

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. W-218, Sub 573

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 and for Approval of a Water and Sewer Investment Plan))))))))))	AQUA PROPOSED ORDER APPROVING RATE INCREASE AND REQUIRING CUSTOMER NOTICE
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HEARD: Tuesday, October 4, 2022, at 7:00 p.m. North Carolina Utilities
 Commission 430 North Salisbury Street Commission Hearing
 Room 2115 Raleigh, North Carolina 27603

Thursday, October 20, 2022, at 6:30 p.m. Virtual Hearing Held via
 Webex

Wednesday, October 26, 2022, at 7:00 p.m. New Hanover County
 Courthouse, 317 Princess Street, Wilmington, North Carolina
 28401

Thursday, October 27, 2022, at 7:00 p.m. Gaston County
 Courthouse, in County Commission Public Forum Room, 2nd
 Floor, 325 Dr. Martin Luther King, Jr. Way, Gastonia, North
 Carolina 28052

Monday, January 9, 2023 at 2:00 p.m., and continuing as required
 through Friday, January 13, 2023, in Commission Hearing Room
 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North
 Carolina

BEFORE: Commissioner ToNola D. Brown-Bland, Presiding; Chair Charlotte A. Mitchell and Commissioners, Daniel G. Clodfelter, Kimberly W. Duffley, Jeffrey A. Hughes, Floyd B. McKissick, Jr., and Karen M. Kemerait

APPEARANCES:

For Aqua North Carolina, Inc.:

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

David T. Drooz, Fox Rothschild LLP, 434 Fayetteville Street, Suite 2800, Raleigh, North Carolina 27601

For the Using and Consuming Public:

Megan Jost, William Freeman, Reita Coxton, and William E. Grantmyre, Staff Attorneys, Public Staff – North Carolina Utilities Commission, 4326 Mail Service Center, Raleigh, North Carolina 27699-4300

BY THE COMMISSION: On June 30, 2022, Aqua North Carolina, Inc. (Aqua or Company) filed an Application for a General Increase in Rates and Approval of a Water and Sewer Investment Plan pursuant to provisions of N.C. Gen. Stat. § 62-133 and 62-133.1B, and North Carolina Utilities Commission (Commission) Rules R1-17 and R1-17A in the above-referenced docket (Application). The Application included the direct testimony of Aqua witnesses.

On July 15, 2022, the Public Staff notified Aqua by letter filed with the Commission pursuant to Commission Rule R1-17(f)(1) that Aqua's Application was missing certain material data and information.

On July 20, 2022, Aqua filed supplemental information with the Commission pursuant to Commission Rule R1-17(f) addressing the Public Staff's concerns.

On July 26, 2022, the Commission issued an Order Establishing General Rate Case and Suspending Rates, finding that Aqua's Application constituted a

general rate case pursuant to N.C.G.S. § 62-137, suspending the proposed new rates for up to 270 days pursuant to N.C.G.S. § 62-134, and establishing a 12-month test-year period ending on December 31, 2021.

On August 16, 2022, Aqua filed a Motion on Hearing Schedule, requesting that the Commission consider Aqua's concerns and proposals in setting a schedule for the docket.

On August 16, 2022, the Public Staff filed a letter stating its position regarding the Commission's setting of a procedural schedule in the docket.

On September 8, 2022, the Commission issued an Order Scheduling Hearings, Establishing Discovery Guidelines, and Requiring Customer Notice (Scheduling Order), setting hearing dates on October 4, October 20, October 26, and October 27, 2022, for the purpose of receiving public witness testimony and January 9, 2023, for the purpose of receiving expert witness testimony.

On September 21, 2022, Aqua filed a Rate Case Information Update for revenues, expenses, and rate base through July 31, 2022, with a statement that update information through August 31, 2022, would be filed as soon as available.

On October 4, 2022, a hearing for public witnesses was held in Raleigh, North Carolina, as scheduled. Public witnesses Linda Cheatham, Jonathan Smith, Craig Stenberg, Susan Sellers, and Kari Hamel testified in response to questions from Public Staff counsel and the Commission.

On October 19, 2022, the Public Staff filed a Motion of the Public Staff Regarding Aqua Updates, arguing that Aqua had failed to adhere to filing deadlines set forth in the Commission's Scheduling Order, requesting an extension to the

Public Staff's deadline for filing its formal discovery requests and direct testimony, and requesting that Aqua provide the Public Staff with updated information and responses to its data requests.

On October 20, 2022, a hearing for public witnesses was held via Webex as scheduled. Public witnesses Stephanie Teran, Eric Galamb, Linda Joyce, Debra Cook, Susan Chandler, Rose Rowan, Hayden Moore, Daniel Reilly, and Raigen Padayachee testified in response to questions from Public Staff counsel, Aqua counsel, and the Commission.

On October 21, 2022, Aqua filed rate case updates, schedules, and supporting data that provided updated information through both August 31, 2022, and September 30, 2022.

On October 24, 2022, Aqua filed a Report on Customer Comments from Public Hearing Held in Raleigh on October 4, 2022, addressing the customer service or service quality complaints expressed during the hearing, pursuant to the Commission's Scheduling Order.

On October 24, 2022, the Public Staff filed an Amended Motion of the Public Staff Regarding Aqua Updates, maintaining its extension requests but withdrawing its request that Aqua provide the Public Staff with updated information and responses to its data requests.

On October 26, 2022, Aqua filed a Response to Amended Motion of the Public Staff Regarding Aqua Updates, opposing the Public Staff's motion and requesting that the Commission either deny the Public Staff's motion or grant commensurate extensions to both parties.

On October 26, 2022, a hearing for public witnesses was held in Wilmington, North Carolina, as scheduled. Public witnesses Al Bennett, Robert Fey, David Echevarria, and Larry Lawson testified in response to questions from Public Staff counsel and the Commission.

On October 27, 2022, a hearing for public witnesses was held in Gastonia, North Carolina, as scheduled. Public witnesses Stan Coleman and Harold Busch testified in response to questions from Public Staff counsel, Aqua counsel, and the Commission.

On November 4, 2022, the Commission issued an Order Denying Motion for an Extension of Time, in which the Commission considered and denied the Public Staff's request to extend its filing deadline regarding its formal discovery requests and direct testimony.

On November 9, 2022, Aqua filed a Report on Customer Comments from Virtual Hearing Held on October 20, 2022, addressing the customer service or service quality complaints expressed during the hearing, pursuant to the Commission's Scheduling Order.

On November 15, 2022, Aqua filed a Report on Customer Comments from Public Hearings in Wilmington on October 26, 2022, and from Gastonia on October 27, 2022, addressing the customer service or service quality complaints expressed during those hearings, pursuant to the Commission's Scheduling Order.

On November 18, 2022, Aqua filed further updated information, schedules, supporting data, and minimum filing requirements to supplement its Application, with reference to N.C.G.S. § 62-133(c).

On November 22, 2022, Aqua filed an Objection to Public Staff Data Request No. 107, stating that the Public Staff' request was overly broad, unduly burdensome, and set an unreasonably short deadline for response.

On December 2, 2022, the Public Staff filed a Motion of the Public Staff for an Extension of Time to file its testimony and exhibits related to the Company's Water and Sewer Investment Plan (WSIP) request.

On December 2, 2022, the Public Staff filed the testimonies and exhibits Shashi M. Bhatta, D. Michael Franklin, John R. Hinton, Evan M. Houser, Jay B. Lucas, and Lindsay Q. Darden, and the joint testimony of Lynn Feasel, June Chiu, and Michelle M. Boswell.

On December 4, 2022, filed-stamped in the docket on December 5, 2022, Aqua filed its Response to Public Staff Motion for Extension of Time and Update, stating that it had no objection to the Public Staff's extension request.

On December 5, 2022, the Commission issued an Order Granting Extension of Time to File Testimony and Exhibits Nunc Pro Tunc, granting the Public Staff's December 2, 2022, motion for an extension of time.

On December 5, 2022, the Public Staff filed the joint testimony and exhibits of Michelle M. Boswell, John R. Hinton, Kuei Fen Sun, Fenge Zhang, and Charles M. Junis.

On December 6, 2022, Aqua filed a Motion for Extension of Deadline for Filing Discovery, requesting a two-day extension to serve discovery on the Public Staff.

On December 6, 2022, the Commission issued an Order Granting Extension of Time to Serve Discovery, setting Aqua's deadline to file discovery on December 7, 2022.

On December 13, 2022, the Public Staff filed the supplemental joint testimony of Lynn Feasel, June Chiu, and Michelle M. Boswell and a corrected exhibit associated with their testimony; the supplemental joint testimony of Michelle M. Boswell, John R. Hinton, Kuei Fen Sun, Fenge Zhang, and Charles M. Junis and a corrected exhibit associated with their testimony; corrected Exhibits 8 through 12 of Lindsay Q. Darden; corrected Exhibit 2 of D. Michael Franklin; and corrected page 29 of the Joint Testimony of Michelle M. Boswell, John R. Hinton, Kuei Fen Sun, Fenge Zhang, and Charles M. Junis.

On December 19, 2022, Aqua filed the rebuttal testimonies of Amanda A. Berger, Daniel T. Franceski, Dylan W. D'Ascendis, and Michael A. Melton, the joint rebuttal testimony of Joseph Pearce, Amanda A. Berger, Michael A. Melton, and Shannon V. Becker, and the joint rebuttal testimony of Shannon V. Becker, William Packer, Whitney Kellett, and Michael A. Melton, along with rebuttal exhibits.

On December 19, 2022, filed-stamped in the docket on December 20, 2022, Aqua filed the joint rebuttal testimony and exhibits of Dean R. Gearhart and David Haddad.

On January 4, Aqua late-filed Exhibit 1 to the joint rebuttal testimony of witnesses Gearhart and Haddad.

On January 5, 2023, the Commission issued its Order Excusing Witnesses from Attending Expert Witness Testimony and Requesting Updated Witness List,

wherein Aqua witness John Spanos and Public Staff witnesses June Chiu and Kuei Fen Sen were excused from appearing at hearing and their prefiled testimonies and exhibits were received into evidence.

The evidentiary hearing began as scheduled at 2:00 p.m. on January 9, 2023, in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina. Thereafter, the evidentiary hearing continued as necessary until its conclusion on Friday, January 13, 2023.

On January 26, 2023, Aqua filed its Notice of Intent to Place Temporary Rates in Effect Subject to an Undertaking to Refund Pursuant to N.C.G.S. § 62-135 and Request for Approval of Notice and Undertaking.

On January 30, 2023, Aqua filed its late-filed exhibits 1, 3, 4, 5, 6, 7, 8, 9, and 10. On January 31, 2023, Aqua filed its late-filed exhibit 2.

On February 2, 2023, the Public Staff filed its late-filed exhibits 1 and 2.

On February 2, 2023, Aqua filed its Clarification of Notice of Intent to Place Temporary Rates in Effect.

On February 2, 2023, the Public Staff filed a letter contending that Aqua's temporary rates were not just and reasonable, and were discriminatory.

On February 3, 2023, Aqua filed its Reply to Public Staff Letter on Temporary Rates. Also on February 3, 2023, the Public Staff filed a letter of correction regarding temporary rates.

On February 6, 2023, the Commission issued its Order Approving Public Notice of Temporary Rates Subject to an Undertaking to Refund.

On February 7, 2023, Aqua filed a Motion for Expedited Approval to Change Dates for Temporary Rates and the Related Customer Notices.

On February 7, 2023, the Public Staff filed a letter requesting that the Commission authorize temporary rates no earlier than February 19, 2023.

On February 7, 2023, the Commission issued its Order Granting Motion to Adjust Dates for Implementation of Temporary Rates Under Bond and Approving Revised Notices to Customers. The revised notices stated that temporary rates would be effective for service on and after February 19, 2023.

On March 31, 2023, the Public Staff and the Company filed a Stipulation of Partial Settlement (Stipulation), and their respective proposed orders, and Aqua also filed the testimony of Shannon Becker and the joint testimony and exhibits of Dean Gearhart in support of the Stipulation.

Based on the Company's Application and corresponding NCUC Form W-1, the testimony and exhibits received into evidence at the hearings held in this proceeding, the Stipulation, the late-filed exhibits submitted at the request of the Commission during the evidentiary hearing, 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 North Carolina and is authorized to do business in the State. It is a franchised public utility providing water and sewer utility service to customers in North Carolina.

Aqua is a wholly-owned subsidiary of Essential Utilities, Inc. (Essential Utilities), located in Bryn Mawr, Pennsylvania.

2. Aqua is subject to the jurisdiction of the Commission pursuant to Chapter 62 of the North Carolina General Statutes for adjudication of Aqua's Application for a rate increase and approval to establish and implement a Water and Sewer Investment Plan (WSIP), and for a determination of the justness and reasonableness of Aqua's proposed rates for its water and sewer utility operations in North Carolina.

3. The appropriate Base Case period for use in this proceeding is the 12-month test period ending on December 31, 2021, updated for known and measurable changes through August 31, 2022, and including adjustments to regulatory commission expense up to the close of hearing.

4. Aqua's last general rate case was decided by Commission Order entered on October 26, 2020, in Docket No. W-218, Sub 526 (Sub 526 Rate Case Order).¹ The Commission has since approved four increases in the Company's rates for water and sewer service in all the Company's service areas by an Order Approving Water and Sewer System Improvement Charges on a Provisional Basis and Requiring Customer Notice issued in Docket No. W-218, Sub 526A on January 4, 2020, November 1, 2021, January 26, 2022, and June 21, 2022. On February 19, 2023, after appropriate customer notice, Aqua placed new rates into effect in its five rate divisions on a partial, temporary basis as allowed pursuant to N.C.G.S.

¹ Pass-through rate increases for various purchased water and purchased sewer systems have been approved pursuant to N.C.G.S. § 62-133.11, subsequent to the Sub 526 Rate Case Order.

§ 62-135. Any amounts of such temporary rates that may be finally determined by the Commission to be excessive are subject to refund with interest at a rate of 10% per annum.

The Rate Case Application

5. In summary, by its Application, supporting documents, and additional updates filed on subsequent dates during the proceeding, Aqua NC sought Commission approval of a multi-year rate increase under the WSIP, as provided in N.C.G.S. § 62-133.1B (WSIP Statute) and Rule R1-17A (WSIP Rule). The Company's requested increases in its annual revenues from its North Carolina customers, as requested initially in its Application on a consolidated basis for all five rate divisions, were \$18,064,678 (25.4%) for Rate Year 1, of which \$13,655,146 (19.2%) is the Base Year increase; \$4,303,037 or 4.8% for Rate Year 2; and \$4,579,353 or 4.9% for Rate Year 3. The Application indicated that the new rates would be effective on July 30, 2022, unless suspended by the Commission. Aqua also asked for other relief, including cost deferrals, changes to rate design, continuation of its conservation pilot program, a customer assistance pilot program, and a sewer use rule.² The Application was based upon a requested rate of return on common equity of 10.40%, an embedded long-term debt cost of 4.01%, and a capital structure of 50.00% common equity and 50.00% long-term debt.

² The Company's Application included a request for a rate increase under N.C.G.S. § 62-133, in the event the Commission denied the Company's request for a WSIP. The Company's Application also included a request to use a consumption adjustment mechanism (CAM) and continue using water and sewer system improvement charge rate adjustment mechanisms (WSIC and SSIC) if the Commission denied the requested WSIP. Both mechanisms are prohibited during the term of an approved WSIP pursuant to the WSIP Statute.

The Stipulation

6. On March 31, 2023, Aqua and the Public Staff (collectively, the Parties) filed a Partial Settlement Agreement and Stipulation (Stipulation), resolving many of the issues contested between the Parties. The Parties agree that Aqua should be authorized to implement a multi-year rate plan or WSIP, according to certain parameters described in more detail *infra*.

7. The Stipulation includes adoption and implementation of the Performance-Based Metrics (PBMs) and, where applicable, corresponding incentives and penalties described in more detail *infra*.

8. The Stipulation also provides for (a) adoption of a new Sewer Use Rule; (b) performance of a third-party audit to review staffing needs; (c) addressing regulatory conditions in a different proceeding; (d) filing a 2018 affiliate interest agreement in Docket No. W-218, Sub 570; (e) the Company's commitment to report semi-annually, beginning with the quarterly report for Q2 of WSIP Rate Year 1 required by Rule R1-17A(j), on its efforts to pursue ways to reduce the high cost of purchased water from the Town of Pittsboro; (f) agreed upon O&M adjustments and inflationary indices; (g) agreed upon adjustments and accounting for rate base items; (h) use of a 50%/50% debt to equity structure and 3.97% cost of debt; (i) date of the Company's first required quarterly WSIP reporting; (j) use of a zero basis point upper ROE band and 50 basis point lower ROE band; (k) post in-service charges associated with certain projects being subject to reasonableness and prudence review in the next general rate case; (l) Aqua's acceptance of accounting reporting requirements specific to manual accounting entries; (m)

agreed upon rate design for water and sewer customers, including those in Huntley Glen, Park South, and Parkway Crossing subdivisions; (n) agreement on the adequacy of customer service, and (o) agreement that the Company's environmental compliance is reasonable.

9. The issues remaining in dispute between the Parties are: (a) the appropriate rate of return on equity; (b) recovery of costs incurred or planned to be incurred as part of Aqua's Capital Investment Project for treatment of PFAS; (c) recovery of costs incurred for the Service Improvement Project (SIP), including SAP software; (d) whether certain Performance-Based Metrics (PBMs) should have performance penalties (namely, timely completion of Capital Improvement Plan (CIP) projects, completion of CIP projects on budget, Safe Drinking Water Act compliance, and Clean Water Act compliance); (e) Conservation Pilot Program; (f) the Company's customer assistance pilot program (CAP) proposal; and (g) rate recovery of the full cost of the Wakefield treatment system.

10. The Stipulation is the product of give-and-take in negotiations between the Parties, is material evidence in this proceeding, and is entitled to be given appropriate weight in this case along with the other evidence of record, including that submitted by the Company, the Public Staff, and the public witnesses who testified at the public witness hearings.

11. The Stipulation is a partial settlement of the matters in controversy in this proceeding as between the Parties.

Acceptance of Stipulation

12. The WSIP, as agreed to in the Stipulation, along with other provisions

of the Stipulation, will result in just and reasonable rates when combined with the rate effects of the Commission's decisions regarding the Disputed Issues.

13. The provisions of the WSIP as agreed to in the Stipulation, along with other provisions of the Stipulation, are just and reasonable to all parties to this proceeding, as well as the Company's ratepaying customers, will produce just and reasonable rates, and will serve the public interest when augmented by appropriate PBMs, penalties, and incentives.

14. It is appropriate to approve the Stipulation in its entirety.

WSIP

15. The appropriate term for the WSIP is a three year-period, as follows:

- a) WSIP Rate Year 1 will begin on January 1, 2023, and end on December 31, 2023;
- b) WSIP Rate Year 2 will begin on January 1, 2024, and end on December 31, 2024; and
- c) WSIP Rate Year 3 will begin on January 1, 2025, and end on December 31, 2025.

16. The WSIP may be modified or terminated prior to the end of WSIP Rate Year 3 as permitted by N.C.G.S. § 62-133.1B(f) and Commission Rule R1-17A(f). The WSIP Rate Year 3 rates approved herein should remain in place until the effective date of a new base rate case order unless otherwise ordered by the Commission.

17. The Base Case revenue requirements shown in the Stipulation and Public Staff Settlement Exhibit 1 are appropriate to be used as the starting point for the revenue requirements for WSIP Rate Years 1, 2, and 3, subject to

modifications resulting from the decisions in this Order on disputed issues that affect Public Staff Settlement Exhibit 1.

18. It is appropriate to calculate WSIP Rate Year 1 revenue requirements (except for revenue requirements for the following expense items: salaries and wages, pensions and other benefits, payroll taxes, purchased water and sewer, transportation-fuel services, and property tax) by escalating the corresponding Base Case revenue requirements by a general escalation factor of 3.04%. It is appropriate to calculate WSIP Rate Year 1 salaries and wages, pension and other benefits, and payroll taxes revenue requirements by escalating Base Case levels by 3.0%. It is appropriate to calculate WSIP Rate Year 1 purchased water service revenue requirements by modifying Base Case levels to offset future wholesale expense changes using the pass-through mechanism. It is appropriate for WSIP Rate Year 1 transportation-fuel services revenue requirements to remain at Base Case levels. It is appropriate to calculate WSIP Rate Year 1 property tax service revenue requirements by escalating Base Case levels by 3.31%. It is appropriate for adjustments for plant, rate base, revenues, and costs to be reflected through the end of WSIP Rate Year 1.

19. It is appropriate to calculate WSIP Rate Year 2 revenue requirements (except for revenue requirements for the following expense items: salaries and wages, pensions and other benefits, payroll taxes, purchased water and sewer, transportation-fuel services, and property tax) by escalating the corresponding WSIP Rate Year 1 revenue requirements by a general escalation factor of 3.04%. It is appropriate to calculate WSIP Rate Year 2 salaries and wages, pension and

other benefits, and payroll taxes revenue requirements by escalating WSIP Rate Year 1 levels by 3.0%. It is appropriate to calculate WSIP Rate Year 2 purchased water service revenue requirements by modifying WSIP Rate Year 1 levels to offset future wholesale expense changes using the pass-through mechanism. It is appropriate for WSIP Rate Year 2 transportation-fuel services revenue requirements to remain at Base Case levels. It is appropriate to calculate WSIP Rate Year 2 property tax service revenue requirements by escalating WSIP Rate Year 1 levels by 3.31%.

20. It is appropriate to calculate WSIP Rate Year 3 revenue requirements (except for revenue requirements for the following expense items: salaries and wages, pensions and other benefits, payroll taxes, purchased water and sewer, transportation-fuel services, and property tax) by escalating the corresponding WSIP Rate Year 2 revenue requirements by a general escalation factor of 3.04%. It is appropriate to calculate WSIP Rate Year 3 salaries and wages, pension and other benefits, and payroll taxes revenue requirements by escalating WSIP Rate Year 2 levels by 3.0%. It is appropriate to calculate WSIP Rate Year 3 purchased water service revenue requirements by modifying WSIP Rate Year 2 levels to offset future wholesale expense changes using the pass-through mechanism. It is appropriate for WSIP Rate Year 3 transportation-fuel services revenue requirements to remain at Base Case levels. It is appropriate to calculate WSIP Rate Year 3 property tax service revenue requirements by escalating WSIP Rate Year 2 levels by 3.31%.

21. It is appropriate to use the capital improvement plan costs for WSIP

Rate Years 1, 2, and 3 as such are projected by Aqua in its March 31, 2023, update filing to Form W-1, Item 28, and summarized in Public Staff Settlement Exhibit 2. For purposes of this case, it is appropriate to calculate the plant in service and accumulated depreciation amounts for WSIP Rate Years 1, 2, and 3 under the Public Staff's methodology of assuming that in each WSIP Rate Year, both plant in service and accumulated depreciation for the WSIP Rate Year occurs on Day 1 of such WSIP Rate Year.

22. With respect to the banding of authorized returns on equity (ROEs) required by N.C.G.S. § 62-133.1B(g), it is appropriate to utilize a band of 50 basis points (specifically, 0 basis points above the authorized ROE and 50 basis points below the authorized ROE) for WSIP Rate Years 1, 2, and 3.

23. The PBMs included in the Stipulation are appropriate metrics under N.C.G.S. § 62-133.1B(a) because they will benefit customers and ensure the provision of safe, reliable, and cost-effective water service. Aqua shall report its performance on these metrics annually in accordance with Rule R1-17A(g)(1)(b).

24. It is appropriate for Aqua to provide the quarterly and annual reports set forth in the WSIP Statute and WSIP Rule.

25. The timing of the first and second quarter reports in Rate Year 1, as set forth in the Stipulation, is appropriate given the timing of the start of Rate Year 1 and the anticipated timing of the Final Order.

Rate Design

26. It is reasonable and appropriate that Aqua's rate design for water utility service provided to its residential customers should be based on the following

fixed/variable ratios which were agreed upon in the Stipulation: 35%:65% for the Aqua Uniform Water Rate Division; 35%:65% for the Brookwood Water Rate Division; and 35%:65% for the Fairways Water Rate Division; and based on 60%:40% for the Aqua Uniform Sewer Rate Division and 60%:40% for the Fairways Sewer Rate Division. It is reasonable and appropriate that unmetered residential sewer rates remain flat. Customers served under the Conservation Pilot Program are an exception to those fixed/variable ratios.

27. It is reasonable and appropriate that Aqua's rate design for Huntley Glen, Park South, and Parkway Crossing should be based on the Company's Aqua Uniform Sewer Rate Division base charge for metered sewer service plus the Charlotte Water sewer usage rate.

28. These rate designs will produce rates that are just and reasonable and promote water efficiency and conservation while also providing Aqua a reasonable opportunity to recover the revenue requirements approved in this proceeding.

Continuation of Bulk Purchase Pass-Through Mechanisms and Update of Purchased Water and Sewer Rates

29. It is reasonable and appropriate for the Company to update its Base Year purchased water and sewer rates as proposed by the Public Staff and as described in the Stipulation. It is reasonable and appropriate for the Company to continue to utilize the bulk purchased water and sewer services pass-through mechanism where it presently exists.

Consumption Adjustment Mechanism

30. Consistent with N.C.G.S. § 62-133.1B(d), there should be no Consumption Adjustment Mechanism under N.C.G.S. § 62-133.12A during the term of Aqua's WSIP.

Suspension of WSIC and SSIC Mechanisms

31. Consistent with N.C.G.S. § 62-133.1B(d), it is reasonable and appropriate for Aqua, during the term of its WSIP, to suspend the use of the Water System Improvement Charge (WSIC), and the Sewer System Improvement Charge (SSIC). Consistent with Commission Rules R7-39(k) and R10-36(k), Aqua's WSIC and SSIC surcharges will reset to zero as of the effective date of the approved rates in this proceeding. Further, it is reasonable and appropriate for Aqua to begin using the WSIC and SSIC mechanisms immediately upon termination of the WSIP.

Sewer Use Rule

32. It is reasonable and appropriate to modify Aqua's Sewer Tariff to include a new Sewer Use Rule, included as Appendix A, intended to protect its wastewater systems from damaging industrial and nondomestic contaminants.

Regulatory Conditions

33. It is reasonable and appropriate to address regulatory conditions in Docket No. W-218, Sub 571, and not in the present docket.

Pittsboro Purchased Water

34. It is appropriate for Aqua to pursue ways to reduce the high cost of purchased water from the Town of Pittsboro, including a request to the Town that it charge Aqua no more than the rate for customers inside city limits. If that is not

successful, Aqua shall inquire about other options. Aqua shall report on its progress to the Commission and Public Staff on a semi-annual basis.

Reporting Requirements Specific to Manual Accounting

35. It is reasonable and appropriate for the Company to file quarterly reports with the Commission that include (1) the steps the Company has taken to modify its current system of verifying completion of plant to be used and useful and (2) the following information about projects that the Company has manually entered into the plant accounting software beginning with Q4 2022: the total dollar amount of the plant, the original in-service date recorded by the system and the manually inserted in-service date entered by the Company, the calculation of AFUDC and corresponding entries to correct the overcollection of AFUDC by project, and the calculation of the depreciation expense differential caused by the override. The Company will file the first report on the same date as it files the report for Q2 of WSIP Rate Year 1, and will continue to file reports with each subsequent quarterly report through Q4 of Rate Year 3.

