hauling expense by \$23,049 based on the two-year average advocated by the Public Staff. Basing sludge expenses on the two-year period ending June 2018 takes into account the addition of two

wastewater treatment plants that started producing sludge in 2018 and operational changes made at some of the Company's wastewater treatment plants. The use of the two-year period also ensures that the uncharacteristically high levels of sludge hauling that occurred during the months of March, April and May 2018 are given appropriate emphasis in determining expenses. For the foregoing reasons, using the two-year average advocated by the Public Staff produces the level that is most representative of the Company's ongoing sludge hauling.

The Commission concludes that it is inappropriate to use the one-year average ending June 2018 advocated by Aqua. A utility must show that the costs it seeks to recover are (1) known and measurable; (2) reasonable and prudent; and (3) used and useful in providing service to customers where included in rate base. See N.C. Gen. Stat. § 62-133(b). In the present case, given the significant variability in sludge hauling levels during the one-year test period advocated by the Company, and given that the ten percent increase in sludge production predicted by Company witness Pearce is not borne out by the data, the Commission concludes that the Company has failed to show that the increase in sludge hauling expenses it seeks to recover based on the twelve-month period ending June 2018 are a known, measurable, and reasonable level of expenses going forward.

Testing Expense

The Public Staff and the Company disagree as to the appropriate amount of expenses related to testing and testing update.

The Company's Application includes testing expenses of \$971,149 for the test year. On July 20, 2018, the Company provided a post-test year update to

testing expense that included an increase in Notice of Deficiency (NOD) site testing. The update increases test year testing expense by \$111,538. In her direct testimony, Public Staff witness Darden recommended that testing expenses in the amount of \$882,746 be approved, with an increase of \$19,426 for NOD site testing.

Compliance and Operational Testing Expenses

The Company filed a testing expense with pro forma adjustments based on comparisons of the test year to the past three years individually and as an average. Company witness Berger confirmed on cross-examination that all tests with a sampling frequency of six or nine years are amortized over three years, with the exception of the UCMR tests, which are amortized over six years. (T 16 p 167) Public Staff witness Darden testified that she disagreed with the Company's amortization, noting that it does not capture the amortization of tests with frequencies that exceed one year. (T 9 p 39)

Public Staff witness Darden testified that she calculated testing expenses in the present case in the same manner the Public Staff has traditionally calculated the testing expense – using current testing schedules going forward, amortizing the expense over the number of years corresponding to the testing frequencies for the various tests, and using the current unit costs of the tests. (T 9 p 18) The Company provided the Public Staff with the schedules establishing the current required compliance testing frequency for each of its water and wastewater systems.

Public Staff witness Darden clarified that the Public Staff's recommended testing expense includes the compliance testing and the testing update with the

NOD sites. Witness Darden noted that Aqua has not tracked operational testing historically, and the appropriate amount of operational testing expense has been agreed upon by the Company and the Public Staff. Witness Darden testified that, in this case, the Company and the Public Staff did not reach an agreement and that is why her recommended testing expense includes the required compliance testing and the testing update provided by Aqua. Witness Darden testified on cross-examination that the Public Staff recognizes that operational testing should be recovered as long as it is reasonable and cost-effective. (T 9 pp 41-42)

Company witness Berger explained in her prefiled rebuttal testimony that compliance testing is performed at a frequency prescribed by regulations, whereas operational testing is used by the utility to determine the effectiveness of treatment and proactively identify concerns. (T 16 p 136) Witness Berger acknowledged under cross-examination on September 25, 2018, that the Company was unable to provide the Public Staff with operational testing expenses when the Public Staff requested them on September 5, 2018. She testified, “if we could have been asked to provide the operational . . . versus the compliance we could have done so, just not on such a short timeline.” (T 16 p 166) However, when asked, “Is Aqua currently tracking compliance and operational testing separately?” witness Berger acknowledged that some of the Company’s operational testing expenses were still not being tracked. (Id.)

The Commission concludes that the appropriate compliance and operational testing expense is \$882,746, as recommended by the Public Staff based on the required compliance testing and the testing update provided to the

Public Staff by Aqua. The Company failed to meet its burden of proof showing that the operational testing expenses it seeks to recover are reasonable due to its failure to maintain adequate records of the operational testing expenses. Therefore, it is inappropriate to use the operational expense total advanced by the Company.

NOD Testing Expense

In calculating testing expenses associated with NOD sites, the Company annualized the amount spent between January and June 2018 and arrived at a total of \$111,538. Public Staff witness Darden recommended the addition of \$58,278 as a sub-category to testing expense to account for NOD site testing. (T 9 p 21) In calculating this amount, witness Darden applied a price decrease which took effect in April 2018 to the period April through June 2018. For ratemaking purposes, witness Darden testified that the total NOD site testing expense would be averaged over three years. Witness Darden disagreed with annualizing these costs, as the Company did, on the basis that the North Carolina Department of Environmental Quality (DEQ) Public Water Supply Section (PWSS) could reduce the sampling frequencies for NOD sites after the third testing quarter, which ended September 30, 2018. Under cross-examination, witness Darden noted that the testing that occurred during the one-year period ending September 2018 would provide a historical benchmark and, therefore, it was likely that reductions in sampling frequencies would occur after that point. The additional sampling data may not be necessary at the same sampling frequency for every site. (T 9 pp 43-44) For example, if all the samples at a particular site are consistent, the sampling

frequency could be reduced due to the consistency and the fact that the samples provide a benchmark of historical testing data. (T 9 p 45) Witness Darden stated on redirect, if certain sites are consistently producing the same results on a monthly basis, the testing frequency could be changed to quarterly, then to semiannually, and then to annually if the historical data supported it. Also, when treatment is installed, a different sampling schedule would be utilized than the sampling schedule required for initial monitoring. (T 9 p 50)

Due to the likelihood that sampling frequencies will be reduced after September 2018, the Public Staff recommended that the actual expenses spent on the NOD site testing be recovered over three years and that testing expenses continue to be tracked and then recovered in future rate cases.

Company witness Berger testified in her prefiled rebuttal testimony that witness Darden was incorrect when she testified that sampling frequencies for NOD sites could be reduced after the third quarter of 2018. She further testified that, pursuant to the State's rules regarding the concentration of iron and manganese, DEQ determines the sampling frequencies required for these constituents, and that the requirement to sample for these constituents is ongoing. (T 16 p 140) However, on cross-examination witness Berger acknowledged that, in practice, the utility submits a recommendation regarding the appropriate testing frequency to DEQ for its approval. She further acknowledged that DEQ has the authority to amend testing schedules for NOD sites. (T 16 p 169). In an excerpt from an audio recording made by Aqua witness Berger of an August 29, 2018, meeting between Aqua, PWSS, and the Public Staff, Bob Midgette, the head of

the operational branch of PWSS, states that he anticipates Aqua could reduce NOD site testing frequency from monthly to quarterly in 2019, and possibly to annually thereafter if the data support such a reduction³². When asked about Mr. Midgette's statement under cross-examination, witness Berger acknowledged, "[Mr. Midgette] does make that recommendation on a specific case-by-case basis where we have the data that demonstrates that we have a resolution in place that, yes, we can propose [a reduction in testing frequencies]." Witness Berger went on to testify that the company intended to use surplus NOD testing expenses resulting from any reductions in NOD testing frequencies to perform sampling on non-NOD sites to proactively address secondary water quality issues. (T 16 p 176)

The Commission finds and concludes that the evidence of record demonstrates that NOD site testing frequencies will be reduced after September 2018 and it is, therefore, appropriate that actual costs be recovered and amortized over three years as recommended by the Public Staff. The future costs associated with the NOD testing are not currently known and measurable and, therefore, it is appropriate that they be recovered in future rate cases. Based on the foregoing, the Commission concludes that the total annual testing expense, including the NOD site testing update, is \$902,172.

Purchased Water

The Application states a purchase water expense of \$1,947,892 for the test year ending September 30, 2017.

³² A transcription of two excerpts from the audio recording was entered into the record as Public Staff Berger Cross Examination Exhibit 5. A CD containing the excerpts from the audio recording transcribed in Exhibit 5 was entered into the record as Public Staff Berger Cross Examination Exhibit 6.

Company witness Gearhart stated in his direct testimony that for all purchased water systems, the test year actual volumes of water purchased were used with the most recent/known vendor pricing applied to that volume. He explained that a pro forma adjustment was made to add the City of Belmont, because in June 2018 Belmont began to supply water to three of Aqua's subdivisions which had previously been supplied from Aqua's wells. Witness Gearhart testified that during discovery, the Company found that there were purchased water systems with abnormal volume activity during the test year. He stated that these systems merited adjustments and in response to a Public Staff engineering data request, resulted in a reduction in the Company's annual purchased water expense. The Company adjusted the purchased water expense to \$1,941,621, a decrease of \$6,271 from the originally filed amount. He stated the response also included an adjustment for the vendor's price increase that went into effect in July 2018. (T 5 pp 217-18)

Public Staff witness Junis testified Aqua operations resulted in test year water losses exceeding fifteen percent for nine of its third party water provider accounts. The highest two being the City of Asheville and City of Concord that resulted in 74% and 64% unaccounted for purchased water, respectively. (T 12 p 155)

In response to Public Staff Engineering Data Request No. 13³³, the Company provided explanations for unaccounted for purchased water supplied by the City of Asheville, City of Concord, City of Mount Airy, Davidson Water, Harnett

³³ The Company's response to Public Staff EDR 13 Q1 was entered into the record as Junis Exhibit 23.

County, Iredell Water, Town of Pittsboro, and Town of Spruce Pines. The response states in part that “Aqua NC has a purchased water loss percentage of 13%.” Witness Junis testified that the overall thirteen percent included a surplus (Aqua sells more gallons than it buys) from the City of Lincolnton and Aqua buys approximately half of overall Aqua NC Water purchased water from Johnston County and sells that purchased water to customers in the Flowers Plantation development. (T 12 p 155)

In response to Public Staff Engineering Data Request No. 53³⁴, the Company provided an update to its purchased water workpapers, which witness Junis testified the update included the quantity of gallons purchased from the City of Lincolnton and an increase in the cost of purchasing water utility service from Johnston County. Witness Junis provided Table 12 detailing the Company’s purchased water quantities, water losses, and Public Staff’s recommended adjustment based on an acceptable level of water loss of fifteen percent. (T 12 p 156)

Based on the most recent, available information, Public Staff witness Junis concluded in his prefiled direct testimony that the customers should not pay for excessive water loss due to lack of oversight, maintenance, and repair. Witness Junis recommended a decrease of \$73,670³⁵ to the purchase water expense filed by the Company.

³⁴ The Company’s response to Public Staff EDR 53 Q3 with witness Junis’ adjustments was entered into the record as Junis Exhibit 24.

³⁵ Exhibit B3-b-a to the Application listed a variance of \$49.64 between columns (i) and (j) that was excluded from the Application, however, it was included in the Company’s and witness Junis’ workpapers. Whether the variance is included or not would impact the filed amount and the recommended adjustment but not the recommended level of expense. For the purposes of

In reference to the non-revenue water analysis that Company witness Berger included in her rebuttal testimony, under cross-examination Public Staff witness Junis stated that the difficulty with utilizing that method is there is not the level of detail, in terms of information available to do a water balance analysis as described by American Water Works Association (AWWA). (T 10 p 123) On cross-examination, witness Junis agreed that Aqua doesn't meter hydrant flow when flushing, and stated doing so would provide the level of detailed information necessary for an accurate non-revenue water or water balance analysis. (T 10 p 126)

Concerning the issue of water loss that was captured prior to water main replacements to address leaks, Public Staff witness Junis testified that he considered whether it is appropriate for the Company to recover both the extremely high water loss amount that the Aqua system is not now experiencing due to leak repairs and capital costs associated with the repairs. (T 10 p 128)

Public Staff witness Junis clarified that incentivizing a reasonable amount of water losses is not the same as de-incentivizing the Company from doing flushing. The reasonable amount of water losses may include flushing amounts. The Public Staff requested records of the Company flushing and the Company could not quantify their flushing. (T 10 p 129)

On cross-examination, Public Staff witness Junis stated that the fifteen percent of allowable water loss is reasonable due to AWWA information. AWWA recommends that action needs to be taken to address water loss at fifteen percent.

discussion, the variance has been reduced ($\$73,719.33 - \$49.64 = \$73,669.69$) from witness Junis' adjustment.

Public Staff witness Junis further clarified that, after the Company addressed water loss issues for systems exceeding fifteen percent, those systems were under the fifteen percent water loss threshold. (T 10 p 130)

The Company and the Public Staff disagree on the appropriate amount of allowable, recoverable water loss. In her rebuttal testimony, Company witness Berger claimed that the Public Staff's use of the concept for Unaccounted for Water is an outdated measure of water loss and that a certain amount of water is necessary for system processes to maintain compliance with DEQ regulations. (T 16 pp 123-24)

On cross-examination, Company witness Berger stated that water loss calculations should consider other factors that contribute to water loss including environmental factors, and construction factors. (T 16 p 146) Company witness Berger then verified that her rebuttal testimony included background information indicating that, for a number of systems, water loss was due at least in part to operational flushing to address Disinfection-By-Product (DBP) issues. (T 16 p 148) On further cross-examination, Company witness Berger confirmed that, with the exception of the Town of Pittsboro, her rebuttal testimony, filed on September 4, 2018, was the first time Aqua indicated that DBP flushing contributed to its water loss, even though Aqua had previously provided two responses to data requests on that very issue. (T 16 pp 154-55)

In her prefiled rebuttal testimony, Company witness Berger testified that witness Junis failed to investigate root causes and did not consider the Company's proactive measures to address customer concerns and regulatory requirements.

(T 16 p 134) However, on cross-examination, witness Berger agreed that witness Junis' request for a detailed explanation for water losses in EDR 13 Q1 was an investigation of the root causes of those losses. (T 16 p 151) Witness Berger's testimony on cross-examination contradicts her prefiled rebuttal testimony on this issue.

In reference to Public Staff engineering data request³⁶ on the rebuttal testimony of Company witness Berger, she states the Company was unable to provide historical data for flushing records at this time, due to the short timeline to satisfy this request. She also states that the Company cannot provide an accurate estimate of the amount of flushing required in the future. (T 16 p 156)

Under cross-examination, Company witness Berger confirmed that Aqua had 74 percent water losses in the Asheville system for the test year. Company witness Berger stated that she does not think it is reasonable for customers to pay for 74 percent water loss. She stated that she does agree it is high, but that it was a case where the circumstances behind the specific leak and attempts by the Company to repair the leak should be considered. (T 16 pp 158-159)

In her rebuttal, Company witness Berger stated that witness Junis failed to factor the costs involved in any potential infrastructure improvements that may be associated with further addressing the water loss issues. (T 16 p 134) Under cross-examination, witness Berger agreed water main replacements, main extensions to eliminate dead ends to help address DBP issues, and treatment systems and filters to comply with water standards are all eligible for recovery

³⁶ Public Staff Engineering Data Request No. 58, Questions 3-5 and 7 with the Company's responses were entered into the record as Public Staff Berger Rebuttal Cross Exam Exhibit 3.

between rate cases through the Water System Improvement Charge (WSIC) mechanism. She added that she did not see where he applied that reasoning in his calculation. (T 16 pp 159-160)

The Commission concludes that 15 percent is a reasonable and appropriate amount of recoverable water loss for a purchased water system. Due to the Company's inability to provide flushing tracking data or historical data, the flushing water losses for operations and water quality are not known and measurable. The 15 percent of recoverable water loss encompasses reasonable levels of necessary operational flushing, flushing due to compliance issues, and leaks and incentivizes the Company to monitor and address water losses. Therefore, the appropriate level of annual purchase water expense is \$1,874,222.

Regulatory Commission Expense

In regards to regulatory commission expense, which is also known as rate case expense, the Public Staff and Company disagree on the amortization period for the applicable expenses. As part of her Supplemental Testimony, Public Staff witness Cooper recommended an amortization period of five years, instead of the typical three years. Under cross-examination, Public Staff witness Cooper testified that five years was more favorable to customers because of the extraordinary number of attorneys that were representing the Company.³⁷ This would in turn result in a substantial increase in attorney fees for this proceeding. Another reason for the five-year amortization is the fact that the Company utilizes the Water system

³⁷ On August 23, 2018, a Notice to Appear was filed on behalf of the Company adding three additional attorneys for this proceeding. This brought the total number of attorneys representing the Company to six, including Aqua America attorney Kim Joyce.

Improvement Charge (WSIC) and Sewer System Improvement Charge (SSIC) mechanism for upgrades and improvements between rate cases. Because the Company has the ability to recover some of those costs before a rate case is filed, it seems reasonable that there would be a greater time span between rate case filings. As a matter of fact, the time span between this rate case and the previous rate case was approximately four and a half years. (T 8 p 114).

As stated earlier, the recommendation for the five-year amortization was filed in Supplemental Testimony by Public Staff witness Cooper, but there was no rebuttal filed by the Company related to this issue. Under cross-examination, Company witness Gearhart stated that this was not included in his rebuttal testimony because it had not been made aware to him that the amortization period had changed. (T 13 p 104). As of the date of the Public Staff filed its proposed order, legal fees associated with rate case are \$130,982.

