

**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 Its Service Areas in North Carolina and)
for Approval of a Water and Sewer)
Investment Plan)
ORDER APPROVING PARTIAL
SETTLEMENT AGREEMENT AND
STIPULATION, DECIDING
CONTESTED ISSUES, APPROVING
WATER AND SEWER INVESTMENT
PLAN, GRANTING PARTIAL RATE
INCREASES, AND REQUIRING
CUSTOMER NOTICE

HEARD: Tuesday, October 4, 2022, at 7:00 p.m., Commission Hearing Room 2115,
Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina

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

Wednesday, October 26, 2022, at 7:00 p.m., New Hannover County
Courthouse, Courtroom 317, 316 Princess Street, Wilmington, North
Carolina

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

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

Monday, April 10, 2023, at 11:00 a.m., 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 Kemerait

APPEARANCES:

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BY THE COMMISSION: On May 27, 2022, pursuant to Rule R1-17(a) of the North Carolina Utilities Commission (Commission or NCUC) Aqua North Carolina, Inc. (Aqua) filed a letter notifying the Commission of its intent to file an application for a general rate case. On June 30, 2022, Aqua filed an application with the Commission for authority to adjust and increase rates for water and sewer utility service in all of its North Carolina service areas, approval of a water and sewer investment plan pursuant to N.C. Gen. Stat. § 62-133.1B and Commission Rule R1-17A, and authorization to modify certain terms and conditions for the provision of water and sewer utility service (Application), effective for service rendered on and after July 30, 2022. Included with this Application was certain information and data required by NCUC Form W-1, along with the direct testimony and exhibits of Aqua witnesses Shannon V. Becker, Dylan W. D'Ascendis, Dean R. Gearhart, P. David Haddad, and John J. Spanos.

On July 15, 2022, the Public Staff notified Aqua by letter filed with the Commission of its determination that additional enumerated information was necessary to complete its Application as required by Commission Rule R1-17.

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

On July 26, 2022, the Commission issued an Order Establishing General Rate Case and Suspending Rates. The Order declared the matter a general rate case, suspended Aqua's proposed rates for up to 270 days, and established the test year period as the 12-month period ending December 31, 2021.

On August 16, 2022, the Public Staff and Aqua made filings recommending deadlines for certain procedural milestones in the rate case. On September 8, 2022, the Commission issued its Order Scheduling Hearing, Establishing Discovery Guidelines, and Requiring Customer Notice (Scheduling Order). Among other things, the Scheduling Order directed Aqua to file updates to its actual revenues, expenses, rate base, and cost of capital for the period ending August 31, 2022, on or before September 21, 2022, and established the dates, times, and locations for four public witness hearings to take place in October 2022 and an evidentiary hearing to begin on January 9, 2023.

On September 21, 2022, Aqua filed rate case updates through July 31, 2022, along with supporting schedules.

On September 23, 2022, Aqua filed its Certificate of Service of Public Notice.

On October 21, 2022, Aqua filed rate case updates through August 31, 2022, along with supporting schedules.

Public witness hearings were held in Raleigh, Wilmington, Gastonia, and via Webex, as scheduled in the Scheduling Order. On October 24, November 9, and November 15, 2022, Aqua filed its reports on customer testimony received at the public hearings.

On October 19 and 24, 2022, the Public Staff filed its Motion Regarding Aqua Updates and its Amended Motion Regarding Aqua Updates, respectively, wherein the Public Staff moved that the Commission grant certain deadline extensions to the Public Staff due to Aqua's failure to timely file updates in violation of the Scheduling Order and moved that the Commission not grant commensurate deadline extensions to Aqua.

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

On November 4, 2022, the Commission issued an order denying the Public Staff's request to extend its filing deadline regarding its formal discovery requests and direct testimony.

On November 18, 2022, Aqua filed further rate case updates, along with supporting schedules.

On November 22, 2022, Aqua filed an Objection to Public Staff Data Request No. 107.

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

Also on December 2, 2022, the Public Staff filed the direct testimony and exhibits of its witnesses John R. Hinton, Shashi M. Bhatta, Lindsay Q. Darden, D. Michael Franklin, Evan M. Houser, and Jay B. Lucas, and the joint testimony of its witnesses Lynn Feasel, June Chiu, and Michelle M. Boswell (collectively, the Public Staff Accounting Panel).

On December 5, 2022, Aqua filed its Response to the Public Staff's Motion for Extension of Time stating that it had no objection to the extension request.

On December 5, 2022, the Public Staff filed its joint testimony of witnesses Boswell, Hinton, Kuei Fen Sun, Fenge Zhang, and Charles M. Junis (collectively, the Public Staff WSIP Panel), along with Public Staff Darden Exhibits 8 through 12.

Also on December 5, 2022, the Commission granted the Public Staff's motion for extension of time, nunc pro tunc, to file its WSIP testimony and exhibits.

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 that same date, the Commission issued an order granting the extension.

On December 13, 2022, the Public Staff filed its supplemental joint testimony of witnesses Feasel, Chiu, and Boswell regarding Corrected Accounting Exhibit I; supplemental joint testimony of witnesses Boswell, Hinton, Sun, Zhang, and Junis regarding Public Staff Corrected WSIP Exhibit I; Corrected Exhibits 8 through 12 of witness Darden for Rate Years

1 through 3; Corrected Exhibit 2 of witness Franklin; and corrected page 29 of the joint testimony of witnesses Boswell, Hinton, Sun, Zhang, and Junis.

On December 19, 2022, Aqua filed its rebuttal testimony of Aqua witnesses Amanda A. Berger, Daniel T. Franceski, Dylan W. D'Ascendis, and Michael Melton; the joint rebuttal testimony of Aqua witnesses Joseph Pearce, Berger, Melton, and Becker (collectively, the Aqua PBM Panel); and the joint rebuttal testimony of Aqua witnesses Becker, William Packer, Whitney Kellett, and Melton (collectively, the Aqua WSIP Panel).

On December 20, 2022, Aqua filed its joint rebuttal testimony of witnesses Gearhart and Haddad.

On January 3, 2023, Aqua filed the witness list for the January 9, 2023 evidentiary hearing, the order of examination, and the estimated cross-examination times.

On January 4, 2023, Aqua filed a request on behalf of Aqua and the Public Staff to excuse Aqua witness Spanos and Public Staff witnesses Chiu and Sun from the requirement to appear in person to testify at the January 9, 2023 evidentiary hearing.

Also on January 4, 2023, Aqua filed its Late-Filed Exhibit 1 to the joint rebuttal testimony of its witnesses Gearhart and Haddad.

On January 5, 2023, the Commission issued an order excusing Aqua witness Spanos and Public Staff witnesses Chiu and Sun from attending the evidentiary hearing and requesting an updated expert witness list.

Also on January 5, 2023, Aqua filed a proposed expert witness list with a revised order of examination and waivers of cross-examination.

On January 9, 2023, Aqua filed Exhibit 8 to the testimony of its WSIP Rebuttal Testimony Panel.

Also on January 9, 2023, the evidentiary hearing was convened as scheduled in Raleigh, North Carolina. The evidentiary hearing concluded on January 13, 2023.

Following the evidentiary hearing, the parties filed the late-filed exhibits requested by the Commission during the evidentiary hearing. No party raised any objection to such exhibits and, therefore, said late-filed exhibits are deemed admitted into the record.

On January 19, 2023, the Commission issued a Notice of Due Date for Proposed Orders and/or Briefs directing the parties to file proposed orders and/or briefs no later than February 20, 2023.

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

On February 2, 2023, the Public Staff filed a letter addressing several concerns with Aqua's Notice of Temporary Rates.

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.

Also 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.

Also 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 February 13, 2023, the Public Staff filed a motion requesting that the Commission extend the deadline for filing proposed orders and briefs to March 20, 2023.

On February 16, 2023, Aqua contacted the Commission indicating that Aqua agreed to waive its right to seek to implement its original proposed rates by operation of N.C.G.S. § 62-134(b) for a period of four weeks, corresponding to the four-week extension requested by the Public Staff.

Also on February 16, 2023, the Commission issued its Order Granting Extension of Time to File Proposed Orders and Briefs, extending the time to file proposed orders and/or briefs to March 20, 2023, and accepting Aqua's waiver of its rights to seek to implement its original proposed rates by operation of N.C.G.S. § 62-134(b) for a period of four weeks.

On March 17, 2023, Aqua and the Public Staff (collectively, the Parties) filed a joint motion requesting an extension of time until March 31, 2023, to file their proposed orders and a Stipulation of Partial Settlement.

On March 20, 2023, Aqua filed a supplement to the joint motion, indicating that Aqua agreed to waive its right to seek to implement its original proposed rates by operation of N.C.G.S. § 62-134(b) for an additional eleven days beyond the waiver it made in conjunction with the extension of time granted on February 16, 2023.