Reporting Requirements on Water Quality

36. It is reasonable and appropriate for Aqua to continue the same secondary water quality reporting requirements ordered in Docket No. W-218, Subs 363, 497, and 526, with the additional modification that the Company be required to file a report regardless of whether the Water and Sewer Investment Charges (WSIC) are in effect and Aqua has an expectation of WSIC funding.

Environmental Compliance

37. Aqua's water and wastewater systems are generally in compliance with applicable federal and state regulations, testing requirements, and primary water quality standards.

Regulatory Commission Expense

38. It is reasonable and appropriate for Aqua to recover total rate case expenses related to the current proceeding to be amortized and collected over a four-year period, Aqua's regulatory commission expense, also known as rate case expense, will be updated by Aqua in a filing within ten business days after the settlement proceeding. The Public Staff has the right to investigate the expense filed by Aqua and to file a response with the Commission within five business days. The current rate case expense for this proceeding will be amortized over a four-year period without a return or carrying costs. Aqua agrees to establish a regulatory liability with no carrying costs to record recovery associated with the rate case expense over amortization after year four. The rate case expense from Docket No. W-218 Sub 526, and the unamortized rate case expense from Docket No. W-218 Sub 497, will continue to be amortized over three years per the final order from the Docket No. W-218, Sub 526, rate case. The unamortized depreciation study expense from Docket No. W-218, Sub 497, will continue to be amortized over five years per the final order from the Docket No. W-218, Sub 497, rate case.

Customer Service³

³ Aqua and the Public Staff agree on the ultimate outcome on this issue and we are largely in agreement on the text; only because we did not have time to combine our drafts, we are filing separately on the issue.

- As of the 12-month period ended December 31, 2022, Aqua served approximately 84,000 active water customers and 21,000 active wastewater customers. For the same period, Aqua also had 85,202 water availability customers and 23,678 sewer availability customers. It operates more than 1,600 wells in 738 water systems, 59 wastewater plants, and 201 sewer collection systems in the State. The Company's service territory spans 51 counties in North Carolina and stretches 400 miles from Turkey Pen Gap in Transylvania County, in the west to Harkers Village in Carteret County, on the coast.
- During the almost twenty-five (25) months between October 26, 2020 and November 15, 2022, the Public Staff Consumer Services Division received 215 complaints about Aqua, from the Company's over 100,000 customers. Fifty-five complaints (or approximately 25%) were related to water quality/low pressure; the other complaints received were related to billing disputes, water system resiliency, water leaks, service disconnection due to non-payment, service requests and other general concerns (such as the Company's ability to provide a backup generator to operate a system should a power outage occur). Twenty-five complaints were related to the Sub 526 Rate Case.
- As of November 15, 2022, 41 written consumer statements of position were filed in Docket W-218, Sub 573CS (the rate case complaint docket). Consumer statements expressed (1) opposition to the proposed rate increase, including the magnitude of the requested

increase and timing of the increase given the inflationary climate; (2) the lack of improvements in service to justify the proposed increase; (3) poor water quality; (4) low water pressure; (5) foul odor in drinking water; (6) sediments in the water that led some customers to purchase costly home filtration systems; (7) poor customer service; (8) opposition to flat sewer rates; and (9) the Company's failure to offer an irrigation rate.

- A total of twenty (20) witnesses testified at the four public witness hearings which were conducted for the purpose of receiving customer testimony. Three hearings were held in person---in Raleigh, Wilmington and Gastonia---and one was conducted as a virtual hearing. The customers were from eight (8) water systems and twelve (12) different subdivisions.
- The testimony received during those four public hearings included opposition to rate increases (both magnitude and frequency), the absence of information about system specific improvement plans that customers believe should be necessary to support a rate increase, secondary water quality concerns, rate design, comparison of rates to those of governmental providers, conservation, irrigation costs, pressure, flushing intervals, communications about flushing and other service interruptions, testing requirements for backflow prevention devices, the level of transparency about PFAS, base facilities charges, and the confusing nature of notices.

- Six customers from the Stoneridge Master, five customers from The Cape/Beau Rivage Master, four customers from Park South, and one customer each from the Flowers Plantation, Chapel Ridge, Bayleaf/Stonebridge Master, River Oaks Master and Meadow Ridge Master testified.
- Some customers who complained of water quality issues testified that they do not drink the water supplied by Aqua and, instead, purchase bottled water for drinking and cooking. Several customers testified that they have incurred expense to have household filters installed (by non-Aqua affiliated vendors) in an effort to improve the quality of water supplied to their homes by Aqua. A few customers produced photographs of discolored water and the impact on their appliances and fixtures.
- Aqua filed three, detailed verified reports with the Commission which reflected its investigation of the concerns raised by the witnesses at the four customer witness public hearing. The reports also address the issues that appeared to apply across systems and discuss remedial efforts being taken at the system level. The reports address customer specific solutions, explaining that: (a) naturally-occurring iron and manganese are present in the groundwater supply that is the source of water for many of the Company's systems; (b) the levels of iron and manganese in the Company's systems do not exceed applicable regulatory standards; (c) the presence of iron and manganese in the

water can cause water discoloration, problems with household appliances, and staining of fixtures and laundry; (d) the Company has employed various strategies to address the elevated levels of iron and manganese in its water systems (e.g., flushing, chemical sequestration, and installation of various filters); and (e) the Company works with the Public Staff and North Carolina Department of Environmental Quality (DEQ) to devise optimal plans to better address the problem of iron and manganese in the Company's water systems.

- Per the Company's complaint tracking notes, the reasons for the outages which were complained about were variously due to power outages or water main breaks. Multiple System Pressure Advisories (SPAs) were due to water main breaks and the related repair work that followed; the low water pressure was due to a power outage; and the rotten egg smell was likely associated with a failing anode in his hot water tank. There were no Boil Water Advisories, and efforts were made to explain the difference between a Boil Water Advisory and an SPA.
- Aqua supported its customer service obligation through attendance at the public hearings by numerous Company personnel, who were available both to hear from the public and to assist with issues. The Company also filed detailed, researched, verified reports after each of the public hearings, addressing the service-related concerns and other comments by the witnesses who testified. The reports described each witnesses' specific service-related and water quality-related comments

and concerns and comments as well as the Company's response to each comment and concern. With respect to secondary water quality concerns, the Company stated that it continues to address these issues by using the appropriate type of treatment/removal methods (e.g., flushing, sequestration, or oxidation and filtration) and installing new treatment equipment to meet the DEQ requirements where necessary.

- Evidence in explanation of customer complaints and in support of the Company's compliance with service quality obligations was presented by Public Staff witness Bhatta and Company witness Berger.
- Operational compliance with environmental laws and regulation is essential to safe, adequate provision of water service. Aqua's compliance record with respect to water systems (of which it has over 700) is at the 99.9% level through the period of 2020 through third quarter 2022. The Company also achieved a wastewater operations compliance record of approximately 98.7% during that same time period.
- United States Environmental Protection Agency (EPA) and DEQ secondary water quality standards address the acceptable levels of certain constituents, including iron and manganese, that naturally occur in the groundwater sources of drinking water. Secondary water quality standards serve as guidelines to operators of water systems on maintaining these elements at levels that consumers will not find

objectionable for drinking or consuming due to taste, color, and odor effects.

- While the EPA and DEQ secondary water quality standards serve as guidelines to assist water systems in managing qualities such as taste, color, and odor, they do not purport to address the suitability or acceptability of water for uses other than drinking, cooking, and human ingestion. Separate and apart from health concerns, the degree or magnitude of water taste, color, and odor problems resulting from elevated levels of iron and manganese, which for purposes of health-related issues are sometimes designated and considered “aesthetic” concerns, often adversely impact the usefulness of water supplied and can significantly limit the benefit customers receive from the water service for which they pay. Persistent secondary water quality issues related to elevated concentrations of iron and manganese and customer service issues may also render the quality of service for some customers inadequate for non-consumptive purposes, such as bathing, cleaning, laundry, and use in appliances.
- Though the customers’ comments and the evidence---particularly with respect to secondary water quality issues, such as odor and staining, in certain parts of Aqua’s service territory--justify the continuation of efforts to address secondary water quality. Aqua’s performance with respect to secondary water quality and service has continued to improve. The evidence showed significantly increased investment and operational

attention to these issues, and there were no complaints during the public hearing regarding primary water quality concerns. The Company's efforts are responsive to customer concerns, reflect additional investment and operational diligence, and, if sustained, should support continued improvement in secondary water quality and service.

- Operational changes and capital improvements should continue as needed to support Aqua's efforts in improving the quality of water in systems affected by elevated levels of iron and manganese.
- As shown by the customers' comments and the actions taken by the Company to address the water quality complaints, specifically regarding secondary water quality complaints and pursuant to its Water Quality Plan, Aqua continues to evaluate its systems for an appropriate type of treatment or removal method based on the water quality complaints received and up-to-date iron and manganese concentrations in the sources.
- The overall quality of water service provided by Aqua is adequate on a company-wide and system-wide basis. The Company meets the DEQ and the EPA's health-based primary quality standards.
- The overall company-wide and system-wide quality of wastewater service provided by Aqua is adequate and the Company operates its wastewater treatment plants in a reasonable and prudent manner.
- Aqua's level and quality of communication with its customers continues to increase and strengthen, as indicated by the testimony of its

customers, the decrease in the number of customers testifying at public hearings and submitting written consumer statements, and the Company's evidence of its internal improvements.

- The Company and the Public Staff should continue conversations about the protocol for tracking source water quality issues in its water systems, in order to assess whether a system has elevated levels of iron and manganese in the source of supply. The Commission recognizes the necessity of proper categorization of discolored water calls as "LabD" calls and assignment of a proper root cause, and directs Aqua and the Public Staff to continue efforts to arrive at a mutually satisfactory protocol.
- Consistent with the statutory requirements of G.S. 62-131(b), the overall quality of service provided by Aqua is adequate, efficient, and reasonable.

Disputed Issues

Rate of Return on Equity and Overall Cost of Capital

- The cost of capital and revenue increase approved in this Order are intended to provide Aqua, through sound management, the opportunity to earn an overall rate of return of 7.19%. This overall rate of return is derived from applying an embedded cost of debt of 3.97%, and a rate of return on common equity of 10.4%, to a capital structure consisting of

50.00% long-term debt and 50.00% equity. This cost of capital is reasonable for both the base year and the WSIP term.

- The 10.4% rate of return on common equity for Aqua is just and reasonable in this general rate case. The cost of equity has risen substantially since Aqua's last rate case, as indicated by cost of capital witnesses for both parties.
- The undisputed 50.00% equity and 50.00% long-term debt ratio is a reasonable capital structure for Aqua in this case.
- The undisputed 3.97% cost of debt for Aqua is reasonable for the purposes of this case.
- The provision of continuous safe, adequate, and reliable water and wastewater utility service by Aqua is essential to the Company's customers.
- The rate increase approved in this case, which includes the authorized rate of return on common equity and capital structure, will be difficult for some of Aqua's customers to pay, particularly the Company's low-income customers.
- The authorized rate of return on common equity and capital structure approved by the Commission appropriately balance the benefits received by Aqua's customers from the Company's necessary investments in the 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.

- The authorized 10.4% rate of return on common equity and the 50.00% equity capital structure approved by the Commission in this case appropriately balance Aqua's need to obtain equity and debt financing with the ratepayers' need to pay the lowest possible rates.
- The authorized levels of overall rate of return, cost of long-term debt, and rate of return on common equity set forth above are supported by competent, material, and substantial record evidence, are consistent with the requirements of N.C.G.S. § 62-133, and are fair to Aqua's customers generally and in light of the impact of changing economic conditions.

PFAS Capital Costs

- PFOS and PFOA are chemical compounds which are part of the larger per- and polyfluoroalkyl substances (PFAS) family of compounds.
- “On March 14, 2023, EPA announced the proposed National Primary Drinking Water Regulation (NPDWR, or the Proposed Regulation) for six PFAS including perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorononanoic acid (PFNA), hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX Chemicals), perfluorohexane sulfonic acid (PFHxS), and perfluorobutane sulfonic acid (PFBS). The proposed PFAS NPDWR does not require any actions until it is finalized. EPA anticipates finalizing the regulation by the end of 2023.”
- See EPA Website: <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>⁴
- The EPA Proposed Regulation was published in the Federal Register on March 29, 2023.

<https://www.federalregister.gov/documents/2023/03/29/2023-05471/pfas-national-primary-drinking-water-regulation-rulemaking>

⁴ The Commission takes judicial notice of EPA’s March 14, 2023, action as well as other federal agency determinations and announcements regarding PFAS and its related compounds, cited herein and including the March 29, 2023, publication in the Federal Register. This notice is taken pursuant to N.C. Gen. Stat. § 62-65(b), concerning judicial notice of (among other things) published reports of federal regulatory agencies, public information and data published by official State and federal agencies, and such other facts and evidence as may be judicially noticed by justices and judges of the General Court of Justice.

- The Maximum Contaminant Levels (MCLs----the enforceable levels) for PFOS and PFOA in this Proposed Regulation are established at 4.0 parts per trillion (ppt).
- The Proposed Regulation would also require public water systems to:
 - Monitor for these PFAS
 - Notify the public of the levels of these PFAS
 - Reduce the levels of these PFAS in drinking water if they exceed the proposed standards.
- The EPA Proposed Regulation on March 14, 2023, is the first-ever national drinking water standard for six per- and polyfluoroalkyl substances (PFAS), and is the latest action under President Biden’s plan to combat PFAS and Administrator Regan’s PFAS Strategic Roadmap. (Tr. Vol. 10, pp. 32 – 38).
- The proposal, if finalized, would regulate PFOA and PFOS as individual contaminants, and will regulate four other PFAS: PFNA, PFHxS, PFBS, and GenX Chemicals, as a PFAS mixture through a hazard index calculation.
- See <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>
- This process has been long in the making and extensively considered. On March 3, 2021, EPA published in the Federal Register Regulatory Determinations for Contaminants on the Fourth Contaminant Candidate List, which included a final determination to regulate PFOA and PFOS in drinking water.

- <https://www.federalregister.gov/documents/2021/03/03/2021-04184/announcement-of-final-regulatory-determinations-for-contaminants-on-the-fourth-drinking-water>
- Prior to that, in 2016, EPA published non-enforceable health advisory levels (HALs) for two types of PFAS, and in 2022 updated those HALs to an effective “non-detect” level and to include additional PFAS chemicals. See Tr. Vol. 10, pp. 33.
- <https://www.federalregister.gov/documents/2022/06/21/2022-13158/lifetime-drinking-water-health-advisories-for-four-perfluoroalkyl-substances>
- The Public Staff recommends removal of estimated capital investment totaling \$7,810,000 during the Rate Years that are associated with PFAS mitigation. (Tr. Vol. 8, pp. 66).
- Aqua contests removal of that capital investment, contending that the filter projects are prudent and necessary to ensure the Company meets compliance obligations to be outlined in the proposed rule and regulatory timeline, that they will establish confidence and safety in customers’ drinking water supply, and that the dollar amount is conservative.
- The capital investment totaling \$7,810,000 during the Rate Years and associated with PFAS mitigation is a reasonable amount and is necessary to protect the integrity of the water supply and, ultimately, customer health. The projected expenditures during Rate Years 1 – 3

reflect proper management, are conservative, and focus on the integrity of the water supply.

- Aqua's development of and reliance on its internal standards, policy and experience for treatment of PFAS demonstrate proper management and operational activity, and are appropriately forward-looking.
- Aqua's parent company, Essential Utilities, Inc. (Essential), adopted a 13-parts-per-trillion (ppt) limit for PFOS and PFOA to align with the New Jersey MCL (which was the most stringent standard within Aqua's footprint at time of adoption).⁵
- Aqua has already prioritized for treatment the 30 entry points (out of 1300 surveyed) that consistently, on a Running Annual Average basis, tested at 13 ppt or higher for PFOS, PFOA, or PFNA. Of the 30, one is paralleled by another utility and another is currently not in service. For the remaining 28, Aqua has been unable to find alternative sources other than treatment for PFAS. (Tr. Vol. 10, pp. 87-88).
- The decision to prioritize these sites for treatment or other alternatives by 2025 is appropriate under the circumstances known at this time. (Tr. Vol. 10, pp. 34).
- Aqua's current proposal for rates to support its PFAS mitigation plan is conservative, considering (a) the EPA recommendation for a lower threshold (4 ppt) than Essential's internally adopted threshold of 13 ppt,

⁵ The Commission takes judicial notice of the transcript of the proceeding in Docket No. W-218 Sub 526 (2020) at Tr. Vol. 8, pp. 53-55, where Ms. Berger testified about Essential's adoption of an internal Company standard for PFOS and PFOA at 13 ppt, as well as the Company's process of surveying its entry points for PFAS in North Carolina.

and (b) Aqua's commitment to treat to a non-detect level. It is reasonable to assume that the universe of entry points to be addressed is likely to be expanded, particularly in light of the EPA proposed regulation.

- It was reasonable for Aqua to follow the lead established by its parent company in Pennsylvania in an effort to initiate the process of addressing the health concerns associated with the presence of these PFAS compounds in drinking water.
- The circumstances surrounding regulation of and treatment plans for reducing the levels of PFAS in drinking water have been and remain dynamic and in flux; however, the EPA's goal is much more clearly understood now, since March 14, 2023.
- Aqua's proactive, studied approach to this problem has placed the Company in the position to refine its program as necessary to effectively deal with PFAS, while providing public health protection, and the Commission commends the effort.
- It has been, and continues to be, reasonable for Aqua to press forward on plans to address the health concerns associated with the presence of these PFAS compounds in drinking water---ahead of final adoption of regulations and ahead of final compliance dates. North Carolina customers are due a high level of protection in these matters, as are customers throughout the country.

- The process of assessing the health impacts associated with various levels of these compounds in drinking water is complex and ongoing. It is prudent and necessary to address the risks on both a current and a forward-looking basis. Conversely, it is imprudent to await some ultimate determination, in the form of a final rule, as to the exact balance of safety and cost prior to taking decisive action that moves the utility towards compliance with standards which are recommended by the EPA's considered, strong, announcement of March 14, 2023.
- The Public Staff's position expressed in the testimony of Evan M. Houser and by the panel of witnesses consisting of Michelle Boswell, John Hinton, Charles Junis, and Fenge Zhang ----to the effect that it is not prudent for Aqua to move ahead as planned with its treatment protocol until the final outcome of rulemaking and compliance is known---is neither reasonable nor prudent. (Tr. Vol. 6 pp. 346, and Tr. Vol. 8 pp. 66). First of all, this position is contradicted by Aqua witness Berger's testimony that the Company believes its treatment protocol will be sufficient to reduce the levels of PFOS and PFOA to non-detect, or 4 ppt. (Tr. Vol. 10, pp. 38 and 86). Secondly, the EPA announcement of March 14, 2023, negated that part of the Public Staff's reservations which were based upon the absence of a proposed MCL. Third, Public Staff witness Junis' attempt to distinguish this circumstance from that of the period prior to adoption of the Coal Combustion Residuals (CCR) final rule pertaining to coal ash---with respect to the urgency of moving

towards mitigation of contaminants----is unpersuasive. (Tr. Vol. 9, p. 60). Fourth, in an environment in which so much is known about the health effects of these compounds, as components of drinking water, and in which litigation has spawned, it is not reasonable or responsible to wait until all regulatory action and decisions are complete to work through the process of controlling the contaminants. Fifth, Aqua's proposed WSIP plan includes capital needed to provide treatment for only sites that exceed Aqua's internal standard of 13 ppt. These sites have consistently exceeded the EPA's proposal for a 4 ppt standard.

- Aqua's protocol for analysis and treatment for PFAS---specifically PFOA and PFOS---on a going-forward basis, is appropriate. Aqua's proposals for evaluation and treatment focus on the goal of compliance with the EPA's new proposed MCLs for PFOA and PFOS and continue the ongoing process of reduction of levels of these compounds.
- It is now clearly reasonable for the Company to migrate from its previous, internal standards to focus on the goal of meeting the announced EPA Proposed Drinking Water Standard for these compounds. Aqua asserts that it can pivot to address and meet the stricter standard; however, under any circumstances, it must address the sites exceeding the higher internal 13 ppt standard.
- Though the announcement was understood to be imminent, at the time of the Public Staff testimony the EPA had not formalized this particular

recommendation. However, and as expected, the EPA did formalize the announcement of a proposed regulation on March 14, 2023.

- The actual compliance date for the rule is anticipated to be Fall of 2026, which requires the Company to meet the MCL at the proposed sites no later than that date. Waiting until 2026 to install treatment would be reactive and delay protection against exposure due to the timing, location, and quantity of sites that Aqua has identified that require treatment under Aqua's internal 13 ppt limit. The challenge is exacerbated as the EPA proposed MCL was, as expected, established at 4.0 ppt.
- It was widely anticipated that EPA intended to propose an MCL. There are limited Best Available Technologies (BAT) to treat for PFOS and PFOA, and thus competition for these materials and resources is at an all-time high. Time is of the essence.
- Aqua's preparation for reduction of PFOS/PFOA in the water supply---mindful of health concerns and in anticipation of control measures---is in the best interests of its customers from the perspective of health concerns, timing, anticipation of necessary treatment protocols, and costs. Prudence requires preparation.
- Aqua should move purposefully and prudently towards compliance with the lower---now announced---proposed MCLs. That the EPA has not finalized enforceable regulations does nothing to support delay in

proceeding towards establishment of proper controls for these compounds in Aqua's drinking water systems.

- The benefits of moving ahead with a carefully devised PFAS Mitigation Strategy are found in timely mitigation of health concerns associated with PFAS compounds, moving methodically to secure a place in a supply chain for resources that are expected to be much in demand, and focusing analysis on alternatives among various courses of response, including treatment vs. accessing additional supply, for example.
- Aqua has established that its planned projects and protocols---its treatment goal---is "non-detect," which ensures compliance with the MCL outcome when it is finalized.
- The Public Staff's opposition to Aqua's plans to continue to move to compliance with the non-detect standards, long expected and now formally announced by the EPA, of 4.00 ppt, is not persuasive, given the clarity and weight of the health concerns associated with these compounds and the level of definition introduced by the EPA's Proposed Regulation. The "shifting sands" of which witness Junis cautioned became appreciably more stable on March 14, 2023.
- The Public Staff testimony failed to clearly provide explanation as to the Public Staff's support of delay until receipt of a final, enforceable standard. Specifically, it did not provide a clear explanation for how delay until the compliance deadline benefits the customer, or how its

proposal ensures the Company's compliance with the Safe Drinking Water Act and NCUC Rule R7-12.

- The Public Staff's testimony failed to consider the impact of delay in terms of cost, timing, quantity, availability of resources, and supply/demand price increases.
- Aqua corrected some misperceptions of its plans:
 - a. Aqua has identified 30 entry points that exceed the Company standard of 13 ppt. Each of these entry points has been prioritized for treatment or other alternatives, such as purchase water, inactivation, or possibly drilling a new well.
 - b. Aqua will perform follow-up sampling on all entry points within Aqua's 704 public water systems to confirm that the detection is not a result of environmental or sampling technique influences. However, in the interim, Aqua plans for many of those sites to have confirmed detections, and the Capital Improvement Plan (CIP) will require modification to achieve compliance by the end of the compliance period – again, which is anticipated to be in 2026.
 - c. Aqua's plan is to address the 30 entry points that exceed 13 ppt – while working to confirm, plan, and pursue Bipartisan Infrastructure Law (BIL) funding where possible for multiple other projects that will be required in the next five years.
 - d. Aqua recognizes that a proposed MCL of 4 ppt is detectable PFOS and/or PFOA, and has testified that all future treatment will be based

on treatment and operational goals of non-detect. This includes the projects currently identified in the CIP and any future projects that result from Aqua's ongoing sampling program.

- Aqua has demonstrated defense of its customers' interests in these matters and has developed a cogent plan.
- Aqua's pursuit of litigation with the manufacturers of PFAS on behalf of customers--- to mitigate the costs of future treatment requirements and added operations costs to address these contaminants---is a responsible step to take on behalf of its customers.
- Aqua has demonstrated commendable transparency in its discussion of these matters with affected and/or concerned customers.
- Aqua's request for inclusion of \$7,810,000 in costs for PFOS and PFOA filter projects during the WSIP period is supported by the evidence and the argument in this proceeding, is conservative, and is reasonable. (Tr. Vol. 6, p. 347).

SIP/SAP Costs

- The actual capital costs incurred by Aqua for its Service Improvement Plan, including the costs of SAP, through August 31, 2022, are prudent, used and useful, and therefore reasonable and appropriate to include in rate base. The actual and projected capital costs incurred by Aqua for its Service Improvement Plan, including the costs of SAP, after August 31, 2022, are reasonable and appropriate to include in rate base for recovery in the WSIP Rate Years 1 – 3.

Certain PBM Penalties

- The Public Staff proposed four additional PBMs with penalties, beyond the PBMs that the parties agreed to in the Stipulation, in its Public Staff Supplemental Exhibit 7 filed March 30, 2023. Aqua opposed the performance penalty recommendations of the Public Staff but agreed to adopt the PBMs for tracking purposes only. The Commission finds that for purposes of the present proceeding, these four additional PBMs should be approved as tracking metrics only.

Conservation Pilot Program

- It is reasonable and appropriate for Aqua to continue its Conservation Pilot Program another year, and to provide the Company's analysis on the pilot in the WSIP annual review scheduled in the first quarter of 2024.

Customer Assistance Program

- It is reasonable and appropriate for the Company to provide a Customer Assistance Program (CAP), funded by \$45,000 of non-utility antenna revenues, as a pilot program to assist low income customers with arrearages on their water and sewer bills.

Wakefield Filter Project

- The Wakefield filter project is prudent and used and useful. It is reasonable and appropriate to include the full costs of this treatment system in rate base.

xx. Aqua requested that Operating and Maintenance (O&M) and General and Administrative (G&A) expenses be included in its revenue requirement based on (1) test year levels with pro forma adjustments, (2) projections for the part of the base year beyond the August 31, 2022, update deadline, and (3) projections for the WSIP Rate Years. The Public Staff recommended various adjustments to the Aqua requests. The Parties' Stipulation has settled all disputed expense issues.