Public Staff witness Cooper testified in this proceeding that Aqua applied for rate case expenses including what Aqua describes as a Communications Initiative totaling \$133,000. She testified the Public Staff removed from rate case expense the \$133,000 estimate which included \$58,000 to The Paige Group and \$75,000 for Aqua Efforts – Customer Education and Mailings. She testified these expenses were not incurred during the test year and, although the communications contain information on Aqua's water quality plans, these are Aqua self-promotional communications. She further testified the timing of the mailings suggests that the purpose was to promote a more positive image of Aqua going into the customer hearings in this rate proceeding. She testified Aqua's retention of a public relations

firm to develop the mailings, which easily could have been developed in-house, further demonstrates the mailings were primarily for public relations purposes. She further testified it is not appropriate for customers to pay for expenses associated with Aqua's self-promotion.

Public Staff witness Cooper testified that Aqua filed this rate increase Application on March 7, 2018. The informational mailings to all Aqua water customers were sent on February 19, 2018. She testified subsequent mailings were sent to Raleigh area subdivisions that had experienced Aqua service issues, including Brayton Park, Brandon Station, Stillwater Landing, Stonehenge, Wildwood Green, and Coachman's Trail, in June 2018 prior to the June 25, 2018, Commission public witness hearing in Raleigh.

Public Staff witness Cooper testified while the mailings provided some information useful to customers, the Aqua website www.ncwaterquality.com has useful customer information and customers could be directed to this useful website information by regular customer bill notations or regular billing inserts. She testified even if Aqua deemed the letters appropriate for a mailing, the Company could have included the letters as a monthly billing insert at a lower cost.

Aqua witness Becker testified on rebuttal that he agreed that the entirety of the Communications Initiative should not be included in rate case expense, but he believes the entire amount should be recoverable, with 50% as rate case expense and 50% as a line-item in cost of service. He testified Aqua's communications plan is directly related to its Water Quality Plan. He testified Aqua is pressing forward with a water quality operations program that is utilizing a combination of increased

capital and operational process improvements to address water quality. He testified Aqua's ability to educate and communicate with Aqua's customers on this issue is a critical piece of the success of the program.

Aqua witness Becker testified the specific functions performed by the consulting firm The Paige Group included the following:

- Developed www.ncwaterquality.com content for each section of the website.
- Developed a letter to all Aqua customers mailed in February 2018 announcing the Company's water quality improvement plan/approach and directing customers to the website.
- Developed 18 distinct letters to customers within various Aqua systems that have been most engaged with Aqua on secondary water quality issues. The letters outlined any improvement work already completed in each system, discussed any future planned work, and directed customers to the water quality website. All letters issued in June 2018.
- Developed a bill insert in June/July 2018 directing all customers to the water quality website.
- Developed two e-newsletters (one issued in June and another issued in August) to customers that signed up to receive updates on the water quality website.

- Developed a customer “print on the run” (“POTR”, similar to a bill insert), issued in August directing customers to the water quality website.

He testified all of these communications are designed to direct customers to the information on Aqua’s Water Quality Plan, which is found at www.ncwaterquality.com. He further testified the materials are essential to efforts to educate Aqua customers, both about infrastructure investment, the necessity and components of rate increases, and in particular about secondary water quality issues.

Aqua witness Becker concluded rebuttal stating that Aqua’s recommendation is that the Communications Initiative expenses be recoverable either as rate case expenses or as an expense line-item.

On cross-examination, Aqua witness Becker testified The Paige Group conducted an Aqua survey to understand what customers want to see, how they want to see it, where they want to see it, and how often they want to see it. He testified The Paige Group designed Aqua’s water quality website, but website updates would be necessary at less cost. He further testified some of the future communications could be prepared by Aqua in-house personnel, but Aqua intended to utilize The Paige Group or another consultant going forward on customer communications. Aqua witness Becker also testified that the actual Communications Initiative cost was \$83,000, instead of the \$133,000 estimate that Aqua provided the Public Staff.

After carefully evaluating the evidence and the Communications Initiative documents in Public Staff Becker Rebuttal Cross-Examination Exhibit No. 1, the Commission concludes that the actual costs of \$83,940 for the Communications Initiative are not rate case expenses as the information provided to customers does not educate the customers on rate case issues. The Commission concludes the Communications Initiative expenses are reasonable operating expenses to educate customers on water quality issues. The Commission concludes that as the \$83,940 includes the completed Aqua customer survey and the completed design of Aqua's water quality website, the reasonable ongoing expenses will be reduced. The Commission concludes that one-half of the \$83,940 expense, which is \$41,970, should be amortized over three years thereby providing the reasonable ongoing annual expense of \$13,990 to be included in the revenue requirement.

Annualization/Consumption Factor

The evidence supporting this finding of fact and conclusion is contained in the Application and Form W-1 of Aqua, the testimony of Company witness Gearhart, and the testimony and exhibits of Public Staff witnesses Junis and Cooper.

In the Form W-1, Aqua provided a billing analysis as required by Commission Rule R1-17(b). In his prefiled direct testimony, Public Staff witness Junis addressed the adjustments he made to the billing data filed by the Company.³⁸ Witness Junis testified that updating the test year billing data to the twelve-month period ending June 30, 2018, resulted in a higher level of bills than

³⁸ The adjustments to the data filed by the Company are footnoted in the billing analysis prepared by Public Staff witness Junis, which was entered into the record as Junis Exhibit 25.

reflected in the originally filed Application for the twelve-month test year period ending September 30, 2017. Witness Junis testified that he also adjusted the consumption for the updated data using a three-year average (July 2015 through June 2018) compared to only using the twelve months ended June 30, 2018. 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. (T 12 pp 157-58)

On direct, Public Staff witness Junis further testified that he provided the data needed for Public Staff witness Cooper³⁹ to calculate customer growth and consumption factors to apply to the test year expenses. Witness Junis testified that, using the data in his billing analysis exhibit updated through June 30, 2018, Public Staff witness Cooper was able to calculate the growth (a/k/a annualization) and consumption factors referred to in her testimony. In addition, witness Junis recommended that witness Cooper apply the growth and consumption factors to the sewer and water short-term variable expenses identified by the “Studies of Volumetric Wastewater Rate Structures and a Consumption Adjustment Mechanism for Water Rates of Aqua North Carolina, Inc.” conducted by the UNC Environmental Finance Center. (EFC Report, pp 6, 11) The exceptions are sludge removal, purchased wastewater treatment, and purchased water expenses. The sludge removal expense was calculated by Public Staff witness Darden to be the

³⁹ The data was incorporated by Public Staff witness Cooper, not Public Staff witness Henry.

annual average of the updated two-year period ending June 2018, which includes recent growth and changes in consumption. Witness Junis testified that short-term variability of the purchased wastewater treatment and purchased water expenses is almost entirely matched by variability of the commodity revenues of those systems. (T 12 pp 158-159)

In his supplemental testimony, Public Staff witness Junis stated that his original billing analysis was an evaluation of monthly bills sent to customers during the test year (October 2016 through September 2017) filed by Aqua in its Application, and that the Company subsequently updated the billing data through June 30, 2018. Witness Junis stated that he then compiled the end of period (EOP) bills issued in June 2018 and annualized the total bill quantity by multiplying the EOP bills by twelve months, and the billing analysis was reviewed by Aqua. He stated that, after his direct testimony was filed on August 21, 2018, the Company raised concerns that the June 2018 bills were overstated and exceeded the actual number of customers during the month. Witness Junis reviewed the customer billing data, made appropriate pro forma adjustments, and prepared a revised billing analysis.⁴⁰ (T 12 pp 183-84) In his supplemental testimony, Public Staff witness Junis stated that Aqua has had an opportunity to review his billing analysis and Aqua agreed to the customer counts, consumption quantities, and the pro forma revenues existing in Aqua's proposed rates. (T 12 p 184)

In her supplemental testimony, Public Staff witness Cooper stated that she had updated the annualization and consumption adjustment to reflect changes in

⁴⁰ The revised billing analysis was entered into the record as Junis Supplemental Exhibit 7, Revised Junis Exhibit 25.

the number of pro forma bills used to calculate annualization factors as provided by Public Staff witness Junis. (T 8 p 86) These same annualization and consumption factors were incorporated by witness Cooper into her revised supplemental exhibits.

In his prefiled rebuttal testimony, Aqua witness Gearhart stated that Aqua disagrees with the Public Staff's annualization and consumption adjustments. He stated that 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 compared to Aqua's three-year average consumption. He further stated that the methodology to apply these factors has been consistently applied over the last two rate cases; however, the Public Staff has changed from its prior methodology in the following three areas: (1) the "consumption factor" has been erroneously applied to Aqua's two sewer rate entities and should only apply to Aqua's three water entities; (2) adjustments for sludge hauling expense that have been part of the annualization calculation in each of Aqua's last two rate case orders have been excluded from the annualization calculation in this proceeding; and (3) materials and supplies expense has been erroneously excluded from the annualization and consumption adjustment despite being included in the previous two rate case orders. (T 13 pp 100-02)

Aqua witness Gearhart explained that Public Staff witness Junis' exclusion of certain variable expenses, which witness Gearhart asserted to be in the amount of \$73,732, effectively reduced revenues to which Aqua was entitled and excluded

legitimate costs associated with the end of period number of customers and level of consumption. (T 13 p 103)

On cross-examination, Aqua witness Gearhart testified that he agrees with the supplemental testimony of Public Staff witness Junis, which states that Aqua reviewed his billing analysis and agreed to the customer counts, consumption quantities, and the pro forma revenues existing in Aqua's proposed rates. Aqua witness Gearhart also agreed that the consumption factor is calculated using Aqua's updated three-year average consumption compared to the test year average consumption. (T 13 p 105) Witness Gearhart's testimony on cross-examination contradicts his prefiled rebuttal testimony on this issue.

On cross-examination, Aqua witness Gearhart testified that a significant portion of Aqua's flat rate sewer customers are also water customers of Aqua. Aqua witness Gearhart agreed that the consumption of Aqua NC Water customers, as well as Aqua NC Sewer customers, decreased since Aqua's last rate case, and that Aqua NC Water's consumption factor is negative 0.47 percent, and Aqua NC Sewer's consumption factor is negative 1.85 percent. He agreed that, if customers use less water, then as a result there would be less wastewater and less sludge. He agreed changes in water consumption impact the quantities of wastewater and sludge, and that is reasonable to conclude that short-term variable expenses from both water and sewer are driven not only by customer count, but also by consumption. (T 13 pp 107-10)

On redirect, Aqua witness Gearhart testified that the Public Staff's adjustment for the consumption factor uses too small of a sample to do the

analysis. He also testified that it is inappropriate to make a consumption adjustment for flat rate sewer customers. (T 13 pp 112-14) Witness Gearhart's testimony on cross-examination and redirect pertaining to a small sample size contradicts the fact that a significant number of flat rate sewer customers are also water customers as he had already agreed and their average consumption had decreased as indicated by the agreed upon consumption factor.

The Commission concludes based upon all of the evidence presented that the Public Staff appropriately calculated and applied annualization factors and consumption factors to calculate reasonable levels of variable expenses. Moreover, the Public Staff appropriately determined the variable expenses to apply those annualization factors and consumption factors.

Summary Conclusion

Based on the foregoing, the Commission concludes that the appropriate level of O&M and G&A expenses for combined operations for use in this proceeding are as follows:

<u>Item</u>	<u>Amount</u>
Salaries and wages	\$10,048,145
Employee pensions and benefits	3,021,650
Purchased water/sewer treatment	2,316,616
Sludge removal	559,382
Purchased power	3,570,667
Fuel for power production	26,809
Chemicals	1,521,967
Materials and supplies	505,720
Testing fees	902,172
Transportation	919,149
Contractual services-engineering	2,750
Contractual services-accounting	188,101
Contractual services-legal	196,144
Contractual services-other	4,199,984
Rent	309,942
Insurance	650,674
Regulatory commission expense	92,562
Miscellaneous expense	1,444,151
Interest on customer deposits	32,388
Annualization & Consumption Adj.	<u>127,978</u>
Total O&M and G&A expenses	<u>\$30,636,951</u>

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 67-71

The evidence supporting these findings of fact is contained in the testimony of Public Staff witnesses Cooper and Junis and Company witnesses Gearhart and Becker. The Company's level of depreciation and amortization expense on its Application is \$9,926,332. The Public Staff's recommended level of depreciation and amortization expense is \$9,986,078 for a difference of \$59,746.

With the Stipulation and revisions made by the Public Staff in its supplemental testimony and Revised Supplemental Cooper exhibit I, the Company does not dispute the following Public Staff adjustments to depreciation and amortization expense:

Adjustment for post-test year plant additions	\$146,775
Update costs related to future customers	173
Update Mid South growth PAA to 6/30/18	1,647
Adjustment for Mountain Ridge AIA	<u>2,500</u>
Total	<u>\$151,095</u>

Therefore, the Commission finds and concludes that the adjustments listed above, which are not contested, are appropriate adjustments to be made to depreciation and amortization expense in this proceeding.

Based on the testimony of Company witnesses Gearhart and Becker, the Company disagrees with the following Public Staff adjustments to depreciation and amortization expense:

Adjustment for Neuse Colony CIAC	\$51,673
Adjustment for meters and meter installations	(139,727)
Adjustment for excess capacity	<u>(3,295)</u>
Total	<u>(\$91,349)</u>

Neuse Colony CIAC

The Public Staff made an adjustment to reduce amortization expense by \$42,676 related to the Neuse Colony sewer expansion and \$8,997 for the imputation of CIAC for Neuse Colony. As discussed elsewhere in this Order, the Commission has concluded that the adjustments for the CIAC related to the Neuse Colony wastewater treatment plant are reasonable and should be made in this proceeding. Therefore, the Commission concludes that the corresponding adjustment to remove \$51,673 of amortization expense is appropriate and should be made in this proceeding.

Meters and Meter Installations

The second area of disagreement concerns the depreciation on the removal of AMR meters and related installation for Aqua NC Water and Brookwood Water.

As discussed elsewhere in this Order, the Commission has concluded that the adjustments to remove these meters are reasonable and should be made in this proceeding. Therefore, the Commission concludes that the corresponding adjustment to remove \$139,727 of depreciation expense is appropriate and should be made in this proceeding.

Excess Capacity

The Public Staff made an adjustment to increase depreciation expense by \$20,372 and amortization expense by \$23,667 for excess capacity for Carolina Meadows, The Legacy at Jordan Lake, and Westfall Subdivision wastewater treatment plants. As mentioned elsewhere, the Company contends that that approximately \$1.7 million of rehabilitation and upgrades that were made in 2018 for the Carolina Meadows WWTP should not be subject to an excess capacity because this disallows 30.63% of the upgrade immediately after the investment is made by the Company. The Commission disagrees with the Company's contention. Therefore, the Commission concludes that the corresponding adjustment to add \$20,372 of depreciation expense and \$23,667 of amortization expense is appropriate and should be made in this proceeding.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 72-75

The evidence supporting these findings of fact is contained in the testimony of Public Staff witnesses Henry and Cooper, and Company witness Gearhart. The following table summarizes the difference between the Company's level of other taxes and Section 338(h) adjustment from its Application and the amounts recommended by the Public Staff:

<u>Item</u>	<u>Company Application</u>	<u>Public Staff</u>	<u>Difference</u>
Property taxes	\$635,463	\$635,463	\$0
Payroll taxes	779,805	788,065	8,260
Other taxes	308,886	308,886	0
Section 338(h) adjustment	(20,024)	(20,024)	0
Total	<u>\$1,704,130</u>	<u>\$1,712,390</u>	<u>\$8,260</u>

With the Stipulation and revisions made by the Public Staff in its supplemental testimony and Revised Supplemental Cooper Exhibit I, the Company does not dispute any of the Public Staff adjustments to other taxes.

Therefore, the Commission finds and concludes that the adjustments listed above, which are not contested, are appropriate adjustments to be made to other taxes in this proceeding.

The difference in the level of payroll taxes is due to the differing levels of salaries and wages recommended by the Company and the Public Staff. Based on the conclusions reached elsewhere in the Order regarding the levels of salaries and wages, the Commission concludes that the appropriate level of payroll taxes for use in this proceeding is \$788,065.

Summary Conclusion

Based on the foregoing, the Commission concludes that the appropriate level of other taxes adjustment for combined operations for use in this proceeding is as follows:

<u>Item</u>	<u>Amount</u>
Property taxes	\$635,463
Payroll taxes	788,065
Other taxes	308,886
Section 338(h) adjustment	(20,024)
Total	<u>\$1,712,390</u>

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 76-79

The evidence supporting these findings of fact is contained in the testimony of Public Staff witnesses Boswell, Henry, and Cooper, and Company witness Kopas.

The following summarizes the differences between the Company's level of regulatory fee and income taxes from its Application and the amounts recommended by the Public Staff:

<u>Item</u>	<u>Company Application</u>	<u>Public Staff</u>	<u>Difference</u>
Regulatory fee	\$77,046	\$79,174	\$2,128
Deferred income tax	(639,532)	(120,648)	518,884
State income taxes	186,463	295,538	109,075
Federal income taxes	<u>1,266,088</u>	<u>2,006,711</u>	<u>740,623</u>
Total	<u>\$890,065</u>	<u>\$2,260,775</u>	<u>\$1,370,710</u>

With the Stipulation and revisions made by the Public Staff in its supplemental testimony and Revised Supplemental Cooper Exhibit I, the Company does not dispute any of the Public Staff adjustments to regulatory fee and income taxes.

Regulatory Fee

The difference in the level of regulatory fee is due to the differing levels of revenues recommended by the Company and the Public Staff. Based on conclusions reached elsewhere in this Order regarding the levels of revenues, the Commission concludes that the appropriate level of regulatory fee for use in this proceeding is \$79,174.