Also on March 20, 2023, the Commission issued its Order Granting Extension of Time to File Proposed Orders and Scheduling Hearing directing the Parties to file

proposed orders and Stipulation of Partial Settlement on or before March 31, 2023; accepting Aqua's waiver of its right to seek to implement its original proposed rate by operation of N.C.G.S. § 62-134(b) on or after June 5, 2023; and scheduling a hearing to receive testimony from the Parties related to the Parties' Stipulation of Partial Settlement on Monday, April 10, 2023.

On March 30, 2023, the Public Staff filed Supplemental WSIP Exhibit 7.

On March 31, 2023, the Public Staff and Aqua filed a Partial Settlement Agreement and Stipulation (Stipulation), and their respective proposed orders.

Also on March 31, 2023, Aqua filed the Settlement Testimony of Shannon V. Becker and Joint Settlement Testimony of Dean R. Gearhart and David Haddad in support of the Stipulation.

Also on March 31, 2023, the Public Staff filed the Joint Testimony of Lynn Feasel and Charles M. Junis Supporting Partial Settlement Agreement and Stipulation.

On April 10, 2023, a hearing was convened in Raleigh, North Carolina to examine the partial settlement terms in the Stipulation.

On April 24, 2023, Aqua filed an update to rate case expense related to the present docket to reflect additional costs related to the settlement proceeding.

On May 1, 2023, the Public Staff filed a letter stating it had reviewed Aqua's updated rate case expense and supporting documentation and stated that such costs are appropriate for recovery by Aqua.

Based upon the foregoing, including Aqua's verified Application and corresponding NCUC Form W-1, the testimony and exhibits of the public witnesses appearing at the hearings, the testimony and exhibits of the expert witnesses received into evidence, the Stipulation, and the entire record herein, 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 or Essential), 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 its 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 the expert witness 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 Aqua's rates for water and sewer service in all Aqua's service areas by Orders 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. § 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 this proceeding, Aqua seeks Commission approval of a multi-year rate increase under a WSIP, as provided in N.C.G.S. § 62-133.1B (WSIP Statute) and Commission Rule R1-17A (WSIP Rule). Aqua's requested increases in its annual revenues from its North Carolina customers, as stated in its Application as initially filed, 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 (4.8%) for Rate Year 2; and \$4,579,353 (4.9%) for Rate Year 3. In its Application, Aqua also asked for other relief, including cost deferrals, changes to rate design, continuation of the current conservation pilot program, a proposed customer assistance pilot program, and adoption of a sewer use rule.² Aqua's Application requested a 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.

The Stipulation

6. On March 31, 2023, the Parties filed a Partial Settlement Agreement and Stipulation (Stipulation), resolving many of the issues contested between the Parties. The

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.

² Aqua's Application included a request for a rate increase under N.C.G.S. § 62-133, in the event the Commission denied Aqua's request for a WSIP. Aqua'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.

Parties agree that Aqua should be authorized to implement a multi-year rate plan or WSIP, subject 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.

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) Aqua'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 operations and maintenance (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 Aqua's first required quarterly WSIP reporting; (j) use of a zero basis point upper rate of return on common equity (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 Aqua's environmental compliance is reasonable.

9. The issues remaining in dispute (Disputed Issues) between the Parties following the Stipulation are: (a) the appropriate rate of return on common equity; (b) recovery of costs incurred or planned to be incurred as part of Aqua's Capital Investment Plan for treatment of PFAS; (c) recovery of costs incurred or planned to be incurred for the Service Improvement Project (SIP), including SAP software, and related projects; (d) whether certain PBMs should have performance penalties; (e) continuation of the current Conservation Pilot Program; (f) Aqua's proposed customer assistance pilot program (CAP); 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 Aqua, 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 Aqua'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, pension and other benefits, payroll taxes, purchased water and sewer, transportation-fuel services, and property tax) by escalating the corresponding Base Case revenue requirements using 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, pension 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 using 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, pension 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 using 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, revised 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 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.

22. With respect to the banding of authorized rate of returns on common equity 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 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.

27. It is reasonable and appropriate that Aqua's rate design for Huntley Glen, Park South, and Parkway Crossing should be based on Aqua's 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 Aqua 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 Aqua to continue to utilize the bulk purchased water and sewer services pass-through mechanism.

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 intended to protect its wastewater systems from being damaged by industrial and nondomestic contaminants.

Regulatory Conditions

33. It is reasonable and appropriate to address regulatory conditions (related to Aqua's request for approval of an Affiliated Interest Agreement between Aqua Services, Inc. filed in Docket No. W-218, Sub 570 and Aqua's Verified Petition for Approval of Restructuring Pursuant to N.C.G.S. § 61-111(a) filed in Docket No. W-218, Sub 571) in Docket No. W-218, Sub 571 and not 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 (Town), 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 pursue other options. Aqua shall report on its progress to the Commission and the Public Staff on a semi-annual basis.

Reporting Requirements Specific to Manual Accounting Entries

35. It is reasonable and appropriate for Aqua to file quarterly reports with the Commission that include: (1) the steps Aqua 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 Aqua 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 Aqua, the calculation of allowance for funds used during construction (AFUDC) and corresponding entries to correct the overcollection of AFUDC by project, and the calculation of the depreciation expense differential caused by the override. Aqua 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.

Environmental Compliance

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

Customer Concerns – Service and Water Quality-Related Issues, Quality, Remediation, and Communication

37. As of December 31, 2021, Aqua served approximately 84,000 water customers and 21,000 wastewater customers. Aqua owns and operates 738 water systems consisting of nearly 1,600 wells along with 59 wastewater systems and 201 sewer collection systems across 51 counties in North Carolina.

38. Between October 26, 2020, and November 15, 2022, the Public Staff Consumer Services Division received 215 complaints about Aqua. Fifty-five complaints (or approximately 25%) were related to water quality/low pressure concerns. The other complaints were related to billing disputes, water system resiliency, water leaks, service disconnection due to non-payment, service requests, and other general concerns (such as Aqua's failure to provide a backup generator to operate a system should a power outage occur). There were also 25 complaints related to the Sub 526 Rate Case during this period.

39. Between October 26, 2020, and July 31, 2022, Aqua created 1,494 "LabD" work/service orders in response to discolored water complaint calls that required a work order. Once Aqua investigated the root cause of the discolored water complaint and resolved it, the work orders were closed and assigned a "root cause." According to data provided by Aqua, the "root cause" of approximately 22% (or 334) of the discolored water calls was a secondary water quality issue.

40. As of November 15, 2022, 41 written consumer statements of position were filed in this proceeding. 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) concern over alleged lack of improvements in service to justify the proposed increase; (3) poor water quality complaints; (4) low water pressure complaints; (5) complaints of foul odor in drinking water; (6) complaints of sediment in the water that led some customers to purchase costly home filtration systems; (7) complaints of poor customer service; (8) opposition to flat sewer rates; and (9) complaints that Aqua did not offer an irrigation rate.

41. A total of 23 Aqua customers testified at the three in-person public witness hearings held in Raleigh, Wilmington, and Gastonia, and one virtual public witness hearing held via WebEx. The customers were from 15 subdivisions and eight different systems. The testimony received during those hearings covered secondary water quality concerns, customer service concerns, and opposition to rate increases. Nine customers from the Stoneridge Master, five customers from The Cape/Beau Rivage Master, four customers from the Park South, and one customer each from the Flowers Plantation, Chapel Ridge, Bayleaf/Stonebridge Master, River Oaks Master and Meadow Ridge Master testified.

42. Customer witnesses who testified regarding water quality complained specifically about: (1) discolored water; (2) water having a foul odor; (3) sediment buildup

related to iron and manganese concentrations in the water; (4) damage to appliances and household fixtures; (5) discoloration of laundry caused by poor water quality; and (6) unsatisfactory customer service related to inaccurate and insufficient information on such matters as system advisories and service outages. Some customers who complained of water quality issues testified that they do not drink the water supplied by Aqua and, instead, have resorted to purchasing bottled water for drinking and cooking. Several customers testified that they have incurred expenses to install household filters to improve the quality of water supplied to their homes by Aqua.

43. Other specific concerns about which customers testified that were not necessarily water quality-related, include: (1) low water pressure; (2) the magnitude of the requested rate increase; (3) inadequate customer service; (4) system resiliency; (5) the lack of system-specific improvement plans to justify the proposed rate increase; (6) the customer notification process regarding potential leaks; (7) the plan and frequency of distribution system flushing; (8) fire hydrants being used for flushing purposes only and not for fire protection; (9) system specific rate design; (10) the frequency of rate cases without significant improvements; (11) the quality of services provided; (12) the excessive base facility charge; (13) a lack of transparency regarding PFAS compounds; (14) inadequate customer complaint tracking; (15) failing to keeping customers informed of the water system operations; (16) testing requirements for backflow prevention devices; (17) negotiations of rates with a municipality for a purchased system; (18) reimbursement for water used for flushing; (19) a conservation incentive with water rates; (20) sewer charges; and (21) confusing public notifications.