Rate Base

Base Year Rate Base

xx. The reasonable and appropriate level of rate base for base year plant in service for Aqua's combined operations is

1	Plant In Service	613,674,600
2	Accumulated Depreciation	(167,697,264)
3	Contributions In Aid Of Construction	(219,348,798)
4	Accumulated Amortization Of CIAC	93,090,963
5	Acquisition Adjustments	1,951,369
6	Accum. Amort. Of Acquisition Adjustments	203,376
7	Advances For Construction	(3,796,948)
8	Net Plant In Service	318,077,297
9	Customer Deposits	(236,957)
10	Unclaimed Refunds And Cost-Free Capital	(184,659)
11	Accumulated Deferred Income Taxes	(36,262,340)
12	Materials And Supplies Inventory	3,548,743
13	Excess Capacity Adjustment	-
14	Working Capital Allowance	6,580,345
15	Original Cost Rate Base	291,522,429

This level of rate base has been found reasonable based on the Commission's findings regarding disputed rate base issues.

xx. The appropriate level of rate base for Rate Years 1, 2, and 3 is:

Description	RY1	RY2	RY3
Plant In Service	690,486,926	732,018,138	767,753,124
Accumulated Depreciation	(179,269,587)	(197,854,801)	(218,531,180)
Contributions In Aid Of Construction	(219,348,798)	(219,348,798)	(219,348,798)
Accumulated Amortization Of CIAC	98,193,543	103,296,123	108,398,703
Acquisition Adjustments	1,951,369	1,951,369	1,951,369
Accum. Amort. Of Acquisition Adjustments	31,416	(140,544)	(312,504)
Advances For Construction	(3,796,948)	(3,796,948)	(3,796,948)
Net Plant In Service	388,247,921	416,124,540	436,113,766
Customer Deposits	(236,957)	(236,957)	(236,957)
Unclaimed Refunds And Cost-Free Capital	(184,659)	(184,659)	(184,659)
Accumulated Deferred Income Taxes	(40,998,029)	(42,738,900)	(44,802,351)
Materials And Supplies Inventory	3,656,625	3,767,786	3,882,327
Excess Capacity Adjustment	-	-	-
Working Capital Allowance	6,888,685	6,186,540	5,488,431
Original Cost Rate Base	357,373,586	382,918,350	400,260,556

Base Case Revenue Requirement

xx. It is reasonable and appropriate to determine the revenue requirement for Aqua NC using the rate base method as allowed by N.C.G.S. § 62-133. The Base Case revenue requirement resulting from the Commission’s findings and conclusions on disputed issues is

Aqua Water	45,822,780
Aqua Sewer	19,331,540
Fairways Water	1,795,790
Fairways Sewer	2,887,440
Brookwood Water	8,042,860
Total	77,880,410

Rate Years 1, 2, and 3 Revenue Requirement Increase

The revenue requirement increase for Rate Years 1, 2, and 3 resulting from the Commission's findings and conclusions on disputed issues is

Description	Increase in:		
	Rate Year 1	Rate Year 2	Rate Year 3
Aqua Water	4,625,370	2,323,110	2,118,670
Aqua Sewer	2,736,570	1,101,130	1,163,410
Fairways Water	424,660	108,830	115,310
Fairways Sewer	116,380	37,830	150,030
Brookwood Water	1,422,880	468,710	492,040
Total	9,325,860	4,039,610	4,039,460

Revenue Requirements: Base Case & WSIP Years 1, 2 and 3

xx. The reasonable revenue requirements for the base year and Rate Years is

Item	Base Year	Rate Year 1	Rate Year 2	Rate Year 3
Operating Revenues				
Service Revenues	\$ 77,343,999	\$ 86,686,526	\$ 90,714,242	\$ 94,739,514
Miscellaneous Revenues	\$ 939,582	\$ 973,174	\$ 1,008,009	\$ 1,044,133
Uncollectibles	\$ (403,171)	\$ (453,419)	\$ (476,378)	\$ (498,320)
Total Operating Revenues	\$ 77,880,410	\$ 87,206,281	\$ 91,245,873	\$ 95,285,327

ROE comparison for revenue impact

xx. The operating revenues pursuant to the Stipulation, with a 10.40% ROE, are

Base Case Operating Revenues:	Company per Application (Updated)	Amount per Public Staff	Amount per Stipulation at 10.40% ROE
Service revenues	\$ 84,745,943	\$ 71,489,784	\$ 77,343,999
Miscellaneous revenues	\$ 1,407,933	\$ 1,385,450	\$ 939,582
Uncollectibles	\$ (467,562)	\$ (397,041)	\$ (403,171)
Total operating revenues	\$ 85,686,314	\$ 72,478,193	\$ 77,880,410

Maintenance and general expenses comparison with Aqua ROE

xx. The amount of operating revenue deductions with a 10.40% ROE are

Base Case Operating Revenue Deductions	Company per Application (Updated)	Amount per Public Staff	Amount per Stipulation at 10.40% ROE
Salaries and wages	\$ 12,389,737	\$ 10,771,381	\$ 11,454,733
Employee pensions and benefits	\$ 4,208,746	\$ 3,122,939	\$ 3,294,310
Purchased water / sewer treatment	\$ 3,897,762	\$ 3,565,498	\$ 3,633,159
Sludge removal	\$ 840,232	\$ 841,981	\$ 841,981
Purchased power	\$ 4,038,030	\$ 4,058,433	\$ 4,058,433
Fuel for power production	\$ 43,957	\$ 29,331	\$ 29,331
Chemicals	\$ 1,478,946	\$ 2,309,639	\$ 2,309,639
Materials and supplies	\$ 687,832	\$ 664,394	\$ 664,394
Testing fees	\$ 1,052,960	\$ 1,021,893	\$ 1,021,893
Transportation	\$ 2,090,694	\$ 1,575,743	\$ 1,575,743
Contractual services - engineering	\$ 417	\$ 405	\$ 405
Contractual services - accounting	\$ 240,104	\$ 52,684	\$ 192,096
Contractual services - legal	\$ 356,985	\$ 326,969	\$ 326,970
Contractual services - management fees	\$ -	\$ -	\$ -
Contractual services - other	\$ 5,368,603	\$ 5,210,212	\$ 5,210,212
Rent	\$ 383,455	\$ 372,141	\$ 372,141
Insurance	\$ 1,465,569	\$ 1,127,393	\$ 1,127,393
Advertising	\$ -	\$ -	\$ -
Regulatory commission expense	\$ 613,482	\$ 600,370	\$ 803,600
Miscellaneous expense	\$ 1,631,520	\$ 1,583,393	\$ 1,583,393
Interest on customer deposits	\$ 24,820	\$ 24,820	\$ 24,820
Animalization & consumption adjustments	\$ (4,742)	\$ -	\$ -
Non-recurring COVID expenses	\$ -	\$ (116,084)	\$ (58,042)
Contra-OH Allocations	\$ (2,105,886)	\$ (419,005)	\$ (419,005)
Total O&M and G&A expense	\$ 38,703,223	\$ 36,724,532	\$ 38,047,600

Depreciation and Amortization Expense

xx. The reasonable level of depreciation and amortization expense is

Base Case Depreciation Expense	Company per Application (Updated)	Amount per Public Staff	Amount per Stipulation at 10.40% ROE
Depreciation and Amortization Expense			
Depreciation - Utility Plant	\$ 18,411,926	\$ 16,621,407	\$ 16,621,407
Amort - Util Plant Acqstn Adjstmnt	\$ 171,960	\$ 171,960	\$ 171,960
Amort - Tank Painting, Other	\$ 365,612	\$ 365,612	\$ 365,612
Amort - CIAC	\$ (5,102,580)	\$ (5,102,580)	\$ (5,102,580)
Total Depreciation and amortization expense	\$ 13,846,917	\$ 12,056,399	\$ 12,056,399

Base Case Depreciation Expense	Amount
Depreciation and Amortization Expense	
Depreciation - Utility Plant	\$ 16,621,407
Amort - Util Plant Acqstn Adjstmnt	\$ 171,960
Amort - Tank Painting, Other	\$ 365,612
Amort - CIAC	\$ (5,102,580)
Total Depreciation and amortization expense	\$ 12,056,399

Taxes Other Than Income Taxes

xx. The reasonable level of taxes other than income taxes is

Base Case Other Taxes	Company per Application (Updated)	Amount per Public Staff	Amount per Stipulation at 10.40% ROE
Property taxes	\$ 741,331	\$ -	\$ 741,331
Payroll taxes	\$ 1,086,682	\$ (261,187)	\$ 825,495
Other taxes	\$ 283,108	\$ -	\$ 283,108
Benefit costs - Pension	\$ (28,314)	\$ -	\$ (28,314)
Total	\$ 2,082,807	\$ (261,187)	\$ 1,821,620

Base Case Other Taxes	Amount
Property taxes	\$ 741,331
Payroll taxes	\$ 825,495
Other taxes	\$ 283,108
Benefit costs - Pension	\$ (28,314)
Total	\$ 1,821,620

WSIP Operating Revenues by Rate Year

xx. The reasonable level of operating revenues by Rate Year is

Item	Base Year	Rate Year 1	
		Adjustments	Amount
<u>Operating Revenues</u>			
Service Revenues	\$ 77,343,999	\$ 9,342,527	\$ 86,686,526
Miscellaneous Revenues	\$ 939,582	\$ 33,592	\$ 973,174
Uncollectibles	\$ (403,171)	\$ (50,248)	\$ (453,419)
Total Operating Revenues	\$ 77,880,410	\$ 9,325,871	\$ 87,206,281
Item	Rate Year 1	Rate Year 2	
		Adjustments	Amount
<u>Operating Revenues</u>			
Service Revenues	\$ 86,686,526	\$ 4,027,716	\$ 90,714,242
Miscellaneous Revenues	\$ 973,174	\$ 34,835	\$ 1,008,009
Uncollectibles	\$ (453,419)	\$ (22,959)	\$ (476,378)
Total Operating Revenues	\$ 87,206,281	\$ 4,039,592	\$ 91,245,873
Item	Rate Year 2	Rate Year 3	
		Adjustments	Amount
<u>Operating Revenues</u>			
Service Revenues	\$ 90,714,242	\$ 4,025,272	\$ 94,739,514
Miscellaneous Revenues	\$ 1,008,009	\$ 36,124	\$ 1,044,133
Uncollectibles	\$ (476,378)	\$ (21,942)	\$ (498,320)
Total Operating Revenues	\$ 91,245,873	\$ 4,039,454	\$ 95,285,327

Adjustments to WSIP Operating Revenues by Rate Year

The reasonable level of adjustments to operating revenues by Rate Year is

Item	Adjustments		
	Rate Year 1	Rate Year 2	Rate Year 3
<u>Operating Revenues</u>			
Service Revenues	\$ 9,342,527	\$ 4,027,716	\$ 4,025,272
Miscellaneous Revenues	\$ 33,592	\$ 34,835	\$ 36,124
Uncollectibles	\$ (50,248)	\$ (22,959)	\$ (21,942)
Total Operating Revenues	\$ 9,325,871	\$ 4,039,592	\$ 4,039,454

Appropriate Level of WSIP Operating Revenues

xx. The reasonable level of operating revenues by Rate Year is

Item	Rate Year 1	Rate Year 2	Rate Year 3
<u>Operating Revenues</u>			
Service Revenues	\$ 86,686,526	\$ 90,714,242	\$ 94,739,514
Miscellaneous Revenues	\$ 973,174	\$ 1,008,009	\$ 1,044,133
Uncollectibles	\$ (453,419)	\$ (476,378)	\$ (498,320)
Total Operating Revenues	\$ 87,206,281	\$ 91,245,873	\$ 95,285,327

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

xx. It is reasonable and appropriate to use the current state corporate income tax rate of 2.50% and the applicable 21.00% federal corporate income tax rate to calculate Aqua's revenue requirement. It is also reasonable and appropriate to use 2.25% tax rate in 2025.

AQUA SCHEDULE 1 FOR THE TEST YEAR

Aqua North Carolina, Inc.				
Docket No. W-218 Sub 384				
NET OPERATING INCOME FOR A RETURN				
For The Test Year Ended December 31, 2021				
COMBINED OPERATIONS				
Item	Base Case	Rate Year 1	Rate Year 2	Rate Year 3
Operating Revenues:				
Service revenues	77,343,999	86,686,526	90,714,242	94,739,514
Miscellaneous revenues	939,582	973,174	1,008,009	1,044,133
Uncollectibles	(403,171)	(453,419)	(476,378)	(498,320)
Total operating revenues	77,880,410	87,206,281	91,245,873	95,285,327
Operating Revenue Deductions:				
Salaries and wages	11,454,733	11,798,366	12,152,315	12,516,884
Employee pensions and benefits	3,294,310	3,393,139	3,494,934	3,599,782
Purchased water / sewer treatment	3,633,159	3,657,787	3,683,164	3,709,313
Sludge removal	841,981	861,888	888,089	915,087
Purchased power	4,058,433	4,181,812	4,308,943	4,439,938
Fuel for power production	29,331	29,331	29,331	29,331
Chemicals	2,309,639	2,379,853	2,452,198	2,526,744
Materials and supplies	664,394	684,590	705,403	726,847
Testing fees	1,021,893	1,052,570	1,084,570	1,117,543
Transportation	1,575,743	1,592,477	1,609,390	1,626,484
Contractual services - engineering	405	418	431	444
Contractual services - accounting	192,096	197,762	203,774	209,970
Contractual services - legal	326,970	336,910	347,153	357,707
Contractual services - management fees	-	-	-	-
Contractual services - other	5,210,212	5,368,600	5,526,187	5,559,375
Rent	372,141	383,107	394,752	406,752
Insurance	1,127,393	1,161,667	1,196,983	1,233,369
Advertising	-	-	-	-
Regulatory commission expense	803,600	323,571	323,571	323,571
Miscellaneous expense	1,583,393	1,631,518	1,681,104	1,732,196
Interest on customer deposits	24,820	24,820	24,820	24,820
Annualization & consumption adjustments	-	-	-	-
Non-recurring COVID expenses	(58,042)	-	-	-
Contra-OH Allocations	(419,005)	(431,743)	(444,868)	(458,392)
Total O&M and G&A expense	38,047,601	38,628,444	39,662,244	40,597,765
Depreciation and amortization expense	12,056,398	14,551,104	15,917,822	17,041,786
Property taxes	741,331	791,173	817,337	844,366
Payroll taxes	825,495	850,260	875,767	902,040
Other taxes	283,108	283,108	283,108	283,108
Benefit costs - Pension	(28,314)	(29,163)	(30,038)	(30,939)
Regulatory fee	104,547	116,133	122,542	127,675
Deferred income tax	(121,272)	(121,272)	(121,272)	(121,272)
State income tax	426,233	522,709	562,702	591,924
Federal income tax	3,490,851	4,280,998	4,608,523	4,847,857
Total operating revenue deductions	55,825,978	59,873,493	62,698,736	65,084,309
Net operating income for return	18,851,015	23,078,859	24,831,359	26,111,966

AQUA SCHEDULE II

Consolidated Operations				
Description	Base Year	RY1	RY2	RY3
Plant In Service	613,674,600	690,486,926	732,018,138	767,753,124
Accumulated Depreciation	(167,697,264)	(179,269,587)	(197,854,801)	(218,531,180)
Contributions In Aid Of Construction	(219,348,798)	(219,348,798)	(219,348,798)	(219,348,798)
Accumulated Amortization Of CIAC	93,090,963	98,193,543	103,296,123	108,398,703
Acquisition Adjustments	1,951,369	1,951,369	1,951,369	1,951,369
Accum. Amort. Of Acquisition Adjustments	203,376	31,416	(140,544)	(312,504)
Advances For Construction	(3,796,948)	(3,796,948)	(3,796,948)	(3,796,948)
Net Plant In Service	318,077,297	388,247,921	416,124,540	436,113,766
Customer Deposits	(236,957)	(236,957)	(236,957)	(236,957)
Unclaimed Refunds And Cost-Free Capital	(184,659)	(184,659)	(184,659)	(184,659)
Accumulated Deferred Income Taxes	(36,262,340)	(40,998,029)	(42,738,900)	(44,802,351)
Materials And Supplies Inventory	3,548,743	3,656,625	3,767,786	3,882,327
Excess Capacity Adjustment	-	-	-	-
Working Capital Allowance	6,580,345	6,888,685	6,186,540	5,488,431
Original Cost Rate Base	291,522,429	357,373,586	382,918,350	400,260,556

xx. The Commission-approved rates will provide Aqua with an increase of \$_____ in its annual level of authorized service revenues through rates and charges approved in this case, consisting of an increase for Aqua Water operations of \$_____, an increase for Aqua Sewer operations of \$_____, an increase for Fairways Water operations of \$_____, a decrease for Fairways Sewer operations of \$_____, and an increase for Brookwood Water operations of \$_____. After giving effect to these authorized increases in water and sewer revenues, the total annual operating revenues for the Company will be \$_____, consisting of the following levels of just and reasonable operating revenues:

Aqua Water \$ _____

Aqua NC Sewer \$ _____

Fairway Water \$ _____

Fairways Sewer \$ _____

Brookwood Water \$ _____

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 1 – 5

General Matters and the Application

The evidence supporting these findings of fact is contained in the verified Application, the NCUC Form W-1, the testimony and exhibits (both prefiled and late-filed) 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. 6 - 26

The Stipulation, Acceptance of Stipulation, and WSIP

The evidence supporting these findings of fact is found in the Stipulation, the testimony of both Aqua's and the Public Staff's witnesses, Settlement Exhibit I, and the entire record in this proceeding.

On March 31, 2023, Aqua and the Public Staff entered into and filed a Stipulation of Partial Settlement that (a) memorializes their agreements on specified issues in this proceeding, and (b) lists the remaining disputed issues.

Public Staff Settlement Exhibit 1⁶ demonstrates the impact of the Parties' agreements on the calculation of Aqua's gross revenue for the test year updated through August 31, 2022, the "bridge" period of September 1, 2022, to December 31, 2022, and then WSIP Rate Years 1, 2, and 3. The Stipulation is based upon the same test period as included in the Company's Application, updated to August 31, 2022, and then 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 the close of the expert witness hearing. The

⁶ Settlement Exhibit 1 reflects the revenue impact of both the settled issues and the Public Staff's position on disputed issues, and therefore must be modified to the extent the Commission does not accept the Public Staff's position on disputed issues that affect revenue.

Stipulation is also based upon the same WSIP Rate Years as included in the Company's Application, including the use of certain projections and escalation factors. In addition to the Parties' agreements on most of the issues in this proceeding (except the Disputed Issues), the Stipulation provides that Aqua and the Public Staff agree that the Stipulation reflects a negotiation of contested issues, and that the provisions of the Stipulation do not reflect any position asserted by either Aqua or the Public Staff, but instead reflect compromise and settlement between them. The Stipulation provides that it is binding as between Aqua and the Public Staff, and that it is conditioned upon the Commission's acceptance of the Stipulation in its entirety. There are no other parties to this proceeding.

North Carolina Gen. Stat. § 62-133.1B(a) defines a WSIP as a plan under which the Commission sets water or sewer base rates, sets revenue requirements through banding of authorized returns, and authorizes annual rate changes for a three-year period based on reasonably known and measurable capital investments and anticipated reasonable and prudent expenses approved under the plan without the need for a base rate proceeding during the plan period. The Stipulation and the other evidence demonstrate that the WSIP agreed to in this proceeding meets this statutory definition. The Commission approves the WSIP consistent with the Stipulation terms, and is setting base rates for Aqua, authorizing the banding of authorized returns, and authorizing rate changes for a three-year period based on reasonably known and measurable capital investments and anticipated reasonable and prudent expenses approved under the plan, without the need for a base rate proceeding during the plan period.

The key aspects of the Stipulation and the WSIP are as follows:

• **WSIP** – The Parties agree that:

(a) The term for the WSIP should be a three year-period, as follows: (a) WSIP Rate Year 1 will begin on January 1, 2023, and end on December 31, 2023;

(b) WSIP Rate Year 2 will begin on January 1, 2024, and end on December 31, 2024; and

(c) WSIP Rate Year 3 will begin on January 1, 2025, and end on December 31, 2025.

(d) The Base period in this case represents the 12 months ending December 31, 2021, updated through the Commission post-test year date of August 31, 2022.

(e) A bridge period spanning from September 1, 2022, through December 31, 2022, whereafter Rate Year 1 begins, includes activity that must be considered in the establishment of WSIP rates. Agreed upon activity for this bridge period has been included in the Rate Year 1 revenue requirement.

The WSIP may be modified or terminated prior to the end of WSIP Rate Year 3 as permitted by N.C. Gen. Stat. § 62-133.1B(f) and Rule R1-17A(f). WSIP Rate Year 3 rates approved herein should remain in place until the effective date of a new base rate case order unless otherwise ordered by the Commission.

The Base Year revenue requirements shown in the Stipulation and Public Staff Settlement Exhibit 1 should be used as the starting point for the revenue requirements for WSIP Rate Years 1, 2, and 3.

WSIP Rate Years 1, 2, and 3 revenue requirements should be calculated starting with the Base Case revenue requirements escalated by a general escalation factor of 3.04% each year, except for the following:

- salaries and wages, pension and other benefits, and payroll taxes should be escalated at a rate of 3.0% each year.
- purchased water and sewer service revenue requirements should remain at Base Case levels, with future wholesale expense changes to be offset through the pass-through mechanism.
- transportation-fuel services revenue requirements should remain at Base Case levels.
- property tax service revenue requirements should be escalated at 3.31% each year.
- Adjustments for WSIP Rate Year 1, Rate Year 2, and Rate Year 3 plant, rate base, revenues, and costs should be as shown on Public Staff

Settlement Exhibit 1 and should be reflected through the end of each WSIP Rate Year.

- Capital improvement plan costs for WSIP Rate Years 1, 2, and 3 should be as projected by Aqua in its W-1, Item 28 settlement testimony filing.
- Plant in service and accumulated depreciation amounts for WSIP Rate Years 1, 2, and 3 should be calculated using the Public Staff's methodology of assuming that in each WSIP Rate Year, both plant in service and accumulated depreciation for the WSIP Rate Year occurs on Day 1 of such WSIP Rate Year.
- With respect to the banding of authorized ROEs required by N.C.G.S. § 62-133.1B(g), a band of zero basis points above the authorized ROE and 50 basis points below the authorized ROE – should be used for all three Rate Years.
- With respect to performance metrics required by N.C.G.S. § 62-133.1B(a), the following metrics should be adopted for Aqua in this case.

Description	Measure	Penalty	Incentive
Expense Efficiency	Operation & Maintenance expense, per Equivalent Residential Connection (ERC) on a rate division and Company basis, excluding Purchased Water / Sewer Treatment and Purchased Power	None	If, on a Company basis, the actual O&M expense level is reduced by at least \$100K in comparison to the authorized level, then a two and one-half Basis Points (BP) increase to the high-end of

Description	Measure	Penalty	Incentive
			the band is awarded. For each additional \$20K in savings, an additional one-half BP increase is awarded, up to a cumulative maximum of 10 BPs.
Utilization of the SRF Program	Whether the Company applied for SRF funds for four eligible projects estimated at a total of \$2 million or more during each Rate Year of the WSIP	10 BP ROE reduction to high-end of the Commission-approved band for failure to submit the applications required by the measure.	One-quarter BP increase to the high-end of the Commission-approved band for every \$500K in funding the Company is awarded.
Water Service Disruptions	Unplanned water service disruptions – recorded water main breaks / 1,000 accounts	Tracking metric	Tracking metric
Sewer Overflows	Number of sanitary sewer overflows (SSOs) Wastewater SSOs / (100 miles of gravity line)	Tracking metric	Tracking metric
Water Loss	(Water purchased – water sold) / water purchased	Tracking metric	Tracking metric
Routine Flushing	Percent of systems flushed within the WSIP Rate Year Percent of systems means number of systems flushed / total number of	Tracking metric	Tracking metric

Description	Measure	Penalty	Incentive
	systems during the WSIP rate year.		
Water Service Quality Customer Complaints	Technical service complaints (Lab D) / (active accounts / 1,000) Underlying data should incorporate subdivision and system name	Tracking metric	Tracking metric
Timely Answering of Customer Calls	Telephone service factor – calls answered within 30 seconds / total calls answered (tracked by quarter; based on calls received during business hours)	Tracking metric	Tracking metric
Customer Call Abandonment Rate	Percentage of calls abandoned by customers during the WSIP rate year	Tracking metric	Tracking metric
Employee Safety	OSHA incident rate – (number of injuries and illnesses*200,000) / employee hours worked	Tracking metric	Tracking metric
Injury Severity	OSHA DART Rate – (number of OSHA Recordable Injuries and Illnesses that resulted in Days Away, Restricted Duty, or a Transfer of Duties)	Tracking metric	Tracking metric
Field Employee Safety Training	Field Employee safety training – hours of employee safety training	Tracking metric	Tracking metric

Description	Measure	Penalty	Incentive
	<p>/employee</p> <p>Field Employee means staff member who works outside the office at least one-half of the year</p> <p>Safety training means structured and organized training (not peer to peer training)</p>		
Employee Turnover	Number of employees that leave / total number of employees for same time period	Tracking metric	Tracking metric

Aqua will report on its performance on such metrics on an annual basis in accordance with Rule R1-17A(g)(1)(b).

Aqua will provide the annual reports set forth in the WSIP Statute and WSIP Rules.

Aqua will provide the quarterly reports set forth in the WSIP Statute and WSIP Rules according to the Stipulation, which allows the first and second quarter reports in Rate Year 1 to be filed 45 days after the second quarter end of WSIP Rate Year 1.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 27 – 30

Rate Design and Continuation of Bulk Purchase Pass-Through Mechanisms

The evidence supporting these findings of fact is contained in the verified Application, the direct pre-filed testimony of Aqua witness Haddad, the direct pre-filed testimony of Public Staff witness Darden, the pre-filed rebuttal testimony of

Aqua witness Franceski, the witnesses' evidentiary hearing testimony, and the Stipulation.

Regarding water rate design, Aqua witness Haddad proposed that there be no modifications to the fixed/variable ratio approved by the Commission in the Company's most recent prior rate case (Docket No. W-218, Sub 526), including allocations of base facility charges (BFCs) and volumetric charges for the average water customers as follows: 41%/59% for the ANC Water Rate Division; 41%/59% for the Brookwood Water Rate Division; and 44%/56% for the Fairways Water Rate Division. Tr. vol. 5, 125. He also proposed that there be no modification to the previously approved fixed/variable structure or its metered wastewater customers as follows: 80%/20% for the ANC Sewer Rate Division and the Fairways Sewer Rate Division. *Id.* at 125-126.

As part of its Application and as discussed in witness Haddad's direct pre-filed testimony, Aqua proposed to consolidate customers in Huntley Glen, Park South, and Parkway Crossing and their related purchased sewer costs into the ANC sewer utility service tariff for "Monthly Metered Service (residential and commercial customers)." *Id.* at 130. These customers are metered sewer customers who to whom Aqua passes through the usage rate charged by Charlotte Water for providing sewer treatment service to Aqua. Under the Company's proposal, the customers' pass-through billing would be eliminated and their purchased sewer costs would be included in ANC Sewer Rate Division O&M expenses. *Id.*

The Public Staff, through the testimony of witness Darden, recommended a service revenue ratio with a fixed/variable structure as follows: 30%/70% for ANC Water, Brookwood Water, and Fairways Water customers and 60%/40% for ANC Sewer and Fairways Sewer customers. Tr. vol. 7, 26. She testified that a lower base facility charge reduces the cost burden on customers for access to utility service before the use of any service and gives customers greater control over their total bill by adjusting their usage through conservation and improved efficiency. *Id.* Witness Darden noted that Aqua customers' average usage has remained stable despite past incremental shifts in rate design. She further noted that, if overall usage were to decline, short-term variable expenses would decrease, which would benefit the Company and provide revenue stability. *Id.* at 27-28. Witness Darden recommended that the same rate design and rate structure be used for the base year and WSIP Years 1, 2, and 3. *Id.* at 33.