State Income Taxes

The difference in the level of state income taxes is due to the differing levels of revenues and expenses recommended by the Company and the Public Staff. Based on the conclusions reached elsewhere in the Order regarding the levels of revenues and expenses, the Commission concludes that the appropriate level of state income taxes for use in this proceeding is \$295,538.

Federal Income Taxes

The difference in the level of federal income taxes is due to the differing levels of revenues and expenses recommended by the Company and the Public Staff. Based on the conclusions reached elsewhere in the Order regarding the levels of revenues and expenses, the Commission concludes that the appropriate level of federal income taxes for use in this proceeding is \$2,006,711.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NOS. 80-84

The evidence in support of these findings of fact is contained in the testimony of Company witness Kopas, the testimony of Public Staff witness Boswell, the Partial Settlement and Stipulation filed in the present docket, and the entire record in this proceeding.

On December 22, 2017, the Tax Act was signed into law. Among other provisions, the Tax Act reduced the federal corporate income tax rate from 35% to 21%, effective January 1, 2018.⁴¹ It also repealed the manufacturing tax deduction and eliminated bonus depreciation.

⁴¹ In response to the enactment of the Tax Act, on January 3, 2018, the Commission opened a rulemaking docket (Docket No. M-100, Sub 148, i.e., the "Tax Docket") for the purpose of determining how the Commission should proceed. In the order establishing the Tax Docket, the

The reduction in the corporate income tax rate in the Tax Act also results in federal EDIT for utilities. EDIT arise from the impact of tax changes on ADIT. ADIT occur because of timing differences between when a utility collects income taxes from ratepayers and when those taxes are paid to the IRS. One of the major types of ADIT arises from differing annual depreciation rates applied to the cost of assets purchased by a utility or other business. Under generally accepted accounting principles (and, in many cases, under the regulatory accounting principles followed by this Commission), a utility business is allowed to record on its books an annual depreciation expense representing the allocation of the cost of an item of property between its acquisition and the end of its useful life, and determine its annual income tax expense recovered from its ratepayers on that basis. The depreciation expense is in most cases determined by the “straight line” method; that is, evenly over each year of the property item’s life. In contrast, the Internal Revenue Code (IRC) allows accelerated depreciation for purposes of annual income tax determination: the business may deduct from its income, on its tax returns, a larger proportion of the property’s value in the initial years of its life and a smaller percentage in the later years. All other things being equal (for example, the tax basis and book basis of the asset), the total depreciation expense over the life of the asset will be the same for ratemaking and income tax purposes.

For accounting and ratemaking purposes, the temporary tax savings that a utility obtains by using accelerated rather than straight-line depreciation for income

Commission placed all public utilities on notice that the federal corporate income tax expense component of all existing rates and charges, effective January 1, 2018, will be billed and collected on a provisional rate basis.

tax purposes is treated as a deferred tax liability. The total amount of taxes a utility has been able to defer, at any given time, is classified as ADIT. ADIT is treated as cost-free capital and is deducted from rate base because the source of the funds that have not yet been paid to the IRS is the ratepayer. If the income tax rate remains constant, the increased taxes a utility pays in the later years of a property item's life will be equal to the tax benefit of accelerated depreciation received by the utility in the earlier years (but not flowed through to the ratepayers in the earlier years); and, if the time value of money is disregarded, the total taxes the utility pays with respect to that property item will not be increased or reduced by the use of accelerated depreciation.

When the federal income tax rate is reduced, as it was in the Tax Act, a portion of the ADIT that the utility has accumulated from the ratepayers will never be needed by the utility for the payment of taxes. This portion is classified as federal EDIT. The IRC requires that certain EDIT must be normalized, or flowed back, subject to certain limitations. Federal EDIT that is subject to this limitation is classified as "protected" federal EDIT. All other types of federal EDIT are termed "unprotected," in that there are no limitations placed upon them by the IRS with regard to the length of time over which they can be returned to ratepayers.

In its Application, the Company reduced the federal tax rate from 35% to 21%. In the revised testimony of Company witness Kopas filed on August 6, 2018, the Company proposed to return federal protected EDIT to ratepayers over a period of time equal to the expected lifespan of the plant, property and equipment with which they are associated (based on the average rate assumption method

(ARAM) required by the IRS), return federal unprotected EDIT to ratepayers over 20 years, and return state EDIT to ratepayers over four years.

Aqua witness Kopas also recommended that the over-collection of federal taxes related to the 14% reduction in the federal corporate income tax rate to income earned after January 1, 2018 be returned to customers over a one-year period as a credit beginning when the new base rates are implemented to reflect the new income tax rates. (T 5 pp 3-9)

In testimony filed on September 5, 2018, Public Staff witness Boswell presented the Public Staff's proposal regarding the flowback of federal and state EDIT. She included four adjustments, based on the information provided by the Company. First, she recommended the return of protected federal EDIT based upon the Company's calculation of the net remaining life of the timing differences, as required under the IRC. For unprotected federal EDIT, she recommended removing the federal EDIT regulatory liability associated with the unprotected differences from rate base, and placing it in a rider to be refunded to ratepayers over three years on a levelized basis, with carrying costs. Public Staff witness Boswell stated that immediate removal of unprotected federal EDIT from rate base increases the Company's rate base and mitigates regulatory lag that might occur from refunds of unprotected federal EDIT not contemporaneously reflected in rate base. Further, refunding the unprotected federal EDIT over three years allows the Company to properly plan for any future credit needs. For state EDIT, witness Boswell recommended returning that EDIT to customers through a levelized rider that would expire at the end of a three-year period. Finally, witness Boswell did

not object to the Company's request to refund to ratepayers the over-collection of federal taxes related to the decrease in federal tax rates for the period beginning January 1, 2018, and corresponding interest, as a credit for a one-year period beginning when the new base rates become effective in the current docket. (T 8 pp 10-15)

On September 17, 2018, the Company and the Public Staff jointly filed a Stipulation. The Stipulation settles, among other items, the treatment of federal EDIT, state EDIT, and the over-collection of federal taxes related to the decrease in federal tax rates for the period beginning January 1, 2018. The Stipulation states that the Company agrees to accept the Public Staff's proposals for addressing 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 ARAM required by IRC Section 203(e). The Stipulation also states the state EDIT that the Company recorded pursuant to the Sub 138 Order will be returned to customers through a levelized rider that will expire at the end of a three-year period. Finally, the Stipulating Parties agree to the Company's proposal to refund to the ratepayers the over-collection of federal taxes related to the decrease in federal tax rates for the period beginning January 1, 2018, and corresponding interest, as a credit for a one-year period beginning when the new base rates become effective in the current docket.

The Commission's primary concern regarding the effects of the Tax Act is to ensure that ratepayers receive the full benefit of the reduction of the federal

corporate income tax rate. Rates have been set to ensure that the Company has adequate funds with which to pay taxes; now that the federal income tax rate is reduced, rates should be adjusted accordingly. The question before the Commission is how, and over what length of time, these effects should be implemented.

The evidence shows that there is agreement regarding how to implement the effects of the Tax Act. The Company and the Public Staff agree upon the revenue requirement effect of the decrease in the corporate income tax rate; additionally, no party disputes the amounts presented by the Company regarding the impact of the Tax Act on these issues. The Commission finds and concludes that the revenue requirement changes presented by the Company related to these issues are appropriate and should be approved.

Additionally, the Company and the Public Staff agree and no party disputes, that protected federal EDIT, which is subject to tax normalization rules, should not be returned to ratepayers any faster than allowed under the IRC rules. Therefore, the Commission finds and concludes that it is appropriate for the Company to return protected federal EDIT in the amount, and over the time period, recommended by the Company and the Public Staff.

The Company and the Public Staff also agree, and no party disputes, that Aqua would return to ratepayers the unprotected federal EDIT through a levelized rider over a three-year period. The Commission finds and concludes the Stipulation's proposal to return unprotected federal EDIT over a three-year period through a levelized rider to be reasonable; it appropriately balances the interests

of ratepayers and the Company. By removing the total amount of the unprotected federal EDIT credit from rate base in the current case, the Company will be provided with an increase in rates to moderate any cash flow issues.

The evidence further shows that there is agreement regarding how to flow back the state EDIT recorded pursuant to the Sub 138 Order. The Company and the Public Staff agree, and no party disputes, that Aqua would return to ratepayers the state EDIT through a levelized rider over a three-year period. The Commission finds and concludes the Stipulation's proposal to return state EDIT over a three-year period through a levelized rider to be reasonable; it appropriately balances the interests of ratepayers and the Company.

Finally, the Public Staff and the Company agree, and no party disputes, that Aqua would refund to ratepayers the over-collection of federal taxes related to the decrease in federal tax rates for the period beginning January 1, 2018, and corresponding interest, as a credit for a one-year period beginning when the new base rates become effective in the current docket. The Commission finds and concludes the Stipulation's proposal to return the over-collection of federal taxes related to the decrease in federal tax rates as a credit over a one-year period beginning when new base rates become effective to be reasonable; it appropriately balances the interests of ratepayers and the Company.

Consistent with the proposed orders of the Public Staff and Aqua, the Commission concludes that 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 ARAM required by IRC § 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 thirty-six 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.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 85-93

The evidence supporting these findings of fact and conclusions is contained in the Application and Form W-1 of the Company, the testimony and exhibits of the public witnesses, the testimony and exhibits of Company witness D'Ascendis, Public Staff witness Hinton, and the entire record of this proceeding.

Rate of Return on Equity

In its Application and in the direct testimony of Aqua Witness Dylan D'Ascendis ('D'Ascendis'), the Company requested approval for its rates to be set using a rate of return on equity of 10.90%. D'Ascendis in his rebuttal testimony reduced his recommended rate of return on equity to 10.80% after removing his adjustment for flotation cost. For the reasons set forth herein, the Commission finds that a rate of return on equity of 9.2% is just and reasonable.

Rate of return on equity, also referred to as the cost of equity capital, is often one of the most contentious issues to be addressed in a rate case. In the absence of a settlement agreed to by all parties, the Commission must exercise its independent judgment and arrive at its own independent conclusion as to all matters at issue, including the rate of return on equity. See, e.g., CUCA I, 348 N.C. at 466, 500 S.E.2d at 707. In order to reach an appropriate independent conclusion regarding the rate of return on equity, the Commission should evaluate the available evidence, particularly that presented by conflicting expert witnesses. State ex rel. Utils. Comm'n v. Attorney Gen. Roy Cooper, 366 N.C. 484, 739 S.E.2d 541, 546-47 (2013) (Cooper I).

In this case, the evidence relating to the Company's cost of equity capital was presented by D'Ascendis, and Public Staff witness Hinton (Hinton). No rate of return on equity expert evidence was presented by any other party.

In addition to its evaluation of the expert evidence, the Commission must also make findings of fact regarding the impact of changing economic conditions on customers when determining the proper rate of return on equity for a public

utility. Cooper I, 366 N.C. 484, 739 S.E.2d at 548. This was a factor newly announced by the Supreme Court in its Cooper I Decision and not previously required by the Commission, the Court of Appeals, or the Supreme Court as an element to be considered in connection with the Commission's determination of an appropriate rate of return on equity. The Commission's discussion of the evidence with respect to the findings required by Cooper I is set out in detail in this Order.

Cooper I was the result of the Supreme Court's reversal and remand of the Commission's approval of the agreement regarding the rate of return on equity in a stipulation between the Public Staff and Aqua in Aqua's 2011 Rate Case. The Commission has had occasion to apply both prongs of Cooper I in subsequent orders, specifically the following:

- Order Granting General Rate Increase in the DEP's Rate Case, Docket No. E-2, Sub 1023 (May 30, 2013) (2013 DEP Rate Order), which was affirmed by the Supreme Court in State ex rel. Utils. Comm'n v. Cooper, 367 N.C. 444, 761 S.E.2d 640 (2014) (Cooper III)⁴²;
- Order on Remand resulting from the Supreme Court's Cooper I Decision, in Docket No. E-7, Sub 989 (October 23, 2013) (Aqua Remand Order), which was affirmed by the Supreme

⁴² An intervening Cooper case, State ex rel. Utils. Comm'n v. Cooper, 367 N.C. 430, 758 S.E.2d 635 (2014) (Cooper II), arose from the 2012 Rate Case by Dominion North Carolina Power (DNCP) and resulted in a remand to the Commission, inasmuch as the Commission's Order in that case predated Cooper I.

Court in State ex rel. Utils. Comm'n v. Cooper, 367 N.C. 644, 766 S.E.2d 827 (2014) (Cooper IV);

- Order Granting General Rate Increase in Aqua's 2013 Rate Case, Docket No. E-7, Sub 1026 (September 24, 2013) (2013 Aqua Rate Order), which was affirmed by the Supreme Court in State ex rel. Utils. Comm'n v. Cooper, 367 N.C. 741, 767 S.E.2d 305 (2015) (Cooper V);
- Order on Remand resulting from the Supreme Court's Cooper II Decision, in Docket No. E-22, Sub 479 (July 23, 2015) (DNCP Remand Order), which was not appealed to the Supreme Court;
- Order Approving Rate Increase and Cost Deferrals and Revising PJM Regulatory Conditions, in Docket No. E-22, Sub 532, dated December 22, 2016 (2016 DNCP Rate Order); and
- Order Accepting Stipulation, Deciding Contested Issues and Granting Partial Rate Increase, in Docket No. E-2, Sub 1142, dated February 23, 2018. (2018 DEP Rate Order).
- Order Accepting Stipulation, Deciding Contested Issues, and Requiring Revenue Reduction, in Docket No. E-7, Sub 1146, dated June 22, 2018. (2018 DEC Rate Order).

In order to give full context to the Commission's Decision herein and to elucidate its view of the requirements of the General Statutes as they relate to rate of return on equity, as interpreted by the Supreme Court in Cooper I, the

Commission deems it important to provide in this Order an overview of the general principles governing this subject.

A. Governing Principles in Setting the Rate of Return on Equity

First, there are, as the Commission noted in the 2013 DEP Rate Order, constitutional constraints upon the Commission's rate of return on equity Decisions established by the United States Supreme Court Decisions in Bluefield Waterworks & Improvement Co., v. Pub. Serv. Comm'n of W. Va., 262 U.S. 679 (1923) (Bluefield), and Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944) (Hope):

To fix rates that do not allow a utility to recover its costs, including the cost of equity capital, would be an unconstitutional taking. In assessing the impact of changing economic conditions on customers in setting an ROE, the Commission must still provide the public utility with the opportunity, by sound management, to (1) produce a fair profit for its shareholders, in view of current economic conditions, (2) maintain its facilities and service, and (3) compete in the marketplace for capital. State ex rel. Utilities Commission v. General Telephone Co. of the Southeast, 281 N.C. 318, 370, 189 S.E.2d 705, 757 (1972). As the Supreme Court held in that case, these factors constitute "the test of a fair rate of return" in Bluefield and Hope. Id.

2013 DEP Rate Order, at 29.

Second, the rate of return on equity is, in fact, a cost. The return that equity investors require represents the cost to the utility of equity capital. In his dissenting opinion in Missouri ex rel. Southwestern Bell Tel. Co. v. Missouri Pub. Serv. Comm'n, 262 U.S. 276 (1923), Justice Brandeis remarked upon the lack of any functional distinction between the rate of return on equity (which he referred to as a "capital charge") and other items ordinarily viewed as business costs, including

operating expenses, depreciation, and taxes:

Each is a part of the current cost of supplying the service; and each should be met from current income. When the capital charges are for interest on the floating debt paid at the current rate, this is readily seen. But it is no less true of a legal obligation to pay interest on long-term bonds ... and it is also true of the economic obligation to pay dividends on stock, preferred or common.

Id. at 306 (Brandeis, J. dissenting) (emphasis added). Similarly, the United States Supreme Court observed in Hope, “From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business ... [which] include service on the debt and dividends on the stock.” Hope, 320 U.S. 591, 603.

Leading academic commentators also define rate of return on equity as the cost of equity capital. Professor Charles Phillips, for example, states that “the term ‘cost of capital’ may be defined as the annual percentage that a utility must receive to maintain its credit, to pay a return to the owners of the enterprise, and to ensure the attraction of capital in amounts adequate to meet future needs.” Phillips, Charles F., Jr., The Regulation of Public Utilities (Public Utilities Reports, Inc. 1993), at 388. Professor Roger Morin approaches the matter from the economist’s viewpoint:

While utilities enjoy varying degrees of monopoly in the sale of public utility services, they must compete with everyone else in the free open market for the input factors of production, whether it be labor, materials, machines, or capital. The prices of these inputs are set in the competitive marketplace by supply and demand, and it is these input prices which are incorporated in the cost of service computation. This is just as true for capital as for any other factor of production. Since utilities must go to the open capital market and sell their securities in competition with every other issuer, there is

obviously a market price to pay for the capital they require, for example, the interest on capital debt, or the expected return on equity.

* * *

[T]he cost of capital to the utility is synonymous with the investor's return, and the cost of capital is the earnings which must be generated by the investment of that capital in order to pay its price, that is, in order to meet the investor's required rate of return.

Morin, Roger A., Utilities' Cost of Capital (Public Utilities Reports, Inc. 1984), at 19-21 (emphasis added). Professor Morin adds: "The important point is that the prices of debt capital and equity capital are set by supply and demand, and both are influenced by the relationship between the risk and return expected for those securities and the risks expected from the overall menu of available securities." Id. at 20 (emphasis added).