44. Aqua filed verified reports with the Commission addressing the concerns raised by the witnesses at the four public witness hearings. The reports described each witness's specific service-related and water quality-related comments and concerns as well as Aqua's response to each comment and concern. With respect to secondary water quality concerns, Aqua 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 North Carolina Department of Environmental Quality (NCDEQ) requirements where necessary.

45. The United States Environmental Protection Agency (EPA) and NCDEQ secondary water quality standards address the acceptable levels of certain constituents, including iron and manganese, in drinking water. Secondary water quality standards serve as guidelines to operators of water systems on maintaining these elements, which are not considered to pose health risks, at levels that consumers will not find objectionable for drinking or consuming due to taste, color, and odor effects.

46. As shown by the customers' comments and the actions taken by Aqua to address the water quality complaints, specifically regarding secondary water quality complaints, 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. For the systems that already have the filtration mechanisms or use sequestration for low levels of iron and manganese, Aqua

must properly operate and maintain the filtration mechanisms and flush the system regularly.

47. Though in certain parts of Aqua's service territory, secondary water quality concerns persist, including odor and staining attributes, when the secondary elements exist at high levels in the water, the evidence shows significantly increased investment and operational attention to these issues. Aqua'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.

48. The overall quality of water service provided by Aqua is adequate on a company-wide and system-wide basis. Aqua meets DEQ's and the EPA's health-based primary quality standards.

49. 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.

50. The overall company-wide and system-wide quality of wastewater service provided by Aqua is adequate, and Aqua operates its wastewater treatment plants in a reasonable and prudent manner.

51. 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 Aqua's evidence of its internal improvements.

52. To better track source water quality issues in its water systems and assess whether a system has elevated levels of iron and manganese in the source of supply, Aqua must properly categorize discolored water calls as "LabD" calls and assign a proper root cause. Proper categorization and root cause assignment will improve Aqua's ability to assess the appropriate treatment method.

53. In order to accurately collect data, Aqua must appropriately train relevant staff to categorize discolored water calls as "LabD" calls and assign a proper root cause.

54. Aqua must provide extra attention to operation and maintenance of older water systems and systems with iron and manganese to further improve its performance related to secondary water quality.

DISPUTED ISSUES

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

55. The cost of capital and revenue increase approved in this Order are intended to provide Aqua, through sound management, the opportunity to earn a 6.885%

overall rate of return. The 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 9.80% 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.

56. A capital structure consisting of 50% debt and 50% common equity for Aqua is reasonable and appropriate for this case.

57. A 3.97% cost of debt for Aqua is reasonable and appropriate for this case.

58. A 9.80% rate of return on common equity for Aqua WSIP Rate Years 1, 2, and 3 is just, reasonable, and appropriate for this case.

59. The provision of continuous, safe, adequate, reliable, and affordable water and wastewater utility service by Aqua is essential to Aqua's customers.

60. The rate increase approved in this case will be difficult for some of Aqua's customers to pay, especially its low-income customers.

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

62. The cost of debt, rate of return on common equity, and 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.

63. The cost of debt, rate of return on common equity, and capital structure employed by the Commission as set forth above are supported by competent, material, and substantial 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.

Revenue Requirements

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

65. 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 the following modifications resulting from the decisions in this Order on Disputed Issues, as discussed herein, that affect Public Staff Settlement Exhibit 1:

- a. The appropriate rate of return on common equity for use during the WSIP period is 9.80%.

- b. For purposes of establishing rates in the WSIP period, it is reasonable and appropriate to include in rate base the PFOS/PFOA projects costs of \$353,928 incurred by Aqua in the last quarter of 2022 and a portion of the total costs projected by Aqua, which is \$3,974,325, for Rate Years 1-3 as part of the WSIP capital projects. These project costs totaling \$4,328,253 should be included for purposes of calculating revenue requirements in the following Rate Years: Rate Year 1: \$1,328,253; Rate Year 2: \$1,500,000; and Rate Year 3: \$1,500,000.
- c. It is reasonable and appropriate for the SIP costs incurred since the end of the last rate case and through August 2022, in the amount of \$7,095,415, to be included in rate base with depreciation starting in the same month in which the costs were incurred. These project costs should be included in establishing revenue requirements for the WSIP period.

It is reasonable and appropriate for Aqua to record the additional SIP project costs incurred from September through December 2022 and during the WSIP period in a regulatory asset account, with amortization beginning in the month the expenses are incurred and amortized over a period of 15 – years, including a return on the unamortized balance, using the net-of-tax overall rate of return approved in this Order, with the ratemaking treatment of the unamortized costs to be addressed in a future rate case proceeding.
- d. The Conservation Pilot Program shall continue through October 31, 2023, and Aqua shall propose ongoing water rates for the customers in the Arbor Bay, Bayleaf Master, Merion, and Pebble Bay water systems for consideration by the Public Staff and Commission in the WSIP annual review scheduled in the first quarter of 2024.
- e. The Customer Assistance Program is denied.
- f. It is appropriate to disallow 25% of the plant in service amount of \$857,797 or \$214,449, related to the Wakefield filter project.

Further, it is reasonable and appropriate to update for rate case expense as filed by Aqua on April 24, 2023, which was reviewed and accepted by the Public Staff.

66. It is just and reasonable to adopt the increase in annual Base Case and WSIP Rate Years 1, 2, and 3 rate operating revenues listed in Public Staff Settlement Exhibit 1 for each rate division of Aqua, adjusted for the Commission's decisions herein regarding the Disputed Issues that affect Public Staff Settlement Exhibit 1. These increases will allow Aqua the opportunity to earn a 6.885% overall rate of return, which the Commission has found to be reasonable upon consideration of the findings in this Order.

67. It is reasonable and appropriate to set the 5% statutory revenue increase cap based on the rate division level, rather than on total company operations as required by N.C.G.S. § 62-133.1B because the division level results in a stricter treatment than required by statute. It is appropriate to apply the 5% cap to Aqua's service revenues, as requested by Aqua and consistent with the WSIP Statute.

68. It is just and reasonable for Aqua to apply the 5% statutory cap on each rate division for its requests of revenue increases for WSIP Rate Years 2 and 3.

Service Improvement Project

69. The SIP and related projects, which include purchase and implementation of new SAP software and applications, are primarily an enterprise resource planning solution to replace the Lawson financial platform and the Banner customer service platform.

70. Based on the revised Form W-1, Item 28, filed on March 31, 2023, Aqua seeks rate recovery of SIP and related projects costs as follows: (1) \$7,095,415 since the last rate case through August 31, 2022; (2) \$2,708,584 for the period of September through December of 2022; (3) \$2,346,850 for 2023 in Rate Year 1; (4) \$766,250 for Rate Year 2; and (5) \$505,550 for Rate Year 3.

71. It is reasonable and appropriate for the SIP costs incurred since the end of the last rate case through August 2022, in the amount of \$7,095,415, to be included in rate base with depreciation starting in the same month in which the costs were incurred. These project costs should be included in establishing revenue requirements for the WSIP period.

72. Aqua should record the additional SIP project costs incurred from September through December 2022, and during the WSIP period in a regulatory asset account, with amortization beginning in the month the expenses are incurred and amortized over a period of 15 years, including a return on the unamortized balance, using the net-of-tax overall rate of return approved in this Order, with the ratemaking treatment of the unamortized costs to be addressed in a future rate case proceeding.

PFOS/PFOA Projects

73. Perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) are chemical compounds, which are part of the larger per- and polyfluoroalkyl substances (PFAS) family of compounds.

74. In 2020, Aqua's parent company, Essential, adopted a 13 parts per trillion (ppt) limit for PFOS and PFOA.

75. Between 2019 and 2020, Aqua performed a survey of over 1,300 entry points and placed all entry points that exceeded 13 ppt for PFOS, PFOA, and/or perfluorononanoic

acid (PFNA) on quarterly monitoring and a Running Annual Average (RAA) was calculated for these sites. Aqua identified 30 entry points that have consistently exceeded Essential's adopted limit of 13 ppt and prioritized those sites for treatment or other alternatives to be in service by year-end 2025. Of the 30 entry points, one is paralleled by another utility, and another is currently not in service. For the remaining 28 entry points, Aqua has been unable to find alternative sources other than treatment for PFAS.

76. As part of its WSIP Application, Form W-1, Item 28, Aqua included approximately \$7,810,000 in capital projects for PFOS/PFOA filtration treatment or other alternatives, such as purchased water, inactivation, or possibly drilling a new well before the end of WSIP Rate Year 3 (December 31, 2025). These capital projects relating to the 30 entry points were presented as ten separate line items in Form W-1, Item 28.

77. Based on Aqua's modification of the capital projects for the bridge period of September through December of 2022 and parts of Rate Year 1 (2023) proposed in its Form W-1, Item 28 of the WSIP, the updated amounts for PFOS and PFOA projects included in the WSIP totaled \$7,703,928, and consist of \$353,928 in 2022, \$2,150,000 in 2023, \$2,900,000 in 2024, and \$2,300,000 in 2025.