The parties agreed in the Stipulation to a rate design with a fixed/variable structure as follows: 35%/65% for ANC Water, Brookwood Water, and Fairways Water customers and 60%/40% for ANC Sewer and Fairways Sewer customers. As discussed elsewhere in this Order, the Commission has also approved continuation of the Conservation Pilot Program, so those customers will necessarily have a different rate design.

The Stipulation also resolved the difference over rates for the Huntley Glen, Park South, and Parkway Crossing subdivisions by agreement on the Public Staff's proposal of the base charge for metered sewer service derived from a 60%/40%

fixed/variable ratio as agreed to in the Stipulation, plus the Charlotte Water sewer usage rate.

The Stipulation further provides that Aqua will continue to utilize the bulk purchased water and sewer services pass-through mechanism.

The Commission finds that the rate design set forth in the Stipulation is reasonable and appropriate for use in the present case, along with the exception for the customers on the Conservation Pilot Program. Aqua should continue to utilize the bulk purchased water and sewer services pass-through mechanism for systems where the pass-through is currently used.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 31 – 32

Consumption Adjustment Mechanism and WSIC/SSIC Mechanisms

The WSIP Statute prohibits any N.C.G.S. § 62-133.12A Consumption Adjustment Mechanism during the WSIP term. Likewise, the use of the Water System Improvement Charge (WSIC), and the Sewer System Improvement Charge (SSIC) mechanisms is prohibited during the WSIP term. Consistent with Commission Rules, the WSIC and SSIC surcharges must be reset to zero on the effective date of the new rates established by this Order. As the WSIP Statute prohibition on WSIC and SSIC charges expires upon the end of the WSIP term, it is reasonable and appropriate for Aqua to begin using the WSIC and SSIC mechanisms immediately upon termination of the WSIP.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 33

Sewer Use Rule

The evidence for this Finding of Fact is in the testimonies of Aqua witness Becker, the Aqua witness panel of Pearce, Berger, Melton, and Becker, and Public Staff witness Darden. Aqua proposed a Sewer Use Rule and corresponding tariff amendment to better control pollutants by imposing certain effluent limitations and pretreatment requirements on for customers who may otherwise discharge nondomestic and industrial waste that could harm the Aqua treatment and collection systems.

Violations of the Sewer Use Rule may result in disconnection. Reconnection will require reimbursement of the Utility's actual costs incurred as a result of the violation. Repeat violations may result in permanent disconnection. As part of the Sewer Use Rule, Aqua may require installation and/or proper operation of grease traps or other pre-treatment devices on grease producing commercial facilities. Failure to properly operate grease traps will result in disconnection of service pursuant to Commission Rule R10-16.

The Sewer Use Rule will be posted by Aqua at <https://www.aquawater.com/assets/sewer-use-rule.pdf> and will also be made available upon request.

The Public Staff recommended one modification in the proposed Sewer Use Rule, which Aqua accepted. The Commission concludes that the proposed Sewer Use Rule – as modified by the Public Staff - and corresponding tariff change are

appropriate to help Aqua protect the environment and minimize costly damage to wastewater facilities, and should be approved.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 34

Regulatory Conditions

The evidence supporting this finding of fact is found in the Joint Rebuttal Testimony of the Aqua WSIP Panel, the Joint Testimony of the Public Staff WSIP Panel, both panels' evidentiary hearing testimony, the Stipulation, and the entire record in this proceeding. The Public Staff proposed a set of Regulatory Conditions in the present case and also in Docket No. W-218, Subs 570 and 571. The Company opposed consideration of Regulatory Conditions in the present rate case and sought to have that issue considered only in Docket No. W-218, Subs 570 and 571. In the Stipulation the parties agreed to accept Aqua's position for purposes of settlement.

Regulatory conditions are typically part of regulatory oversight for corporate changes. The Commission finds and concludes that it is appropriate and reasonable to address the issue of regulatory conditions in the docket in which the Commission is considering the pending realignment of corporate entities of Essential Utilities, specifically, Docket No. W-218, Sub 571.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NO. 34

Cost of Purchased Water from the Town of Pittsboro

The evidence supporting this finding of fact is found in the prefiled testimony of Public Staff witness Darden, the Joint Testimony of the Public Staff

WSIP Panel. the evidentiary hearing testimony of those witnesses, the Stipulation, and the entire record in this proceeding.

Public Staff witness Darden testified to the high cost of purchased water from the Town of Pittsboro. That cost is passed through to Aqua customers in the Chapel Ridge, Laurel Ridge, and The Parks of Meadowview subdivisions. The Public Staff recommended that Aqua ask Pittsboro to lower its rate to Aqua to the in-town rate, and if that was not successful to request prepayment of bills as an option. Witness Darden recommended that Aqua file semi-annual reports on its progress, and requests that include in its reporting more details on alternative water supply options, including cost analysis and feasibility.

The Company noted that the original developer agreement with Pittsboro obligated Aqua to buy 100% of its water from the Town for these subdivisions, and that Aqua must pay the outside-of-town rate. Aqua has sought relief from Town officials to no avail. Aqua has explored the option of alternative water sources, notwithstanding the contractual bar to this option, and considered that option to pose high costs, a risk of inadequate supply, and a challenge because the Town and Aqua use incompatible treatment chemicals. Nonetheless, Aqua did offer to request that the Town allow the Company to seek alternative water sources. Aqua also proposed to merge the affected customers into its uniform rate structure.

In the Stipulation, the parties agreed that Aqua shall pursue ways to reduce the high cost of purchased water from the Town of Pittsboro, including a request to the Town that it charge Aqua no more than the rate for customers inside city limits. If that is not successful, Aqua shall inquire about other options, such as

prepayment of bills or a minimum bill amount. Aqua shall report on its progress to the Commission and Public Staff on a semi-annual basis. The Commission concludes that the high cost of purchased water from Pittsboro is a significant burden on Aqua's affected customers, that there should be ongoing efforts to mitigate this problem, and that the commitment made by Aqua in the Stipulation is a reasonable and appropriate approach at this time.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 35 and 36

Reporting Requirements Specific to Manual Accounting Entries and Secondary Water Quality

The evidence supporting this finding of fact is found in the prefiled testimony of the Public Staff accounting panel, the Joint Testimony of the Public Staff WSIP Panel, the prefiled rebuttal testimony of Aqua joint witnesses Gearhart and Haddad, the Stipulation, and the entire record in this proceeding.

The Public Staff accounting panel noted that Aqua personnel had to manually override automated systems during its transition to SAP. They recommended that Aqua file quarterly reports on the projects that the Company has manually entered into the plant accounting software, including total dollar amount of the plant, the original in service date recorded by the system and the manually inserted in-service date entered by the Company, the calculation of AFUDC and corresponding entries to correct the overcollection of AFUDC by project, and the calculation of the depreciation expense differential caused by the override.

The Aqua rebuttal panel of witnesses Gearhart and Haddad opposed the Public Staff recommendation and burdensome and unnecessary. However, in the

Stipulation, the Company agreed to file quarterly reports with the Commission that include (1) the steps the Company has taken to modify its current system of verifying completion of plant to be used and useful, and (2) the following information about projects that the Company has manually entered into the plant accounting software beginning with Q4 2022: the total dollar amount of the plant; the original in-service date recorded by the system and the manually inserted in-service date entered by the Company; the calculation of AFUDC and corresponding entries to correct the overcollection of AFUDC by project; and the calculation of the depreciation expense differential caused by the override. The Company will file the first report on the same date as it files the report for Q2 of WSIP Rate Year 1, and will continue to file reports with each subsequent quarterly report through Q4 of Rate Year 3.

Aqua also agreed in the Stipulation to continue the same secondary water quality reporting requirements ordered in Docket No. W-218, Subs 363, 497, and 526, with the additional modification that the Company be required to file a report regardless of whether the Water and Sewer Investment Charges (WSIC) are in effect and Aqua has an expectation of WSIC funding.

The Commission concludes that the reporting requirements provided in the Stipulation are appropriate to approve in this proceeding.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 37

Environmental Compliance

The evidence for this finding of fact is contained in the prefiled direct testimony of Public Staff witness Evan M. Houser, the prefiled rebuttal testimony

of Aqua witness Amanda A. Berger, both witnesses' evidentiary hearing testimony, and the entire record in this proceeding.

Summary of the Testimony of Public Staff Witness Evan M. Houser

Public Staff witness Houser reviewed the environmental compliance records for the Company's water and wastewater systems from August 2019 through July 2022. Witness Houser discussed the environmental noncompliance that occurred during that time-period, noting that a total of 85 wastewater and 19 water violations were issued by North Carolina Department of Environmental Quality (DEQ). Witness Houser stated that Aqua had paid \$13,088 and \$1,100 in civil penalties related to its wastewater and water systems, respectively. Witness Houser additionally stated that Aqua had received 23 Notices of Deficiency from DEQ related to its wastewater systems. Witness Houser concluded that Aqua's water systems are generally in compliance with federal and state regulations, testing requirements, and primary water quality standards. Tr. vol. 6, 347-352.

Summary of the Rebuttal Testimony Aqua witness Amanda A. Berger

While witness Berger did not dispute the testimony of Public Staff witness Houser regarding the Company's environmental compliance record, she provided additional context regarding the statistics witness Houser presented. Witness Berger noted that witness Houser acknowledged the Company is generally in compliance. Tr. vol. 10, 39.

Witness Berger stated that, while witness Houser's summary of wastewater violations was factual, it did not recognize that Aqua's wastewater facilities are small and are not designed or constructed to achieve 100% compliance. Witness

Berger noted that, while treatment redundancy and excessive capacity have been identified as imprudent in previous rate cases, both redundancy and additional capacity are, to some extent, critical to compliance. *Id.* at 39-40.

Witness Berger stated that the Company operates 58 nonmajor wastewater treatment facilities and 26 permitted water treatment plant discharges. Witness Berger noted that 55% to 63% of similar facilities in North Carolina had noncompliance between 2020 and the third quarter of 2022 and that 9.23% to 12.9% of those facilities were in significant noncompliance. Aqua's facilities ranged from 22% to 39% non-compliant, with 0% - 3.44% being in significant noncompliance during the specified period. *Id.* at 40. Aqua had a 98.7% wastewater compliance rate during the period of January 2022 – October 2022. *Id.* at 41.

Witness Berger explained the circumstances surrounding the water violations witness Houser testified to and stated that his characterization of Aqua's compliance record was "not representative of actuality, and is a bit misleading" without mention of the Company's "significant success of maintaining compliance for more than 700 water systems and 58 wastewater plants, along with widespread distribution, collection, and spray systems" *Id.* at 44. Witness Berger testified that Aqua historically has received very favorable comments from its environmental regulators regarding its ability to sample and report for over 700 public water systems.-The Company's monitoring and reporting compliance record is calculated to be 99.99% for the period of 2020 through the third quarter of 2022. *Id.*

**Summary of witness Berger’s Testimony in Response to Questions from
the Commission**

In response to a question from Commissioner Brown-Bland about whether it was possible to specify which of the NOV’s issued to the Company would trigger a determination of significant noncompliance for a facility, witness Berger explained that two of Aqua’s systems witness Houser identified as having been issued an NOV were determined to be in significant noncompliance “due to treatment challenges.” *Id.* at 108. Witness Berger continued, “So the trigger point would be if I have a BOD [biological oxygen demand] limit that’s greater than 60 percent 60 percent greater and I consistently do that, that would lead to significant noncompliance is how that’s determined.” *Id.* at 108-109.

When asked by Commissioner Brown-Bland to distinguish nonmajor wastewater treatment plants from major plants, witness Berger stated that nonmajor plants are those with flows of less than one million gallons per day. She did not believe any of Aqua's plants were discharging one million gallons per day. *Id.* at 109. Commissioner Brown-Bland asked clarifying questions on grade 1 – grade 3 wastewater facilities design limitation, and witness Berger explained that the facilities the Company operates lack the increased technology, redundancy, efficiency that makes achieving 100 percent compliance feasible. She further clarified that these facilities can be impacted by operational or catastrophic issues such as a maintenance on a treatment chain or catastrophic flood, and identified that these types of issues can be contributing factors to the Company's wastewater non-compliance rate. *Id.* at 120-121.

Conclusions

The evidence of record demonstrates that Aqua's water and wastewater systems are generally in compliance with federal and state regulations, testing requirements, and primary water quality standards, and they appear to be providing adequate quality service based upon the information included in the time-period reviewed in this proceeding. Based upon the clarifying information presented by Witness Berger, the Commission finds that, where primary water quality concerns have arisen associated with the environmental compliance of Aqua's water systems, Aqua has worked to correct the issues in a timely manner, and continues to provide adequate water quality and service to its customers.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 38

Regulatory Commission expense

The evidence supporting this finding of fact is found in the prefiled testimony of the Public Staff accounting panel, the prefiled rebuttal testimony of Aqua joint witnesses Gearhart and Haddad, the Stipulation, and the entire record in this proceeding.

The only difference between the parties in their filed testimony was the amortization period. In the Stipulation, the parties agreed that rate case expense will be updated by Aqua in a filing within ten business days after the settlement proceeding; that the Public Staff has the right to investigate the expense filed by Aqua and to file a response with the Commission within five business days; that the current rate case expense for this proceeding will be amortized over a four-year period without a return or carrying costs; that Aqua agrees to establish a regulatory liability with no carrying costs to record recovery associated with the rate case expense over amortization after year four; that the rate case expense from Docket No. W-218 Sub 526, and the unamortized rate case expense from Docket No. W-218 Sub 497, will continue to be amortized over three years per the final order from the Docket No. W-218, Sub 526, rate case; and that the unamortized depreciation study expense from Docket No. W-218, Sub 497, will continue to be amortized over five years per the final order from the Docket No. W-218, Sub 497, rate case. The Commission concludes that the agreement in the Stipulation is reasonable and appropriate for use in the present proceeding.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 39 – 60

Customer Concerns – Service, Water Quality Related and Other.

The evidence supporting these findings of fact is found in the testimony and exhibits of the public witnesses, Aqua's three verified responses to customer concerns expressed by twenty (20) public witnesses⁷ at the four public hearings, the pre-filed and live testimony of Aqua's Rebuttal witness Berger and Public Staff witness Bhatta, and the entire record in this proceeding.

Witness testimony variously submitted that the water Aqua supplies has caused issues, including discoloring fixtures and damaging appliances and installed in-home water filtration systems; that the secondary water quality issues some customers have experienced have resulted in expense to (1) repair and replace damaged appliances and plumbing fixtures and (2) purchase bottled water for drinking and cooking; that there were issues concerning customer service and the ability to communicate with the Company on water quality concerns; about the interruption of water service without prior notification; and about the degree of planning to replace aging infrastructure, routine maintenance, low water pressure and concerns over water system resiliency. Virtually all witnesses complained about the requested rate increase, and some objected to rate design including flat rate sewer service. Other witnesses addressed the frequency of the backflow prevention device testing, conservation issues, the comparison of Aqua's rates with municipal rates, and Aqua's transparency regarding PFAS detected in Aqua's wells.

⁷ Four (4) fewer than testified at the public hearing in the Sub 526 rate case.

The secondary water quality concerns of the customer witnesses appearing before the Commission in this docket are consistent with concerns expressed by witnesses who testified at the public witness hearings held in connection with Aqua's last four general rate cases filed in Docket No. W-218, Subs 319, 363, 497, and 526 in 2011, 2013, 2018, and 2020, respectively.

After extensive investigation, the Company responded thoroughly to each of the concerns and comments expressed at the four public hearings by filing verified reports on October 24, 2022 (Raleigh), November 9, 2022 (Virtual), and November 15, 2022 (Wilmington and Gastonia).

Response to Raleigh Public Hearing, Held on October 4, 2022

Aqua was represented at the Raleigh public hearing by State President Shannon V. Becker along with fourteen (14) members of his staff, reflecting the Company's complement of Operational and Field Managers; Environmental Compliance, Business Development, Rates and Regulatory personnel; Administration; the Call Center; and Customer Service. All were available to provide assistance to customers, if possible, as well as to understand the regulatory interest and process and to hear directly from customers about concerns. Aqua's response to the issues raised by five customers at the Raleigh public hearing consisted of 42 pages plus 20 additional exhibits. It is a granular report which "...summarizes the customer service quality concerns expressed at the Raleigh public hearing, provides the Company's specific responses and levels of corrective actions, explains how investment obligations and ratemaking consequences interrelate, discusses certain aspects of the ratemaking process,

and describes generally the Company's position on and communications about its service to these and other North Carolina customers.” See *Report On Customer Comments From Public Hearing Held In Raleigh, North Carolina On October 4, 2022*.

<https://starw1.ncuc.gov/NCUC/ViewFile.aspx?Id=185a1749-555b-448c-abcf-fbcd98800c25>

The Report analyzed the issues presented from a range of perspectives. It addressed the general categories of customer concerns, which included: general objections to rate increases; water quality and service; customer communications; system pressure; and meters. The examination of rate increases included a discussion of the statutory ratemaking process (including customer safeguards), the need for and consequence of investment, and the inaccuracies associated with generic comparisons of rates between regulated entities such as Aqua, and municipalities or other governmental entities. The water quality and service discussion addressed the naturally occurring incidence and impact of iron and manganese in source water and the respective roles of flushing, sequestration, and filtration as mitigating measures—including the cost and efficacy of the various measures.

Additionally, the Report addressed in detail Aqua’s water quality operational plan which was implemented in January 2018 (the “Water Quality Plan” or “Plan”). The Plan is intended to ensure that water quality is addressed while requisite capital improvements are being prioritized and completed, using source water treatment tools such as sequestration, flushing and filtration.

Aqua reported that it spoke to, met with, or otherwise attempted to contact the witnesses who testified at the hearing.

The Company stated approximately 20% of its approximately 1,600 wells are challenged with elevated levels of iron and manganese and it has tried to reduce those levels by implementing different treatment and removal methods (e.g., flushing, sequestration, and oxidation and filtration). From 2015 to 2021, Aqua stated that it has installed 62 filters at a cost of approximately \$22 million and it anticipates installing 14 additional filters to remove iron and manganese by the end of 2022 at an estimated cost of \$5.4 million. Aqua also stated that its 2018 Water Quality Plan, that categorizes the water systems' iron and manganese remediation priority need based on the concentrations, is continually updated to include recently detected concentrations and DEQ's feedback on the same.

Aqua acknowledged that the presence of iron and manganese in the water can cause water discoloration, problems with household appliances, and staining of fixtures and laundry and also noted that the levels of iron and manganese in its systems meet applicable DEQ regulatory standards. The Company also stated that it is cost-prohibitive to install a filter to treat 100% of the source water for iron, manganese and hardness. The Company explained that some water quality issues result from unexpected events like water main breaks, equipment failures, power outages, and construction activities. The Company stated that it provides advance customer notification of the potential of water quality impact when scheduled maintenance activities may impact water quality.

The Company's Raleigh Public Hearing Report also addressed customer concerns related to low water pressure. The Company stated that it operates all of its water systems to maintain a minimum pressure of 45 pounds per square inch (PSI), but pressure losses at homes may still occur. Possible causes for low water pressure include problems with home plumbing fixtures, such as carbonate build up in shower heads and faucet aerators, as well as mechanical failure of system equipment such as a well pump, pressure tank, or booster pump. For the customer that specifically complained about water pressure, the Company installed pressure sensors to record pressure throughout the system following the public witness hearing. The Company submitted the results documenting that the minimum pressure required was met throughout the system with the Raleigh Public Hearing Report.

The Company's Raleigh Public Hearing Report also addressed customer complaints about the proposed rates. The Company stated that the proposed rates are not subjectively developed and are based on the actual, or expected, capital costs and actual, or projected, operating costs. The Company stated that comparing the Company's rate to municipal rates is not a useful comparison.

The Company's Raleigh Public Hearing Report also addressed customer complaints about inadequate notice regarding upcoming system maintenance events. The Company stated that it attempts to provide advance notice regarding upcoming system maintenance events affecting the water quality, but some situations are unplanned and require immediate actions.

Addressing communications, the Company discussed the Company's website (www.NCWaterQuality.com) dedicated to secondary water quality issues that is routinely updated to provide the latest information on the Company's systems. *Id.* at 14-15. The Company also described customer service staff training designed to improve interactions with customers. Lastly, the Raleigh Public Hearing Report stated that the Company's management team tries to maintain regular communications with homeowners' associations and the Company is working towards making the leak notification process more efficient.

Since the W-218, Sub 526, case, Aqua's continued improvement in customer communications and analytics to improve customer service, using customer input, was outlined in the Report. These improvements include: 1) improved messaging of flushing campaigns using WaterSmart Alert; 2) increased use of local signage at community entrances and exits for awareness of flushing activities while a campaign is in progress; 3) use of a link on WaterSmart text messages that allow customers to be taken to a site with a comprehensive message; and 4) availability of a Service Disruption Map on Aqua America's home page that is used to track potential outages and flushing activities by system. In 2022, Aqua additionally hired a Customer Communications Specialist to identify opportunities to better communicate with its customers, facilitate the effective provision of information, and improve customer messaging. Aqua reports that it now provides a broad range of options and resources for both one-way alerts and two-way communications, including the referenced website enhancements as well as personal contact for discolored water calls.

Aqua has instituted an extensive monthly review process of LabD calls to determine the origin of customer complaints to drive its customer focused continuous improvement program. This data has helped Aqua to focus on prioritizing main replacement projects, improve customer communications regarding emergency operations, and focus on capital and operational improvements for systems impacted by naturally occurring iron and manganese.

The report also addressed the respective functions of SPAs and Boil Water Advisories, usefully explaining the differences between them. Finally the report updated the record on the status and benefits of the aged-meter change program.

The Report included an overview of each system (River Oaks and Stoneridge Master System) and individual responses to witness Ms. Cheatham (River Oaks), and witnesses Mr. Smith, Mr. Stenberg, Ms. Sellers and Ms. Hamel (Stoneridge Master). Customer specific concerns included: discolored water; a SPA advisory error and associated customer service response; a recent loss of water without prior notice (due to work on a line); discolored water that impacted plumbing and appliances; low pressure, insufficient flushing; billing error; run-off onto a driveway; a bad smell; the addition of new customers; and a high bill. Aqua responded with detailed explanations of procedures, investment, the impact of iron and manganese, a leak on the customer side, and possible non-Aqua service related explanations for other matters. The systems, including their challenges and the litany of efforts to maintain and improve good quality service at both of them, were specifically explained. Information was provided concerning meter reading, rotten egg odors, and pressure anomalies. Explanation of outreach to

DEQ, to individual customers and to associations of customers was made, and specific operational and treatment strategies were explained. Descriptions of various projects and explanations for various service quality issues were provided, along with commitments and strategies for improvement.

Response to Virtual Hearing, Held on October 20, 2022

As with the Raleigh Public Hearing Report, Aqua's 38 page Report (with seven attachments) on the Virtual hearing provides an overview of the issues, including information about the eight systems that were discussed by the nine witnesses who appeared, the types of concerns expressed, and the Company's management of these systems and concerns. The report includes a general response for each system and individual responses for each witness. For clarity, the witnesses are grouped by system.

<u>Water System</u>	<u>Subdivision</u>	<u>Customers</u>
Chapel Ridge	Chapel Ridge	1 (Ms. Rowan)
Flowers Plantation Master	Cottonfield Village	1 (Ms. Cook)
Park South	Park South	2 (Ms. Teran & Mr. Reilly)
Stoneridge Master	Stoneridge Sedgefield	1 (Ms. Chandler) 1 (Mr. Payadachee)
The Cape Master	Village at Mott's Landing	1 (Ms. Joyce)
Meadow Ridge Master	Meadow Ridge	1 (Mr. Moore)
Bayleaf Master	Hawthorne	1 (Mr. Galamb)

General issues previously addressed in the Response filed to the Raleigh Public Hearing Report expressions of concern at Section D, were included in

Section E in the Response to the Virtual hearing.

The issue of conservation was emphasized by some of the witnesses at this hearing and was addressed by Aqua in its Response. Several customers discussed a lack of incentive to conserve water. As part of Aqua's last rate case (Docket No. W-218, Sub 526), the Commission approved an investigation of rate design requesting "rate design proposals that may better achieve revenue sufficiency and stability while also sending appropriate efficiency and conservation signals to consumers." In the present case, Docket No. W-218, Sub 573, Aqua has requested the continuation of the approved pilot of tiered conservation rates for four systems so that sufficient data can be obtained. As part of Aqua's water conservation strategy, Aqua notifies customers in drought affected areas to conserve water so their community wells can continue to provide essential water services. Such conservation notices were issued in Docket No. W-218, Sub 573 several times to the Meadow Ridge Community. The Aqua America website additionally contains useful drought information and links along with "Water Smart Tips" to aid customers in water conservation techniques. Subjects such as higher water efficiency appliances, checking for leaks, insulating pipes, shower conservation, dishwashing techniques, building and grounds maintenance and more are presented to Aqua customers at www.aquawater.com. Aqua also reports support of water conservation capabilities via its on-going effort to replace all manual read meters with AMR water meter technology, which are being used to notify customers of potential leaks. When continuous minimum consumption is recorded on a particular meter, the meter produces a leak detection error code that

is collected during the company's monthly meter reading cycles. Aqua provides an Aqua Alert message to notify those customers who may have a leak, which helps identify and make proper corrections to minimize the potential for heightened water loss.

Aqua investigated and responded to the individual customer concerns, including explanations for service issues, correction of the record about certain events, and suggestions for how customers might avail themselves of additional help, either through service outreach from the Company or through their own means. Some significant issues addressed in the Response included: sediment, contaminants and calcium residue as impacts on pipes and health; the costs of filtration systems; the alleged unavailability of emergency connections to power sources; Water Smart Alerts in the event of system pressure loss; complaints about the rate design anomaly causing high purchased water rates for the Park South customers, as well as the proposal to remedy the issue; the very significant investment in The Cape Master System; and The Cape issues concerning the demands of high usage, pressure, discolored water and concerns about contaminants. The Response also addressed the concerns about billing, odor, pressure and backflow prevention devices.

Finally, Aqua reported that the Company has the capability to bring in on-site portable generators when there is an electrical outage, adding that if customers register on the Company's WaterSmart Alert program, they can receive an instant alert issued for the Company's systems via email, text, or phone. The

Company also stated it has a plan to treat the PFAS compounds detected in its wells even though the EPA has not issued a final rule on PFAS limits in water.

Report from the Wilmington and Gastonia Hearings (October 26 and 27, 2022). One report, filed on November 15, 2022, addressed both the Wilmington and Gastonia hearings.

Response to Wilmington Public Hearing Held on October 26, 2022

Shannon V. Becker, State President of Aqua, was joined by other Company personnel, available to assist customers with questions or requests, and including representatives from Operations, Engineering, Environmental Compliance, Rates, Area Management and Field Supervision, Communications, Regulatory Support, Policy Analysis, and the Call Center.

The general observations and explanations, contained in the Raleigh and Virtual hearing reports, were included in the Wilmington Response. The four customers who testified are all part of The Cape Master System and are in the following subdivisions: Village at Mott's Landing (Mr. Bennett); Willow Glen at Beau Rivage (Mr. Fey); The Cape (Mr. Lawson and Mr. Echeverria). The Cape Master System is a large system with complex characteristics; between April 2020 and September 2022, Aqua has invested \$9,200,000 in the water and sewer systems and is working diligently on a master plan to address the significant issues associated with this system.