Changing economic circumstances as they impact Aqua's customers may affect those customers' ability to afford rate increases. For this reason, customer impact weighs heavily in the overall rate setting process, including, as set out in detail elsewhere in this Order, the Commission's own Decision of an appropriate authorized rate of return on equity. In addition, in the event of a settlement, customer impact no doubt influences the process by which the parties to a rate case decide to settle contested matters and the level of rates achieved by any such settlement.

However, a customer's ability to afford a rate increase has absolutely no impact upon the supply of or the demand for capital. The economic forces at work in the competitive capital market determine the cost of capital – and, therefore, the utility's required rate of return on equity. The cost of capital does not go down

because some customers may find it more difficult to pay for an increase in water and wastewater prices as a result of prevailing adverse economic conditions, any more than the cost of capital goes up because some customers may be prospering in better times.

Third, the Commission 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. State ex rel. Utils. Comm'n v. Pub. Staff-N. Carolina Utils. Comm'n, 323 N.C. 481, 490, 374 S.E.2d 361, 370 (1988). Further, and echoing the discussion above concerning the fact that rate of return on equity represents the cost of equity capital, the Commission must execute the Supreme Court's command "irrespective of economic conditions in which ratepayers find themselves." (2013 DEP Rate Order, at 37.) The Commission noted in that order:

The Commission always places primary emphasis on consumers' ability to pay where economic conditions are difficult. By the same token, it places the same emphasis on consumers' ability to pay when economic conditions are favorable as when the unemployment rate is low. Always there are customers facing difficulty in paying utility bills. The Commission does not grant higher rates of return on equity when the general body of ratepayers is in a better position to pay than at other times, which would seem to be a logical but misguided corollary to the position the Attorney General advocates on this issue.

Id. Indeed, in Cooper I the Supreme Court emphasized "changing economic conditions" and their impact upon customers. 366 N.C. 484, 739 S.E.2d at 548.

Fourth, while there is no specific and discrete numerical basis for quantifying the impact of economic conditions on customers, the impact on customers of changing economic conditions is embedded in the rate of return on

equity expert witnesses' analyses. The Commission noted this in the 2013 DEP Rate Order: "This impact is essentially inherent in the ranges presented by the return on equity expert witnesses, whose testimony plainly recognized economic conditions – through the use of econometric models – as a factor to be considered in setting rates of return." 2013 DEP Rate Order, at 38.

Fifth, under long-standing Decisions of the North Carolina Supreme Court, the Commission's subjective judgment is a necessary part of determining the authorized rate of return on equity. State ex rel. Utils. Comm'n v. Pub. Staff, 323 NC 481, 490, 374 S.E.2d 361, 369. As the Commission also noted in the 2013 DEP Rate Order:

Indeed, of all the components of a utility's cost of service that must be determined in the ratemaking process, the appropriate [rate of return on equity] the one requiring the greatest degree of subjective judgment by the Commission. Setting an ROE [rate of return on equity] for regulatory purposes is not simply a mathematical exercise, despite the quantitative models used by the expert witnesses. As explained in one prominent treatise,

Throughout all of its Decisions, the [United States] Supreme Court has formulated no specific rules for determining a fair rate of return, but it has enumerated a number of guidelines. The Court has made it clear that confiscation of property must be avoided, that no one rate can be considered fair at all times and that regulation does not guarantee a fair return. The Court also has consistently stated that a necessary prerequisite for profitable operations is efficient and economical management. Beyond this is a list of several factors the commissions are supposed to consider in making their Decisions, but no weights have been assigned.

The relevant economic criteria enunciated by the Court are three: financial integrity, capital attraction and comparable earnings. Stated another way, the rate of return allowed a public utility should be high enough: (1) to maintain the financial integrity of the enterprise, (2) to enable the utility to attract the new capital it needs to serve the public, and (3) to

provide a return on common equity that is commensurate with returns on investments in other enterprises of corresponding risk. These three economic criteria are interrelated and have been used widely for many years by regulatory commissions throughout the country in determining the rate of return allowed public utilities.

In reality, the concept of a fair rate of return represents a “zone of reasonableness.” As explained by the Pennsylvania commission:

There is a range of reasonableness within which earnings may properly fluctuate and still be deemed just and reasonable and not excessive or extortionate. It is bounded at one level by investor interest against confiscation and the need for averting any threat to the security for the capital embarked upon the enterprise. At the other level it is bounded by consumer interest against excessive and unreasonable charges for service.

As long as the allowed return falls within this zone, therefore, it is just and reasonable. . . . It is the task of the commissions to translate these generalizations into quantitative terms.

Charles F. Phillips, Jr., The Regulation of Public Utilities, 3d ed. 1993, pp. 381-82. (notes omitted)

2013 DEP Rate Order, pp. 35-36.

Thus, the Commission must exercise its subjective judgment so as to balance two competing rate of return on equity-related factors – the economic conditions facing the Company’s customers and the Company’s need to attract equity financing in order to continue providing safe and reliable service.

The Supreme Court in Cooper V affirmed the 2013 Aqua Rate Order, in which this framework was fully articulated. But to the framework we can add additional factors based upon the Supreme Court’s Decisions in Cooper III, Cooper IV, and Cooper V. Specifically, the Supreme Court held that nothing in Cooper I requires the Commission to “quantify” the influence of changing economic

conditions upon customers (see, e.g., Cooper V, 367 N.C. at 745-46; Cooper IV, 367 N.C. at 650; Cooper III, 367 N.C. at 450), and, indeed, the Supreme Court reiterated that setting the rate of return on equity is a function of the Commission's subjective judgment: "Given th[e] subjectivity ordinarily inherent in the determination of a proper rate of return on common equity, there are inevitably pertinent factors which are properly taken into account but which cannot be quantified with the kind of specificity here demanded by [the appellant]." Cooper III, 367 N.C. at 450, quoting State ex rel. Utils. Comm'n v. Pub. Staff-North Carolina Utils. Comm'n, 323 NC 481, 490 (1988).

Finally, the Supreme Court discussed with approval the Commission's reference to and reliance upon expert witness testimony that used econometric models that the Commission had noted "inherently" contained the effects of changing economic circumstances upon customers, and also discussed with approval the Commission's reference to and reliance upon expert witness testimony correlating the North Carolina economy with the national economy. See, e.g., Cooper V, 367 N.C. at 747; Cooper III, 367 N.C. at 451.

It is against this backdrop of overarching principles that the Commission turns to the evidence presented in this case.

B. Application of the Governing Principles to the Rate of Return Decision

1. Evidence from expert witnesses on cost of equity capital

Company witness D'Ascendis recommended in his direct testimony a rate of return on equity of 10.90%. This 10.90% was based upon his indicated cost of common equity of 10.60%, a recommended size adjustment of .20% and a

recommended Flotation adjustment of 11%. He rounded down his cost of common equity adjustment to 10.90%.

Public Staff Director of Economic Research John R. Hinton testified the Public Staff recommends an overall rate of return of 6.92%, based on a capital structure consisting of 50.00% long-term debt at a cost rate of 4.63% and 50.00% common equity at a cost rate of 9.20%.

Public Staff witness Hinton described the current financial market conditions testifying the cost of financing is much lower today than in more inflationary period of the 1990s. More recently, the continued low rates of inflation and expectations of future low inflation rates have contributed to even lower long-term interest rates. He testified according to Moody's Bond Survey, yields on long-term "A" rated public utility bonds as of July 2018 were 4.27% as compared to 4.63% for January, 2014 which is the time of filing of the Public Staff and Company Stipulation in the last Aqua rate case. He further testified the relative decrease in long-term bond yields since the last rate case is not indicative of an increase in financing costs for utilities; rather, it portends a lowering of financing costs for long-term capital. However, he testified there has been an increase in the cost of short-term financing.

Public Staff witness Hinton testified the current lower interest rates and stable inflationary environment of today indicate that borrowers are paying less for the time value of money. He testified this is significant since utility stocks and utility capital costs are highly interest rate-sensitive relative to most industries with the securities markets. Furthermore, given that investors often view purchases of the common stocks of utilities as substitutes for fixed income investments, the

reductions in interest rates observed over the past ten years or more has paralleled the decreases in investor required rates of return on common equity.

Public Staff witness Hinton testified he generally does not rely on interest rate forecasts. Rather, he believes that relying on current interest rates, especially in relation to yields on long-term bonds, is more appropriate for ratemaking in that, it is reasonable to expect that as investors are pricing bonds, they are based on expectations on future interest rates, inflation rates, etc. He testified while he has a healthy respect for forecasting, he is aware of the risk of relying on predictions of rising interest rate cases. He presented a case can be observed in the testimony of Company witness Ahern in the 2013 Aqua rate case. In that case, she identified several point forecasts of 30-year Treasury Bond yields that were predicted to rise to 4.3% in 2015, 4.7% in 2016, and 5.2% in 2017. He presented in the graph 30-Year US Treasury Bonds which showed in 2016 the range was approximately 2.50% to 3.10%, and in 2017 the range was approximately 2.25% to 3.10%. T.6, p. 175.

Public Staff witness Hinton testified he used the discounted cash flow (DCF) model and the Risk Premium model to determine the cost of equity for Aqua. He testified the discounted cash flow model is a method of evaluating the expected cash flows from an investment by giving appropriate consideration to the time value of money. The DCF model is based on the theory that the price of the investment will equal the discounted cash flows of return. The return to an equity investor comes in the form of expected future dividends and price appreciation. He testified as the new price will again be the sum of the discounted cash flows,

price appreciation is ignored and attention focused on the expected stream of dividends.

Public Staff witness Hinton testified he applied the DCF method to Aqua America and to a comparable group of water utilities followed by Value Line Investment Survey (Value Line). He testified the standard edition of Value Line covers nine water companies. He excluded Connecticut Water Service, Inc. and the SJW Group because of a merger of the two companies and also excluded Consolidated Water Co. because of its significant overseas operations.

Public Staff witness Hinton testified he calculated the dividend yield component of the DCF by using the Value Line estimate of dividends to be declared over the next 12 months divided by the price of the stock as reported in the Value Line Summary and Index sections for each week of the 13-week period May 25, 2018 through August 17, 2018. He testified a 13-week averaging period tends to smooth out short-term variations in the stock prices. This process resulted in an average dividend yield of 2.1% for his proxy group of water utilities.

To calculate the expected growth rate component of the DCF, Public Staff witness Hinton testified he employed the growth rates of his proxy group in earnings per share (EPS), dividend per share (DPS), and book value per share (BPS) as reported in Value Line over the past ten and five years. He also employed the forecasts of the growth rates of his proxy group in EPS, DPS, and BPS as reported in Value Line. He testified the historical and forecast growth rates are prepared by analysts of an independent advisory service that is widely available to investors, and should also provide an estimate of investor

expectations. He testified he includes both historical known growth rates and forecast growth rates, because it is reasonable to expect that investors consider both sets of data in deriving their expectations.

Public Staff witness Hinton testified he also incorporated the consensus of various analysts' forecasts of five-year EPS growth rate projections as reported in Yahoo Finance. He testified the dividend yields and growth rates for each of the companies and for the average for his comparable proxy group are shown in Exhibit JRH-3.

Public Staff witness Hinton concluded based upon his DCF analysis that a reasonable expected dividend yield is 2.1% with an expected growth rate of 6.1% to 7.1%. He testified his DCF analysis produces a cost of common equity for his comparable proxy group of water utilities of 8.20% to 9.20%.

Public Staff witness Hinton testified the equity risk premium method can be defined as the difference between the expected return on a common stock and the expected return on a debt security. The differential between the two rates of return are indicative of the return investors require in order to compensate them for the additional risk involved with an investment in the Company's common stock over an investment in the Company's bonds that involves less risk.

Public Staff witness Hinton testified his method relies on approved returns on common equity for water utility companies from various public utility commissions that is published by the Regulatory Research Associates, Inc. (RRA), within SNL Global Market Intelligence. In order to estimate the relationship with a representative cost of debt capital, he regressed the average annual allowed

equity returns with the average Moody's A-rated yields for Public Utility bonds from 2006 through 2018. His regression analysis which incorporates years of historical data is combined with recent monthly yields to provide an estimate of the current cost of common equity.

Public Staff witness Hinton testified the use of allowed returns as the basis for the expected equity return has two strengths over other approaches that involve various models that estimate the expected equity return on common stocks and subtracting a representative cost of debt. He testified one strength of his approach is that authorized returns on equity are generally arrived at through lengthy investigations by various parties with opposing views on the rate of return required by investors. He testified it is reasonable to conclude that the approved allowed returns are good estimates of the cost of equity.

Public Staff witness Hinton testified the summary data of risk premiums shown on his Exhibit JRH-4, page 1 of 2, indicates 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 Moody's A-rated utility 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%. He performed a statistical regression analysis as shown on Exhibit JRH 4, page 2 of 2 in order to quantify the relationship of allowed equity returns and bond costs. He testified by applying the allowed returns to the current utility bond cost of 4.16%, resulted in a current estimate of the equity risk premium of equity of 9.69%, which reflects a risk premium of 5.53%.

Public Staff witness Hinton concluded 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 the risk premium model that indicates a cost of equity of 9.69%, he determined that the investor required rate of return on equity for Aqua is between 8.70% and 9.69%. He concluded that 9.20% is his single best estimate of the Company's cost of common equity.

Public Staff witness Hinton testified as to the reasonableness of his recommended return, that he considered the pre-tax interest coverage ratio produced by his cost estimates for the cost equity. He testified based on his recommended capital structure, cost of debt, and equity return of 9.20%, the pre-tax interest coverage ratio is approximately 3.7 times. He testified this tax interest coverage should allow Aqua to qualify for a single "A" bond rating.

Public Staff witness Hinton testified his recommended return on common equity takes into consideration the impact of the water and sewer system improvement charges pursuant to N.C. Gen. Stat. §62-113.12 on Aqua's financial risk. He testified that Aqua witness Roberts in the 2013 Aqua rate case, Docket No. W-218, Sub 363, testified the water and sewer improvement charge mechanism (WSIC and SSIC) has the ability for enhanced cost recovery of the eligible capital improvements which reduces regulatory lag through incremental and timely recovery. Public Staff witness Hinton testified in this current general rate case, the WSIC and SSIC have added \$2,398,199 to Aqua's annual revenue, which equates to a 4.3% increase in Aqua's total annual revenues. He testified he believes this mechanism is seen by debt and equity investors as supportive

regulation that mitigates business risk. Witness Hinton testified he believes that this mechanism is noteworthy and is supportive of his 9.2% return on equity recommendation.

Public Staff witness Hinton testified it is not appropriate to add a risk premium to the cost of equity due to the size of the company. He testified from a regulatory policy perspective, ratepayers should not be required to pay higher rates because they are located in the franchise area of a utility of a size which is arbitrarily considered to be small. He further testified if such adjustments were routinely allowed, an incentive would exist for large existing utilities to form subsidiaries when merging or even to split-up into subsidiaries as to obtain higher allowed returns. He further testified Aqua operates in a franchise environment that insulates the company from competition and it operates with procedures in place that allow for rate adjustments for eligible capital improvements, cost increases, and other unusual circumstances that impact its earnings.

Public Staff witness Hinton testified Aqua is owned 100% by Aqua America, Inc. A potential investor cannot purchase Aqua stock. All Aqua paid in equity capital is infused by Aqua America, Inc. He testified as stated in the testimony of Aqua company witness D'Ascendis, Aqua America, Inc. is the second largest investor owned water and wastewater utility in the United States with its shares traded on the New York Stock Exchange (NYSE) having a \$6.9 Billion market capitalization at the January 12, 2018, market close as reported by Value Line. He testified Aqua America's market capitalization of \$6.9 Billion is larger than the cumulative market capitalization of the next four largest investor owned water

utilities being American States Water Co. (NYSE), California Water Service Group (NYSE), SJW Group (NYSE), and Connecticut Water Service, Inc. (NASDAQ).

Aqua witness D'Ascendis' recommendation was based upon his Discounted Cash Flow ("DCF") model, his Risk Premium Model ("RPM"), and his Capital Asset Pricing Model ("CAPM"), applied to market data of a proxy group of eight water companies ("Utility Proxy Group"). He also applied the DCF, RPM, and CAPM to a proxy group of domestic, non-price regulated companies (Non-Price Regulated Proxy Group) which he described as comparable in total risk to the his Utility Proxy Group.

The results derived from Mr. D'Ascendis' analyses in his direct testimony are as follows:

Table 2: Summary of Common Equity Cost Rate

<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>

He concluded that a common equity cost rate of 10.60% for Aqua is indicated before any Company-specific adjustments. He then adjusted upward by 0.20% to reflect Aqua's smaller relative size as compared with the members of his Utility Proxy Group, resulting in a size-adjusted indicated common equity

cost rate of 10.80%. He also adjusted upward the indicated common equity cost rate by an additional 0.11% to reflect flotation costs.

Aqua witness D'Ascendis testified the eight companies in his Utility Proxy Group were: American States Water Co., American Water Works Co., Inc., Aqua America, Inc., California Water Service Group, Connecticut Water Service, Inc., Middlesex Water Co., SJW Corp., and York Water Co.

Aqua witness D'Ascendis testified he used the single-stage constant growth DCF model. He testified his unadjusted dividend yields are based on the proxy companies' dividends as of January 12, 2018, divided by the average of closing market prices for the 60 trading days ending January 12, 2018.⁴³ He made an adjustment to the dividend yield because dividends are paid periodically, usually quarterly.