78. On March 13, 2023, the EPA issued a proposed rule that included a preliminary regulatory determination, request for public comment, and notice of public hearing for six PFAS known to occur in drinking water.

79. On March 29, 2023, the EPA published the proposed rule in the Federal Register. The preliminary regulatory determination and proposed regulation are proposals and do not require any actions until after the EPA considers public input, including written comments and a virtual hearing held on May 4, 2023, and finalizes the regulation.

80. Aqua states the PFOS/PFOA capital projects included in its WSIP application totaling approximately \$7,810,000 would provide for treatment or other alternatives only for sites that exceed Aqua's internal standard of 13 ppt. These sites have also consistently exceeded the EPA's stricter rule proposal for a 4 ppt standard.

81. Aqua believes its current treatment protocol will be sufficient to reduce the levels of PFOS and PFOA to non-detect, or 4 ppt.

82. Aqua plans 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 Aqua states will be required in the next five years.

83. It is reasonable and appropriate for Aqua to proceed to reduce PFOS/PFOA in its water supply for the projects that have been identified through regular monitoring since 2019 and 2020, and that have exceeded Aqua's internal standard of 13 ppt, since Aqua's current treatment protocol should reduce the levels of PFOS and PFOA to non-detect, or at least 4 ppt, if that is the maximum contaminant level (MCL) adopted by the EPA.

84. For purposes of establishing rates in the WSIP period, it is reasonable and appropriate to include in rate base the PFOS/PFOA projects costs of \$353,928 incurred by Aqua in the last quarter of 2022 and a portion of the total costs projected by Aqua, which is \$3,974,325 for Rate Years 1-3 as part of the WSIP capital projects. These project costs totaling \$4,328,253 should be included for purposes of calculating revenue requirements in the following Rate Years: Rate Year 1: \$1,328,253; Rate Year 2: \$1,500,000; and Rate Year 3: \$1,500,000.

85. Aqua is currently seeking opportunities to obtain federal funding under the Infrastructure Investment and Jobs Act (IIJA). Notably, in Docket No. M-100, Sub 164, Aqua reported that Aqua filed two applications with NCDEQ by the May 1, 2023 application date requesting \$3,375,675 in project funding for PFOS/PFOA capital projects.

86. Aqua has not proposed an adjustment in this proceeding for the benefits to customers related to any federal or state funding to be received by Aqua during the WSIP period for PFOS/PFOA capital projects or any other capital projects included in the WSIP.

87. It is reasonable and appropriate for Aqua to establish a regulatory liability on its books for review in Aqua's next general rate case to accumulate the customer benefits related to the actual receipt of state and federal funding related to PFOS/PFOA capital projects in excess of \$3,375,675 for which Aqua applied to NCDEQ by the May 1, 2023 application due date as well as any other state and federal funding received for capital projects included in the WSIP. Aqua should also establish a regulatory liability account to accumulate any settlement funds received from its current litigation with the manufacturers of PFAS for review in Aqua's next general rate case proceeding.

88. Aqua should continue to apply for available state and federal funding for PFOA and PFOS related projects; continue its pursuit of litigation with the manufacturers of PFAS on behalf of its customers; monitor the progress of the EPA's proposed regulation, which is anticipated to be finalized in late 2023; and continue to monitor, evaluate, analyze, and plan for the appropriate treatment options and alternatives to comply with the EPA's new proposed MCLs for PFOA and PFOS once finalized.

89. It is appropriate for Aqua to file annual reports with the Commission stating the status of the EPA proposed regulation and final approved requirements; federal and state funding; litigation with the manufacturers of PFAS; and Aqua's progress towards PFAS mitigation, including cost estimates by year.

Conservation Pilot Program

90. Aqua proposed the continuation of the Conservation Pilot Program (Pilot) that was authorized by the Commission in the Sub 526 Rate Case through the 2023 irrigation season. Aqua is seeking continuation of the Pilot, contending that it does not have enough data to promote development of future rate structures. The Pilot includes the revenue reconciliation methodology approved by the Commission in Docket No. W-218, Sub 526A.

91. The Public Staff opposes the continuation of the Pilot, stating that Aqua has had adequate time to collect the data the Commission required in the Sub 526 Rate Case and continuation of the Pilot while implementing the WSIP will unnecessarily complicate application of statutory requirements of the WSIP Statute.

92. It is reasonable and appropriate for Aqua to continue the Pilot Program through October 31, 2023, and to propose appropriate ongoing water rates for the customers in the Arbor Bay, Bayleaf Master, Merion, and Pebble Bay water systems for consideration by the Public Staff and Commission in the WSIP annual review scheduled in the first quarter of 2024.

Customer Assistance Program (CAP)

93. Aqua proposed a customer assistance program (CAP) to assist low-income customers with arrearages who are at risk of disconnection or without service due to disconnection. Customers with household incomes below 150% of the federal poverty guidelines could be eligible. Aqua plans to work with Dollar Energy Fund to manage and administer the program.

94. Aqua's proposed CAP would reallocate \$45,000 of Aqua's antenna revenues for the CAP annually. Dollar Energy Fund charges an operating fee of 8.75% of the grant amount and a fee in the range of \$5 to \$10 per application. Aqua stated that the CAP would be available on an annual basis until the funds for the year are exhausted. If the \$45,000 allocation is not exhausted at the end of the calendar year, the unused funds would carry over to the following year. Aqua stated that customers would be eligible to receive one grant of no more than \$500 per year.

95. Aqua has not demonstrated that its proposed CAP, including the parameters and amounts, is reasonable or justified for the purposes of this case and should be denied.

96. It is reasonable and appropriate for Aqua to continue to develop its CAP proposal with additional information and analysis to support the program, including a cost-benefit analysis to customers. Aqua should file its fully developed CAP proposal in a separate docket for consideration by the Public Staff and Commission.

Wakefield Filter Project

97. Aqua spent \$857,797 on a project to install a treatment system to remove iron and manganese from well water in its Wakefield service area (Funding Project 35800060544). Aqua's original estimate to complete the project submitted in its project approval application filed with the Commission in Docket No. W-218, Sub 363A was \$370,000 to \$395,000.

98. Aqua stated in its application filed on January 13, 2016, in Docket No. W-218, Sub 363A, that the project would take six months to complete. The project took five years and six months to complete, resulting in an excessive AFUDC.

99. For cost efficiency, Aqua planned to connect Well #6 and Well #8 in its Wakefield service area and build one treatment system instead of two. This connection required Aqua to obtain an easement.

100. Aqua imprudently incurred costs for engineering and equipment before it had substantial confirmation of obtaining the easement necessary to complete the project as planned.

101. Aqua imprudently paid its first consulting engineer for work that it believed was late and inadequate.

102. Aqua's internal staffing problems delayed the project and added to project costs.

103. The amount of utility plant in service for this project should be decreased by 25% of the \$857,797 project cost resulting in a \$214,449 disallowance.

Performance Based Metrics

104. To comply with N.C.G.S. § 62-133.1B(a) and Commission Rule R1-17A(b)(1) and (c)(10), it is appropriate to establish the Performance Based Metrics (PBMs) and incentives and penalties set out in Appendix A to this Order, in addition to the PBMs, incentives, and penalties agreed upon by the Stipulating Parties.

105. Aqua shall report on its performance on the PBMs set out in Appendix A on an annual basis in accordance with Commission Rule R1-17A(g)(1)(b).

Other Matters

106. It is appropriate to update rate case expense for this proceeding to reflect the additional costs related to the settlement proceeding as updated by Aqua per its filing on April 24, 2023, which included supporting documentation that was reviewed and accepted by the Public Staff per its May 1, 2023 filing.

107. It is reasonable and appropriate for Aqua to file with the Commission its Strategic Plan for Meter Data Management and Advanced Analytics upon completion and to provide status update reports annually beginning in 2024, 60 days after the end of the previous calendar year until such completion.

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, NCUC Form W-1, the testimony and exhibits of 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. 6-25

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, Public Staff Settlement Exhibit 1, 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 memorializes their agreements on specified issues in this proceeding. Accompanying the Stipulation is Public Staff Settlement Exhibit 1, which 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 the WSIP Rate Years 1, 2, and 3. The Stipulation is also based upon the same WSIP Rate Years as included in Aqua'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 reflects 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 General Statute § 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 Stipulating Parties agree that:

- 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.
- The Base period in this case represents the 12 months ending December 31, 2021, updated through the Commission recommended post-test-year date, August 31, 2022.
- 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 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 service revenue requirements should remain at Base Case levels, with future wholesale expense changes to be offset through the pass-through mechanism.
 - Purchased sewer treatment service revenue requirements should remain at Base Case levels, with future wholesale expense changes to be offset through the pass-through mechanism for the Park South, Parkway Crossing, Huntley Glen, and The Enclave systems that have City of Charlotte treatment, and for the Bradfield Farm/Carolina Water systems of Hawthorne at the Greene, Woodland Farms, Beaver Farms. Other

purchased sewer treatment costs, not subject to pass-through, will be escalated by the 3.04% annual rate.