Aqua addressed the history of the impact of and response to capacity demands and levels of iron in the source water at The Cape, specifically noting the sharp demands imposed by irrigation (in some areas and during some periods,

with an average usage of an exceptionally high 22,000 gallons per day). The relationship between increased demand, occurring at peak, the age of the system, and a scouring of the pipes that results in discoloration was explained. Aqua has met with the Public Staff, DEQ and the Homeowners' Association to attempt to explain the problems and develop solutions that work for all stakeholders.

Given the interest in the southeastern North Carolina region, Aqua included for added background detailed information regarding PFAS contaminant levels and the regulatory differences between a Health Advisory Limit ("HAL") and a Maximum Contaminant Level ("MCL"). Aqua outlined the measures the Company has taken regarding PFAS levels. The Company stated that it has (1) updated its water quality website to include PFAS concentrations at The Cape/Beau Rivage wells in October 2022 and (2) it has provided the PFAS levels detected in the wells at The Cape/Beau Rivage system to the customers who have requested the information. The Company also stated that it has plans to install treatment systems for PFAS. Some of the customer specific comments focused, with a high degree of expressed concerns, on PFOS/PFOA contamination, and Aqua further explained the regulations, the science, testing results, compliance requirements, and its plans for remediation, if PFAS contaminants are discovered in the future.

For the Park South customers who are interested in pass-through rate design, the Company stated that it is supportive of a range of rate design approaches and is open to all conversations on optimal design, provided the recovery of the revenue requirement is reasonably supported.

Other customer concerns about high bills were correlated with high usage for irrigation purposes, upon investigation, and the impact of iron and manganese in the source water was explained. A general request for additional financial information was met by direction to certain information on line, as well as a willingness by Aqua to meet to discuss the available financial data. Finally, a brief explanation of the regulatory process was provided.

Response to Gastonia Public Hearing Held on October 27, 2022

Two customers---Mr. Coleman and Mr. Busch---testified in Gastonia, both from the Park South system, are both concerned about their purchased water rates and the rate design. Both Mr. Coleman and Mr. Busch are “pass-through” customers whose bills have been significantly impacted by a change in rate design in the prior rate case (Docket No. W-218, Sub 526). Aqua explained that the theories of rate design are complicated, and that it has suggested and is supportive of a form of rate design that would both moderate the rates for sewer to the Park South customers and would allow for Aqua to have a reasonable opportunity to ensure that its revenue requirement was supported.

With respect to the commitment to communication as a component of good service, it should also be noted that, at the request of Park South HOA management, Aqua’s president, Mr. Becker, attended an open house with the Park South community on Thursday, October 13, 2022, to discuss Park South’s historic and proposed rate designs.

Testimony of Public Staff Witness Bhatta

Ms. Bhatta's Prefiled Direct Testimony and her testimony at the hearing addressed, among other issues, customer service. Tr. Vol. 6, p. 312- 333, January 10, 2023.

She thoroughly investigated Aqua's customer service record by reviewing the consumer statements of position filed in Docket No. W-218, Sub 573CS, the Company's customer complaint log provided by the Company in response to a Public Staff data request, water quality complaints received by the Company via email, complaint logs maintained by the Public Staff's Consumer Services Division (Consumer Services), and the testimony provided by customers at four public witness hearings. As of November 15, 2022, 41 consumer statements of position had been filed in Docket No. W-218, Sub 573CS, and the issues most frequently raised therein are opposition to the proposed rate increase, including the magnitude and timing of the requested increase, the lack of improvements in service to justify the increase, and water quality, including low pressure, foul odor, and sediment, leading some customers to purchase costly home filtration systems; customer service issues; opposition to flat sewer rates; and failure to offer irrigation rates. Between October 26, 2020, the date the Commission filed its *Order Approving Partial Settlement Agreement and Stipulation, Deciding Contested Issues, Granting Partial Rate Increase, and Requiring Customer Notice (Final Order)* in Aqua's last rate case in Docket No. W-218, Sub 526 (Sub 526 Rate Case), through November 15, 2022---over a two year period---a total of 215 complaints were received by Consumer Services from Aqua customers. Out of

215 complaints, 55 complaints (approximately 25%) related to water quality/low pressure; another 55 complaints (approximately 25%) related to billing disputes; 24 complaints (approximately 11%) related to water leaks either in service lines or in mains; 18 complaints (approximately 8%) related to service disconnections due to non-payment; 13 complaints (approximately 6%) related to service requests; and 25 complaints (approximately 11%) were general.

In response to a Public Staff Data Request, Aqua provided information on the LabD service orders created for water quality (discolored) complaints from October 26, 2020, through July 31, 2022. During that approximately 21-month period, a total of 1,494 LabD service orders were created regarding water quality. Aqua provided responses from its technicians and Ms. Bhatta re-configured the technician's reported cause determination in a way that Aqua contested. Even so, her comparison of the results in this case were very consistent with the results in the last three rate cases, but for one category (the one about which she and the Company disagree with respect to the coding protocol).

Ms. Bhatta's examination was thoroughly done, including review of e-mails to various Aqua addresses and determination of Aqua's responses to customers' complaints. She, like the Company, carefully reviewed the concerns expressed by witnesses at the four public hearings, and she reviewed the Company's responses to those expressions of concern or complaint.

After her examination, Ms. Bhatta concluded that:

Based on my review of the reports filed by the Company regarding the public witness hearings, it appears Aqua has generally addressed customer's complaints appropriately and is working to address issues in a timely manner.

The Public Staff notes that older systems and systems with high levels of iron and manganese may need additional attention in terms of operation and maintenance, such as more frequent distribution system flushing than annually and more frequent backwashing of iron and manganese filters.

Tr. Vol. 6, p. 333, lines 10—18.

Aqua witness Amanda Berger, Aqua's Director of Environmental Compliance, spoke in clarification of some of Ms. Bhatta's testimony. She specifically did not dispute Ms. Bhatta, but provided additional information regarding the following:

- Five customer statements were submitted by the Public Staff to help illustrate the tenor of the 41 customer statements of position filed in the W-218, Sub 573CS docket. Two of those five customers are customers of Flowers Plantation---a purchase water system whose water is supplied by Johnston County---and neither have contacted Aqua about water quality complaints, despite their written complaints about service in this docket. One of the other three customers who complained about high rates is a customer at Chapel Ridge, which has the known and difficult situation with respect to Pittsboro's high rates for the pass-through water on which the Chapel Ridge customers depend.
- Ms. Berger's analysis of informal complaints filed between October 1, 2020 and December 5, 2022, further illustrated the extent to which The Cape Master System requires additional analyses, consultation with state agencies and engineering and hydrology firms, sampling, and flushing---the

distribution system's capacity is exceeded during daily peak demands from high irrigation usage.

- Ms. Bhatta's testimony revealed a range of causes for some of the complaints, such as a water quality complaint initiated during the installation of a filter, systems which are scheduled to be evaluated, installation of filtration, issues due to main breaks, well pump failures or power outages, or complaints which could not be verified on investigation.

Ms. Berger and Ms. Bhatta expressed varying views on the better protocol for coding certain LabD responses. The differences in outcomes suggest an opportunity for the Company and the Public Staff to continue their commendable and successful efforts to work together in these matters.

Finally, and with respect to on-going complaints about issues associated with iron and manganese in the source water, the record reflects that Aqua continues to invest significant time, effort, and resources toward the improvement of these important, secondary water quality issues. Aqua explained that over the years and continuing to date, it has implemented iron and manganese removal techniques such as sequestration and filtration, including the installation of expensive manganese dioxide filters. The water quality operational plan implemented in January 2018 continues to methodically implement solutions via capital and operational measures.

Discussions and Conclusions

The Commission concludes that though some customer concerns persist, particularly in certain parts of Aqua's service territory regarding secondary water quality, including odor and staining attributes when the secondary elements exist at high levels in the water, the evidence showed significantly increased investment and operational attention to these issues. The Commission concludes that the Company's efforts are responsive to customer concerns, reflect additional investment and operational diligence, and, if sustained, should support continued improvement in secondary water quality and service.

The Commission further finds and concludes that (1) the overall quality of water service provided by Aqua is adequate on a companywide and systemwide basis for purposes of human consumption and ingestion and (2) overall companywide and systemwide quality of wastewater service provided by Aqua is adequate and the Company generally has operated its wastewater plants in a prudent manner.

- DISPUTED ISSUES

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 61 - 69

Cost of Capital/Rate of Return on Equity

The evidence for these findings is in the testimony and exhibits of Aqua witnesses D'Ascendis, Haddad, and Becker, Public Staff witness Hinton, the Public Staff's WSIP panel of witnesses, the Company's WSIP rebuttal panel of witnesses, and the entire record in this case.

The Company and the Public Staff agreed that a capital structure of 50% long term debt and 50% common equity is appropriate for use in this proceeding. Witness D'Ascendis testified that this capital structure is what Aqua expects for the WSIP term, and that it is within the range of equity ratios for the companies in his utility proxy group. The Commission approves this as a reasonable capital structure for use in setting rates in this proceeding.

In direct testimony, witness D'Ascendis recommended a 4.01% cost of debt, which he based on long-term borrowings of the Company as of May 2022. Witness Hinton recommended a 3.97% rate for the cost of debt, which he based on the embedded cost as of June 30, 2022, and predicted increases in the cost of debt over the next three years. Witness D'Ascendis testified in rebuttal that the Company accepted the update to a 3.97% cost of long term debt. The Commission approves this as a reasonable rate for the cost of long term debt to be used in setting rates in this proceeding.

The parties disagreed as to the appropriate rate of return for common equity. Witness D'Ascendis recommended 10.40%. Witness Hinton recommended 9.50% if no WSIP or Consumption Adjustment Mechanism (CAM) is approved; 9.40% if a CAM is approved; and 9.30% if a WSIP is approved.

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 order to reach an appropriate independent conclusion regarding the rate of return on equity, the Commission must weigh all the available evidence and make an

independent determination, not just recite the testimony of witnesses. *State ex rel. Utils. Comm'n v. Cooper*, 366 N.C. 484, 739 S.E.2d 541, (2013) (*Cooper I*).

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. *Id.*

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.

Governing Principles in Setting the Rate of Return on Equity

First, as the Commission noted in the Order Granting General Rate Increase, *Application of Carolina Power & Light Company, d/b/a Progress Energy Carolinas, Inc., for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina*, No. E-2, Sub 1023, at 35-36 (N.C.U.C. May 30, 2013) (2013 DEP Rate Case Order), *aff'd*, *State ex rel. Utils. Comm'n v. Cooper*, 367 N.C. 444, 761 S.E.2d 640 (2014) (*Cooper II*), there are 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 declared" in *Bluefield* and *Hope*. *Id.*

2013 DEP Rate Case 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.

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.

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 utility 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, there is no specific and discrete numerical basis for quantifying the impact of economic conditions on customers – a reality that the Supreme Court has acknowledged:

we did not state in *Cooper I* that the Commission must "quantify" the influence of this factor [the impact of changing economic conditions upon customers] upon the final ROE determination. See *id.*; [State ex rel. Utils. Comm'n v. Pub. Staff, 323 N.C. 481, 498, 374 S.E.2d 361, 370 \(1988\)](#) ("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 II, 367 N.C. at 450, 761 S.E.2d at 644 (2014) However, 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 ROE [rate of return on equity] is 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 Case 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. It is against this backdrop of overarching principles that the Commission turns to the evidence presented in this case.

Application of the Governing Principles to the Rate of Return Decision

Aqua requested a rate of return of equity (ROE) of 10.40% for the Company for both the base year and the WSIP term, notwithstanding that its expert witness estimated an increased cost of equity capital after the base year. The Company's return on equity recommendations were supported by the expert testimony of witness D'Ascendis, who analyzed the Company's cost of equity using the

following three methodologies: a single-stage constant growth Discounted Cash Flow (DCF); Risk Premium Models including a Predictive Risk Premium Model (PRPM) and a Total Market Approach Risk Premium Model (Market Risk Premium); and Capital Asset Pricing Models including a traditional Capital Asset Pricing Model (CAPM) and an empirical Capital Asset Pricing Model (ECAPM). Witness D'Ascendis applied these models to the market data of both a Utility Proxy Group and a Non-Price Regulated Proxy Group. He recommended adding five basis points (0.05%) to the ROE to allow for floatation costs.

Witness D'Ascendis concluded that the WSIP would not mitigate the volatility of revenues or earnings for Aqua, which is a direct measure of risk, despite allowing a better matching of revenues to expenses. Therefore he did not adjust the ROE because of the WSIP.

Witness D'Ascendis assessed the impact of changing economic conditions on customers in conjunction with his ROE analysis. This assessment included review of state and national unemployment rates, unemployment rates in the counties served by Aqua, state and national Gross Domestic Produce growth, state and national median household income, and total national personal income and consumption. He observed that unemployment has fallen significantly since it spiked during COVID, that household income in North Carolina was growing slightly faster than the national rate, that income has been increasing at the national level since the financial crisis, and that the cost of living in North Carolina is below the national average.

Witness D'Ascendis' initial analyses (data as of May 13, 2022) produced the following results:

Principal Methods	Base Year (Current Interest Rates)	Projected Year 1 (2023 Projected Int. Rates)	Projected Year 2 (2024 Projected Int. Rates)	Projected Year 3 (2025 Projected Int. Rates)
Discounted Cash Flow Model	9.37%	9.37%	9.37%	9.37%
Risk Premium Model	11.12%	11.76%	11.69%	11.90%
Capital Asset Pricing Model	11.32%	11.68%	11.66%	11.79%
Market Models for Comparable Risk, Non-Price Regulated Companies	11.20%	11.54%	11.49%	11.49%
Flotation Cost Adjustment	0.05%	0.05%	0.05%	0.05%
Indicated Common Equity Cost Rate after Adjustment	9.90% - 10.90%	10.12% - 11.12%	10.08% - 11.08%	10.19% - 11.19%

Witness D'Ascendis' updated rebuttal analyses (data as of November 30, 2022) eliminated one company from his Utility Proxy Group and produced the following overall ranges of cost of equity for Aqua:

	Using Current Interest Rates	Using Projected 2023 Interest Rates	Using Projected 2024 Interest Rates	Using Projected 2025 Interest Rates
Discounted Cash Flow Model	10.22%	10.22%	10.22%	10.22%
Risk Premium Model	12.06%	12.31%	12.18%	12.10%
Capital Asset Pricing Model	11.73%	11.84%	11.77%	11.75%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	<u>11.65%</u>	<u>11.75%</u>	<u>11.69%</u>	<u>11.69%</u>
Indicated Range	10.64% - 11.64%	10.77% - 11.77%	10.70% - 11.70%	10.66% - 11.66%
Flotation Cost Adjustment	0.05%	0.05%	0.05%	0.05%
Indicated Range of Common Equity Cost Rates After Adjustment	<u>10.69%</u> - <u>11.69%</u>	<u>10.82%</u> - <u>11.82%</u>	<u>10.75%</u> - <u>11.75%</u>	<u>10.71%</u> - <u>11.71%</u>

Witness D'Ascendis testified in rebuttal that the Company was maintaining its requested ROE of 10.40%, even as investor-required return has increased since his direct testimony. He noted that in light of the ranges of his ROEs, the requested 10.40% ROE is an extremely conservative measure of Aqua's ROE.

Witness D'Ascendis emphasized that current market conditions are riskier now than during the Company's last four rate cases. In particular, he noted that the Fed Funds target rate and the Consumer Price Index (CPI) are higher than in any of the previous three rate cases. The significant increase in inflation has driven all costs higher (materials, labor, and capital); it has increased risk and therefore increased investor-required return for utilities.

Public Staff witness Hinton recommended a cost of equity of 9.50% for Aqua, based on a Discounted Cash Flow Model and a Risk Premium analysis. He also recommended a 20 basis point downward adjustment if the WSIP is approved, for an ultimate ROE recommendation of 9.30%, and he recommended an ROE of 9.40% if the WSIP is not approved but a CAM is approved. His recommendations (before adjustment for WSIP or CAM) are summarized as:

<u>DCF Method</u>	
Based on Average Historical	9.38%
Based on Historical & Forecasted Growth Rates	9.08%
Based on Predicted Growth Rates	8.63%
DCF Average	9.03%
<u>Risk Premium Method</u>	
	9.94%
Average of DCF and Risk Premium	9.49%
Rounded Cost of Equity	9.50%

Witness Hinton identified three concerns with the analysis undertaken by witness D'Ascendis. First, he opposed use of interest rate forecasts to determine the cost of equity in this proceeding. He first observed that past interest rate forecasts had significantly over-estimated interest rates compared to what actually occurred.

Second, he criticized the exclusive use of forecasted earnings per share (EPS) in witness D'Ascendis' DCF model. Witness Hinton maintained that consideration of historical EPS growth rates, along with historical and forecasted dividends per share (DPS) and book value per share (BVPS), provides a variety of growth measures, and he doubted that investors would rely solely on EPS forecasts.

Third, he opposed the flotation cost adjustment of witness D'Ascendis. Witness Hinton testified that there was no public issuance of equity during the test year, and that the costs associated with an employee stock purchase plan were too low to justify recovery.

In addition, the Public Staff's WSIP panel, which included witness Hinton, addressed the Public Staff's recommended downward adjustments to the authorized ROE of 10 basis points if a CAM is approved and 20 basis points if a WSIP is approved. The panel stated that a CAM would reduce business risk by ensuring an average per consumption revenue stream consistent with the revenue requirement used to set rates. The panel testified that a WSIP would reduce risk by (1) somewhat insulating the Company from future expense changes because of forecasted inflation and growth factors in the WSIP; (2) allowing future capital investments into rate base, with a return on those investments before the plant is used and useful and before filing a rate case or WSIC/SSIC application; and (3) increasing rates annually to account for forecasted future expense levels and capital investments. The panel asserted that debt and equity investors see a multi-year rate plan as mitigating business risk and regulatory lag. They stated that a WSIP would reduce non-weather-related earnings volatility.

The Public Staff WSIP panel identified 22 states with utility regulation that allowed infrastructure surcharges, or fully forecasted test years, or both. The panel concluded that multi-year rate plans and fully forecasted test years are not fully recognized for the group of comparable water utilities used in the ROE analysis of witness D'Ascendis and witness Hinton. Finally, the panel testified that the Public

Staff's ROE recommendation was reasonable because it produced a pre-tax interest coverage of 4.0 times, which should qualify Aqua for a single "A" bond rating.

In rebuttal, witness D'Ascendis disagreed with (1) witness Hinton's application of the DCF model; (2) his application of the RPM; (3) his failure to reflect the Company's flotation costs; and (4) his recommended 20-basis-point or 10-basis-point deduction to his recommended ROE contingent upon approval of the WSIP or CAM, respectively. He also commented on witness Hinton's choice not to use a comparable earnings model as he has done in certain past cases.

With respect to Witness Hinton's application of the DCF model, witness D'Ascendis criticized Witness Hinton's use of DPS and BVPS to calculate expected growth rates, as well as his use of historical growth rates in addition to forecasted growth rates. Witness D'Ascendis noted that there can be no growth in DPS without growth in EPS. Further, he explained that the use of projected EPS growth rates in a DCF analysis provides a better match between investors' market price appreciation expectations and the growth component of the DCF, because they have a significant influence on market prices and the appreciation (or growth) experienced by investors. He also cited academic and financial literature support for the use of projected EPS growth in a DCF analysis, compared to the lack of any such support for use of projected DPS or BVPS. In addition, he noted that investors have widespread access to EPS growth projections but not to DPS or BVPS growth projections, which indicates investors rely on EPS but not DPS or BVPS. Witness D'Ascendis testified that if witness Hinton had relied on EPS

growth projections, witness Hinton's DCF model results would have been ROEs of 10.06% (mean) and 10.80% (median), indicating that witness Hinton's proposed DCF cost rate of 9.03% is severely understated.

With respect to witness Hinton's application of the RPM, witness D'Ascendis agreed with witness Hinton's methodology of regression analysis of historical equity risk premiums. However, witness D'Ascendis disagreed with three aspects of how witness Hinton performed that methodology.

First, witness D'Ascendis disagreed with the exclusive use of current interest rates in the RPM analysis. He testified that because the cost of capital and ratemaking are prospective in nature, and cost of equity is tied to investors' expectations about future capital markets, witness Hinton should have made use of projected interest rate data in his RPM analyses. Indeed, he pointed out that witness Hinton endorsed use of both historical and forecasted growth rates in his DCF model "because it is reasonable to expect that investors consider both sets of data in deriving their expectations." Witness D'Ascendis noted that whether or not the projected interest rate data is later shown to be accurate or reliable is irrelevant; as the FERC has stated, the cost of equity depends on what the market expects, not what actually happens. *Opinion No. 531*, 147 FERC ¶61,234 at 88. Further, Witness D'Ascendis demonstrated that current interest rates are not accurate predictors of future interest rates.

Second, witness D'Ascendis disagreed with Hinton's use of annual authorized returns and interest rate data in the RPM. Witness D'Ascendis testified that it is preferable to use the authorized returns and bond yields on a case-by-

case basis. He supported this position by noting that some years have more rate case data, other years have less, and using average annual returns will result in those years with less data garnering unnecessary weight. In addition, he noted that interest rates and market conditions change during the year, and using average annual returns and rates ignores those fluctuations between interest rates and equity premiums.

Third, witness D'Ascendis took issue with witness Hinton's use of 2009-2022 authorized returns when rate case data going back to 2006 is available. He noted that the arbitrary selection of historical periods, as opposed to using the full set of available data, is highly suspect and unlikely to be representative of long-term market data trends. Accordingly, he concluded that witness Hinton should have used the entire Regulatory Research Associates dataset.

Witness D'Ascendis calculated the range of witness Hinton RPM results using prospective bond yields and individual rate case data, showing that the results range from 9.98% (using current interest rates) to 10.15% (using forecasted interest rates).

Witness D'Ascendis testified that witness Hinton has in recent natural gas utility cases performed a comparable earnings analysis, but chose not to do so in this case. While not agreeing with witness Hinton's application of the comparable earnings analysis, witness D'Ascendis performed a comparable earnings analysis to show the outcome if witness Hinton had done for Aqua would he did in other cases. The result as applied to Aqua in this proceeding is an average ROE of

10.01% (median 10.00%) based on historical returns, and an average ROE of 9.81% (median 10.25%) based on projected returns.

After adjusting witness Hinton's results for the as described above, witness D'Ascendis showed that the midpoint of witness Hinton's DCF analyses would be an ROE of 10.40% and the midpoint of his RPM analyses would be an ROE of 10.06%, without any flotation costs.

Regarding flotation costs, in direct testimony witness D'Ascendis explained that they are costs associated with the sale of new issuances of common stock. They are real and necessary costs incurred by the Company, and there is no mechanism that recovers them other than his adjustment to the ROE to include flotation costs. Flotation costs are charged to capital accounts and thus there is not a test year expense or other historical expense shown for them. Witness D'Ascendis further stated:

Since common equity has a very long and indefinite life (assumed to be infinity in the standard regulatory DCF model), flotation costs should be recovered through an adjustment to common equity cost rate even when there has not been an issuance during the test year or in the absence of an expected imminent issuance of additional shares of common stock.

Historical flotation costs are a permanent loss of investment to the utility and should be accounted for.

He noted that the ROE models assume no transaction costs, so the model results do not reflect flotation costs.

On rebuttal, witness D'Ascendis rejected the idea of witness Hinton that no flotation cost adjustment should be made in this case simply because there were no flotation costs for public issuances of stock in the test year. He stated that "since

common equity has an indefinite life, all flotation costs, not just current flotation costs, should be recovered through an adjustment to the ROE.”

Witness D’Ascendis responded to the testimony of witness Hinton that a 9.5% ROE would qualify Aqua for a single “A” credit rating as meaningless. He noted that ROEs from 6.12% to 15.29% could support a single “A” rating for Aqua based on its pre-tax interest coverage ratio.

With respect to witness Hinton’s proposed 20 basis point downward adjustment to reflect the reduced regulatory lag associated with a WSIP, or his proposed 10 basis point downward adjustment to reflect the reduced business risk associated with a CAM, witness D’Ascendis disagreed because (1) North Carolina’s WSIP mechanism is not unique relative to the proxy group, and (2) there is no evidence that either the WSIP or CAM would affect the investor-required return. That is, cost of equity estimates involving comparisons between various companies, and if the proxy companies have similar mechanisms in place to address regulatory lag, the comparative risk is zero. Witness D’Ascendis cited several examples of similar mechanisms in place for proxy group utilities to address regulatory lag – for example, multi-year rate plans in California, and fully forecasted test years in Iowa, Tennessee, Virginia, Pennsylvania, and New York. He stated that such fully forecasted future test year mechanisms or water and sewer improvement charge mechanisms are in place for all members of the proxy group, and that all members of the proxy group except one have CAM-type mechanisms. Thus, any risk reduction attributable to a multi-year rate plan would

be reflected in their market data and a further reduction to Aqua's return on equity would double-count that risk reduction.

Witness D'Ascendis cited two studies that found no statistically significant on investor-perceived risk, or ROE, as a result of risk stabilization mechanisms such as revenue decoupling and infrastructure replacement riders. He further noted that no rating agency has upgraded a utility's credit rating based upon approval of a multi-year rate plan, indicating witness Hinton's 20 basis point deduction to ROE has no basis.

Witness D'Ascendis concluded his rebuttal by observing that if the analytical flaws that he had identified in witness Hinton's testimony were corrected, witness Hinton's ROE range would be from 10.05% to 10.85%. This corrected range supports witness D'Ascendis' recommended 10.40% ROE.

The Commission has carefully evaluated the testimony of Aqua witness D'Ascendis and Public Staff witness Hinton. Before any risk adjustments, the range of the rate of return on common equity recommendations from witness Hinton is from 9.03% - the average of his DCF results - to 9.94% for his RPM result; for witness D'Ascendis the base year ranged from 10.64% to 11.64% and he presented higher numbers for each of the rate years. Such a wide range of estimates by expert witnesses is not atypical in proceedings before the Commission with respect to the return on the equity issue. Neither is the debate and differences in judgment among expert witnesses on the virtues of one model or method versus another and how to best determine and measure the required

inputs of each model in representing the interests of the party on whose behalf they are testifying. The Commission has the experience and ability to assess the competing evidence and determine a fair rate of return on equity based on all the record evidence in this proceeding and in accordance with the legal guidelines discussed above.

With respect to the issue concerning witness Hinton's application of the DCF model, the Commission concludes that it is appropriate to use projected EPS growth, not DPS or BVPS growth in the application of the DCF model. The use of projected EPS growth rates in a DCF analysis provides a better match between investors' market price appreciation expectations and the growth component of the DCF, and the use of projected EPS finds support in academic and financial literature.

With respect to witness Hinton's application of the RPM, the Commission concludes that the exclusive use of current interest rates to the exclusion of projected interest rates is inappropriate. Ratemaking is prospective in nature, and the cost of equity is an exercise in attempting to quantify investors' financial expectations, especially where the proceeding is setting rates three years into the future. Further, the Commission is persuaded by the FERC's logic that the comparison of actual interest rates to past projections of interest rates deserves almost no weight because the cost of equity is based on market expectations, whether they turn out to be right or wrong.