For Aqua witness D'Ascendis' DCF growth rate he testified he only used analysts' five-year forecasts of earning per share (EPS) growth. He testified the mean result of his application of the single-stage DCF model is 9.09%, the median result is 8.81%, and the average of the two is 8.95% for his Utility Proxy Group as shown on D'Ascendis Direct Exhibit 1, Schedule DWD-3, page 1. He testified in arriving at a conclusion for the DCF-indicated common equity cost rate for his Utility Proxy Group, he relied on an average of the mean and the median results of the DCF.

Aqua witness D'Ascendis used two risk premium methods. He testified his first method is the PRPM, while the second method is a risk premium model

⁴³ See Schedule DWD-3, page 1, column 1.

using a total market approach. He testified the inputs to his PRPM are the historical returns on the common shares of each company in the Utility Proxy Group minus the historical monthly yield on long-term U.S. Treasury securities through December 2017. He testified he added the forecasted 30-year U.S. Treasury Bond yield, 3.54% to each company's PRPM-derived equity risk premium to arrive at an indicated cost of common equity. He testified the mean PRPM indicated common equity cost rate for the Utility Proxy Group is 12.36%, the median is 12.09%, and the average of the two is 12.23%. He testified he relied on the average of the mean and median results of the Utility Proxy Group PRPM to calculate a cost of common equity rate of 12.23%.

Aqua witness D'Ascendis testified his total market approach RPM adds a prospective public utility bond yield to an average of 1) an equity risk premium that is derived from a beta-adjusted total market equity risk premium, and 2) an equity risk premium based on the S&P Utilities Index. He calculated his adjusted prospective bond yield for the Utility Proxy Group to be 4.84%, and the average equity risk premium to be 5.06% resulting in risk premium derived common equity to be 9.90% for his PRPM using his total market approach.

For his CAPM, Aqua witness D'Ascendis testified he applied both the traditional CAPM and the ECAPM to the companies in his Utility Proxy Group and averaged the results. For his CAPM beta coefficient, he considered two methods of calculation: the average of the Beta coefficients of the Utility Proxy Group companies reported by Bloomberg Professional Services, and the average of the

Beta coefficients of the Utility Proxy Group companies as reported by Value Line resulting in a mean beta of .78 and median beta of .74.

Aqua witness D'Ascendis testified the risk-free rate adopted for both applications of the CAPM is 3.54%. This risk-free rate of 3.54% is based on the average of the *Blue Chip* consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six quarters ending with the second calendar quarter of 2019, and long-term projections for the years 2019 to 2023 and 2024 to 2028.

Aqua witness D'Ascendis testified he used three sources (historical, Value Line, and Bloomberg), when averaged, result in an average total market equity risk premium of 8.69%. He testified the mean result of his CAPM/ECAPM analyses is 10.53%, the median is 10.25%, and the average of the two is 10.39%.

Aqua witness D'Ascendis testified he also selected eleven domestic non-price regulated companies for his Non-Price Regulated Proxy Group, that he believes are comparable in total risk to his Utility Proxy Group. He calculated common equity cost rates using the DCF, RPM, and CAPM for the Non-Price Regulated Proxy Group. His DCF result was 13.37%, his RPM cost rate was 11.28%, and his CAPM/ECAPM cost rate was 10.91%.

Aqua witness D'Ascendis testified he made .20% equity cost rate adjustment due to Aqua's small size relative to the Utility Proxy Group. He testified the Company has greater relative risk than the average company in the Utility Proxy Group because of its smaller size compared with the group, as measured by an estimated market capitalization of common equity for Aqua (whose common stock is not publicly-traded).

In Aqua witness D'Ascendis' direct testimony he recommended a flotation cost adjustment, which recommendation he withdrew in his rebuttal testimony.

Witness D'Ascendis Cross-Examination

On cross-examination, Aqua witness D'Ascendis testified he was aware that 99 percent of Aqua's customers were residential and that Aqua's systems were geographically diversified across North Carolina including Ashe County, the Hendersonville area, the Charlotte area, the Greensboro and the Winston-Salem areas, the Raleigh area, the Fayetteville area, and also the Atlantic Coast from New Hanover County to Carteret County. He testified Aqua has approximately 100,000 customers in North Carolina and that there is not a regulated water company in North Carolina anywhere near Aqua's size.

Aqua witness D'Ascendis testified that Public Staff D'Ascendis Cross Examination Exhibit 1 showed at the market close on September 7, 2018, as listed in the Morningstar investment publication, Aqua America's market capitalization was at \$6.65 Billion, which was greater than the combined market capitalizations of the next four largest water companies being American States Water, California Water, SJW Group, and Connecticut Water, which have a combined market capitalization totaling \$6.287 Billion. He further testified that SCANA Corporation (SCANA) had a market capitalization of \$5.22 Billion which is less than Aqua America's \$6.65 Billion, and that SCANA is the parent company and owner of 100% of the common stock of South Carolina Electric and Gas (SCE&G), and Public Service Company of North Carolina, Inc. (PSNC).

He also testified an investor could not buy stock in Aqua, and instead would buy the stock of Aqua America.

Aqua witness D'Ascendis testified on cross examination that Public Staff D'Ascendis Cross Examination 2 was his response to a Public Staff data request showing water and wastewater utility general rate cases in which he testified recommending a return on equity range or a specific return on equity. He testified in the United Utility Services Company general rate case in South Carolina with decision in December 2013, he recommended a ROE range of 10.45% to 11.45% which had a mid-point of 10.95%, and the Commission approved a 9.35% ROE which was 160 basis points below his mid-point.

He testified in the Carolina Water Service, Inc. general rate case in South Carolina with decision on December 22, 2015, he recommended an ROE range of 10.0% to 10.50% which had a mid-point of 10.25%, and the Commission approved an ROE of 9.34% which was 91 basis points below his mid-point. He further testified in the Aqua Illinois, Inc. general rate case in Illinois with decision on March 2, 2018, he recommended a specific ROE of 10.85%, and the Commission approved an ROE of 9.60%, which was 125 basis points below his recommendation.

Aqua witness D'Ascendis testified in the Middlesex Water Company general rate case in New Jersey with decision on March 6, 2018, he recommended a specific ROE of 10.70% and the Commission approved an ROE of 9.60%, which was 110 basis points below his recommendation. He testified that in the current Aqua Virginia, Inc. general rate case, Aqua Virginia recently agreed in a settlement

to a 9.25% ROE, which the Hearing Examiner accepted, Aqua witness D'Ascendis recommended a specific ROE of 10.60%, and the Hearing Examiner accepted 9.25% ROE was 135 basis points below his specific recommendation.

Aqua witness D'Ascendis testified that most of authorized ROEs on Public Staff D'Ascendis Direct Cross Examination Exhibit 2 were the result of settlements which the Commission approved. He testified there were only three general rate cases with litigated ROEs being: Columbia Water Company in Pennsylvania where in January 2014, with the Commission approved ROE of 9.75% being 160 basis points below his recommended specific ROE of 11.35%; Emporium Water Company in Pennsylvania where the Commission in January 2015, approved a 10.00% ROE, which was 105 basis points below his recommended specific ROE of 11.05%; and Carolina Water Service, Inc. in South Carolina where on May 26, 2018, the Commission approved ROE of 10.50% was within his range of 10.45% to 10.95%. He testified this South Carolina decision is the most recent litigated ROE and he considered it the most relevant.

Aqua witness D'Ascendis testified that Public Staff Direct Cross Examination Exhibit 3 is a RRA Water Advisory, S&P Global, dated July 27, 2018, which lists water utility rate case decisions in the years 2014 through 2017, and through June 30, 2018. He testified that in 2018 through June 30, 2018, the average approved ROE was 9.41%. He testified the four 2018 California ROE decisions have fully forecasted test years, full decoupling, and three year rate plans. He testified these California decisions dated March 22, 2018, were all **fully litigated**. The approved ROEs were: California America Water with 9.20%

approved ROE, California Water Service with 9.20% approved ROE, Golden State Water Co. with 8.90% approved ROE, and San Jose Water Co. with 8.90% approved ROE. He testified more relevant was the recent Duke Energy Carolinas case Docket No. E-7, Sub 1146 with a settlement approved 9.90% ROE.

Aqua witness D'Ascendis further testified in 2014 where the RRA Advisory reported thirteen Commission decisions with approved ROEs, none were 10% or above. He testified in 2015 where the RRA Advisory reported eleven Commission decisions with approved ROEs, only two were 10.0% or above, being Maryland American Water at 10.0% and Kona Water in Hawaii with 10.10% ROE. He testified in 2016 where RRA Advisory reported nine Commission decisions with approved ROEs, only Hawaii Water Service at 10.10% ROE, had an approved ROE at 10.0% or above. He testified in 2017 where RRA Advisory reported nine Commission decisions with approved ROEs, only Utilities, Inc. of Florida with a formula approved ROE of 10.40% and a 41.92% approved common equity capital structure, had an approved ROE at 10.0% or above.

Aqua witness D'Ascendis further testified on cross examination that the four California water utilities with the litigated March 22, 2018, 8.90% and 9.20% ROE decisions, and Middlesex Water with the March 24, 2018 decision, are companies included in his Utility Proxy Group, with Golden State Water being a subsidiary of American States Water.

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Aqua witness D'Ascendis testified that Public Staff Direct Cross Examination Exhibit 3 is a RRA Water Advisory, S&P Global, dated July 27, 2018, which lists water utility rate case decisions in the years 2014 through 2017, and through June 30, 2018. He testified that in 2018 through June 30, 2018, the average approved ROE was 9.41%. He testified the four 2018 California ROE decisions have fully forecasted test years, full decoupling, and three year rate plans. He testified these California decisions dated March 22, 2018, were all fully litigated. The approved ROEs were: California America Water with 9.20% approved ROE, California Water Service with 9.20% approved ROE, Golden State Water Co. with 8.90% approved ROE, and San Jose Water Co. with 8.90% approved ROE. He testified more relevant was the recent Duke Energy Carolinas case Docket No. E-7, Sub 1146 with a settlement approved 9.90% ROE.

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Aqua witness D'Ascendis further testified on cross examination that the four California water utilities with the litigated March 22, 2018, 8.90% and 9.20% ROE decisions, and Middlesex Water with the March 24, 2018 decision, are companies included in his Utility Proxy Group, with Golden State Water being a subsidiary of American States Water.

2. Discussion of Rate of Return Evidence and Conclusions

The Commission determines the appropriate rate of return on equity based upon the evidence and particular circumstances of each case. However, the Commission believes that the rate of return on equity trends and decisions by other regulatory authorities deserve some weight, as (1) they provide a check or additional perspective on the case-specific circumstances, and (2) the Company must compete with other regulated utilities in the capital markets, meaning that a rate of return on equity significantly lower than that approved for other utilities of comparable risk would undermine the Company's ability to raise necessary capital, while a rate of return on equity significantly higher than other utilities of comparable

risk would result in customers paying more than necessary. In this connection, the Public Staff D'Ascendis Cross Examination Exhibit No. 3.

RRA APPROVED ROEs

This RRA Water Advisory dated July 27, 2018, contains ROE decisions by the different state utilities commissions from January 2014 through June 30, 2018. The seven decisions in 2018 with approved ROEs average 9.41% ROE, and excluding the one South Carolina outlier decision of May 2, 2018, of 10.5% ROE, the average for the remaining six decisions is 9.23% ROE. The average approved ROEs have been declining since 2014. In 2014 there were thirteen decisions averaging 9.59% ROE; in 2015 there were eleven decisions averaging 9.76% ROE; in 2016 there were nine decisions averaging 9.71% ROE; in 2017 there were nine decisions averaging 9.56% ROE; and in 2018 there are seven decisions averaging 9.41% ROE, including the South Carolina outlier.

There were no approved ROEs at or above 10.0% in 2014; only two ROEs at or above 10.0% in 2015 being 10.10% in Hawaii and 10.0% in Maryland; only one at or above 10.0% in 2016 being 10.10% in Hawaii; and only one at or above 10.0% in 2017 being a 10.40% in Florida with a formula based ROE and with an approved equity capital structure of 41.92%.

Accordingly, the evidence presented concerning other authorized rates of return on equity, when put into proper context, lends substantial support to the Commission approved 9.2% rate of return on equity level.

3. Evidence of Impact of Changing Economic Conditions on Customers

As noted above, utility rates must be set within the constitutional constraints made clear by the United States Supreme Court in Bluefield and Hope. To fix rates that do not allow a utility to recover its costs, including the cost of equity capital, would be an unconstitutional taking. In assessing the impact of changing economic conditions on customers in setting a return on equity, the Commission must nonetheless provide the public utility with the opportunity, by sound management, to (1) produce a fair profit for its shareholders, in view of current economic conditions, (2) maintain its facilities and service, and (3) compete in the marketplace for capital. State ex rel. Utils. Comm'n v. General Telephone Co. of the Southeast, 281 N.C. 318, 370, 189 S.E.2d 705 (1972). As the Supreme Court held in that case, these factors constitute “the test of a fair rate of return” in Bluefield and Hope. Id.

a. Discussion and Conclusions Regarding Evidence Introduced During the Evidentiary Hearing

In this case, all parties had the opportunity to present the Commission with evidence concerning changing economic conditions as they affect customers. The testimony of witnesses D'Ascendis and Hinton, which the Commission finds entitled to substantial weight, addresses changing economic conditions.

As to the impact of changing economic conditions on Aqua's customers, Public Staff witness Hinton testified he reviewed information on the economic conditions in the areas served by Aqua, specifically, the 2014, 2015, and 2016 data on total personal income from the Bureau of Economic Analysis (BEA) and

the Development Tier Designations published by the North Carolina Department of Commerce for the counties in which Aqua's systems are located. The BEA data indicates that from 2014 to 2016, total personal income weighted by the number of water customers by county grew at a compound annual growth rate (CAGR) of 3.2%, which is slightly lower than the rate of 3.4% for the whole state.

Public Staff witness Hinton testified the North Carolina Department of Commerce annually ranks the state's 100 counties based on economic well-being and assigns each a Tier designation. The most distressed counties are rated a "1" and the most prosperous counties are rated a "3". The rankings examine several economic measures such as, household income, poverty rates, unemployment rates, population growth, and per capita property tax base. For 2017, the average Tier ranking that has been weighted by the number of water customers by county is 2.6. He testified both these economic measures indicate that there have been improvement in the economic conditions for Aqua's service area relative to the 2013 rate case.

Aqua witness D'Ascendis testified on economic conditions in North Carolina that he reviewed. He testified he reviewed: unemployment rates from the United States, North Carolina, and the counties comprising Aqua's service territory; the growth in Gross National Product ("GDP") in both the United States and North Carolina; median household income in the United States and in North Carolina; and national income and consumption trends.

He testified that the rate of unemployment has fallen substantially in North Carolina and the U.S. since late 2009 and early 2010, when the rates peaked at

10.00% and 11.30%, respectively. He testified by December 2017, the unemployment rate had fallen to less than one-half of those peak levels: 4.10% nationally; and 4.50% in North Carolina.

He testified he was also able to review (seasonally unadjusted) unemployment rates in the counties served by Aqua. At its peak, which occurred in late 2009 into early 2010, the unemployment rate in those counties reached 12.52% (52 basis points higher than the State-wide average); by December 2017 it had fallen to 4.48% (8 basis points higher than the State-wide average).

Aqua witness D'Ascendis testified for real Gross Domestic Product growth, there also has been a relatively strong correlation between North Carolina and the national economy (approximately 69%). Since the financial crisis, the national rate of growth at times (during portions of 2010 and 2012) outpaced North Carolina. He testified since the third quarter of 2015, however, North Carolina has consistently exceeded the national growth rate.

Aqua witness D'Ascendis testified as to median household income, the correlation between North Carolina and the U.S. is relatively strong (approximately 88% from 2005 through 2015). Since 2009 (that is, the years subsequent to the financial crisis), median household income in North Carolina has grown at a faster annual rate than the national median income (3.62% vs. 2.47%).

Aqua witness D'Ascendis summarized stating in the Commission's 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. He testified 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. He testified 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; and median household income also has grown faster in North Carolina than the rest of the Country, and remains strongly correlated with national levels.

b. Evidence Introduced During Public Hearings and Further Conclusions

The Commission's review also includes consideration of the evidence presented during the public hearings by public witnesses, almost all of whom presently are customers of Aqua. The hearings provided twenty-eight witnesses the opportunity to be heard regarding their respective positions on Aqua's application to increase rates. The Commission held four evening hearings throughout Aqua's North Carolina service territory to receive public testimony. The testimony presented at the hearings illustrates the difficult economic conditions facing many North Carolina citizens. The Commission accepts as credible, probative, and entitled to substantial weight the testimony of the public witnesses.

c. Commission's Decision Setting Rate of Return and Approving Rate Increase Takes Into Account and Ameliorates the Impact of Current Economic Conditions on Customers

As noted above, the Commission's duty under N.C. Gen. Stat. § 62-133 is to set rates as low as reasonably possible without impairing the Company's ability to

raise the capital needed to provide reliable water and wastewater service and recover its cost of providing service. The Commission is especially mindful of this duty in light of the evidence in this case concerning the impact of current economic conditions on customers.

Chapter 62 in general, and N.C. Gen. Stat. § 62-133 in particular, set forth an elaborate formula the Commission must employ in establishing rates. The rate of return on cost of property element of the formula in N.C. Gen. Stat. § 62-133(b)(4) is a significant, but not independent one. Each element of the formula must be analyzed to determine the utility's cost of service and revenue requirement. The Commission must make many subjective Decisions with respect to each element in the formula in establishing the rates it approves in a general rate case. The Commission must approve accounting and pro forma adjustments to comply with N.C. Gen. Stat. § 62-133(b)(3). The Commission must approve depreciation rates pursuant to N.C. Gen. Stat. § 62-133(b)(1). The Decisions the Commission makes in each of these subjective areas have multiple and varied impacts on the Decisions it makes elsewhere in establishing rates, such as its Decision on rate of return on equity.