- Transportation-fuel services revenue requirements should remain at Base Case levels.
- Property taxes 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 are 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 shown in Public Staff Settlement Exhibit 2.
- 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 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.

Description	Measure	Penalty	Incentive
Utilization of the SRF Program	Whether Aqua 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 Aqua 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 systems during the WSIP rate year.	Tracking metric	Tracking metric
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

Description	Measure	Penalty	Incentive
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 /employee Field Employee means staff member who works outside the office at least one-half of the year Safety training means structured and organized training (not peer to peer training)	Tracking metric	Tracking metric
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.

Capital Structure – the capital structure appropriate for use in this proceeding is a capital structure consisting of 50.00% common equity and 50.00% long-term debt.

Cost of Debt – a cost of long-term debt of 3.97% is appropriate for use in this proceeding.

Regulatory Commission Expense – 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 expenses 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.

Tariff Rate Design and Other Programs -

- Rate Design – rate design in this case should be based on a 35/65 ratio of fixed/volumetric (or base/usage) revenues for water service rates, a 60/40 ratio of fixed/volumetric (or base/usage) revenues for metered sewer service rates, and a flat rate continuing for unmetered sewer customers.
- Purchased Water and Sewer Services – Aqua will continue to utilize the bulk purchased water and sewer services pass-through mechanism.
- Modification of Sewer Tariff for a Sewer Use Rule – Aqua should be authorized to modify its tariff as proposed by Aqua, with the one modification proposed by the Public Staff in its testimony.

Other Provisions

- State Revolving Fund – Aqua should apply for state revolving funds as specified in the Stipulation section on PBMs.
- 2018 Affiliate Interest Agreement – Aqua agrees to file in Docket No. W-218, Sub 570 its 2018 Affiliate Interest Agreement as an information item, in satisfaction of Public Staff concern that this agreement was not previously filed for approval with the Commission.
- Management Audit – Aqua will perform a Management Audit limited to review of staffing needs to include compliance with the WSIP requirements.

- **Pittsboro Purchased Water** – 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 rate. Aqua shall report on its progress to the Commission and Public Staff on a semi-annual basis.
- **Future Cases** – Aqua will use its best efforts to communicate with the Public Staff, Commission, and other Class A water and sewer utilities regarding scheduling of future rate case filings in an effort to avoid pancaked filings going forward.
- **Accounting Reporting Requirements** – Aqua will file quarterly reports with the Commission that include (1) the steps Aqua 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 Aqua 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 Aqua, 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. Aqua 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.

Discussion and Conclusions

Based upon the foregoing and the entire record herein, the Commission finds that the Stipulation was entered into by the Parties after full discovery and extensive negotiations, that the Stipulation is the product of give-and-take in settlement negotiations between Aqua and the Public Staff, and that the Stipulation represents a reasonable and appropriate resolution of certain specific matters in dispute in this proceeding. In making this finding, the Commission notes that no party expressed opposition to the provisions of the Stipulation. In addition, when the provisions of the Stipulation are compared to Aqua's Application and the recommendations included in the testimony of the Public Staff's witnesses, the Stipulation results in a number of downward adjustments to the expenses sought to be recovered by Aqua and resolves and balances the issues which were of varying importance to each party. Therefore, the Commission further finds that the Stipulation is material evidence to be given appropriate weight in this proceeding, along with all other evidence of record, including that submitted by Aqua, the Public Staff, and the public witnesses who testified at the hearings.

In addition, the Commission finds that the Stipulation resolves only some of the disputed issues between Aqua and the Public Staff. The Stipulation leaves the following Disputed Issues to be resolved by the Commission: (1) the appropriate rate of return on common equity; (2) recovery of costs for capital projects related to treatment of PFOS/PFOA contaminants; (3) recovery of costs for Capital Investment Plan (CIP) projects incurred for the Service Improvement Plan (SIP), including SAP software

(4) inclusion of penalties and incentives for the following Performance-Based Metrics (PBMs) (i) timely completion of CIP projects, (ii) completion of CIP projects on budget, (iii) Safe Drinking Water Act compliance, and (iv) Clean Water Act compliance; (5) Conservation Pilot Program; (6) Customer Assistance Program; and (7) rate base treatment for the Wakefield treatment system.

Section 62-133.1B(b) provides that the Commission may approve a WSIP upon a finding by the Commission that the plan results in rates that are just and reasonable and are in the public interest. Further, that statute states that in reviewing any application for a WSIP, the Commission must consider whether the application, as proposed: (1) establishes rates that are fair both to the customer and to the water or sewer utility; (2) reasonably ensures the continuation of safe and reliable utility services; (3) will not result in sudden substantial rate increases to customers annually or over the term of the plan; (4) is representative of the utility's operations over the plan term; and (5) is otherwise in the public interest.

The Commission finds that the evidence supports approval of the Stipulation and concludes that the WSIP will result in just and reasonable rates and will be in the public interest. The rates are representative of Aqua's expected operations over the term of the plan. The rates are supported by a historical utility plant in service combined with a reasonable capital plan for the three-year plan period. The rates are also supported by historical revenue and expense data combined with reasonable plan period revenue and expense projections using escalation factors based on reasonable inflation projections, customer growth projections, and certain specific expense forecasts (such as salaries and wages). The revenue requirements should be sufficient to allow Aqua to make needed capital improvements while also covering expected operation and maintenance expenses, thus supporting the continuation of safe and reliable service to customers. The revenue requirements approved upfront in the WSIP, in conjunction with the protection of the WSIP Statute's 5% cap for Rate Years 2 and 3, will limit annual rate increases, avoiding the sudden substantial rate increases a series of traditional base rate cases sometimes produces.

The Commission also finds that the public interest will be further served by its approval of the Stipulation and the WSIP. On the one hand, the WSIP will provide Aqua with flexibility to make planned and needed infrastructure investments, along with some protection against inflation and regulatory lag during the term of the plan, without the need for (and cost of) coming in for additional rate cases. On the other hand, the Commission, the Public Staff, and the customers are being provided more information about Aqua's plans; the WSIP limits the annual revenue requirements thus imposing risk of cost increases and cost control upon Aqua; any earnings above the authorized ROE band will be returned to customers; and Commission oversight is enhanced insofar as approved performance metrics will necessarily increase company transparency and accountability, and as certain incentives and penalties are added to the metrics, accountability will be further strengthened.

After careful consideration the Commission concludes that the Stipulation and the WSIP are consistent with N.C.G.S. § 62-133.1B and strike a fair balance between the

interests of Aqua on the one hand, allowing it to maintain its financial strength at a level that enables it to attract sufficient capital on reasonable terms, and its customers on the other hand, allowing them to receive safe, adequate, reliable, and affordable water and sewer service at reasonable rates. The Commission finds that the rates that will result from the Stipulation are just and reasonable to both Aqua and its customers. In addition, the Commission finds that the provisions of the Stipulation are just and reasonable to all parties to this proceeding and serve the public interest, and that it is appropriate to approve the Stipulation in its entirety (as updated herein with respect to the due date for provisions regarding penalties and incentives).

Filing of 2018 Affiliate Interest Agreement

The Commission finds and concludes that it is appropriate and reasonable for Aqua to file the 2018 Affiliate Interest Agreement that amended the Service Agreement between Aqua Services, Inc., and Aqua, Mountain Point Utilities, Inc., Heater Utilities, Inc., Fairway Utilities, Inc., Rayco Utilities, Inc., Brookwood Water Corporation, Glynnwood Water Systems, Inc., Willowbrook Utility Company, Inc., and LaGrange Waterworks (2006 Service Company Agreement) filed and approved in Docket No. W-218, Sub 220. The 2018 Affiliate Interest Agreement is superseded by the Affiliate Interest Agreement between Aqua Services, Inc. and Aqua North Carolina, Inc. that is filed in Docket No. W-218, Sub 570 (Sub 570 Affiliate Interest Agreement) and currently before the Commission for consideration and approval. The 2018 Affiliate Interest Agreement must, for informational purposes, be filed in Docket No. W-218, Sub 570 consistent with the Stipulation.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 26-28

Rate Design

The evidence supporting these findings of fact is contained in the verified Application, the direct prefiled testimony of Aqua witness Haddad, the direct prefiled testimony of Public Staff witness Darden, the prefiled 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 Aqua'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 125-26.

As part of its Application and as discussed in witness Haddad's direct prefiled 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 to whom Aqua passes through the usage rate charged by Charlotte Water for providing sewer treatment service to Aqua. Under Aqua’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 Aqua 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 Stipulating Parties agree that rate design in this case should be based on a 35/65 ratio of fixed/volumetric (or base/usage) revenues for water service rates. The Stipulating Parties further agree that rate design in this case should be based on a 60/40 ratio of fixed/volumetric (or base/usage) revenues for metered sewer service rates. Unmetered residential sewer rates should remain flat.