With respect to witness Hinton's use of annual authorized returns and interest rate data in his RPM, the Commission concludes that it is preferable to use the authorized returns and bond yields on a case-by-case basis. To do otherwise would be to give undue weight to years in which there are fewer rate cases – an arbitrary result. Additionally, witness Hinton's methodology, if adopted, would ignore fluctuations of interest rates and equity premiums within a year.

The Commission also concludes that it is more appropriate to use the full historical record of authorized returns – in this case, going back to 2006 RRA data – in order to avoid skewed results and to make full use of longer-term market trends.

With respect to witness Hinton's proposed 20 basis point downward adjustment to reflect the reduced regulatory lag associated with a WSIP, The Commission finds that this or similar mechanisms have been approved in other parts of the country and within the proxy group. Although a WSIP is intended to reduce regulatory lag, the existence of similar mechanisms across the country and in the states where the proxy group utilities operate indicates that any risk reduction associated with a WSIP has already been incorporated into the models used to assess a reasonable ROE for Aqua.

In addition, while there is credible evidence that any risk reduction that might exist would be already accounted for in the proxy-based ROE models, there remains a question as to whether and to what degree risk to investors might be reduced as the result of a WSIP being approved. The Public Staff advanced a bevy

of arguments for risk reduction, meaning a reduction in the investor-required ROE. One argument is that the WSIP would partially insulate Aqua from future expense changes because of the CAGR growth factor applied to expenses in rate years. This is not persuasive to the Commission because (a) the CAGR of 3.04% is well below recent inflation rates, so it is more likely that Aqua has locked itself into under-recovery on price increases, and (b) as a practical matter it will be at least three years and likely longer before Aqua can seek a rate increase under the WSIP, whereas a traditional rate case would allow the Company to apply much sooner to recover major expense increase. The same is true of costs eligible for rate base treatment.

The Commission agrees with the Public Staff that investors generally see the WSIP as reducing regulatory lag, and thus a positive development. However, the Commission concludes that investor risk must be assessed in light of all the impacts of the particular WSIP order. While regulatory lag is reduced, there is no realistic way to quantify that as a 20 basis point reduction to ROE – that is a totally arbitrary recommendation from the Public Staff. More importantly, Aqua has agreed to refund 100% of earnings it may have above the authorized ROE, while shareholders do not have any recovery mechanism if earnings are below the authorized ROE. Those facts, specific to the present case, represent an increase in investor risk. That increase in risk must be weighed against any reduction in risk by lowered regulatory lag. Further, the performance measure penalties that Aqua has offered in its post-hearing position [let's cite to filing on PIMs] further increase

investor risk. The Commission concludes that a reduction in ROE because of the approval of a WSIP is not warranted in the facts of the present case.

The evidence demonstrates that witness Hinton's cost of equity analyses, when corrected for the items noted above, produce a range of cost of equity estimates from 10.05% to 10.85%. It is also significant that witness Hinton's ROE recommendation in the present case is 50 basis points higher than his recommendation in the prior Aqua case (Docket No. W-218, Sub 526), which reflects an increase in investors' return expectations. In Aqua's last rate case, the Commission approved a 9.40% ROE. Adding 50 basis points to what was accepted as reasonable in the Sub 526 Order would indicate a 9.90% ROE in the present case if witness Hinton is correct in determining a 50 basis point increase in investor expectations.

The Commission finds that the DCF, RPM, and CAPM model results provided by witness D'Ascendis, as updated in his rebuttal testimony, as well as the recalculation of by witness D'Ascendis of witness Hinton's model results as noted above, are credible, probative, and are entitled to substantial weight as set forth below. In most cases the Commission does not agree with one ROE witness's recommendation where the issue has not been settled, but in this case key evidence supports the recommendation of witness D'Ascendis. There has been a substantial increase in investor-required returns since the previous Aqua case. The 10.40% ROE request of Aqua is well below the 10.64% - 11.64% ROE range indicated by witness D'Ascendis' models for the base year, and even lower than his indicated ranges for the rate years. By use of a proxy group, the indicated

ranges include data from companies that have similar risk stabilization mechanisms, so a downward adjustment for the WSIP is not warranted. Nor do the foregoing indicated ranges of witness D'Ascendis include his flotation adjustment, which again reflects how conservative the 10.40% request is.

Accordingly, the evidence presented concerning other authorized rates of return on equity, when put into proper context, lends substantial support and corroboration to a finding that a 10.40% rate of return on common equity is appropriate for use in this proceeding. These determinations are supported by the substantial weight of the evidence in view of the entire record. In addition, and to meet its obligation in accord with the holding in *Cooper I*, the Commission will next address the impact of changing economic conditions on customers.

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

In particular, the testimony of witness D'Ascendis sets forth several positive aspects of changing economic conditions that affect consumers, even as the Commission notes that inflation remains a concern. He testified that the unemployment rate in counties served by the Company spiked in April 2020 at 14.23%, but by February 2022 it had fallen substantially to 3.70%. He observed that North Carolina's real GDP grew faster than the overall U.S. in every quarter of 2021. He testified that since the 2009 – following the financial crisis - nominal

median household income in North Carolina has grown at a slightly faster pace than the national median income (3.36% vs. 2.81%, respectively).

Based upon economic conditions affecting Aqua's customers, the Commission concludes that an allowed rate of return on common equity of 10.40% will not cause undue hardship to customers as a whole even though some will struggle to pay the increased rates resulting from this decision. Additionally, an ROE of 10.40% is a conservative measure of investor-required ROE, and there is no evidentiary basis to adjust this cost of common equity – which is needed to meet investor expectations – for the impact of changing economic conditions on consumers.

The Commission 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 and is a regulatory requirement.

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 notes further that its approval of a rate of return on common equity at the level of 10.40%, or for that matter at any level, is not a guarantee to the Company that it will earn a rate of return on common equity at that level. Rather, as North Carolina law requires, setting the rate of return on common equity at this level merely affords Aqua the *opportunity* to achieve such a return. The WSIP further impacts this opportunity because the ROE banding approved in this Order will require over-earnings above the prescribed level must be refunded to customers, while Aqua may not recover under-earnings below the prescribed level. The Commission finds and concludes, based upon all the evidence presented, that the rate of return on common 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.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 70 - 109

PFAS

The evidence in support of these Findings of Fact is contained in the Application and the testimony of Aqua witness Amanda Berger (Tr. Vol. 10, pp. 32-38), Public Staff witnesses Sashi Bhatta (Tr. Vol. 6, pp. 328, 331 – 332), Evan Houser (Tr. Vol. 6, pp. 344 – 347), and Charles Junis, and the Public Staff panel of witnesses consisting of Michelle Boswell, John Hinton, Charles Junis, and

Fenge Zhang (Tr. Vol. 8, pp. 63 – 65, 109, 119, 132, 156).

Additional evidence is found in the form of recent announcements from the United States Environmental Protection Agency (EPA) on March 14, 2023, addressing adoption of a proposed National Primary Drinking Water Regulation (NPDWR) concerning six PFAS, including perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorononanoic acid (PFNA), hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX Chemicals), perfluorohexane sulfonic acid (PFHxS), and perfluorobutane sulfonic acid (PFBS). The proposed PFAS NPDWR does not require any actions until it is finalized; EPA anticipates finalizing the regulation by the end of 2023. The EPA submits that it expects that if fully implemented, the rule will prevent thousands of deaths and reduce tens of thousands of serious PFAS-attributable illnesses.

Not only is EPA proposing a National Primary Drinking Water Regulation (NPDWR) to establish legally enforceable levels, called Maximum Contaminant Levels (MCLs), for the six PFAS, it is also proposing health-based, non-enforceable Maximum Contaminant Level Goals (MCLGs) for these six PFAS.

<u>Compound</u>	<u>Proposed MCLG</u>	<u>Proposed MCL (enforceable levels)</u>
PFOA	Zero	4.0 parts per trillion (also expressed as ng/L)
PFOS	Zero	4.0 ppt
PFNA	1.0 (unitless) Hazard Index	1.0 (unitless) Hazard Index
PFHxS		
PFBS		
HFPO-DA (commonly referred		

to as GenX Chemicals)		
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The proposed rule would also require public water systems to:

- Monitor for these PFAS
- Notify the public of the levels of these PFAS
- Reduce the levels of these PFAS in drinking water if they exceed the proposed standards.

See: <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas> See also testimony of Amanda Berger, Tr. Vol. 10, pp. 32 -- 38 and testimony of Public Staff witness Evan Houser, Tr. Vol. 6, pp. 341 -- 347.

Aqua witness Amanda Berger, Director of Environmental Compliance, described the EPA and North Carolina Department Of Environmental Quality (DEQ) PFAS Strategies in her pre-filed testimony and discussed them in the examination of her on the stand on January 12, 2023. (Tr. Vol 10, pp. 32 – 38). Anticipating the establishment of a MCL – or enforceable standard – for PFAS compounds in drinking water by the EPA⁸, she described the EPA’s issuance of a PFAS Strategic Roadmap, which occurred on October 18, 2021.

Ms. Berger testified that EPA had also stated it will release a pre-guidance document by year-end 2022 with the proposed rule to establish an enforceable drinking water limit in early 2023. She stated the proposed MCL was anticipated by state primacy agencies and the industry to be the existing Minimum Reporting Level (MRL) - or lowest level detected with 95% confidence at 75% of laboratories

⁸ The proposed MCL of 4 ppt that was announced on March 14, 2023.

- for PFOS and PFOA of 4 parts per trillion (ppt). She testified that in June 2022, EPA also lowered the Health Advisory Limit (HAL) for PFOS and PFOA from a combined 70 ppt to 2 parts per quadrillion (ppq) for PFOS and 4 ppq for PFOA. Noting that a HAL is not an enforceable standard by EPA or DEQ, witness Berger opined that the average consumer interprets this value to mean anything greater than the HAL could be a health concern. (Tr. Vol. 10, pp. 33).

Evidence about the efforts undertaken by Aqua parent company, Essential Utilities, to address PFAS in New Jersey and Pennsylvania was provided by Aqua witness Berger at Tr. Vol. 10, p. 34. New Jersey's Department of Environmental Protection set its MCLs for PFOS and PFOA to 13 ppt and 14 ppt, respectively. Pennsylvania's Environmental Quality Board adopted a final limit of 18 ppt for PFOS and 14 ppt for PFOA on October 12, 2022. Essential has subsidiary companies in both New Jersey and Pennsylvania and selected the lower of the two limits as an internal company standard.

Witness Berger addressed the similarity of actions taken by several other utilities located in North Carolina, to that of Aqua. She stated that Cape Fear Public Utility Authority (CFPUA), Brunswick County Utilities, the Town of Pittsboro, and Brunswick Regional Water and Sewer H2GO, have proactively installed or are in the process of installing treatment for PFOS and PFOA. (Tr. Vol. 10, pp. 35). Ms. Berger, an experienced expert in her field, submitted that utilities leaders want their consumers to have confidence in their water supply and recognize that waiting for a regulation may not be responsible, in light of the potential health impacts. She, like Public Staff witnesses Junis and Houser, noted that development of federal or

state regulations does have a time frame associated with it. Further, she also emphasized that consumers have been demanding that utilities take appropriate action to protect their drinking water supply, as evidenced during the customer hearings in this docket. Ms. Berger cautions against the delay that is proposed by the Public Staff:

“Waiting until 2026 to install treatment would be reactive and delay protection against exposure due to the timing, location, and quantity of sites that Aqua has identified that require treatment under Aqua’s internal 13 ppt limit as well as the future USEPA MCL that is expected to be established much below 13 ppt.”

Tr. Vol. 10, p. 36

On a North Carolina-specific basis, Aqua witness Berger refuted Public Staff witness Houser’s testimony that the Company plans to complete approximately ten PFOS/PFOA filtration projects in the state, for budget years 2022—2025.

Ms. Berger noted that Public Staff witness Houser testified (Tr. Vol. 6, pp. 345 - 346) that the EPA and DEQ had not issued an MCL on PFAS compounds in drinking water at that time. Mr. Houser also noted the then current Interim EPA health advisories (HAL) for PFOS and PFOA were 0.02 ppt and 0.004 ppt, respectively. He referred to the EPA’s June 2022 webinar which discussed that the minimum reporting level (MRL) is 4 ppt for both substances. He testified that the MRL for the fifth unregulated contaminant monitoring rule, known as UCMR 5, is the minimum quantitation level that can be achieved by capable analysts with 95% confidence at 75% or more of the laboratories, using a specified analytical method.

Witness Houser---essentially in agreement with Aqua witness Berger on

this point---opined that it was likely that the *final* rule on PFOS and PFOA limits for drinking water will set limits near the current MRL of 4.0 ppt, which he correctly calculates as less than one-third of the internal limit that had been previously established by Essential. He testified that the EPA states in its PFAS Strategic Roadmap that it plans to issue a final rule for PFOS and PFOA by Fall of 2023. Then, by comparison to the history of the EPA's most recent primary drinking water rule update---the Lead and Copper Rule Revisions, his testimony surmises that, if on a comparable schedule to the Lead and Copper track, the final rule on PFOS and PFOA compounds may not have a compliance date until Fall of 2026.⁹

The combination of the absence of a final proposed EPA rule for PFOS and PFOA, at the time of witness Houser's testimony, and his uncertainty as to when a compliance date might be confirmed, prompts the Public Staff to oppose the Company's approach to management of PFOS and PFOA as being not reasonable or prudent. The Public Staff contests the Company's approach to addressing these substances, principally because neither the EPA nor the DEQ has issued final regulations. The Public Staff states that because final regulations and compliance dates are not actually in force at the time of its testimony, it believes the Company's planned projects "...may not achieve the limits ultimately set by those agencies." (Tr. Vol. 6, pp. 347).

First, this position is contradicted by Aqua witness Berger's testimony that the Company believes its pending treatment protocol will be sufficient to reduce

⁹ The EPA Lead and Copper Rule Revisions were initially published on January 15, 2021, with an effective date of March 16, 2021, and a compliance date of January 16, 2024, according to witness Houser. Tr. Vol. 6, pp. 346.

the levels of PFOS and PFOA to or below 10 ppt. More importantly, witness Berger made clear in responses to questions from Commissioner Clodfelter that the filtration efforts the Company will undertake going forward are expected to bring the levels down to “non-detect,” which is essentially at or below 4.0 ppt. (Tr. Vol. 10, p.90, lines 1-3).

Secondly, the EPA announcement of March 14, 2023, of a final proposed rule does not totally remove---but does undermine---the Public Staff’s reservations which were based in some measure upon the absence of such a rule.

Third, Public Staff witness Junis’ attempt to distinguish this PFAS experience from that of the period prior to adoption of the Coal Combustion Residuals (CCR) final rule pertaining to coal ash, is unpersuasive. (Tr. Vol. 9, p. 60). In answer to Commissioner Clodfelter’s questions about how the experiences could be differentiated, Mr. Junis variously indicated that coal ash had a long history, federal regulation is subject to changes in administrations, and it was a complex issue. Yet Mr. Junis then proceeded to discuss the extent to which EPA had studied the PFAS issues, noting there has already been one UCMR to collect data on PFOS/PFOA, and another UCMR that expands that to now multiple variations of PFOS.

In these respects, there is a sameness about all significant federal environmental regulations that are controversial and costly. Given the sweep of the implications from regulation of something as ubiquitous as PFAS and the task of addressing the pervasive nature of its presence in the environment, the Public Staff’s argument do not support a diminution of the urgency of action. The

Commission does not find any distinction between the Coal Ash and the PFAS situations that would suggest that continuing and purposeful movement by the Company to reduce the level of PFAS in drinking water as soon as possible is not clearly in the public interest. To the contrary, Aqua's commitment to address heightened levels of PFAS in this WSIP, given the documented EPA position on public health in advance of the widely anticipated final MCL, is a commendable and responsible action for which the Company should not be penalized through an inability to recover planned treatment costs associated with PFAS.

Evidence of the Company's transparency regarding PFAS. The Response to Customer Concerns From the Virtual Hearing (filed November 9, 2022) addressed PFAS issues and concerns at The Cape/Beau Rivage wells. Aqua's filed, verified Response stated that it used two contracted laboratories to analyze for PFAS compounds. Witness Joyce from Wilmington stated that the Company should be making quarterly PFAS reports and providing the results to the DEQ. Aqua explained that until EPA promulgates a standard, PFAS monitoring is not required in North Carolina unless the system has been identified to participate in the Unregulated Contaminant Monitoring Rule (UCMR) scheduled for 2023 – 2025, or previously participated in UCMR in 2013-2015. However, Aqua's evidence also showed that it is voluntarily monitoring its systems based on occurrence and environmental factors. The Cape Master System's data is available on Aqua's previously referenced website. The Response to the Virtual Public Hearing also addressed the concerns expressed about PFAS in the water purchased from the Town of Pittsboro. Aqua explained that the Town of Pittsboro had recently installed

a one-million gallon per day granular activated carbon system and that it was reported that the system was meeting its 90% PFAS removal design. (Aqua Response to Virtual Hearing, filed November 9, 2022, p. 30).

In the Response to Customer Concerns at the Wilmington hearing, Aqua provided an extensive explanation regarding PFAS contaminant levels, the regulatory oversight structure, and the regulatory differences between a Health Advisory Limit (HAL) and a MCL. Specific responses to the witness testimony, in addition to concerns expressed by Ms. Joyce in the Virtual Hearing, included:

- Answers to witness Bennett, who expressed concern that Aqua had no plans for PFAS removal. Aqua explained its expectation to install treatment for PFAS over the next several years and that it does have filtration placeholders included within its multi-year capital plan to address systems that exceeded Aqua's previously adopted internal standard of 13 ppt, which was the lowest Essential state standard being utilized for PFAS contaminants at the time. Aqua's evidence, in the Response, was that it has voluntarily monitored all its public water systems and has established quarterly monitoring for systems whose results exceed the Aqua internal standard, or where a need arises based on proximity to potential sources or environmental factors.
- Aqua's response to the Wilmington area customers stated that Aqua is actively engaged in monitoring the status of pending changes to the EPA regulations being developed for PFAS contaminants so that

the Company can make necessary operational and treatment changes required to provide water that meets all applicable standards to its customers.

- Aqua's report made clear that if a standard less than 13 ppt is adopted, the actual amounts necessary to install appropriate treatments and operate the new systems will exceed what Aqua incorporated in its 2022 MYRP application. (This supports Aqua's position that the \$7,810,000 capital investment figure is conservative).
- Aqua's evidence, in the Wilmington report, is that it expects to install treatment for PFAS over the next several years and that it has filtration placeholders included within its multi-year capital plan to address systems that exceeded Aqua's previously adopted internal standard of 13 ppt (which---again---was the lowest Aqua state standard being utilized for PFAS contaminants at the time).

The Public Staff's testimony, from Mr. Houser, objects to implementation of treatment measures until the Company has---essentially---mapped the treatment plan for the entire state. (Tr. Vol. 6, pp 372 – 376). The Commission rejects this position. As Aqua explained in its testimony, it is taking action and should continue to do so, to position itself to deal with the PFAS issue. It is imprudent to not do so, particularly given all that is known about the examination behind EPA's decision, the March 14, 2023, announcement, the widespread nature of the health-based concerns about the PFAS family of compounds, and the unique nature of the

number and size of Aqua's systems. Customer concerns and the actions undertaken by other utilities to address this matter heighten the issue of customer confidence in the water supply.

The Commission appreciates the Public Staff's concerns about cost containment, but in this instance rejects the Staff's view that proceeding to lower PFAS levels is itself not a reasonable or a responsible approach. Work to lower the level of PFAS starting with the entry points that already exceed the 13 ppt identified by Aqua, pursuant to the methodology the Company is operationally and managerially responsible for determining, should proceed simultaneously with the process of finalizing the enforceable standard, in this case. The Commission concludes that the business of controlling the level of these contaminants in the drinking water supply is a prudent undertaking and should not be delayed. The Commission will require annual reports on the progress towards PFAS mitigation, to keep it apprised of the status of the undertaking and of the regulatory changes.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 110

SIP/SAP Costs

The Public Staff recommended that the costs of SIP, including the SAP enterprise software, not be allowed into rate base. This recommendation was in addition to the Public Staff's pre-settlement position that the implementation of SAP was part of its recommendations to deny the Aqua WSIP request entirely and to require a management audit of Aqua.

The Public Staff raised multiple concerns about SAP in particular, alleging:

- a) A concern that the SAP costs were incurred to satisfy a settlement in Pennsylvania related to Aqua America's acquisition of Peoples Gas;
- b) A concern that a described reorganization into Essential Utilities was inappropriately driving SAP costs, and that issues related to regulation of the new parent company should be decided in other dockets before allowing SAP costs into rates in this proceeding;
- c) A concern that Aqua customers in North Carolina would bear SAP costs that should be allocated to other jurisdictions;
- d) A concern that SIP and SAP were not providing direct benefits to customers;
- e) A concern that the new software did not allow Aqua to track spending on capital projects in a timely manner;
- f) A concern that issues with the transition to SAP caused delays in Aqua discovery responses;
- g) A concern that Aqua would not be able to fulfill the WSIP reporting requirements of Rule R1-17A on a timely basis; and
- h) A concern that it was premature for Aqua to acquire SAP because its Lawson and Banner programs have remaining useful lives.

The Public Staff WSIP panel recommended removal of \$7,095,415 from plant in service that was incurred by Aqua for SIP since last rate case through August 31,

2022; removal of \$3,488,758 projected for first eight months of 2022; and removal of \$3,791,010 during the Rate Years. The Public Staff accounting panel recommended that SIP costs be included in a regulatory asset, with a 15-year amortization period beginning in the month each expense was incurred, and with no rate recovery of amortization expense until some future rate case after completion of milestones prescribed by the Public Staff.

In response to a Commission question, Aqua witness Kellett updated the North Carolina allocated share of the amount spent on SIP from 2020 through November 2022 as \$7,832,121. The Company rebuttal witnesses addressed the Public Staff's concerns, and the Commission concludes on the basis of that rebuttal evidence that the SIP expenditures, including SAP, made through August 31, 2022, should be included in rate base because they are both reasonable and used and useful. The Commission further concludes that the projected SIP costs for the Rate Years – including costs incurred in the bridge period of September through December 20220 are reasonable and should be recovered in rates subject to prudence review in the next Aqua rate case.

Aqua witnesses explained that SAP was implemented as a much-needed technology update for Enterprise Resource Planning (ERP), and not as a concession to settlement requirements in Pennsylvania. Phase 1 of SAP replaces the Lawson program and provides software integration for accounting, financials, supply chain, time sheet, and payroll needs. Phase 2 will replace the Banner program, and will provide customer relationship and billing modules. The Public Staff speculated that “It appears a primary driver of SAP implementation was to

satisfy the terms of the PA Settlement, which was entered into for the purpose of obtaining PAPUC [Pennsylvania Public Utilities Commission] approval of the transaction between Aqua America and Peoples Gas, the latter of which used SAP as its legacy system since 2011.” Aqua responded that

The decision to implement SAP was not something that Aqua Pennsylvania was forced into doing to reach a settlement agreement; rather, the parties did agree it was a benefit of the transaction. The Public Staff references commitments in the Pennsylvania acquisition proceeding. Aqua Pennsylvania made a number of settlement commitments including one which required it to provide parties with initial estimates of the cost of SAP implementation. This was an informational filing. There was no “pre-approval” of SAP or SAP costs required from the parties or the Commission and there was not any feedback from the informational filing.

The Public Staff quotes internal Aqua America presentation materials that describe the purpose of SAP as to “significantly enhance customer service and meet the settlement goals.” Aqua witnesses explained why the Public Staff was taking the reference to “meet the settlement goals” completely out of context:

Banner is not being replaced because of a commitment to meet certain customer service metrics in Pennsylvania. Banner is being replaced because it is over 20 years old, is no longer supported by the vendor, and does not support important customer experience goals such as automated move in/move out, integrated chat sessions and real-time customer payment and billing.

The Company also discussed why the Public Staff had misconstrued cost information in Aqua America internal materials on the business case for SIP. The Public Staff misread those materials to infer that Aqua water customers would be bearing substantial SIP costs for Peoples Gas compared to a stand-alone plan for Aqua. The Company replied in rebuttal that

The Public Staff appears to infer those additional costs were

somehow unnecessarily assigned to the customers of the Aqua water and wastewater subsidiaries either initially or along the way. This is not correct. The Company did not move capital costs over to the water business. This waterfall chart reviewed the five year capital plan for IT, identified all five year IT projects (of which SAP was a large portion), and demonstrates that \$42 million would be needed to implement SAP and other strategic platforms on the water side of the business. Nothing is being shifted. In fact, the waterfall slide makes the point that when taking the Aqua Services IT budget and Peoples IT budget together, the additional combined IT cost for SAP was \$42 million more over a five-year period. It should be noted that more capital costs are being borne by Aqua customers because Peoples already did its large SAP investment in 2010 and 2011. As stated previously, Peoples has had SAP functionality on both the financial platform and the customer service side for quite some time. Please refer to the SIP waterfall slide in Public Staff Confidential WSIP Exhibit 3, which explains the SIP investments for Aqua America and Peoples Gas. Without SIP, Aqua America would have had to implement SAP from scratch and would have spent significantly more than \$158 million over six years. Aqua did not prepare an alternate five or six year capital IT plan using the assumption it would have to implement a technology platform from scratch. But, as stated, it would have been more than \$158 million over six years. Rather, Aqua was able to leverage the SAP knowledge, expertise and experience from one of its subsidiaries to transition to SAP.

At hearing, witness Kellett observed that the Public Staff was incorrect in stating the amount of SIP cost would be \$131 million over four years, or \$32 per Aqua customer. She testified that the correct cost for Aqua America would be” \$110,694,235 over six years, or \$18/year for each Aqua America customer.” She further elaborated on the financial benefit for Aqua customers resulting from acquisition of a company that had been using SAP for some years:

With the service improvement program, as we've talked about in our testimony, we wrote a new capital plan to include investments in an overhaul of our technology that was, frankly, aging and out of support. And that total for the water Companies was \$158 million over five years.

If we had had to build SAP and all the associated systems that we've been implementing, including TimeTrak, ADP time,

PowerPlan, BPC and Group Reporting, Procore, and the list goes on, the estimates, we believe, would be somewhere between 200 and \$220 million. At \$220 million, that's a 40 percent increase in cost if we had not leveraged what Peoples Gas had already implemented.

They [Peoples Gas] took this journey in 2011. They bought the hardware and the software and the licensing. They built a staff, a team of people that know SAP and these systems. We were able to use that knowledge. We were able to leverage that hardware investment, that software investment to our advantage. So we absolutely would have spent more had we gone it alone.

Witness Kellett described a thorough process to assess the value of implementing the SIP, starting with the engagement of an outside consulting firm in 2018 to assess the cost of an ERP based on the experiences of other utilities. Aqua America then issued an RFI in early 2019, followed by an RFP in early 2020. The Company received four bids, and “did an exhaustive analysis of that and came back and then made a determination based on the services, the cost, and the deliver -- you know, the timeline and what they would deliver, the investment by the Company.”