Economic conditions existing during the test year, at the time of the public hearings, and at the date of this Commission Order affect not only the ability of Aqua's consumers to pay water and wastewater utility rates, but also the ability of Aqua to earn the authorized rate of return during the period rates will be in effect. Pursuant to N.C. Gen. Stat. § 62-133, rates in North Carolina are set based on a

modified historic test period.⁴⁴ A component of cost of service as important as return on investment is test year revenues.⁴⁵ The higher the level of test year revenues the lower the need for a rate increase, all else remaining equal. Historically, and in this case, test year revenues are established through resort to regression analysis, using historic rates of revenue growth or decline to determine end of test year revenues.

When costs and expenses grow at a faster pace than revenues during the period when rates will be in effect, the utility will experience a decline in its realized rate of return on investment to a level below its authorized rate of return. Differences exist between the authorized return and the earned, or realized, return. Components of the cost of service must be paid from the rates the utility charges before the equity investors are paid their return on equity. Operating and administrative expenses must be paid, depreciation must be funded, taxes must be paid, and the utility must pay interest on the debt it incurs. To the extent revenues are insufficient to cover the entire cost of service, the shortfall reduces the return to the equity investor, last in line to be paid. When this occurs, the utility's realized, or earned, return is less than the authorized return.

This phenomenon, caused by incurrence of higher costs prior to the implementation of new rates to recover those higher costs, is commonly referred to as regulatory lag. Just as the Commission confronts constitutional and statutory restrictions in making discrete decrements to rate of return on equity to mitigate the impact of rates on consumers, it also confronts statutory constraints on its

⁴⁴ N.C. Gen. Stat. § 62-133(c).

⁴⁵ N.C. Gen. Stat. § 62-133(b)(3).

ability to adjust test year revenues to mitigate for regulatory lag. However, the WSIC and SSIC legislation Gen. Stat. § 62-133.12 and Commission Rules R7 - - 39 and R10 - -26, have substantially mitigated the regulatory lag for Aqua. The Commission, in its expert experience and judgment and based on evidence in the record, is aware of the effects of regulatory lag in the existing economic environment. However, just as the Commission is constrained to address difficult economic times on customers' ability to pay for service by establishing a lower rate of return on equity in isolation from the many subjective determinations that must be made in a general rate case, it likewise does not address the effect of regulatory lag on the Company by establishing a higher rate of return on equity. Instead, in setting the rate of return, the Commission considers both of these negative impacts in its ultimate decision fixing Aqua's rates. The Commission keeps all factors affected by current economic conditions in mind in the many subjective decisions it makes in establishing rates. In doing so in the case at hand, the Commission approved the 9.2% rate of return on equity in the context of weighing and balancing numerous factors and making many subjective decisions. When these decisions are viewed as a whole, including the decision to establish the rate of return on equity at 9.2%, the Commission's overall decision fixing rates in this general rate case results in lower rates to consumers in the existing economic environment.

Consumers pay rates, a charge in dollars per 1,000 gallons for the water they consume and a monthly flat rate for residential wastewater customers. Investors are compensated by earning a return on the capital they invest in the business. Consumers do not pay a rate of return on equity.

All of the scores of adjustments the Commission approves reduce the revenues to be recovered from ratepayers and the return to be paid to equity investors. Some adjustments reduce the authorized rate of return on investment financed by equity investors. The noted adjustments are made solely to reduce rates and provide rate stability to consumers (and return to equity investors) to recognize the difficulty for consumers to pay in the current economic environment. While the equity investor's cost was calculated by resort to a rate of return on equity of 9.2% instead of 10.80%, this is only one approved adjustment that reduced ratepayer responsibility and equity investor reward. Many other adjustments reduced the dollars the investors actually have the opportunity to receive. Therefore, nearly all of these other adjustments reduce ratepayer responsibility and equity investor returns in compliance with the Commission's responsibility to establish rates as low as reasonably permissible without transgressing constitutional constraints.

For example, to the extent the Commission makes downward adjustments to rate base, or disallows test year expenses, or increases test year revenues, or reduces the equity capital structure component, the Commission reduces the rates consumers pay during the future period when rates will be in effect. Because the utility's investors' compensation for the provision of service to consumers takes the form of return on investment, downward adjustments to rate base or disallowances of test year expenses or increases to test year revenues, or reduction in the equity capital structure component, reduce investors' return on investment irrespective of its determination of rate of return on equity.

The rate base, expenses, and revenue examples listed above are instances where the Commission makes Decisions in each general rate case, including the present case, that influence the Commission's determination on rate of return on equity and cost of service and the revenue requirement. The Commission always endeavors to comply with the North Carolina Supreme Court's requirements that it "fix rates as low as may be reasonably consistent" with U.S. Constitutional requirements irrespective of economic conditions in which ratepayers find themselves. While compliance with these requirements may have been implicit and, the Commission reasonably assumed, self-evident as shown above, the Commission makes them explicit in this case to comply with the Supreme Court requirements of Cooper I.

Based on the changing economic conditions and their effects on Aqua's customers, the Commission recognizes the financial difficulty that the increase in Aqua's rates will create for some of Aqua's customers, especially low-income customers. As shown by the evidence, relatively small changes in the rate of return on equity have a substantial impact on a utility's base rates. Therefore, the Commission has carefully considered the changing economic conditions and their effects on Aqua's customers in reaching its decision regarding Aqua's approved rate of return on equity. The Commission also recognizes that the Company is investing significant sums in system improvements to serve its customers, thus requiring the Company to maintain its creditworthiness in order to compete for large sums of capital on reasonable terms. The Commission must weigh the impact of changing economic conditions on Aqua's customers against the benefits

that those customers derive from the Company's ability to provide safe, adequate, and reliable water and wastewater service. Safe, adequate, and reliable water and wastewater service is essential to the well-being of Aqua's customers.

The Commission finds and concludes that these investments by the Company provide significant benefits to Aqua's customers. The Commission concludes that the return on equity approved by the Commission in this proceeding appropriately balances the benefits received by Aqua's customers from Aqua's provision of safe, adequate, and reliable water and wastewater service with the difficulties that some of Aqua's customers will experience in paying Aqua's increased rates.

The Commission in every case seeks to comply with the North Carolina Supreme Court mandate that the Commission establish rates as low as possible within constitutional limits. The scores of adjustments the Commission approves in this case comply with that mandate. Nearly all of them reduced the requested return on equity and benefit consumers' ability to pay their bills in this economic environment.

The Commission has carefully examined the Company's Application and supporting testimony, exhibits and Form W-1 filings seeking to justify this increase. The Public Staff represents the using and consuming public, including those having difficulty paying their bills. Public Staff representatives attended all of the hearings held across the state to receive customers' testimony. The Public Staff has a staff of expert engineers, economists, and accountants who investigate and audit the Company's filings. The Public Staff must recommend rates consumers

should pay and the return on investment equity investors should receive. The Public Staff considers all factors included in cost of service.

Summary and Conclusions on the Rate of Return on Equity

The Commission has carefully evaluated the return on equity testimony of Aqua witness D'Ascendis and Public Staff witness Hinton. The Commission finds that the DCF analyses and risk premium testimony of Public Staff witness Hinton, and the DCF testimony of Aqua witness D'Ascendis are credible, probative, and are entitled to substantial weight.

Conclusion ROE

Public Staff witness Hinton performed his DCF analysis on his proxy group of six water companies, all of which were included in the Utility Proxy Group of Aqua witness D'Ascendis. Witness Hinton demonstrated the comparability of investing in Aqua to investing in other water companies through his evaluation of the Value Line Safety Rank, which is defined as a measure of the total risk of a stock. The Safety Rank is calculated by averaging two variables: (1) the stock's index of price stability; and (2) the Financial Strength rating of the company. He also reviewed the beta coefficients, the S&P Common Stock Ratings, and the S&P's Bond Ratings.

Witness Hinton evaluated the growth rates of his proxy group for EPS, DPS and BPS historically over the past ten and five years, in addition to the forecasted five-year EPS growth rates as reported in Value Line and Yahoo Finance. The Commission concludes that both historical and projected growth rates are probative and both should be carefully analyzed in the DCF. The Commission

concludes that investors evaluate many factors and not only projected EPS growth rates as testified by Aqua witness D'Ascendis. The Commission concludes that Public Staff witness Hinton's DCF with a midpoint of 8.7% ROE is credible, probative, and entitled to substantial weight, and when averaged with witness Hinton's 9.7% ROE from his Risk Premium analysis results in a 9.2% ROE which the Commission finds is just and reasonable.

The Commission finds that witness Hinton's Risk Premium analysis is credible, probative, and entitled to substantial weight. The Commission concludes that using approved ROEs from many different Commission orders in the period 2006 to date in 2018, is a reasonably good estimate of the cost of equity for a Risk Premium analysis, as these returns on equity are generally arrived at through lengthy investigations by various parties with opposing views. The Commission finds that witness Hinton's Risk Premium using Moody's A-rated bond yields from 2006 through July 31, 2018, corresponding to the same year approved ROEs to calculate the Risk Premium is probative and credible. In comparison, projected bond yields as utilized by Aqua witness D'Ascendis are highly speculative and provide little probative value.

The Commission finds as credible, probative and entitled to substantial weight the testimony of Public Staff witness Hinton that the continued low rates of inflation and expectations of future low inflation rates have contributed to continued lower long-term interest rates. According to Moody's Bond Survey, yields on long-term "A" rated public utility bonds as of July 2018, were 4.27% as compared to 4.63% for January 2014, which is the time of filing of the Public Staff and Company

Stipulation in the last Aqua rate case in Docket No. W-218, Sub 363, resulting in a thirty-six basis point decrease. The overall decline in long-term interest rates over the last seven years is shown in Exhibit JRH-1. As such, the relative decrease in long-term bond yields since the last Aqua rate case is not indicative of an increase in financing costs for utilities; rather it supports lowering of financing costs for long-term capital.

The Commission finds as credible, probative and entitled to substantial weight Mr. Hinton's testimony as to the risk in relying on predictions of rising interest rates for rate cases. He testified that, in the testimony of Aqua witness Ahern in the 2013 Aqua rate case Docket No. W-218, Sub 363, she identified several points of forecasts of thirty-year Treasury Bond yields that were predicted to rise to 4.7% in 2016, and 5.2% in 2017. However, as illustrated in the thirty-year U.S. Treasury Bond graph on page seventeen of Mr. Hinton's direct testimony which showed in 2016, the range was approximately 2.50% to 3.10%, and in 2017, the range was approximately 2.25% to 3.10%. He testified the forecasts used by Ms. Ahern significantly over-estimated actual interest rates for 30-year U.S. Treasury Bonds. (T 6 p 175)

The Commission concludes that Aqua witness D'Ascendis' DCF analysis for his Utility Proxy Group is credible, probative, and entitled to substantial weight, although the Commission as previously stated concludes that the DCF growth rates should not be based solely on analysts projected five-year growth in earnings per share.

The Commission has carefully evaluated Mr. D'Ascendis' RPM, CAPM, and Cost of Equity Models Applied to Non-Price Regulated Companies and gives no weight to these analyses. The results of each of these models are outliers. The RPM at 11.07% is 151 basis points above the RRA Water Advisory dated July 27, 2018, Public Staff D'Ascendis Cross Exam Exhibit 3, average of 9.56% approved ROEs for 2017, and 166 basis points above the 9.41% approved ROEs average in 2018, which includes the South Carolina 10.5% ROE outlier. Of the 49 RRA reported ROE decisions from 2014 through June 30, 2018, only five were at 10.0% or above, with the two highest being the 10.40% Florida formula approved ROE with a 41.92% approved equity capital structure dated September 25, 2017, and the South Carolina 10.50% ROE approved on May 2, 2018. In addition the Commission gives no weight to the predicted future bond yields in Mr. D'Ascendis' RPM, as they are highly speculative.

Mr. D'Ascendis' CAPM at 10.39 is also an outlier being 83 basis points above the RRA 2017 ROE average and 98 basis points above the RRA 2018 average of 9.41%. In addition, the Commission gives no weight to the predicted future bond yields in witness D'Ascendis' CAPM, as they are highly speculative.

Mr. D'Ascendis' cost of equity models applied to Non-Price Regulated Companies with his 11.57% ROE is an extreme outlier being 201 basis points above the 2017 RRA reported average and 216 basis points above the 2018 RRA average of 9.41%. In addition, the Commission finds the Non-Price Regulated Companies, which Mr. D'Ascendis asserts are comparable, are not comparable to the Utility Proxy Group for purposes of risk comparison. Non-utility earnings are

dependent on a company's ability to price products or services at rates a buyer is willing to pay in a competitive market. Regulated utility earnings are limited by a regulatory return on rate base in a monopolistic market. While a non-regulated company faces the possibility of loss of business (or bankruptcy) to any number of competitors, a regulated utility in a monopolistic market faces the possibility of under-earning its allowed return but regulatory mechanism largely insulates it from factors beyond its control. This difference in the nature of the risks faced by regulated and non-regulated companies is an additional reason to reject Mr. D'Ascendis' financial modeling results for the Non-Price Regulated Companies.

The Commission after carefully evaluating Public Staff witness Hinton's DCF at 8.70%, his Risk Premium at 9.70%, and Aqua witness D'Ascendis' DCF at 8.95% concludes that a 9.2% ROE in this proceeding is supported by credible and probative evidence entitled to substantial weight, and is just and reasonable. The Commission has also considered that the WSIC/SSIC mechanisms help reduce regulatory lag.

The Commission concludes that the RRA Water Advisory stating other recent authorized rates of return on equity as a check on reasonableness, lends substantial support to the decreasing trend in approved ROEs and the Commission approved 9.2% ROE in this proceeding. In 2016, the average approved ROE was 9.70%; in 2017, the average ROE was 9.56%; in 2018, the average ROE is 9.41%; and in 2018, the average ROE is 9.23% excluding the South Carolina 10.4% ROE. As shown on page six of the RRA Water Advisory, in 2017, there were approved

ROEs of 9.00% and 9.10% in New York, 9.25% in Virginia, and in 2018, two 9.20% and two 8.90% ROEs in California.

The Commission notes further that its approval of a rate of return on equity at the level of 9.2% or for that matter at any level, is not a guarantee to the Company that it will earn a rate of return on equity at that level. Rather, as North Carolina law requires, setting the rate of return on equity at this level merely affords Aqua the opportunity to achieve such a return. The Commission finds and concludes, based upon all the evidence presented, that the rate of return on equity provided for herein will indeed afford the Company the opportunity to earn a reasonable and sufficient return for its shareholders while at the same time producing rates that are just and reasonable to its customers.

CAPITAL STRUCTURE

Aqua witness D'Ascendis recommended the use of a ratemaking capital structure consisting of 50.0% long-term debt and 50.0% common equity. He testified this capital structure is based on a test year capital structure for Aqua, ending September 30, 2017. He testified a capital structure consisting of 50.0% long-term debt and 50.0% total equity is appropriate for ratemaking purposes for Aqua in the current proceeding because it is comparable, but conservative, to the average capital structure ratios (based on total permanent capital) maintained by the water companies in his Utility Proxy Group on whose market data he based his recommended common equity cost rate.

Public Staff witness Hinton also testified in recommending a 50.0% long-term debt and 50.0% common equity capital structure. The Partial Stipulation also

supports a 50.0% long-term debt, 50.0% common equity capital structure. The other party presented evidence as to a different capital structure.

Finally, the Commission has also carefully considered changing economic conditions in connection with its capital structure determination, including their effect upon the Company's customers. As discussed in the rate of return on equity section above, which is incorporated herein, the public witnesses in this case provided testimony concerning economic stress they are currently experiencing and have experienced for the last several years. The Commission accepts as credible and probative this testimony.

Accordingly, the Commission finds and concludes that the recommended capital structure of fifty percent common equity and fifty percent long-term debt is just and reasonable to all parties in light of all the evidence presented.

Cost of Debt

In its Application, the Company proposed a long-term debt cost of 4.76%. The Stipulation provides for a 4.63% cost of debt. The Commission finds for the reasons set forth herein that a 4.63% cost of debt is just and reasonable.

Public Staff witness Hinton, in his supplemental testimony, supported the embedded cost of Aqua's long-term debt on June 30, 2018, of 4.63%. The Stipulation's 4.63% debt cost gives customers the benefit of reductions in Aqua's lower cost of debt after the end of the test year.

No intervenor offered any evidence supporting a debt cost below 4.63%. The Commission, therefore, finds and concludes that the use of a debt cost of 4.63% is just and reasonable to all parties based upon all the evidence presented.

EVIDENCE AND CONCLUSION FOR FINDING OF FACT NO. 94

The following schedules summarize the gross revenue and rate of return that the Company should have a reasonable opportunity to achieve based on the increases and decreases in revenues approved in this Order for each rate entity. These schedules, illustrating the Company's gross revenue requirements, incorporate the adjustments found appropriate by the Commission in this Order.