The Commission finds and concludes that the rate design proposals recommended by the Public Staff as set forth above are just and reasonable and should be approved, given the negotiated support for such proposals as evidenced by the Stipulation.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 29

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

The evidence supporting this finding of fact is found in the verified Application and accompanying NCUC Form W-1, the Stipulation, and the testimony and exhibits of Public Staff witnesses Darden and Franklin and Aqua witness Gearhart and Haddad. The Commission finds that, consistent with the Stipulation, and as allowed by N.C.G.S. § 62-133.11, Aqua should continue to utilize the bulk purchased water and sewer pass-through mechanisms and Aqua’s purchased water and sewer rates should be updated as proposed by the Public Staff.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 30

Consumption Adjustment Mechanism

The evidence supporting this finding of fact is contained in the Stipulation, the WSIP Statute, and the direct prefiled testimony of Public Staff witness Darden and Aqua witness Haddad.

Pursuant to N.C.G.S. § 62-133.1B(d), “Any rate adjustment mechanism authorized pursuant to G.S. 62-133.12 or G.S. 133.12A shall be discontinued during the term of any Water and Sewer Investment Plan.” A CAM can only be authorized under N.C.G.S. § 62-133.12A. Therefore, a CAM cannot be utilized if the Commission has approved a WSIP.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 31

Suspension of WSIC and SSIC Mechanisms

The evidence supporting this finding of fact is found in the Stipulation, the WSIP Statute, and the WSIP Rule.

Consistent with Rules R7-39(k) and R10-26(k) and the Stipulation, the Commission’s previously approved WSIC and SSIC rate adjustment mechanisms have been reset to zero in this rate case. Consistent with N.C.G.S. § 62-133.1B(d), during the term of a WSIP, the WSIC and SSIC mechanisms shall be suspended; however, immediately upon the termination of the WSIP, Aqua shall be authorized to reinstate implementation of the WSIC and SSIC mechanisms.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 32

New Sewer Use Rule and Modification of Existing Sewer Tariff

The evidence supporting this finding of fact is found in the verified Application, the direct prefiled testimony of Aqua witness Becker, the direct prefiled testimony of Public Staff witness Darden, the prefiled rebuttal testimony of the Aqua PBM Panel, and the Stipulation.

In this case, Aqua proposed to modify its Sewer Tariff to include a new Sewer Use Rule intended to protect its wastewater systems from damaging industrial and nondomestic contaminants. In the Stipulation, the Parties agreed that Aqua’s Sewer Tariff should be modified by removing Chromium (VI) from the list of General Effluent Limitations appearing in Item 4 on page six of Aqua’s proposed Sewer Use Rule.

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.

Based upon the foregoing, the Commission concludes that it is appropriate and reasonable for Aqua to modify its Sewer Tariff to include a new Sewer Use Rule, as described above and set forth in the Stipulation.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 33

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, the Stipulation, and the entire record in this proceeding.

The Public Staff WSIP Panel recommended that certain regulatory conditions, attached as Public Staff WSIP Exhibit 5, be imposed as a part of the rate case. The Aqua rebuttal WSIP Panel testified that the regulatory conditions for its reorganization of Essential Utilities into a holding company, for which regulatory approval is sought in Docket No. W-218, Sub 571, should be kept separate from the rate case proceeding. The Aqua rebuttal WSIP Panel also submitted its own recommendation for regulatory conditions in the event the Commission ruled on that issue in the present case.

In the Stipulation, the parties agreed that they would work together in an attempt to finalize regulatory conditions in Docket No. W-218, Subs 570 and 571. Based upon the foregoing, the Commission finds and concludes that this negotiated resolution is appropriate and reasonable, and therefore the issue of regulatory conditions does not need to be addressed in the present rate case docket.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 34

Pittsboro Purchased Water

The evidence for this finding of fact is contained in the prefiled direct testimony of Public Staff witness Darden, the prefiled Joint Rebuttal Testimony of the Aqua WSIP Panel, the evidentiary hearing testimony of those witnesses for both parties, the Stipulation, and the entire record in this proceeding.

Witness Darden testified about the high cost of water that Aqua purchases in bulk from the Town of Pittsboro. Pittsboro charges its outside-of-town limits rate to Aqua for service to the Aqua customers in the subdivisions of Chapel Ridge, Laurel Ridge, and The Parks of Meadowview. Witness Darden recommended that Aqua pursue ways to reduce the cost from Pittsboro, including but not limited to, pursuing an inside-town-limits rate and that Aqua explore options that may encourage Pittsboro to discount the rate if the in-town city limits rate is not an option, such as prepayment of bills. The Public Staff recommended that Aqua report to the Commission and the Public Staff on Aqua's

progress on a semi-annual basis and include in its reporting more details on the alternative water supply options, including cost analysis and feasibility.

The Aqua WSIP panel described various efforts Aqua had already made to obtain a lower rate from Pittsboro or an alternative supply source. They noted that the original developer contract with Pittsboro for purchased water is binding on Aqua and that it requires Aqua to purchase 100% of its water from Pittsboro at the outside-town limits rate. Aqua asked if that rate could be lowered. A Town official responded that a reduction would be unlikely as the rates are per the contract, and a rate reduction would result in increased rates for others. Aqua asked if Pittsboro would annex the Aqua service areas so those residents could have lower rates. The Town official responded that annexation was unlikely because of the added infrastructure costs necessary to serve these communities, and it would not likely be advantageous to Pittsboro. Aqua also explored the idea of alternative water supply, notwithstanding the contract prohibition on that option, and determined that further action on that option would cause Aqua to incur potentially significant time and cost related to the pursuit of a new source that may not result in enough water to serve or supplement the supply to these communities. Aqua further determined that there would be challenges in mixing Town water with Aqua well water because the two providers use incompatible treatment chemicals. Aqua offered to request permission from Pittsboro to potentially use alternative water supplies or to include the affected Aqua customers in uniform rates.

In the Stipulation, the Parties agreed that Aqua will 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 will inquire about other options, such as prepayment of bills or a minimum bill amount. Aqua will report on its progress to the Commission and Public Staff on a semi-annual basis. The Commission concludes that continued efforts to solve the problem of the high cost of purchased water from Pittsboro are appropriate, and that the Stipulation is a reasonable approach to this problem.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 35

Reporting Requirements Specific to Manual Accounting Entries and Secondary Water Quality

The evidence supporting this finding of fact is found in the testimony of the Public Staff Accounting Panel, the Joint Testimony of the Public Staff WSIP Panel, the 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. The Public Staff recommended that Aqua file quarterly reports on the projects that Aqua 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 Aqua,

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's recommendation as burdensome and unnecessary. However, in the Stipulation, Aqua agreed to file quarterly reports with the Commission that include (1) the steps Aqua 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 Aqua 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 Aqua; 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. Aqua 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 Aqua be required to file a report regardless of whether the WSIC is 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. 36

Environmental Compliance

The evidence for this finding of fact is contained in the prefiled direct testimony of Public Staff witness Houser, the prefiled rebuttal testimony of Aqua witness Berger, both witnesses' evidentiary hearing testimony, and the entire record in this proceeding.

Summary of the Testimony of Public Staff Witness Houser

Public Staff witness Houser reviewed the environmental compliance records for Aqua'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 NCDEQ. Witness Houser stated that Aqua paid \$13,088 and \$1,100 in civil penalties related to its wastewater and water systems, respectively. Witness Houser additionally stated that Aqua received 23 Notices of Deficiency from NCDEQ 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, 347-52.

Summary of the Rebuttal Testimony Aqua Witness Berger

While witness Berger did not dispute the testimony of Public Staff witness Houser regarding Aqua's environmental compliance record, she provided additional context regarding the statistics witness Houser presented. Witness Berger noted that witness Houser acknowledged Aqua 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 Aqua 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 were in 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 and stated that witness Houser's characterization of Aqua's compliance record was "not representative of actuality and is a bit misleading" without mention of Aqua'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. In addition, Aqua'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 Aqua Witness Berger's Testimony in Response to Questions from the Commission

In response to a question from the Commission about whether it was possible to specify which of the NOV's issued to Aqua would trigger a determination of significant noncompliance for a facility, witness Berger explained that two of Aqua's systems identified by witness Houser as having been issued a NOV were determined to be in significant noncompliance "due to treatment challenges." *Id.* at 108.

When asked by the Commission 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. Witness Berger did not believe any of Aqua's plants were discharging one million gallons per day. *Id.* at 109. The Commission asked

clarifying questions on grade 1 – grade 3 wastewater facilities design limitation, and witness Berger explained that the facilities Aqua operates lack the increased technology, redundancy, and 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 a catastrophic flood and identified that these types of issues can be contributing factors to Aqua’s wastewater non-compliance rate. *Id.* at 120-21.