In sum, the Commission concludes that Aqua did not buy SAP to facilitate the acquisition of Peoples Gas, and the acquisition of Peoples Gas did not impose an undue share of SAP costs on Aqua water customers. Rather, the purchase of SAP was conducted through an appropriate and thorough process to acquire an ERP that would deliver the results that Aqua needed in a cost effective manner. Being able to leverage the SAP experience of Peoples Gas actually has saved millions of dollars for Aqua water customers. Nor is there any compelling evidence that Aqua's North Carolina customers are somehow impacted by settlement commitments made in Pennsylvania. Essential Utilities was going to move to an enterprise management system with or without the acquisition of Peoples Gas.

The Company did not commit to do so as a result of seeking approval of the underlying Peoples Gas and Aqua transaction. There is no credible evidence that North Carolina customers are paying for costs that should be assigned or allocated to Essential Utilities customers in other states.

The Public Staff also alleged that the business combination of Peoples Gas and Aqua America had resulted in a corporate reorganization into Essential Utilities. They asserted that Essential Utilities must ensure operational efficiencies would be flowed through to North Carolina customers, that North Carolina customers should be held harmless from the business combination, and that either (a) the WSIP should be denied until these issues can be resolved in other dockets, or (b) WSIP rates should be provisional to allow adjustments to ensure customer benefits.

In rebuttal, Aqua explained that the Public Staff had mischaracterized the name change from Aqua America to Essential Utilities, that this change was to create a holding company that would cleanly separate the Peoples Gas subsidiary from Aqua water operations, that customers would be held harmless from these corporate changes, and that the facts and issues surrounding the changes will be properly addressed in dockets specific to those issues (Docket No. W-218, Subs 570 and 571). The Aqua WSIP rebuttal panel testified that

Aqua America entered into an agreement to acquire Peoples as one of its subsidiaries, but it is incorrect that there was a “reorganization” into Essential. Shortly before the closing of the transaction, Aqua America, the parent company of Aqua (and water and wastewater operating subsidiaries in other states) changed its name to Essential Utilities, Inc. This was a name change, not a wholesale corporate reorganization. Peoples is and remains a separate subsidiary. However, the Company agrees that Aqua should not be responsible

for absorbing costs that are not appropriately allocated or assigned to it. As described later in this testimony the charges allocated to Aqua are appropriate.

The Commission notes that the Public Staff has not proposed any adjustments and has not identified any inappropriate costs in the WSIP request that result from the parent corporation name change or from the parent corporation's acquisition of Peoples Gas. The Commission concludes that Aqua has made a *prima facie* case for rate change in its application, testimony, and exhibits, and that there is no evidence showing inappropriate costs from the Peoples Gas acquisition or the change in corporate parent from the Aqua America name to the Essential Utilities name. Commission approval is required for any updates in the affiliate agreement between Aqua (North Carolina) and its parent company, and also for any corporate change in ownership. Aqua filed applications for such approvals in Docket No. W-218, Subs 570 and 571, on October 29, 2021. Those dockets are the appropriate place to address Aqua's applications and to impose any regulatory conditions that may be appropriate, as agreed in the Stipulation. In the present rate case, the Commission finds there is no substantial evidence to disallow SIP/SAP costs from rate base due to the corporate name change or acquisition of Peoples Gas. The Public Staff has not identified any inappropriate costs related to those issues in its rate case testimony.

With regard to the Public Staff concern that customer benefits from SAP were not apparent, the Commission finds there are important benefits. First, the existing tools of Lawson and Banner are quite old, losing vendor support, and in need of replacement. Second, SAP is the leading ERP for utilities – a well-

established and respected platform. Third, Aqua carefully evaluated SAP along with other ERP options and in a systematic and reasonable process chose it as the best fit for Aqua. Fourth, by leveraging the SAP experience of Peoples Gas, Aqua America (now Essential Utilities) has saved customers millions of dollars on the adoption of an ERP. Fifth, SAP will add features and functionality that Lawson and Banner do not have, thereby benefiting customers.

These findings are based on material and substantial evidence from the Aqua WSIP rebuttal panel. Those witnesses testified that “Banner is being replaced because it is over 20 years old, is no longer supported by the vendor, and does not support important customer experience goals such as automated move in/move out, integrated chat sessions and real-time customer payment and billing.” While the Lawson software had not yet lost vendor support, that is going to happen in the near future for the version used by Aqua. Aqua discussed why the move to SAP at the present time was the best action for it to take:

Because Peoples Gas was already using SAP, Aqua was able to execute its transition off Lawson faster than if Aqua had to build a new SAP system from scratch. It would be very risky to stay on a financial platform until the last possible date of vendor support. Software vendors stop providing any software updates (including security patches) years before they sunset the software, meaning Aqua would not be able to get new functionality. If Aqua had an issue with the software, the vendor would stop training new employees on older software so it would be very difficult to get support. Also, the Company was on version 10. Infor did have a version 11, but it was only offered via the cloud and we would have had to do an entirely new implementation of Lawson to use it. So we were going to have to implement a new platform no matter what. Aqua needed as a matter of prudent management and operation to move to a new financial platform.

Witness Kellett described in detail the deliberate, careful, and thorough process that Aqua America used to evaluate its options and ultimately choose the best ERP platform for its purposes. She provided examples of particular features that will benefit customers, such as callback technology, which makes it much easier for customers to connect with the Company on matters of interest to the customers; and integration with tablets for field personnel, which are less expensive than laptops and will allow digital time-keeping instead of paper time-keeping forms, and which will allow field personnel to create work orders that go directly into SAP. In Phase 2, there will be a new customer portal with a move-in move-out feature. Customers will be able to look up consumption information. There will be more billing data accessible to customers. Features like these are in addition to the substantial cost savings realized by customers from Aqua's ability to use the SAP experience of Peoples Gas.

A concern of the Public Staff was that the transition to SAP slowed discovery responses during the rate case investigation and led the Public Staff to question Aqua's ability to track capital costs on a timely and accurate basis. The Commission concludes that the transition issues for SAP created challenges, especially for the Public Staff's discovery requests, but those issues do not mean that SAP has been "woefully deficient" as the Public Staff states. The legal standard for including a cost in rate base is whether it is a reasonable cost (including whether the asset is a prudent acquisition) and whether it is used and useful. The Aqua SAP and SIP costs meet this standard for the reasons discussed below.

First, transition issues are a normal part of deploying a major new software platform. As Aqua testified:

We spoke with many utilities and consulting firms ahead of the go live and all shared feedback that we should expect some issues and a period of transition while our employees get used to SAP. A stabilization period after a major technology platform change is very common. We expected some bumps after implementation since SAP was a new system, with new screens, new terminology, new codes and changed business processes. It was a lot of change, and it naturally is taking our employees some time and significant extra effort to get comfortable with the new system.

Knowing that transition issues were likely to arise, Aqua took reasonable management action to minimize the disruptions. The Company began testing SAP as early as the fall of 2020. Testing of the development code and applications that work with SAP, like PowerPlan, began in early 2021. Testing incidents were tracked and findings were made. In addition, Aqua had external auditors with it throughout this process:

they were validating our controls, all of our financial controls, all of our IT controls. They were validating data integrity. Show me the trial balances that you pulled out of Lawson. Show me those trial balances in SAP as we practiced the conversion. Show me this account reconciliation. You started with this, you reconciled it, and you got to this, you know, and show me that it works. So we had their participation the entire time through the project.

Aqua also conducted over 10,000 hours of staff training before going live with SAP. When SAP went live on January 1, 2022, there was a six-month “hypercure period,” where experts could answer employee questions 16 hours/day and teams of implementation experts were deployed to guide Aqua employees on site.

Witness Kellett explained that “the conversion process extends over a

period of time, and there are checkpoints, you know. Think of a schedule and, you know, moving into a new house, and there's checkpoints as you move in. But every account, every balance, every number is validated." The Commission concludes that the existence of transition issues for SAP was not by itself indicative of imprudence because transition issues are to be expected for this type of project; moreover, the Company's approach to managing transition issues was reasonable.

Also of concern, however, is the impact of the transition issues even if the issues are to be expected in a major software change. The Public Staff took particular note of how long it took Aqua to close out projects in the SAP system, claiming there was no evidence of a resolution at the time the Public Staff filed its testimony. They testified that

The Public Staff is also concerned about the Company's inability to track the spend on individual projects included in the Capital Asset Additions spreadsheet. The spreadsheet timeline begins in January 2022 and lists projects running through December 2025. Throughout the discovery process, the Public Staff repeatedly asked the Company to update the completed projects and the dollars spent from January 2022 to the present. The Public Staff was consistently told that it was not possible for the Company to provide timely updates on which projects were completed or the corresponding costs. The Company's response was consistently that it was functionally incapable of providing the information and that the Public Staff's investigation should focus on the total dollar amounts in each rate year. The Public Staff requested the information on July 29, 2022 and did not receive a quantifiable update until September 18, 2022.

Additionally, the Public Staff testified that

The Company's conversion to SAP produced systematic delays in discovery responses throughout the investigation due to the inability to timely closeout capital projects in the SAP system. The Company is currently operating dual systems that require creation of multiple

project numbers and results in significant delay in completion of the end of month closing process in monthly close of the books. In some instances, the Company takes as many as forty-four days to close out its books from the prior month.

.....

The Public Staff has seen no evidence that the SAP implementation and associated problems will be resolved in the foreseeable future.

.....

The SAP system and/or staff utilization of the SAP system appear to be incapable of timely and accurately tracking project costs, including AFUDC, as they are completed which has material implications for meeting the detailed reporting requirements of Commission Rule R1-17A(j) in a timely manner. For much of the Public Staff's four and a half months discovery period, the Company contended it was unable to update the itemized spreadsheet detailing projects that were to be completed throughout 2022 because the system did not allow production of such data. There have been significant and repeated delays in the monthly accounting closing process after the transition to SAP. This issue is illustrated by the number of days after month end the closing process is completed shown in the table below.

Month	2021		2022	
	Close Date	Days	Close Date	Days
Jan	2/12/2021	12	3/16/2022	44
Feb	3/8/2021	8	4/1/2022	32
Mar	4/14/2021	14	4/28/2022	28
Apr	5/7/2021	7	6/2/2022	33
May	6/10/2021	10	6/22/2022	22
Jun	7/8/2021	8	7/24/2022	24
Jul	8/10/2021	10	8/24/2022	24
Aug	9/10/2021	10	9/21/2022	21

Sep	10/7/2021	7	10/20/2022	20
Oct	11/5/201	5		
Nov	12/7/2021	7		

In response to Public Staff Data Request No. 70, Question 11, the Company stated the following:

Aqua stopped using Lawson on 12/31/2021. (Lawson will continue functioning as a historical repository). Aqua began using SAP for financial reporting, purchasing, inventory and time reporting in January 2022. Aqua is still using Banner and will convert to SAP for customer billing by end of 2025. Aqua did not use Lawson in combination with SAP for current year financial reporting.

For a multi-year rate plan to succeed, it is vital to meet mandatory three-month capital investment project reporting requirements--the inability to do so is unacceptable. The issues with SAP have consistently delayed the filing of regulatory reports throughout 2022 and there is no indication this will be resolved within a reasonable time going forward under a WSIP. The Public Staff questions the value of the SAP conversion if this is the end result.

There is no question that the discovery period for the Aqua rate case was challenged by the transition issues with SAP. While it appears that some discovery responses did not meet the Public Staff's timing needs or did not appear in the format the Public Staff preferred, Public Staff made significant recommended adjustments and performed a thorough review of the rate application. Upon review, the Commission concludes that the Public Staff has over-stated the issues with the transition to SAP, has ignored the advances that Aqua has made during the fall of 2022, and has not made a persuasive case for disallowance of SIP costs. The Commission credits the rebuttal testimony of Aqua, as summarized below, in regard to this issue.

The Aqua WSIP rebuttal panel testified that the Company began use of SAP on the schedule it had planned, and that it was used and useful in many important functionalities:

The Company implemented SAP on January 1, 2022, as planned. Aqua completed 11 month-end close processes as planned, paid millions of dollars in invoices to run the Aqua operations, published financial results for three quarters as planned, and executed thousands of work orders in asset maintenance. The system is working and has been working since implementation. It is being used to create requisitions, create purchase orders, process vendor invoices, query financial data, perform journal entries, perform intercompany settlements, track asset data, and track payroll data. The SAP implementation has come with challenges in North Carolina but has not been “woefully deficient.” The value of SAP is also reflected in the fact that many other companies and many utilities are using SAP. The implementation of SAP by Aqua involved a lot of work and the type of delays that come with transition to a major new enterprise software platform. This is not woefully deficient, it is a naturally occurring part of bringing long-term benefits to Aqua’s customers through necessary, critical system updates.

.....
SAP is Aqua’s financial platform, it is used and useful. Aqua disagrees with the Public Staff’s position to remove it from rate base because that proposal is unreasonable and unfounded. SAP is in service, functioning, and a necessary component of the Company’s operation, and is used and useful.

As to the discovery delays, the Company ultimately provided necessary plant closing updates to the Public Staff and Commission:

As stated above, DR 6 Q6 responses were provided to the Public Staff on September 18, October 5 and November 21.

Q. DO THE COMMISSION AND PUBLIC STAFF HAVE THE INFORMATION NECESSARY TO REVIEW THE COMPANY’S ABILITY TO PLAN, IMPLEMENT AND INVEST ON CAPITAL ADDITIONS PER THE COMPANY’S PLAN, AND THEREFORE HAVE A GOOD BASIS TO APPROVE THE WSIP?

A. Yes. The Commission and Public Staff have the data and means to do this, even if the Commission only focuses on 2022. DR6 Q6 provides details on capitalizations and projected capital activity - which is what was provided – rather than an updated forecast of Item 28. DR6 Q6 and DR 5 show exactly what the Company placed plant

in service on a monthly basis and was and can be sampled/ tested by project name now or in the future. The Public Staff could see exactly what Aqua was spending on a monthly basis, by project line. In addition, there were projects held in CWIP that were available for review and auditing. See Aqua WSIP Exhibit 1 and 2.

Q. DID THE COMPANY UPDATE THE ITEM 28 PLAN DURING THE COURSE OF DISCOVERY?

A. As stated above, the Company created DR6 Q6 in lieu of an updated Item 28. In addition, the Company provided an update to Item 28 per DR 115 (Sept 2022 – December 2025) which is provided as Aqua WSIP Exhibit 3. This update also corrected the \$8.3 million double counting error previously discussed. As explained above, updating W-1 Item 28 detail was an inefficient and time-consuming process based on the different format and change to the SAP system. As noted previously in this rebuttal, the crux of this issue is that Public Staff wanted a reconciliation of the Item 28 filing, which had 9,000 lines of data. The application was prepared using Lawson, and now the information is in SAP. The Company believed it would take at least a month to go back and reconcile each line item to a new updated Item 28, which was unnecessary based on the similar level of information provided in DR5 and DR6 Q6. See Aqua WSIP Exhibit 1 and 2.

Aqua also provided its actual plant additions through December 31, 2022, in its Late-Filed Exhibit 6. The Public Staff will have the opportunity to investigate bridge period and projected rate year utility plant costs and challenge them for prudence in Aqua's next rate case. In sum, Aqua has provided its updated plant figures in this proceeding, and any prejudice to the Public Staff by the timing of those updates will be cured by the future opportunity to audit and challenge them.

The Company provided convincing evidence that the delays it experienced in closing plant costs to the books during the SAP transition are behind them, and timely tracking of capital additions can now be done to meet the WSIP Rule R1-17A reporting requirements. As the Aqua WSIP rebuttal panel testified:

The increase in the number of days to close the books in 2022 would not be unexpected while a Company is learning and implementing a new financial platform. The closing timeline is moving in the right direction; the Company, thanks to good management and the dedicated, tireless efforts of its employees, is managing through the issues. The Public Staff at page 27 states: "For a multi-year rate plan to succeed, it is vital to meet mandatory three-month capital investment project reporting requirements—the inability to do so is unacceptable." This is a reference to the reports required in Rule R1-17A(j), which must be filed 45 days after each three-month period. The chart in the Public Staff's testimony shows the closing process has taken less than 25 days – and is shortening – since May 2022. This is easily enough time to meet the 45-day reporting requirement. The chart relied upon by the Public Staff undermines its own argument.

.....

As stated previously, the conversion issues have largely been resolved and the Company will comply with the three-month reporting requirements.

.....

We filed in our -- I think in our testimony, closing time frames through October. I did check on November and December. And for the November -- the closing of October, I should say, which happens in November, we did that in 18 days, as well as closing November, which we did in December, we closed that in 18 days as well. Considering we started 2022 at 44 days, we've made more than 100 percent improvement in our closing process. So we will continue to refine that.

.....

There's no -- there's no overrides that were the subject of the delays early on in this case. The two issues that were identified with blankets and the overhead issue in June. We're closing projects as normal. I'm not claiming perfection, right, as we have accountants. And if everything was perfect, I wouldn't need accountants. I get concerned when accountants don't find errors, right, not when they do. And the two that we found were found by our accountants, reported through hypercare, immediate IT teams dispatched, and they were resolved.

So for now, the issues that were causing us headaches are no longer causing us headaches.

.....

So Mr. Packer talked about two issues, one with the overhead calculation and then with closing of projects.

.....

And I would consider those the two technical issues that have been identified, remediated, and fixed.

.....

What I would say is, our employees continue to adjust, right? They continue to adjust. And I think that's evidenced in our closing time frame, you know, each month. We started at 44 days last January, which we learned a lot, right? Now we're down to 18 days. I expect that number will continue to drop, right, as we improve.

But in terms of the two technical issues that we faced post go-live that impacted this rate case that, you know, challenged us, those are fixed.

.....

Q. And so your rebuttal testimony references some catchups that were required. Have those been completed?

20 A. As far as blankets are being closed, correct.

.....

And then once they were made and moved from [CWIP] into completed construction not classified, you know, the Company had to make the appropriate adjustments to accumulated depreciation as well as AFUDC.

So yeah, those are -- those are done. We're closing projects in PowerPlan as we speak and finishing up this year.

.....

We're not yet closed the books for 2022, but we expect we will be done. The issues that we talked about, delayed closings, overhead allocation issues, they're not in existence right now.

In light of this evidence, the Commission believes SAP transition issues with Aqua's timely closing of capital projects to its books are resolved, and the Company should be able to satisfy regulatory reporting requirements in a timely manner going forward.

Based on the foregoing findings and conclusions, the actual and projected SIP costs submitted by Aqua are appropriate for rate recovery.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 111

Certain PBM Penalties

The evidence supporting these findings of fact is contained in the direct testimony of Aqua witness Becker, the Public Staff Joint WISP Testimony and the AQUA rebuttal panel of witnesses Pearce, Berger, Melton and Becker in this proceeding. The Company, in its direct case, submitted a set of Performance Based Metrics (PBMs) and the Public Staff made several recommendations to significantly increase the number of PBMs along with recommendation for specific incentives and penalties in its Joint WISP testimony. At the conclusion of the evidentiary hearings Aqua and Public Staff met several times to negotiate appropriate PMBs to be adopted in this proceeding. After significant discussion, the Parties agreed to 13 PBMs, some to include proposed penalties or incentives and other to be tracking only, as described in detail in the Stipulation. The parties discussed four additional PBMs. They are filed as Public Staff Supplemental WSIP Exhibit 7 and are mentioned in the settlement testimony of Public Staff witness Becker.

The Public Staff attaches penalties to the four additional PBMs; the Company opposes penalties and views them as appropriate for tracking only. Two of the contested PBMs relate to the Company's compliance with Safe Drinking Water and Clean Water Act standards. The Company does not oppose use of these PBMs for tracking purposes. The area of disagreement involves whether there should be penalties, and if so at what level of non-compliance. The Commission concludes that given Aqua's high compliance rate, to penalize it for

falling below a prior years' average would be using the wrong standard; rather as witness Becker has suggested a fairer approach would be to develop these performance measures based on industry standards. It would not be appropriate to penalize Aqua if it were performing well above industry standards.

The remaining two contested PBMs include the completion on schedule and on budget of capital projects during the WSIP period. The Company has accepted this metric as a tracking metric only, and strongly disagrees with any associated penalty. The proposed penalties, are not a reasonable performance incentive because the completion of project capital projects may be under or over budget and schedule due to factors beyond the Company's control – factors such as permitting issues from other agencies, construction contractor schedules, weather, and a myriad of other issues. The Commission concludes, as witness Becker has suggested, that setting penalties based on achievement of budget and schedule would be a perverse incentive for the Company to modify its bidding and contract terms in a way that may result in an overall increase in estimates received from contractors and negatively affect the customers through higher project costing.

Accordingly, the Commission concludes that the four additional PBMs should be approved as tracking only measures in this proceeding. The additional PBMs, as approved, are set out below.

Description	Measure	
Timely Completion of CIP Projects	Percentage of projects \$200,000 or over in the approved WSIP incomplete	tracking

Description	Measure	
	<p>during the planned rate year on a Company basis</p> <p>Approved WSIP means a list of projects with estimated in service dates and costs upon completion allowed for prospective cost recovery</p> <p>Incomplete means not placed in service.</p>	
<p>Completion of CIP Projects on Budget</p>	<p>Percentage of projects \$200,000 or over that cost in excess of 110% of the estimate in the approved WSIP on a Company basis</p> <p>Approved WSIP means a list of projects with estimated in service dates and costs upon completion allowed for prospective cost recovery</p>	<p>tracking</p>
<p>Safe Drinking Water Compliance (Quality)</p>	<p>% days in compliance with health based MCLs and TTs – (sum of all days – sum of all days out of compliance) / sum of all days (excludes monitoring / reporting violations)</p> <p>Sum of all days = No. of systems x 365 days</p>	<p>tracking</p>
<p>Clean Water Act Compliance (Quality)</p>	<p>% days in compliance with effluent standards – (sum of all days – sum of all days out of compliance) / sum of all days (excludes monitoring / reporting violations)</p> <p>Sum of all days = No. of systems x 365 days</p>	<p>tracking</p>

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 112

Conservation Pilot Program

The evidence for this Finding of Fact is in the testimonies of Aqua witness Franceski and Public Staff witness Darden. In Aqua's last rate case, Docket No. W-128, Sub 526, the Commission approved a Conservation Pilot Program (Pilot) in the final order issued on October 26, 2020. The Public Staff opposed the Pilot in that case, and again opposes it in the present case. Witness Franceski recommended that the Pilot be extended to allow more data collection, as the data collected so far is not sufficient for a meaningful evaluation of tiered rates.

In the Sub 526 Order, the Commission concluded in part that:

The Commission agrees with Aqua NC witness Thill that pilot programs are by their very nature limited; that the pilot is rightfully intended to affect Aqua NC's discretionary water users with the greatest capacity for conservation that are more prevalent in the Company's high-usage water systems; that Aqua NC's proposed pilot covers ten percent of Aqua NC Water; that this level of coverage, particularly in areas of high consumption, can reasonably be expected to provide useful data and valuable customer behavior information which can be used to refine the rate structure and apply it to the Company's larger customer population in future cases; that the proposed revenue reconciliation process acts as a safeguard both for Aqua NC and its customers; and that the allegations of discrimination and prejudice raised by the Public Staff would preclude implementation of any pilot programs, since pilots, by definition, generally apply to a subset of the customer base.

Although the Commission declines to accept the implementation of the Company's proposed pilot program in the Fairways Water Rate Division, the Commission concludes that the Company's proposed pilot program for a portion of the Aqua NC Water Rate Division will better allow Aqua NC to analyze the results this pilot will have on a smaller scale before designing and applying any one or more final rate designs to the larger population of the Company's customers. The Commission concludes this analysis on a smaller scale is particularly important because there are many variabilities in an inclining block rate structure, from the number and size of the blocks, to the various step points, and the magnitude of the unit price

difference between blocks. Further, the Commission concludes that an analysis of the impact these variables have on the effectiveness of the rate structure in promoting water efficiency and conservation should include both an evaluation of the municipal and town water and sewer systems operating in the State that currently utilize inclining block rate structures as well as actual customer reaction and changes in consumption observed through the implementation of Aqua NC's pilot program.

- Moreover, there are not presently any tiered rate structures approved for the North Carolina water and sewer utilities regulated by the Commission. Implementation of tiered inclining block rate structures would be a significant change in rate design for the regulated water and sewer utilities. It is reasonable and appropriate to implement a pilot program in a portion of Aqua NC's Water Rate Division to allow Aqua NC, the Public Staff,
- and the Commission to analyze the results on a smaller scale before designing and applying any one or more final rate designs to the larger population of Aqua NC. The application of a pilot program in a portion of Aqua NC's Water Rate Division should provide the Company, the Public Staff, and the Commission an opportunity to explore the effects of a tiered inclining block rate structure on a variety of customer types in several geographical areas in the State; to make comparisons of actual pilot program results to data pertaining to nonregulated entities (towns, municipalities, etc.) that utilize inclining block rates; to evaluate the feasibility of utilizing inclining block rates rather than Aqua NC's current single-tier rate design structure compared to the resulting benefits in

water efficiency and conservation; and to review Aqua NC's reports of the monthly

- consumption data of accounts by blocks of 1,000 gallons to ensure that all required information is captured prior to possible full or permanent implementation of inclining block rates in some or all of Aqua NC's service areas.
- Although witness Darden questions "the practicability, fairness, and value" of the Pilot, the Commission declines to change its conclusion from the Sub 526 Order.
- The primary issue raised by Aqua's recommendation and the Public Staff's opposition is whether the time limits anticipated in the Sub 526 Order should apply to the Pilot. The Sub 526 Order stated that "NC's pilot program should include at least two summer irrigation seasons but should conclude within three years of the implementation date or the effective date of new base rates in a general rate case application, whichever is earlier." This time limit was preceded in Finding of Fact No. 39 in the Sub 526 Order with: "Aqua NC should implement the pilot program for a period of time that allows the Company to accumulate sufficient information to analyze the results of the pilot and to apply such results to designing proposed future rate structures."
- Witness Darden recommended that the Pilot be ended and that Aqua be ordered to present the results of the Pilot based on data collected through August 31, 2022. The Public Staff reasoned that "there has been

adequate time for data collection, the likelihood that the Pilot Program will further complicate metric reporting, and the efforts associated with customer reconciliation....”

Witness Franceski made clear in rebuttal that there has not been accumulation of sufficient information to support a useful analysis:

- First, very little summer usage data was available to perform relevant conservation trend analysis in advance of Aqua’s filing on June 30, 2022. Furthermore, even using the Public Staff’s update period through August would not have provided for a second full summer irrigation season that continues through at least September in North Carolina, let alone a forum to perform and submit an analysis of the impact on usage in this case. Aqua believes that a three-summer period (through 2023) is needed to meaningfully evaluate the effects of the tiered rates, because usage in the initial summer would not be expected to decrease very much (when the high-use customers just began to receive bills higher than in previous seasons), so data from the second and third season should be collected before making conclusions about extending tiered rates to other areas. Aqua recommends its analysis be completed and submitted in the fourth quarter of 2023 and included in the WSIP annual review scheduled in the first quarter of 2024. Should the Commission decide to terminate or change the rate design at that time, Aqua believes the Commission would be authorized to make this change outside of a rate case per § 63-133.1B. . . .