SCHEDULE I

Aqua North Carolina, Inc.
Docket No. W-218, Sub 497
Net Operating Income for a Return
For the Twelve Months Ended September 30, 2017
Combined Operations

	Present <u>Rates</u>	Increase <u>Approved</u>	After Approved <u>Increase</u>
Operating Revenues:			
Service revenues	\$55,496,957	\$1,277,571	\$56,774,528
Late payment fees	114,830	2,558	117,388
Miscellaneous revenues	1,355,499	0	1,355,499
Uncollectibles & abatements	<u>(414,248)</u>	<u>(11,715)</u>	<u>(425,963)</u>
Total operating revenues	<u>56,553,038</u>	<u>1,268,414</u>	<u>57,821,452</u>
Operating Revenue Deductions:			
Salaries & wages	10,048,145	0	10,048,145
Employee pensions & benefits	3,021,650	0	3,021,650
Purchased water/sewer treatment	2,316,616	0	2,316,616
Sludge removal	559,382	0	559,382
Purchased power	3,570,667	0	3,570,667
Fuel for power production	26,809	0	26,809
Chemicals	1,521,967	0	1,521,967
Materials & supplies	505,720	0	505,720
Testing fees	902,172	0	902,172
Transportation	919,149	0	919,149
Contractual services-engineering	2,750	0	2,750
Contractual services-accounting	188,101	0	188,101
Contractual services-legal	196,144	0	196,144
Contractual services-other	4,199,984	0	4,199,984
Rent	309,942	0	309,942
Insurance	650,674	0	650,674
Regulatory commission expense	92,562	0	92,562
Miscellaneous expense	1,444,151	0	1,444,151
Interest on customer deposits	32,388	0	32,388
Annualization & consumption adjustments	<u>127,978</u>	<u>0</u>	<u>127,978</u>
Total O&M and G&A expense	30,636,951	0	30,636,951
Depreciation & amortization expense	9,986,078	0	9,986,078
Property taxes	635,463	0	635,463
Payroll taxes	788,065	0	788,065
Other taxes	308,886	0	308,886
Section 338(h) adjustment	(20,024)	0	(20,024)
Regulatory fee	79,174	1,776	80,950
Deferred income tax	(120,648)	0	(120,648)
State income tax	295,538	36,663	332,201
Federal income tax	<u>2,006,711</u>	<u>248,935</u>	<u>2,255,646</u>
Total operating revenue deductions	<u>44,596,194</u>	<u>287,374</u>	<u>44,883,568</u>
Net operating income for return	<u>\$11,956,844</u>	<u>\$981,040</u>	<u>\$12,937,884</u>

SCHEDULE II

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Original Cost Rate Base

For the Twelve Months Ended September 30, 2017

Combined Operations

Plant in service	\$488,061,240
Accumulated depreciation	(155,018,156)
Contributions in aid of construction	(194,983,782)
Accumulated amortization of CIAC	70,516,485
Acquisition adjustments	2,055,735
Accum. amort. of acquisition adjustments	1,040,444
Advances for construction	<u>(4,467,841)</u>
Net plant in service	207,204,125
Customer deposits	(379,445)
Unclaimed refunds & cost-free capital	(193,255)
Accumulated deferred income taxes	(24,791,481)
Materials and supplies inventory	2,405,967
Excess capacity adjustment	(1,589,551)
Working capital allowance	<u>4,434,355</u>
Original cost rate base	<u>\$187,090,715</u>

Rates of return:

Present	6.39%
Approved	6.92%

SCHEDULE III

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Statement of Capitalization and Related Costs

For the Twelve Months Ended September 30, 2017

Combined Operations

	<u>Ratio %</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost %</u>	<u>Net Operating Income</u>
PRESENT RATES				
Long-Term Debt	50.00	\$93,545,357	4.63	\$4,331,150
Common Equity	<u>50.00</u>	<u>93,545,358</u>	8.15	<u>7,625,694</u>
Total	<u>100.00</u>	<u>\$187,090,715</u>		<u>\$11,956,844</u>
APPROVED RATES				
Long-Term Debt	50.00	\$93,545,357	4.63	\$4,331,150
Common Equity	<u>50.00</u>	<u>93,545,358</u>	9.20	<u>8,606,734</u>
Total	<u>100.00</u>	<u>\$187,090,715</u>		<u>\$12,937,884</u>

SCHEDULE I-A

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Net Operating Income for a Return

For the Twelve Months Ended September 30, 2017

Aqua Water Operations

	Present <u>Rates</u>	Decrease <u>Approved</u>	After Approved <u>Decrease</u>
Operating Revenues:			
Service revenues	\$34,566,184	(\$223,113)	\$34,343,071
Late payment fees	69,132	(446)	68,686
Miscellaneous revenues	766,595	0	766,595
Uncollectibles & abatements	<u>(214,739)</u>	<u>1,386</u>	<u>(213,353)</u>
Total operating revenues	<u>35,187,172</u>	<u>(222,173)</u>	<u>34,964,999</u>
Operating Revenue Deductions:			
Salaries & wages	6,758,185	0	6,758,185
Employee pensions & benefits	2,010,681	0	2,010,681
Purchased water	1,600,928	0	1,600,928
Purchased power	2,164,209	0	2,164,209
Fuel for power production	935	0	935
Chemicals	467,003	0	467,003
Materials & supplies	341,233	0	341,233
Testing fees	584,292	0	584,292
Transportation	618,442	0	618,442
Contractual services-accounting	117,906	0	117,906
Contractual services-legal	122,841	0	122,841
Contractual services-other	1,917,590	0	1,917,590
Rent	208,095	0	208,095
Insurance	435,950	0	435,950
Regulatory commission expense	58,212	0	58,212
Miscellaneous expense	910,027	0	910,027
Interest on customer deposits	25,111	0	25,111
Annualization & consumption adjustments	<u>29,398</u>	<u>0</u>	<u>29,398</u>
Total O&M and G&A expense	18,371,038	0	18,371,038
Depreciation & amortization expense	6,210,300	0	6,210,300
Property taxes	492,594	0	492,594
Payroll taxes	495,645	0	495,645
Other taxes	193,611	0	193,611
Section 338(h) adjustment	(10,817)	0	(10,817)
Regulatory fee	49,262	(311)	48,951
Deferred income tax	(77,166)	0	(77,166)
State income tax	204,213	(6,656)	197,557
Federal income tax	<u>1,386,609</u>	<u>(45,194)</u>	<u>1,341,415</u>
Total operating revenue deductions	<u>27,315,288</u>	<u>(52,161)</u>	<u>27,263,127</u>
Net operating income for return	<u>\$7,871,884</u>	<u>(\$170,012)</u>	<u>\$7,701,872</u>

SCHEDULE II-A

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Original Cost Rate Base

For the Twelve Months Ended September 30, 2017

Aqua Water Operations

Plant in service	\$271,813,951
Accumulated depreciation	(93,258,549)
Contributions in aid of construction	(93,199,142)
Accumulated amortization of CIAC	33,674,909
Acquisition adjustments	6,089,670
Accum. amort. of acquisition adjustments	(1,871,736)
Advances for construction	<u>(1,246,720)</u>
Net plant in service	122,002,384
Customer deposits	(295,674)
Unclaimed refunds & cost-free capital	(46,582)
Accumulated deferred income taxes	(15,092,828)
Materials and supplies inventory	2,038,514
Excess capacity adjustment	0
Working capital allowance	<u>2,773,362</u>
Original cost rate base	<u>\$111,379,176</u>

Rates of return:

Present	7.07%
Approved	6.92%

SCHEDULE III-A

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Statement of Capitalization and Related Costs

For the Twelve Months Ended September 30, 2017

Aqua Water Operations

	<u>Ratio %</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost %</u>	<u>Net Operating Income</u>
PRESENT RATES				
Long-Term Debt	50.00	\$55,689,588	4.63	\$2,578,428
Common Equity	<u>50.00</u>	<u>55,689,588</u>	9.51	<u>5,293,456</u>
Total	<u>100.00</u>	<u>\$111,379,176</u>		<u>\$7,871,884</u>
APPROVED RATES				
Long-Term Debt	50.00	\$55,689,588	4.63	\$2,578,428
Common Equity	<u>50.00</u>	<u>55,689,588</u>	9.20	<u>5,123,442</u>
Total	<u>100.00</u>	<u>\$111,379,176</u>		<u>\$7,701,870</u>

SCHEDULE I-B

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Net Operating Income for a Return

For the Twelve Months Ended September 30, 2017

Aqua Sewer Operations

	Present <u>Rates</u>	Increase <u>Approved</u>	After Approved <u>Increase</u>
Operating Revenues:			
Service revenues	\$13,459,559	\$592,184	\$14,051,743
Late payment fees	21,535	948	22,483
Miscellaneous revenues	123,377	0	123,377
Uncollectibles & abatements	<u>(55,272)</u>	<u>(2,432)</u>	<u>(57,704)</u>
Total operating revenues	<u>13,549,199</u>	<u>590,700</u>	<u>14,139,899</u>
Operating Revenue Deductions:			
Salaries & wages	2,291,496	0	2,291,496
Employee pensions & benefits	686,348	0	686,348
Purchased sewer treatment	440,871	0	440,871
Sludge removal	470,173	0	470,173
Purchased power	1,043,919	0	1,043,919
Fuel for power production	23,053	0	23,053
Chemicals	589,467	0	589,467
Materials & supplies	116,995	0	116,995
Testing fees	251,311	0	251,311
Transportation	212,266	0	212,266
Contractual services-accounting	29,299	0	29,299
Contractual services-legal	30,364	0	30,364
Contractual services-other	1,321,337	0	1,321,337
Rent	52,743	0	52,743
Insurance	149,653	0	149,653
Advertising	555	0	555
Regulatory commission expense	14,551	0	14,551
Miscellaneous expense	311,071	0	311,071
Interest on customer deposits	1,007	0	1,007
Annualization & consumption adjustments	<u>44,955</u>	<u>0</u>	<u>44,955</u>
Total O&M and G&A expense	8,081,434	0	8,081,434
Depreciation & amortization expense	2,241,073	0	2,241,073
Property taxes	23,018	0	23,018
Payroll taxes	123,884	0	123,884
Other taxes	48,126	0	48,126
Section 338(h) adjustment	(5,914)	0	(5,914)
Regulatory fee	18,969	827	19,796
Deferred income tax	(30,751)	0	(30,751)
State income tax	60,094	17,696	77,790
Federal income tax	<u>408,040</u>	<u>120,157</u>	<u>528,197</u>
Total operating revenue deductions	<u>10,967,973</u>	<u>138,680</u>	<u>11,106,653</u>
Net operating income for return	<u>\$2,581,226</u>	<u>\$452,020</u>	<u>\$3,033,246</u>

SCHEDULE II-B

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Original Cost Rate Base

For the Twelve Months Ended September 30, 2017

Aqua Sewer Operations

Plant in service	\$150,401,694
Accumulated depreciation	(43,120,425)
Contributions in aid of construction	(79,282,761)
Accumulated amortization of CIAC	27,829,878
Acquisition adjustments	(4,002,509)
Accum. amort. of acquisition adjustments	2,882,669
Advances for construction	<u>(3,388,691)</u>
Net plant in service	51,319,855
Customer deposits	(11,194)
Unclaimed refunds & cost-free capital	(6,342)
Accumulated deferred income taxes	(7,139,859)
Materials and supplies inventory	265,709
Excess capacity adjustment	(1,589,551)
Working capital allowance	<u>1,026,070</u>
Original cost rate base	<u>\$43,864,688</u>

Rates of return:

Present	5.89%
Approved	6.92%

SCHEDULE III-B

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Statement of Capitalization and Related Costs

For the Twelve Months Ended September 30, 2017

Aqua Sewer Operations

	<u>Ratio %</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost %</u>	<u>Net Operating Income</u>
PRESENT RATES				
Long-Term Debt	50.00	\$21,932,344	4.63	\$1,015,468
Common Equity	<u>50.00</u>	<u>21,932,344</u>	7.14	<u>1,565,758</u>
Total	<u>100.00</u>	<u>\$43,864,688</u>		<u>\$2,581,226</u>
APPROVED RATES				
Long-Term Debt	50.00	\$21,932,344	4.63	\$1,015,468
Common Equity	<u>50.00</u>	<u>21,932,344</u>	9.20	<u>2,017,776</u>
Total	<u>100.00</u>	<u>\$43,864,688</u>		<u>\$3,033,244</u>

SCHEDULE I-C

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Net Operating Income for a Return

For the Twelve Months Ended September 30, 2017

Fairways Water Operations

	Present <u>Rates</u>	Decrease <u>Approved</u>	After Approved <u>Decrease</u>
Operating Revenues:			
Service revenues	\$1,084,684	(\$32,962)	\$1,051,722
Late payment fees	2,386	(72)	2,314
Miscellaneous revenues	92,938	0	92,938
Uncollectibles & abatements	<u>(5,218)</u>	<u>159</u>	<u>(5,059)</u>
Total operating revenues	<u>1,174,790</u>	<u>(32,875)</u>	<u>1,141,915</u>
Operating Revenue Deductions:			
Salaries & wages	193,325	0	193,325
Employee pensions & benefits	57,183	0	57,183
Purchased water	0	0	0
Purchased power	59,453	0	59,453
Fuel for power production	1,474	0	1,474
Chemicals	20,977	0	20,977
Materials & supplies	5,133	0	5,133
Testing fees	10,165	0	10,165
Transportation	15,976	0	15,976
Contractual services-accounting	8,207	0	8,207
Contractual services-legal	8,473	0	8,473
Contractual services-other	145,938	0	145,938
Rent	13,923	0	13,923
Insurance	13,015	0	13,015
Regulatory commission expense	4,137	0	4,137
Miscellaneous expense	43,968	0	43,968
Interest on customer deposits	642	0	642
Annualization & consumption adjustments	<u>11,993</u>	<u>0</u>	<u>11,993</u>
Total O&M and G&A expense	613,982	0	613,982
Depreciation & amortization expense	179,796	0	179,796
Property taxes	28,236	0	28,236
Payroll taxes	35,237	0	35,237
Other taxes	13,482	0	13,482
Section 338(h) adjustment	0	0	0
Regulatory fee	1,645	(46)	1,599
Deferred income tax	(1,384)	0	(1,384)
State income tax	6,806	(984)	5,822
Federal income tax	<u>46,216</u>	<u>(6,688)</u>	<u>39,528</u>
Total operating revenue deductions	<u>924,016</u>	<u>(7,718)</u>	<u>916,298</u>
Net operating income for return	<u>\$250,774</u>	<u>(\$25,157)</u>	<u>\$225,617</u>

SCHEDULE II-C

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Original Cost Rate Base

For the Twelve Months Ended September 30, 2017

Fairways Water Operations

Plant in service	\$12,051,221
Accumulated depreciation	(3,301,424)
Contributions in aid of construction	(7,430,398)
Accumulated amortization of CIAC	2,071,911
Acquisition adjustments	0
Accum. amort. of acquisition adjustments	0
Advances for construction	<u>60,570</u>
Net plant in service	3,451,880
Customer deposits	(7,436)
Unclaimed refunds & cost-free capital	(7,339)
Accumulated deferred income taxes	(286,910)
Materials and supplies inventory	0
Excess capacity adjustment	0
Working capital allowance	<u>112,529</u>
Original cost rate base	<u><u>\$3,262,724</u></u>

Rates of return:

Present	7.69%
Approved	6.92%

SCHEDULE III-C

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Statement of Capitalization and Related Costs

For the Twelve Months Ended September 30, 2017

Fairways Water Operations

	<u>Ratio %</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost %</u>	<u>Net Operating Income</u>
PRESENT RATES				
Long-Term Debt	50.00	\$1,631,362	4.63	\$75,532
Common Equity	<u>50.00</u>	<u>1,631,362</u>	10.74	<u>175,242</u>
Total	<u>100.00</u>	<u>\$3,262,724</u>		<u>\$250,774</u>
APPROVED RATES				
Long-Term Debt	50.00	\$1,631,362	4.63	\$75,532
Common Equity	<u>50.00</u>	<u>1,631,362</u>	9.20	<u>150,085</u>
Total	<u>100.00</u>	<u>\$3,262,724</u>		<u>\$225,617</u>

SCHEDULE I-D

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Net Operating Income for a Return

For the Twelve Months Ended September 30, 2017

Fairways Sewer Operations

	Present <u>Rates</u>	Increase <u>Approved</u>	After Approved <u>Increase</u>
Operating Revenues:			
Service revenues	\$1,360,925	\$671,327	\$2,032,252
Late payment fees	2,177	1,075	3,252
Miscellaneous revenues	340	0	340
Uncollectibles & abatements	<u>(7,633)</u>	<u>(3,766)</u>	<u>(11,399)</u>
Total operating revenues	<u>1,355,809</u>	<u>668,636</u>	<u>2,024,445</u>
Operating Revenue Deductions:			
Salaries & wages	176,489	0	176,489
Employee pensions & benefits	51,103	0	51,103
Purchased sewer treatment	1,572	0	1,572
Sludge removal	89,209	0	89,209
Purchased power	88,090	0	88,090
Fuel for power production	659	0	659
Chemicals	111,193	0	111,193
Materials & supplies	8,775	0	8,775
Testing fees	14,028	0	14,028
Transportation	14,480	0	14,480
Contractual services-accounting	5,270	0	5,270
Contractual services-legal	5,468	0	5,468
Contractual services-other	113,553	0	113,553
Rent	8,750	0	8,750
Insurance	13,015	0	13,015
Regulatory commission expense	2,629	0	2,629
Miscellaneous expense	35,664	0	35,664
Interest on customer deposits	14	0	14
Annualization & consumption adjustments	<u>12,683</u>	<u>0</u>	<u>12,683</u>
Total O&M and G&A expense	752,644	0	752,644
Depreciation & amortization expense	370,493	0	370,493
Property taxes	2,527	0	2,527
Payroll taxes	22,350	0	22,350
Other taxes	8,659	0	8,659
Section 338(h) adjustment	0	0	0
Regulatory fee	1,898	936	2,834
Deferred income tax	(2,956)	0	(2,956)
State income tax	0	18,694	18,694
Federal income tax	<u>0</u>	<u>126,933</u>	<u>126,933</u>
Total operating revenue deductions	<u>1,155,615</u>	<u>146,563</u>	<u>1,302,178</u>
Net operating income for return	<u>\$200,194</u>	<u>\$522,073</u>	<u>\$722,267</u>