Discussion and 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 foregoing, 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 FINDINGS OF FACT NOS. 37-54

Customer Concerns – Service and Water Quality Related Issues, Quality, Remediation, and Communications

The evidence supporting these findings of fact is contained in the prefiled testimony of Public Staff witness Bhatta, the prefiled and evidentiary hearing rebuttal testimony of Aqua witness Berger, the testimony and exhibits of the public witnesses, the verified reports filed by Aqua, and the entire record in this proceeding.

Public Witness Hearings and Aqua’s Responses

Four public witness hearings were held for the purpose of receiving the testimony of Aqua’s customers and other non-expert, public witnesses. A total of 23 customers testified during the hearings. Several witnesses testified that they opposed Aqua’s requested rate increase. Customers testified that the secondary water quality issues they experience have resulted in expenses to (1) repair and replace damaged appliances and plumbing fixtures and (2) purchase bottled water for drinking and cooking. The secondary water quality concerns of the customer witnesses appearing before the Commission in this docket are consistent with the customer 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.

Some witnesses who testified about issues related to poor water quality also testified about issues with Aqua’s customer service and the inability to communicate with Aqua on water quality concerns. They testified about the improper timing of boil water

notices and termination of water service without prior notification. Witnesses also testified about a lack of planning to replace aging infrastructure, a lack of routine maintenance, high water bills, low water pressure, and concerns over water system resiliency. Some witnesses also testified regarding the magnitude of the rate increase, unique and system-specific rate design concerns, and the requested base facility charge increase. Most wastewater customers expressed frustration with flat rate sewer service. Other witnesses testified about inadequate customer complaint logging, the frequency of the backflow prevention device testing, the comparison of Aqua's rates with municipal rates, Aqua's perceived failure to encourage water conservation due to high base charges, and Aqua's transparency on PFAS detected in Aqua wells.

Aqua's verified reports on customer comments addressed the concerns raised by the witnesses at the public witness hearings. In its Report on Customer Comments from Public Hearing held in Raleigh, North Carolina on October 4, 2022 (Raleigh Public Hearing Report), filed on October 24, 2022, Aqua reported that it spoke to, met with, or otherwise attempted to contact the witnesses who testified at the hearing. Regarding water quality issues stemming from the presence of iron and manganese in the well water, Aqua stated that iron and manganese are some of the most abundant naturally occurring elements of the soil and rock formations from which groundwater is extracted in North Carolina. Aqua stated that 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, which 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 NCDEQ regulatory standards and pose no health risk to users. Aqua also stated that it is cost prohibitive to install a filter to treat 100% of the source water for iron and manganese and hardness. Aqua explained that some water quality issues result from unexpected events like water main breaks, equipment failures, power outages, and construction activities. Aqua stated that it provides advance customer notification of the potential of water quality impact when scheduled maintenance activities may impact water quality.

Aqua's Raleigh Public Hearing Report also addressed customer concerns related to low water pressure. Aqua 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, Aqua installed pressure sensors to record pressure throughout the system following the public witness hearing. Aqua submitted the results documenting that the minimum pressure required was met throughout the system.

Aqua's Raleigh Public Hearing Report also addressed customer complaints about the proposed rates. Aqua 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. Aqua stated that comparing Aqua's rate to municipal rates is not a fair comparison.

In addition, Aqua's Raleigh Public Hearing Report addressed customer complaints about inadequate notice regarding upcoming system maintenance events. Aqua 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.

The Raleigh Public Hearing Report discussed the ways in which Aqua communicates with customers. Aqua identified the following improvements to its local communication efforts: (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) addition of a bit.ly link on WaterSmart text messages that allow customers to be taken to a site with a comprehensive message; and (4) implementation of a Service Disruption Map on Aqua America's home page that is used to track potential outages and flushing activities by system. Raleigh Public Hearing Report at 13-14. Aqua also discussed Aqua's website (www.NCWaterQuality.com) dedicated to secondary water quality issues that is routinely updated to provide the latest information on Aqua's systems. *Id.* at 14-15. Aqua also described customer service staff training designed to improve interactions with customers. Lastly, the Raleigh Public Hearing Report stated that Aqua's management team tries to maintain regular communications with homeowners' associations and Aqua is working towards making the leak notification process more efficient.

In its Report on Customer Comments from Virtual Hearing held on October 20, 2022, filed on November 9, 2022, Aqua reported that Aqua has the capability to bring in on-site portable generators when there is an electrical outage, adding that if customers register on Aqua's WaterSmart Alert program, they can receive an instant alert issued for Aqua's systems via email, text, or phone. Aqua 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.

In its Report on Customer Comments from Public Hearings in Wilmington on October 26, 2022, and Gastonia on October 27, 2022 (Wilmington-Gastonia Public Hearing Report), filed on November 15, 2022, Aqua outlined the measures Aqua has taken regarding PFAS levels. Aqua 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. Aqua also stated that it has plans to install treatment systems for wells that have PFAS levels above 13 ppt. Aqua further stated that customers in the Cape/Beau Rivage system interested in paying a separate rate for water used for irrigation can request and obtain, at their own cost, a separate irrigation service line with a separate meter. For the Park South customers who are interested in pass-through rate design, Aqua stated that it supports 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.

Prefiled Testimony of Public Staff Witness Bhatta

In the prefiled direct testimony of Public Staff witness Bhatta, witness Bhatta outlined the Public Staff's review of Aqua's handling of phone complaints about secondary water quality issues. Witness Bhatta testified that Aqua issues a LabD, a category of work/service order, in response to discolored water complaints that require a work order. Witness Bhatta stated that the LabD service order information contains, among other information, the date of each complaint and a description of the field service representative's reported root cause. Tr. vol. 6, 318. Witness Bhatta testified that she reviewed the discolored water complaints data (LabD data) from October 26, 2020, to July 31, 2022, provided by Aqua. Based on her review, the field service representative (FSR) reported a root cause of "source water quality" for approximately 22.4% (334 calls) of the LabD calls received during that period. *Id.* at 320. Witness Bhatta then testified that the percentage increases to 33.9% when the "No Problem/Clear on Arrival" option was removed from the analysis. *Id.* at 320-321.

Witness Bhatta further testified that it appears Aqua has generally addressed customers' complaints appropriately and is working to address issues in a timely manner. Tr. vol. 6, 333. Witness Bhatta testified 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. *Id.*

Prefiled Testimony of Aqua Witness Berger

Aqua witness Berger testified on rebuttal that she reviewed the complaints the Public Staff Consumer Services Division received from customers for the period between October 1, 2020, and December 5, 2022. Witness Berger stated that Aqua recorded 165 informal complaints and 37 complaints (approximately 20.2%) were assigned a root cause of water quality and/or low pressure. Tr. vol. 10, 47.

Witness Berger also provided additional context regarding the LabD calls Public Staff witness Bhatta discussed. Witness Berger testified that FSRs identify a root cause from a list of programmed root causes when they close a work order. Witness Berger testified that the list was updated in January 2022 to include a new category: Clear on Arrival. *Id.* at 48. According to witness Berger, the new category was added because a

review of pre-2022 data showed that many FSRs were selecting “Source Water Quality Issue” in response to calls that were clear on arrival. *Id.* at 49. Witness Berger noted that data collected before January 1, 2022, will not reflect the newly added category.

Witness Berger stated that she completed a “more thorough review” of the data Aqua gave the Public Staff that entailed reviewing FSR notes, Secondary Water Quality Group identification, and conversations with staff. Witness Berger determined that Aqua reported 2,840 LabD calls between January 1, 2020, and July 31, 2022, and 4.6% of those calls were directly related to naturally occurring iron and manganese. *Id.* at 50.

Evidentiary Hearing Rebuttal Testimony of Aqua Witness Berger

During cross-examination, witness Berger described Aqua’s internal process for handling customer complaints that gives rise to a LabD work order. Witness Berger testified that Aqua has been working on continuously improving its process since 2018. Witness Berger testified that Aqua provides employee training on handling LabD calls, but mistakes can happen.

Discussion and Conclusions

The Commission finds that though some customer concerns persist, particularly in certain parts of Aqua NC’s service territory regarding secondary water quality issues, the evidence showed significantly increased investment and operational attention to these issues. The Commission concludes that Aqua’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) the overall companywide and systemwide quality of wastewater service provided by Aqua is adequate and Aqua has generally operated its wastewater plants in a prudent manner.

DISPUTED ISSUES

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 55-63

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

The evidence supporting these findings of fact and conclusions are contained in the documents, testimony, and exhibits taken in this matter, including without limitation Aqua’s verified Application and accompanying NCUC Form W-1, the testimony and exhibits of the public witnesses, the direct and rebuttal testimony and exhibits of Aqua witness D’Ascendis, the testimony and exhibits of Public Staff witness Hinton, the joint testimony and exhibits of Public Staff witnesses Boswell, Hinton, Junis, Sun, and Zhang, the Stipulation, and the entire record of this proceeding.

Capital Structure

Aqua 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 concludes that this is a reasonable capital structure for use in setting rates in this proceeding.