- Aqua received positive verbal feedback from the Bayleaf focus group members for implementing a tiered conservation rate structure upon its initial roll-out. To prematurely eliminate this pilot rate structure without an appropriate sample period of results and a formal impact analysis being completed will prove this pilot to be meaningless. Another complication to eliminating the pilot would be that there was not a recommended alternative rate design in the application or the customer rate case notice for the pilot customers.

-

The Commission agrees with the Company's position and concludes that the Pilot should be continued, that the Company should present its analysis of the Pilot in its WSIP report for the first quarter of 2024, and that the Pilot rates may thereafter be continued, modified, or terminated as the Commission determines appropriate based on the analysis filed by Aqua and any comments filed by the Public Staff or other parties.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 113

Customer Assistance Program

The evidence for this finding of fact is found in the testimonies of Aqua witness Becker, Aqua rebuttal panel witnesses Becker, Packer, Kellett, and Melton, and Public Staff witness Darden.

Witness Becker proposed a Customer Assistance Program (CAP) that would use \$45,000 of non-utility antenna revenues, which are approximately \$900,000 per year, to fund a pilot program to assist low income customers with arrearages

on their water and sewer bills. Eligible customers would be those at 150% or less of the federal poverty guidelines. The CAP pilot would be administered by Dollar Energy Fund, a non-profit 501c(3) organization that administers low-income utility programs for more than 40 utilities across the country. Eligible customers could receive grants of no more than \$500 per customer per year. Aqua proposed to continue the CAP as a pilot until its next rate case, and to report on the CAP as part of its annual WSIP reports.

The Public Staff opposed approval of the CAP in the present docket on multiple grounds. Witness Darden testified that “basing the program’s funding on 5% of the annual antennae revenues is arbitrary and totally unrelated to the affordability of water and sewer utility service and that the program should instead be based on expected need and the projected customer impact.” She observed that a total of 80 customers a year could receive a \$500 grant, while 12,305 of Aqua’s customers meet the definition of poverty under federal guidelines. Witness Darden also opined that the fees for Dollar Energy Fund, estimated at 8.75% of the total grant amount and an application processing fee of \$5 to \$10 per application, were excessive. She suggested that Aqua consider ways to reduce the administrative fees, such as replacing the Dollar Energy Fund determination of eligibility by accepting eligibility in other low income assistance programs, although she did not identify any particular program that Aqua could use. She noted that the non-utility antenna funds are imputed to the revenue requirement so that using \$45,000 of those funds would impact rates for all Aqua customers. Witness Darden concluded that Aqua has failed to show the need for and purpose of the CAP.

In rebuttal, Aqua explained that using 5% of antenna revenues for the CAP would have a relatively small impact to ratepayers overall, balancing the needs of those participating in a safety net program with the costs of the program to other ratepayers. Also, the intent is to gain experience that will help guide funding levels in the future.

- Aqua also justified the 8.75% fee to Dollar Energy Fund as reasonable because that fee covers not only grant processing and access to the Fund's iPartner© system, but also technology management, accounting, fundraising and public relations related to the utility's funds. The administrative fee also includes training and support to local social service agencies that are participating as application sites for the utility's program. The application processing fees are not retained by Dollar Energy Fund, but are paid to the local social service agencies to cover their costs in assisting customers with the application process. Aqua testified that the one assistance program that might be used to determine eligibility – the Low-Income Water Assistance Program – may not continue beyond 2023. The Commission finds that the weight of the evidence demonstrates that both the administrative fees and application processing fees are reasonable.
- The Commission is concerned about the affordability of utility service. The CAP pilot is one way to test mitigation of affordability issues. As a pilot, and given the number of households in poverty, the CAP cannot reasonably be expected to solve the problem of affordability for all low

income utility customers, but it is a start. The Commission commends Aqua for recognizing the problem and seeking to test a small, partial solution as better than doing nothing. The Public Staff's proposal to address this in another docket would postpone taking any useful action, and it is not apparent from the evidence that the Public Staff has an alternative approach that would be any better. The Commission concludes that Aqua's CAP pilot should be approved as proposed.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 114

Wakefield Filter Project

The evidence for this finding of fact is in the testimony of Public Staff witness Lucas and Aqua witness Melton. Witness Lucas testified that the \$857,797 cost and the 2021 completion date for a project to remove iron and manganese from Wells #6 and #8 in the Wakefield service area were significantly over-budget and late. He opined that Aqua should not have contracted with an engineering firm for design until Aqua had obtained an easement to connect the two wells. He further stated that excessive and imprudent costs for the project resulted from internal staffing problems and from Aqua's failure to seek compensation from an engineering consultant that did unsatisfactory work. Witness Lucas recommended a 25% disallowance, or \$214,449 of costs as an amount that "approximates the charges from the original engineer whose work was unsatisfactory, allowance for funds used during construction (AFUDC), and Aqua charges such as capitalized time and allocations."

Aqua witness Melton described the history of the project and the Company's decision-making in detail. He explained that Aqua had been cited by environmental regulators because the water system for Wakefield Estates had exceeded secondary maximum contaminant levels for iron and manganese. On March 1, 2016, received Commission approval to proceed with a new treatment system in Docket No. W-218, Sub 363A. The next day Aqua contracted with an engineering firm to perform design, permitting, construction administration, and oversight for the project. Later in March of 2016 Aqua contracted for purchase of the equipment needed for the iron and manganese removal system.

Around the same time, the Company began negotiating with the Bayleaf Baptist Church for an easement that would allow Wells #6 and #8 to be connected. Connecting these two wells would allow installation of one removal system at a lower cost than designing, purchasing, installing, and maintaining separate systems for each well. The church had indicated it was open to negotiation an easement, and Aqua had no reason to disbelieve the church. The Commission finds that Aqua's decision to proceed with engineering design in parallel with seeking an easement was reasonable in the circumstances at that time.

Aqua's engineer on the project made several attempts to get the church to decide on an easement, but the church leadership was not making a decision either way. This was a cause of delay outside of Aqua's control. When witness Melton became the Engineering Manager for Aqua in January of 2018, he decided that the best response to the church's indecision was to abandon that

approach, so he amended the contract with the engineering firm to move forward with separate treatment systems at Wells #6 and #8.

The church became the Crossroad Fellowship church, with new leadership, and in late 2018 witness Melton assigned a new project engineer since the previous project engineer had left Aqua in the spring of 2018. The new church operation director and the pastor were agreeable to negotiating a lease. The negotiation took almost a year because the church had a list of criteria and asked for a larger payment than Aqua paid for other easements. This in turn led Aqua to obtain an appraisal for the easement to justify the price. Aqua's actions in this regard were reasonable.

With regard to the assertion that internal staffing issues led to excessive costs, witness Melton responded that the project was delayed because of indecision by the first church on granting an easement, followed by the need to re-engineer for two treatment systems, followed by the receptivity of the new church to an easement and the lengthy negotiation of that easement. He explained that when Aqua's original engineer assigned to the project left in April of 2018 – along with another engineer – it took until June of 2018 to hire replacement engineers and then another several months to get them trained before a new engineer could be assigned to the project. There is no evidence that the turnover in engineering staff was the result of any Company mismanagement. And as witness Melton testified, the shortage of engineering staff could not reasonably be cured by pulling another Aqua engineer off his or her existing work

to take on the Wakefield project. The Commission agrees that there has been no showing of imprudence based on internal staffing changes.

The Public Staff's claim that Aqua was imprudent in not seeking compensation from the original engineering firm is not adequately supported by the record. Aqua had asked the original engineering firm to pause design work until further funds could be budgeted to pay them. The engineering firm then terminated the contract with Aqua. Aqua paid that firm for the design work it had done, and sent their design files to the new engineering firm retained by Aqua. The fact that the original firm had assigned someone inexperienced, required a lot of oversight, provided too little details on the second design, and was not responsive to Aqua calls is a weak basis for bringing a claim against them for the work they did do. Witness Lucas suggested that Aqua was imprudent because it did not ask the original engineering firm to return funds on the order of \$70,000 that it had been paid – an assertion made without any evidence that a such a request would have been successful and therefore the funds paid represent an imprudent cost. The Public Staff introduced no evidence showing that the engineering firm would have willingly given up tens of thousands of dollars just if asked to do so. The Public Staff did not consider the facts that the second engineering firm was able to use some portion of the work of the original engineering firm, that it is normal to pay an engineering firm for the hours and work they completed even if the full scope of work was not completed, that bringing a lawsuit for compensation would have resulted in litigation costs for

Aqua thereby reducing the value of any recovery the Company might have received, and that the outcome of litigation was uncertain.

The Commission agrees with witness Lucas that the cost of the Wakefield treatment project greatly exceeded Aqua's original estimate, and took much longer to complete than anticipated. However, an imprudence disallowance must be on evidence of imprudence that causes the excess costs. The Commission is not convinced that Aqua's actions and decisions on the Wakefield treatment project were imprudent. Nor does the evidence support a finding that the amount of disallowance recommended by the Public Staff was caused by the imprudence the Public Staff alleged.

[add further E&Cs to complete the Order]

IT IS, THEREFORE, ORDERED as follows:

1. That the Partial Stipulation between Aqua NC and Public Staff is hereby approved in its entirety;
2. That all of the findings, conclusions, and decisions reflected in this Order are hereby affirmed and are so ordered;
3. That Aqua NC shall be authorized to implement a multi-year rate plan or WSIP, according to certain parameters described in more detail in this Order;
4. That the Performance-Based Metrics (PBMs) contained in the Stipulation are approved.

5. That the four additional PBMs that were contested are approved for tracking purposes only ;
6. That the new Sewer Use Rule, as presented in the Stipulation, is approved;
7. That Aqua NC will undertake the engagement of a third-party audit to review staffing needs, as agreed upon in the Stipulation;
8. That the regulatory conditions that are the subject of Docket No. W-218, Sub 571, will be dealt with in that proceeding;
9. That Aqua NC will file its 2018 affiliate interest agreement in Docket No. W-218, Sub 570;
10. That the Notices to Customers, attached hereto as *(to be provided)* shall be electronically delivered, mailed with sufficient postage, or hand delivered to all affected customers in each relevant service area, respectively, in conjunction with the next regularly scheduled billing process;
11. That Aqua NC shall file the attached Certificate of Service, properly signed and notarized, not later than 45 days after the issuance of this Order;
12. That the Commission considers neither the Partial Settlement Agreement and Stipulation filed on March 31, 2023, nor the parts of this Order pertaining to the contents thereof, as having precedential value with respect to future proceedings and the same shall not be cited, argued, or treated as such;
13. That all late-filed exhibits filed by Aqua NC and the Public Staff in this docket are hereby admitted in evidence;

14. That the Chief Clerk shall establish Docket No. W-218, Sub 573A, as the reporting requirement docket for Commission-required reports as ordered herein and also for WSIC/SSIC filings, if any occur during the pendency of the WSIP;

15. With respect to reporting requirements, that Aqua NC shall do the following:

- File Performance Based Metrics quarterly reporting requirements consistent with Commission Rule R1-17A with the first quarter report to be filed on the same date as the second quarter report required by Rule R1-17A(j).
- Include in its quarterly filing required by Commission Rule R1-17A(j) the following information:
 - A list of all the open positions as of the beginning of the three-month period addressed by the filing;
 - The salary and pension and benefits associated with each position; and
 - The number of days the position has been open.
- File Quarterly reports with the Commission, with the first report filed on the same date as the Company files the report for Q2 of WSIP Rate Year 1, and will continue to file reports with each subsequent quarterly report through Q4 of Rate Year 3. The reports will include:
 - the steps the Company has taken to modify its current system of verifying completion of plant to be used and useful, and
 - the following information about projects that the Company has manually entered into the plant accounting software beginning with Q4 2022.

- the total dollar amount of the plant;
- the original in-service date recorded by the system and the manually inserted in-service date entered by the Company;
- the calculation of AFUDC and corresponding entries to correct the overcollection of AFUDC by project; and
- the calculation of the depreciation expense differential caused by the override.
- Continue to file its annual Three-Year WSIC and SSIC Plan, as well as its Quarterly Earnings, WSIC/SSIC Revenues, and Construction Status reports, its Annual Heater Acquisition Incentive Account Report, the DEQ Quarterly Notice of Deficiency filings, and the DEQ Secondary Water Quality Filtration Request Executive Summary.
- Continue the same secondary water quality reporting requirements ordered in Docket No. W-218, Subs 363, 497, and 526, with the additional modification that the Company be required to file a report regardless of whether the Water and Sewer Investment Charges (WSIC) are in effect and Aqua has an expectation of WSIC funding.
- File the consulting firm's report detailing its findings and recommendations with the Commission, upon the completion of the firm's engagement. Aqua shall also file a report addressing the timelines for implementation of the accepted consulting firm's recommendations. Aqua will report on a quarterly basis for one year on the implementation of such recommendations.

- Pursue ways to reduce the high cost of purchased water from the Town of Pittsboro, including a request to the Town that it charge Aqua no more than the rate for customers inside city limits. If that is not successful, Aqua shall inquire about other options, such as prepayment of bills or a minimum bill amount. Aqua shall report on its progress to the Commission and Public Staff on a semi-annual basis.
16. That the annual revenue reconciliation request by Aqua NC and the supporting calculation and data for an annual adjustment shall be filed with the Commission at least 45 days prior to the annual adjustment effective date;
17. That at any time after a year from the issuance of this Order, Aqua NC may request that the Commission revise or eliminate the regular and periodic reporting requirements ordered herein due to demonstrated and significant progress in customer satisfaction with improvements made in water quality related to levels of iron and manganese;
18. That Aqua NC shall refund all partial, temporary rates and charges in excess of the final rates and charges found to be appropriate by the Commission, if any, in the Aqua NC Water, Aqua NC Sewer, and Brookwood Water Rate Divisions with interest at 10% compounded annually;

ISSUED BY ORDER OF THE COMMISSION.

This the ___ day of ___, 2023.

NORTH CAROLINA UTILITIES
COMMISSION

A. Shonta Dunston, Chief Clerk

CERTIFICATE OF SERVICE

I, _____, _____ of Aqua North Carolina, Inc., mailed with sufficient postage or hand delivered to all affected customers the Notice to Customers issued by the North Carolina Utilities Commission in Docket No. W-218 Sub 573 and the Notice was mailed or hand delivered by the date specified in the Order.

This ____ day of _____, 2023.

By: _____

The above-named applicant, _____, _____, of Aqua North Carolina, Inc., personally appeared before me this day and, being first duly sworn, says that the required Notice to Customers was mailed or hand delivered to all affected customers, as required by the Commission Order dated _____, 2023, in Docket No. W-218 Sub 573.

Witness my hand and notarial seal, this ____ day of _____, 2023.

Notary Public

Printed or Typed Name

My Commission Expires:

_____ Date

(SEAL)

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APPENDIX A

AQUA NORTH CAROLINA, INC. SEWER USE RULE

1. DEFINITIONS

- 6 ***Nondomestic waste or industrial waste*** shall mean any wastewater resulting from any process of industry, manufacturing, trade, or business or from the development or recovery of any natural resource, or any mixture of such waste with water or domestic wastewater, as distinct from domestic wastewater.
- 7 ***Domestic wastes*** shall mean a combination of water-carried wastes, consisting of wash water, culinary wastes and liquid wastes containing only human excreta and similar matter flowing in or from a building drainage system or sewer originating from residences, business buildings, institutions, and commercial establishments.
- 8 ***Industrial waste permit or contract*** shall mean a wastewater permit or contract issued as required by the Company to an industrial user.
- 9 ***Industrial waste pretreatment program*** shall mean a program established by the Company that requires dischargers to monitor, test, treat and control as necessary pollutants in their wastewater prior to discharge into the sanitary and/or combined sewer.
- 10 ***Pretreatment*** shall mean the reduction or elimination of pollutants, or the alteration of the nature of pollutant properties prior to discharging into the public sewer system. This reduction or alteration can be obtained by physical, chemical, or biological processes, by process changes, or by other means, except by diluting the concentration of the pollutants unless allowed by an applicable pretreatment standard.
- 11 ***User or Discharger*** shall mean any person that discharges, causes or permits the discharge of wastewater into a Company sanitary sewer system.
- 12 ***Person*** shall mean any individual, firm, company, association, society, corporation, institution, group, or any other legal entity.
 -
- 13 ***Shall*** is mandatory; ***may*** is permissive.
 -
- 14 ***Company*** shall mean Aqua North Carolina, Inc.

9. **Waste** shall mean rejected, unutilized or superfluous substances in liquid, gaseous, or solid form resulting from domestic and nondomestic activities.
10. **Wastewater** shall mean a combination of the water-carried waste from residences, businesses, buildings, institutions, and industrial establishments, together with any ground, surface, and stormwater that may be present, whether treated or untreated, discharged into or permitted to enter a sanitary sewer system.
11. **Maximum allowable industrial loading** shall mean the maximum mass of pollutants that is allowed to be discharged to the treatment works from all contributory industrial users.
12. **Contributory industrial user** shall mean any user that the Company has determined discharges specific pollutants to the treatment works at concentrations greater than typical domestic/commercial wastewaters.
13. **Sanitary Sewer System** shall refer to all mains, laterals, treatment plants and all appurtenances or infrastructure necessary to convey and treat wastewater.

12. GENERAL REQUIREMENTS

- The User shall cooperate with the Company in its efforts to implement or enforce its sewer use rule, including any monitoring, reporting and treatment that the Company may deem necessary to ensure that discharges into its system are compatible with the capability of its wastewater treatment and collection system. Every User who knows or should know it will discharge Nondomestic Waste or Industrial Waste into a Sanitary Sewer System of the Company shall notify the Company in advance and obtain a permit or contract from the Company if required by the Company.
- It is agreed and understood that the Company's facility is not a Publicly Owned Treatment Works (POTW), and that the User is not entitled to, and may not claim or otherwise take advantage of, any statutory or regulatory exemptions that may apply to discharges into the sewage collection system of a Publicly Owned Treatment Works (POTW).
- The User is required to install and maintain, at their own expense, all interconnecting lines, grease traps, pretreatment equipment, sampling wells and any lift stations required to collect sewage at connecting points per Company approval.
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19. It is agreed and understood that User may not dispose of or permit disposal of waste generated offsite by the User, or any other party, by discharge through the User's sanitary sewer system connection.
20. Grease and oil traps shall be provided when necessary for the proper handling of liquid wastes containing grease or oil when required by the Company. All traps and drains shall be located so as to be readily and easily accessible for cleaning and inspection. All grease and oil traps shall be maintained by the User, at the User's expense. Prior to installation, plans shall be submitted to the Company for approval.
21. User shall install and maintain a waste interceptor, grease trap or pre-treatment unit of sufficient design to prevent the discharge or introduction of trash, debris, grease, oil or any other solid material having maximum dimensions equal to or greater than one and one-half inches (1½") into the sewage collection system, and that the design of such interceptor or pre-treatment unit shall be subject to approval by the Company prior to commencement of discharge into the sewage collection system or wastewater treatment plant.
22. The User will indemnify and hold harmless the Company from any and all claims, demands, damages, costs, fines, expenses (including attorney's fees), judgements or liabilities arising out any damage, injury, or loss sustained by Company ("Losses") on account of or in consequence of the introduction of any Prohibited Discharge, violation of any permit or contract, failure to install required Pretreatment, or failure to otherwise comply with the Company's Sewer Use requirements by the User. The Company shall have the right to charge the User as a part of the User's wastewater service charges any expenses or costs incurred by the Company including but not limited to cleaning and removal on account of or in consequence of the introduction of any Prohibited Discharge, violation of any permit or contract, or failure to otherwise comply with the Company's Sewer Use Control requirements by the User.
23. The Company shall have the right to terminate or otherwise refuse service in accordance with its rules and regulations to any User on account of or in consequence of the introduction of any Prohibited Discharge, violation of any permit or contract, failure to install required Pretreatment, or failure to otherwise comply with the Company's Sewer Use requirements by the User.
24. The Company shall not be liable to the User for a failure to provide sanitary sewage collection services. It is understood and agreed that service interruptions may, from time to time, occur. The Company agrees to use its best efforts to provide continuous service.

If any measurement, test, inspection or analysis determines that a User has

created a situation which is in violation of any statute, ordinance, rule or regulation, the User shall be required to pay all costs incurred to remedy the situation.

Where necessary in the Company's opinion, the User shall provide, at the User's expense, preliminary treatment as may be necessary to reduce the characteristics or constituents to within the maximum limits provided for in these sewer use control program or to control the quantities or rates of discharge of water or wastes. Plans and specifications and other pertinent information shall be submitted for the approval of the Company and no construction of such facilities shall commence until said approvals are obtained in writing. Preliminary treatment facilities shall be maintained continuously to satisfactory and effective operations. Solely the User is responsible for meeting the compliance limits herein.

The Company reserves the right to refuse connection to its sanitary sewer system or to compel the discontinuance of the use of the sanitary sewer where the Company deems the discharge of the waste harmful to the sewer system or have an adverse effect on the sewage treatment processes or Company personnel.

26. PROHIBITED DISCHARGES

It is prohibited for any User to discharge or permit the discharge or infiltration into any Company sewer any of the following:

- A. Any liquid or vapor having a temperature higher than 150 degrees Fahrenheit or any substance which causes the temperature of the total wastewater treatment plant influent to exceed 104 degrees Fahrenheit. Allowable temperatures may vary by facility and will be addressed in permit or contract between the User and the Company.
- B. Any liquid containing fats, wax, grease or oils of mineral or petroleum origin, whether emulsified or not, in excess of 100 mg/l, or of animal or vegetable origin in excess of 300 mg/l. Lower limits may be applied to mineral oils where necessary to prevent interference with treatment plant operations or pass through. Allowable grease levels may vary by facility and will be addressed in permit or contract between the User and the Company.
- C. Wastes containing any substances that may affect the effluent or may cause violation of the National Pollutant Discharge Elimination System permit, Non-Discharge permit, or local health department permit, or the ability to meet sludge standards or beneficial reuse of sludge.
- D. Any wastewater that imparts color that may affect the effluent or may cause violation of the National Pollutant Discharge Elimination System permit,

Non-Discharge permit, or local health department permit, or the ability to meet sludge standards or beneficial reuse of sludge.

- E. Any waste containing toxic substances in quantities sufficient to interfere with the biological processes of the sewage treatment plant, will endanger Company personnel, will pass through the treatment works, or cause the treatment works to exceed any state or federal standards.
- F. Wastes containing a toxic or poisonous substance that could constitute a hazard to human or animals or create any hazard in the sewer system operation.
- G. Waste discharged into the sewage collection system shall not include any hazardous waste as defined in the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., as amended, and the regulations thereunto, or in those sections of the North Carolina Administrative Code governing solid and hazardous waste.
- H. Any pollutants which create a fire or explosion hazard in the collection and treatment system including, but not limited to, waste streams with a closed cup flash point of less than 140 degrees Fahrenheit, using the test methods specified in 40 CFR 261.21.
- I. Wastes containing any noxious or malodorous gas or substance that, in the opinion of the Company, may create a public nuisance or hazard to or prevent entry to sewers for maintenance or repair.
- J. Wastes containing any solid or viscous material that may cause an obstruction to flow or interfere with proper operation of the system. Wastes containing other matter detrimental to the operation of the sanitary sewers, sewage treatment plant equipment or structures or facilities.
- K. The Company reserves the right to set more stringent limitations by contract or permit with the User if the Company determines that the limitations in this section may not be sufficient to protect the operation of the system or to comply with the water quality standards or effluent limitations of the Company's applicable permits.

4. GENERAL EFFLUENT LIMITATIONS

Maximum Allowable Limits Sample)	Maximum Allowable Limits (Grab (Composite Sample)
BOD5 (mg/l)	250 250
TSS (mg/l).....	250 250
COD (mg/l).....	750 750
TKN (mg/l).....	80 80
pH (s.u.).....	6-9 N/A
Arsenic (mg/l).....	0.3 0.2
Barium (mg/l).....	2.0 1.0
Boron (mg/l).....	4.0 2.0
Cadmium (mg/l).....	0.2 0.1
Chromium (Total) (mg/l).....	3.0 1.0
Copper (mg/l).....	2.0 1.0
Lead (mg/l).....	1.5 1.0
Manganese (mg/l).....	3.0 2.0
Mercury (mg/l).....	0.00001
Nickel (mg/l).....	2.0 2.0
Total Phosphorus.....	10 10
Selenium (mg/l).....	0.2 0.1
Silver (mg/l).....	0.2 0.1
Zinc (mg/l).....	2.0 2.0

- A. Notwithstanding the limitations set forth in the General Effluent Limitations, the Company may accept the discharge of wastewater with constituents in excess of such concentrations provided that the Company determines that such increased concentrations are compatible with the wastewater treatment process and such concentration variances do not create a total contributory industrial user loading allocation above the maximum allowable industrial loading.
- B. Nothing in this Rule shall be construed as preventing or precluding any special agreement or arrangement between the Company and any User whereby an industrial waste of unusual strength or character may be accepted by the

Company for treatment, subject to the requirements of the Categorical Standards for Industrial Users. For such waste, the Company may require the User to provide any additional documentation or to conduct any special studies, at the User's expense, as deemed necessary to demonstrate that such waste complies with the limitations specified.

- C. The discharge of constituents in excess of the concentration limits set forth under the General Effluent Guidelines may result in disconnection of sewer service, and reimbursement of costs incurred by the Company prior to reconnection, as established in the Company's tariffs approved by the North Carolina Utilities Commission. Repeat violations may result in permanent disconnection.
- D. The Company hereby adopts the Categorical Standards for Industrial Users in 40 CFR 403.6., provided that such categorical standards are more stringent than the General Effluent Limitations established by the Company for the pollutant. Where Categorical Standards are less stringent than the General Effluent Limitations the General Effluent Limitations shall apply.
- E. No User shall discharge radioactive materials into public sewers without a discharge permit. The Company may establish, in compliance with applicable state and federal regulations, regulations for discharge of radioactive wastes into public sewers. In no instance shall the active elements, or their local concentrations permitted to be discharged into the sewers, exceed the concentration limits established by the Company.
- F. Dilution prohibited as substitute for treatment. Except as provided under federal law, the use of dilution as a partial or complete substitute for adequate treatment to achieve compliance with categorical or local limitations is prohibited. The Company may impose mass-based limitations or otherwise modify the limitations to account for dilution in each case.

5. SAMPLING AND ANALYSES

- A. All measurements, tests and analyses must be determined in accordance with the state approved edition of "Standard Methods for the Examination of Water and Wastewater, by "Methods for Chemical Analysis of Water and Wastes" published by the USEPA, or by any method approved by the US Environmental Protection Agency. All compliance tests shall be completed by a lab certified by the state for the specific analysis.
- B. Where the Company deems advisable, it may require any User discharging wastes to install and maintain, at their own expense, in a manner approved by the Company, a suitable device to continuously measure and records flow, pH, or other parameter of the wastes discharged. The User shall install and maintain a suitable control manhole in the Users' sewer lateral to facilitate

observation, sampling and measuring of wastes. Any manhole and sampling device shall be publicly accessible and in a safe location, constructed in accordance with plans approved by the Company and installed and maintained at the expense of the User of the premises or property to who sewer service is provided.

- C. Samples for analyses shall be by either grab sample or composite samples or a 24 hour composite sample collected and proportioned, as directed by the Company.
- D. Copies of all operational records, analyses, shall be filed with the Company unless otherwise directed by the Company.