SCHEDULE II-D

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Original Cost Rate Base

For the Twelve Months Ended September 30, 2017

Fairways Sewer Operations

Plant in service	\$18,595,484
Accumulated depreciation	(2,333,905)
Contributions in aid of construction	(7,081,614)
Accumulated amortization of CIAC	1,639,386
Acquisition adjustments	0
Accum. amort. of acquisition adjustments	0
Advances for construction	<u>107,000</u>
Net plant in service	10,926,351
Customer deposits	(172)
Unclaimed refunds & cost-free capital	(217)
Accumulated deferred income taxes	(586,254)
Materials and supplies inventory	0
Excess capacity adjustment	0
Working capital allowance	<u>105,210</u>
Original cost rate base	<u>\$10,444,918</u>

Rates of return:

Present	1.92%
Approved	6.92%

SCHEDULE III-D

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Statement of Capitalization and Related Costs

For the Twelve Months Ended September 30, 2017

Fairways Water Operations

	<u>Ratio %</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost %</u>	<u>Net Operating Income</u>
PRESENT RATES				
Long-Term Debt	50.00	\$5,222,459	4.63	\$241,800
Common Equity	<u>50.00</u>	<u>5,222,459</u>	(0.80)	<u>(41,606)</u>
Total	<u>100.00</u>	<u>\$10,444,918</u>		<u>\$200,194</u>
APPROVED RATES				
Long-Term Debt	50.00	\$5,222,459	4.63	\$241,800
Common Equity	<u>50.00</u>	<u>5,222,459</u>	9.20	<u>480,467</u>
Total	<u>100.00</u>	<u>\$10,444,918</u>		<u>\$722,267</u>

SCHEDULE I-E

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Net Operating Income for a Return

For the Twelve Months Ended September 30, 2017

Brookwood Water Operations

	Present <u>Rates</u>	Increase <u>Approved</u>	After Approved <u>Increase</u>
Operating Revenues:			
Service revenues	\$5,025,605	\$270,135	\$5,295,740
Late payment fees	19,600	1,053	20,653
Miscellaneous revenues	372,249	0	372,249
Uncollectibles & abatements	<u>(131,386)</u>	<u>(7,062)</u>	<u>(138,448)</u>
Total operating revenues	<u>5,286,068</u>	<u>264,126</u>	<u>5,550,194</u>
Operating Revenue Deductions:			
Salaries & wages	628,650	0	628,650
Employee pensions & benefits	216,335	0	216,335
Purchased water	273,245	0	273,245
Purchased power	214,996	0	214,996
Fuel for power production	688	0	688
Chemicals	333,327	0	333,327
Materials & supplies	33,584	0	33,584
Testing fees	42,376	0	42,376
Transportation	57,985	0	57,985
Contractual services-engineering	2,750	0	2,750
Contractual services-accounting	27,419	0	27,419
Contractual services-legal	28,998	0	28,998
Contractual services-other	701,566	0	701,566
Rent	26,431	0	26,431
Insurance	39,041	0	39,041
Regulatory commission expense	13,033	0	13,033
Miscellaneous expense	143,421	0	143,421
Interest on customer deposits	5,614	0	5,614
Annualization & consumption adjustments	<u>28,949</u>	<u>0</u>	<u>28,949</u>
Total O&M and G&A expense	2,818,408	0	2,818,408
Depreciation & amortization expense	984,417	0	984,417
Property taxes	89,088	0	89,088
Payroll taxes	110,949	0	110,949
Other taxes	45,008	0	45,008
Section 338(h) adjustment	(3,293)	0	(3,293)
Regulatory fee	7,400	370	7,770
Deferred income tax	(8,391)	0	(8,391)
State income tax	24,425	7,913	32,338
Federal income tax	<u>165,846</u>	<u>53,727</u>	<u>219,573</u>
Total operating revenue deductions	<u>4,233,857</u>	<u>62,010</u>	<u>4,295,867</u>
Net operating income for return	<u>\$1,052,211</u>	<u>\$202,116</u>	<u>\$1,254,327</u>

SCHEDULE II-E

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Original Cost Rate Base

For the Twelve Months Ended September 30, 2017

Brookwood Water Operations

Plant in service	\$35,198,890
Accumulated depreciation	(13,003,853)
Contributions in aid of construction	(7,898,867)
Accumulated amortization of CIAC	5,300,401
Acquisition adjustments	(31,426)
Accum. amort. of acquisition adjustments	29,511
Advances for construction	0
Net plant in service	19,503,655
Customer deposits	(64,969)
Unclaimed refunds & cost-free capital	(132,775)
Accumulated deferred income taxes	(1,685,630)
Materials and supplies inventory	101,744
Excess capacity adjustment	0
Working capital allowance	417,184
Original cost rate base	<u>\$18,139,209</u>

Rates of return:

Present	5.80%
Approved	6.92%

SCHEDULE III-E

Aqua North Carolina, Inc.

Docket No. W-218, Sub 497

Statement of Capitalization and Related Costs

For the Twelve Months Ended September 30, 2017

Brookwood Water Operations

	<u>Ratio %</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost %</u>	<u>Net Operating Income</u>
PRESENT RATES				
Long-Term Debt	50.00	\$9,069,605	4.63	\$419,923
Common Equity	<u>50.00</u>	<u>9,069,604</u>	6.97	<u>632,288</u>
Total	<u>100.00</u>	<u>\$18,139,209</u>		<u>\$1,052,211</u>
APPROVED RATES				
Long-Term Debt	50.00	\$9,069,605	4.63	\$419,923
Common Equity	<u>50.00</u>	<u>9,069,604</u>	9.20	<u>834,404</u>
Total	<u>100.00</u>	<u>\$18,139,209</u>		<u>\$1,254,327</u>

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 95-96

The evidence supporting these findings of fact and conclusions are contained in the Application and Form W-1 of Aqua, and the testimony of Public Staff witness Junis.

In its Application, the Company proposes a company-wide rate increase of 9.19 percent over the total revenue level generated by the rates currently in effect. When compared to the present schedule of Commission approved rates, the Company's proposed schedule of rates⁴⁶ indicates the Company is seeking to increase the ratio of base charges to commodity charges of the average monthly residential metered bill for the Aqua Water, Aqua Sewer, and Fairways Sewer rate divisions.

Witness Junis provided multiple iterations of his billing analysis and rate design⁴⁷ as part of his direct and supplemental testimonies and late-filed exhibits requested by the Commission in this proceeding. In each iteration, witness Junis clearly designed rates to remain at or adjust closer to a forty to sixty split between the base facilities charges and the metered commodity charges, balancing the promotion of conservation and sustainability of revenues, for the average monthly metered residential bill for each of the Company's rate divisions.

The rate design and rates, necessary and appropriate to provide Aqua a reasonable opportunity to recover the approved revenue requirement in this proceeding, are reflected in Junis Late-Filed Exhibit 11. The rates shown on Junis

⁴⁶ The Company's proposed schedule of rates was entered into the record as Exhibit O to the NCUC form "Application for Rate Increase."

⁴⁷ Witness Junis' billing analyses and rate designs were entered into the record as Junis Exhibit 25, Junis Supplemental Exhibit 7, and Junis Late-Filed Exhibit 11.

Late-Filed Exhibit 11 are the result of the adjustments agreed upon by the Stipulating Parties and the Public Staff's adjustments to the Company's filed position in this proceeding, as described in the Stipulation and the supplemental direct testimony of Public Staff witness Cooper. No party has submitted evidence rebutting witness Junis' rate design. Based upon the Stipulation and other record evidence in this proceeding regarding rate design and individual rate elements, the Commission finds and concludes that the Public Staff's rate design is reasonable and appropriate for use in this proceeding.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 97-99

The evidence supporting these findings of fact and conclusions can be found in the Application and Form W-1 of Aqua, the testimony of Company witness Becker and Public Staff witness Junis, and the record in the Sub 363 Docket.

In his direct testimony, Company witness Becker asserted that, over the last several years, the average consumption per customer has varied widely due to environmental factors, conservation, and pricing impact. Witness Becker cited the "Studies of Volumetric Wastewater Rate Structures and a Consumption Adjustment Mechanism for Water Rates of Aqua North Carolina, Inc."⁴⁸ completed by the Environmental Finance Center (EFC) at the UNC School of Government, which provides in pertinent part that, "[t]he analysis demonstrates that average 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." (T 5 pp 43-44)

⁴⁸ The EFC Report was filed in Docket No. W-218, Sub 363A on March 31, 2016.

Witness Becker asserted that, though the trend is one of declining consumption, it should be noted that consumption can also increase significantly during extended periods of warm weather. He also asserted that declining consumption can be attributed to several 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. (T 5 p 44)

Witness Becker asserted that persistent decline in consumption has eroded the Company's opportunity to earn its authorized return and to minimize the impact of significant swings in customer consumption patterns, the Company proposes the Consumption Adjustment Mechanism (CAM) for approval by the Commission. (T 5 p 45)

Witness Becker explained how the proposed CAM would operate. He detailed that an average monthly consumption per metered bill would be established based on the total metered consumption and the total metered bills of all metered residential and commercial premises included in that rate division tariff. 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 current average monthly consumption is within a range of +/- one percent, then no surcredit/surcharge adjustment is required. However, if it is outside the range, then the total annual revenue excess/shortfall⁴⁹ is computed and divided by the number of bills and then divided

⁴⁹ The difference between the current monthly average and the rate case average monthly consumption multiplied by twelve months and then multiplied by the consumption tariff rate.

by twelve months to establish the monthly CAM to be applied to the monthly bills for all metered accounts. (T 5 pp 45-46)

On cross-examination, witness Becker agreed that legislation similar to the proposed CAM had not been ratified. (T 5 pp 58-59)

Public Staff witness Junis testified that the Public Staff believes 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. (T 12 p 160)

Witness Junis further testified that, during the 2017-2018 Session, House Bill 752 would have added language to N.C. Gen. Stat. § 62-133 authorizing customer usage tracking and rate adjustments. Witness Junis concluded that the General Assembly had every opportunity to authorize this mechanism during its existing session, but chose not to do so, even while making other changes to Chapter 62 involving water and wastewater utilities, thus the Commission should not authorize a CAM. (T 12 pp 160-61)

Witness Junis explained that, if the average monthly usage was 5,000 gallons then the proposed one percent threshold for consumption variance would amount to fifty gallons or about fifty seconds per day of shower flow. He asserted that the trigger for the mechanism was too narrow. (T 12 p 161)

Witness Junis testified that the proposed mechanism as described in witness Becker's testimony utilized average usage per bill and ignored the short-term revenue gains from growth. Witness Junis cited the EFC Report which confirmed in the short-term that the revenues from growth exceed the associated

costs. Witness Junis explained that the proposed CAM would allow Aqua to increase rates for decreased average usage even if the customer growth resulted in the Company otherwise collecting its full revenue requirement. (T 12 p 162)

In his rebuttal, Company witness Becker again cited the EFC Report, which provides in pertinent part that, “[t]he analysis demonstrates that average water use . . . has recently stabilized close to 5,000 gallons/month average for ANC customers.” (T 14 p 49)

Witness Becker disagreed with the Public Staff’s objections to the CAM and asserted that none of them present an impediment to Commission approval of a CAM. He even asserted that proof of declining average consumption had been presented and the Public Staff had not refuted it, despite the finding of the EFC that average water use has stabilized and the inconsistency of the consumption factors that range from negative 1.85% to positive 2.97% across the five Aqua rate divisions.

Based upon the evidence, the Commission concludes that Aqua has not proven by the greater weight of evidence that a consumption adjustment mechanism is reasonable or necessary. There was substantial evidence that the average water use by Aqua customers has recently stabilized. The North Carolina General Assembly in the 2017-2018 Session had the opportunity in House Bill 752 to authorize the Commission to establish a consumption adjustment mechanism, but the North Carolina General Assembly chose not to do so. The Commission denies Aqua’s request for a consumption adjustment mechanism.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 100-101

The evidence supporting these findings of fact is contained in the testimony of Public Staff witness Henry.

Mr. Henry testified that consistent with Commission Rules R7-39(k) and R10-36(k), Aqua WSIC and SSIC surcharges will reset to zero as of the effective date of the approved rates in this proceeding. Additionally, Mr. Henry stated by law, the cumulative maximum charges that the Company can recover between rate cases cannot exceed five percent of the total service revenues approved by the Commission in this rate case.

The Commission's previously approved WSIC/SSIC improvement charge rate adjustment mechanism continues in effect, although it has been reset to zero in this rate case. 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 improvements. 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 five percent of the total annual service revenues approved by the Commission in this rate case proceeding.

Based on the service revenues set forth and approved in this Order, the maximum WSIC/SSIC charges as of the effective date of this Order are:

	<u>Service</u> <u>Revenues</u>		<u>WSIC &</u> <u>SSIC Cap</u>
Aqua Water	\$34,343,071	x 5% =	\$1,717,154
Aqua Sewer	14,051,743	x 5% =	702,587
Fairways Water	1,051,722	x 5% =	52,586
Fairways Sewer	2,032,252	x 5% =	101,613
Brookwood	5,295,740	x 5% =	264,787

IT IS, THEREFORE, ORDERED as follows:

1. That the Partial Settlement Agreement and Stipulation between Aqua and the Public Staff, is hereby approved.
2. That the Schedule of Rates, attached hereto as Appendices A-1, A-2, and A-3, are hereby approved and deemed filed with the Commission pursuant to N.C. Gen. Stat. § 62-138.
3. That the attached Schedule of Rates is hereby authorized to become effective for service rendered on and after the date of issuance of this Order.
4. That a copy of the Notice to Customers, attached hereto as Appendices B-1, B-2, and B-3, shall be mailed with sufficient postage or hand delivered to all affected customers in each relevant rate division, respectively, by Aqua in conjunction with the next regularly scheduled billing process.
5. That the Company shall file the attached Certificate of Service, properly signed and notarized, not later than forty-five days after the issuance of this Order.
6. That the Company shall file quarterly reports addressing water

quality concerns raised by customers at the public hearings in this proceeding, including customers served by the Bayleaf Master System, Lake Ridge Aero Park, Castelli, High Grove, Medfield, Upchurch Place, Waterfall Plantation, Saddleridge, and Yorkwood systems. Such reports shall describe what is being done by Aqua to address water quality issues and shall include summaries of customer concerns raised, results of water laboratory analyses (including soluble and insoluble concentration levels of iron and manganese) to measure baseline concentration levels and the effectiveness of chemical sequestration treatment, and budgetary cost estimates to install filtration systems (green sand or other filtration options deemed appropriate) at Aqua's systems with iron and manganese water quality issues. The first of the quarterly reports, which shall cover the time period of October – December 2018, shall be due on January 31, 2019. Thereafter, the Company shall continue to file quarterly reports until further Order of the Commission.

7. That the Public Staff and the Company shall continue to work together to develop and implement a plan to identify and respond to secondary water quality concerns that occur in significant numbers in individual subdivision service areas. At a minimum, the Public Staff and the Company are required to file a written report with the Commission on June 1 and December 1 each year in which the WSIC is in effect on secondary quality concerns that are affecting the Company's customers. If a particular secondary water quality concern has affected or is affecting ten percent of the customers in an individual subdivision service area or twenty-five billing customers, whichever is less, the customers

affected and the estimated expenditures that are necessary to eradicate the secondary water quality issues through the use of projects that are eligible for recovery through the WSIC shall be detailed in the written report. The written report shall also contain a recommendation as to whether the Commission should order the Company to pursue the corrective action and/or an underlying reason why the action should or should not be undertaken. If there are no secondary water issues or if the secondary water quality issues are below the ten percent/twenty-five customer threshold previously set forth, the Company and the Public Staff shall so inform the Commission, but they need not report secondary water quality issues resolved by the Company without the assistance or expectation of assistance of the WSIC.

8. That Aqua shall convey to the Public Staff in a timely manner written correspondence, reports and emails to, and the recommendations of PWSS and DWR regarding the water quality concerns and wastewater issues being evaluated and addressed in Aqua's systems. Such communication shall be in a written format and shall be provided, at a minimum, on a bi-monthly basis. Aqua shall provide the Public Staff copies of: (a) Aqua's reports and letters to PWSS concerning water quality concerns in its systems; (b) responses from PWSS concerning reports, letters, or other written communication received from Aqua; (c) PWSS's specific recommendations to Aqua, by system, concerning each of the water quality concerns being evaluated by PWSS; and (d) all written correspondence with DWR on compliance issues.

9. That the Company shall, within sixty days of the date of this Order,

file with the Commission a cost effective policy for Aqua to provide customers with billing credits when a customer must flush the customer's lines to clear up discolored water.

10. That neither the Partial Settlement Agreement and Stipulation entered and filed on September 17, 2018, nor the parts of this Order pertaining to the contents of that agreement shall be cited or treated as precedent in future proceedings.

ISSUED BY ORDER OF THE COMMISSION.

This the ___ day of _____, 2018.

NORTH CAROLINA UTILITIES COMMISSION

M. Lynn Jarvis, Chief Clerk