Cost of Debt

In direct testimony, witness D'Ascendis recommended a 4.01% cost of debt, which he based on long-term borrowings of Aqua 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 Aqua accepted the update to a 3.97% cost of long-term debt. The Commission finds that this is a reasonable rate for the cost of long-term debt to be used in setting rates in this proceeding.

Cost of Equity and Overall Rate of Return

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 should evaluate the available evidence, particularly that presented by conflicting expert witnesses. *State ex rel. Utils. Comm'n v. Cooper*, 366 N.C. 484, 739 S.E.2d 541, 546-47 (2013) (*Cooper I*). In this case, the evidence relating to Aqua's cost of equity was presented by Aqua witness D'Ascendis and Public Staff witness Hinton.

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.

Law Governing the Commission's Decision on Rate of Return on Equity

In the absence of a unanimous settlement, the law of North Carolina requires the Commission to exercise its independent judgment and arrive at its own independent conclusion as to the proper rate of return on common equity. *See, e.g., State ex rel. Util's. Comm'n v. Carolina Util. Customers Ass'n*, 348 N.C. 452, 466, 500 S.E.2d 693, 707 (1998) (*CUCA I*). In order to reach an appropriate independent conclusion regarding the rate of return on equity, the Commission must evaluate the available evidence, particularly that presented by conflicting expert witnesses. *Cooper I*, 366 N.C. at 491-93, 739 S.E.2d at 546-47.

As this Commission has previously acknowledged, relying upon the decisions of the Supreme Court of the United States in *Bluefield Water Works & 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 [rate of return on equity], 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.

Order Accepting Stipulation, Deciding Contested Issues, and Requiring Revenue Reduction, Application by Duke Energy Carolinas, LLC, for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina, No. E-7, Sub 1146, at 50 (N.C.U.C. June 22, 2018); see also *State ex rel. Utils. Comm'n v. General Telephone Co. of the Southeast*, 281 N.C. 318, 370, 189 S.E.2d 705, 738 (1972). (*General Telephone*). As the North Carolina Supreme Court held in *General Telephone*, these factors constitute “the test of a fair rate of return declared” in *Bluefield* and *Hope*. *Id.*

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:

[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.

Dr. Roger A. Morin, *Modern Regulatory Finance: Utilities’ Cost of Capital* 19-21 (Public Utilities Reports, Inc. 1984). “The term ‘cost of capital’ may [also] 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.” Charles F. Phillips, Jr., *The Regulation of Public Utilities* 388 (Public Utilities Reports, Inc. 1993).

The North Carolina Supreme Court has long recognized that the Commission’s subjective judgment is a necessary part of determining the authorized rate of return on common equity. See, e.g., *State ex rel. Utils Comm’n v. Public Staff - N.C. Utils. Comm’n*, 323 N.C. 481, 490, 374 S.E.2d 361, 369 (1988) (*Public Staff*). Likewise, the Commission has noted that such determination is not made by application of any one simple mathematical formula:

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. 382 (notes omitted).

Order Granting General Rate Increase, Application of Carolina Power & Light Co., 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), *aff'd*, *State ex rel. Utils. Comm'n v. Cooper*, 367 N.C. 444, 761 S.E.2d 640 (2014) (2013 DEP Rate Order).

Moreover, in setting rates the Commission must not only adhere to the dictates of both the United States and North Carolina Constitutions, but as has been held by the North Carolina Supreme Court, it must set rates as low as possible consistent with

constitutional law. *Public Staff*, 323 N.C. at 490, 374 S.E.2d at 370. The Commission must also set rates employing the multi-element formula set forth in N.C.G.S. § 62-133. The formula requires consideration of elements beyond just the rate of return on common equity element and inherently requires the Commission's subjective determinations, in addition to the subjectivity required in order to determine the rate of return on common equity. These subjective decisions can and often do have multiple and varied impacts on other elements of the formula. In other words, the formula elements are intertwined and often interdependent in their impact to the setting of just and reasonable rates.

The fixing of a rate of return on the cost of property used and useful to the provision of service (as determined through the end of the historic 12-month test period prior to the proposed effective date of a requested change in rates and adjusted for proven changes occurring up to the close of the expert witness hearing) is but one of several interdependent elements of the statutory formula to be used in setting just and reasonable rates. See N.C.G.S. § 62-133. Section 62-133(b)(4) provides, in pertinent part, that the Commission shall:

[f]ix such rate of return on the cost of the property . . . as will enable the public utility by sound management (1) to produce a fair return for its shareholders, *considering changing economic conditions and other factors* . . . (2) to maintain its facilities and services in accordance with the reasonable requirements of its customers in the territory covered by its franchise, and (3) to compete in the market for capital funds on terms that are reasonable and that are fair to its customers and to its existing investors.

Id. at (b)(4) (emphasis added).

The North Carolina Supreme Court has interpreted the above-emphasized language as requiring the Commission to make findings regarding the impact of changing economic conditions on customers when determining the proper rate of return on common equity for a public utility. *Cooper I*, 366 N.C. at 495, 739 S.E.2d at 548. The Commission must exercise its subjective judgment so as to balance two competing rate of return on common equity-related factors – the economic conditions facing Aqua's customers and Aqua's need to attract equity financing on reasonable terms in order to continue providing safe and reliable service. 2013 DEP Rate Order at 35-36. The Commission's determination in setting rates pursuant to N.C.G.S. § 62-133, which includes the fixing of the rate of return on common equity, must also credit affordability of public utility service to the using and consuming public. The impact of changing economic conditions on customers is embedded in the analyses conducted by the expert witnesses on rate of return on common equity, as the various economic models widely used and accepted in utility regulatory rate-setting proceedings reflect such economic conditions. 2013 DEP Rate Order at 38. Further,

[t]he 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 common equity when the general body of ratepayers is in a better position to pay than at other times . . .

Id. at 37.

Economic conditions existing during the modified test year, at the time of the public hearings, and at the date of the issuance of the Commission's order setting rates will affect not only the ability of the utility's customers to pay rates but also the ability of the utility to earn the authorized rate of return during the period the new rates will be in effect. However, in setting the rate of return on common equity, just as the Commission must assess the impact of economic conditions on customers' ability to pay for service, it must also assess the effect of regulatory lag³ on Aqua's ability to access capital on reasonable terms. The Commission sets the rate of return on common equity considering both of these impacts taken together in its ultimate decision fixing a utility's rates.

Thus, in summary and in accordance with the applicable law, the Commission's duty under N.C.G.S. § 62-133 is to set rates as low as reasonably possible to the benefit of the customers without impairing Aqua's ability to attract the capital needed to provide safe and reliable water and sewer service and recover its cost of providing service.

Summary of the Evidence

Aqua requested a rate of return on common equity of 10.40% for Aqua 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. Aqua's return on equity recommendations were supported by the expert testimony of witness D'Ascendis, who analyzed Aqua'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 rate of return on equity to allow for flotation 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.

³ Regulatory lag can cause a utility's realized, earned return to be less than its authorized return, negatively affecting the shareholder's return on investment as other expenses and debts owed are paid ahead of investor return.

Witness D'Ascendis assessed the impact of changing economic conditions on customers in conjunction with his ROE analysis. Witness D'Ascendis's initial analyses (data as of May 13, 2022) produced the following results:

SUMMARY OF D'ASCENDIS MODEL RESULTS (DIRECT TESTIMONY)

	Using Current Interest Rates	Using Projected 2023 Interest Rates	Using Projected 2024 Interest Rates	Using Projected 2025 Interest 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 Applied to Comparable Risk, Non-Price Regulated Companies	<u>11.20%</u>	<u>11.54%</u>	<u>11.49%</u>	<u>11.49%</u>
Indicated Range of Common Equity Cost Rates Before Adjustments for Company-Specific Risk	9.85% - 10.85%	10.07% - 11.07%	10.03% - 11.03%	10.14% - 11.14%
Size Adjustment	0.00%	0.00%	0.00%	0.00%
Flotation Cost Adjustment	0.05%	0.05%	0.05%	0.05%
Indicated Range of Common Equity Cost Rates after Adjustment	<u>9.90%</u> - <u>10.90%</u>	<u>10.12%</u> - <u>11.12%</u>	<u>10.08%</u> - <u>11.08%</u>	<u>10.19%</u> - <u>11.19%</u>

Tr. vol. 6, 16.

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

SUMMARY OF D'ASCENDIS MODEL RESULTS (REBUTTAL TESTIMONY)

	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%
Size Adjustment	0.00%	0.00%	0.00%	0.00%
Flotation Cost Adjustment	0.05%	0.05%	0.05%	0.05%
Indicated Range of Common Equity Cost Rates After Adjustment	<u>10.69% - 11.69%</u>	<u>10.82% - 11.82%</u>	<u>10.75% - 11.75%</u>	<u>10.71% - 11.71%</u>

Witness D'Ascendis testified in rebuttal that Aqua 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 a conservative estimate of Aqua's ROE.

Witness D'Ascendis emphasized that current market conditions are riskier now than during Aqua'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. Witness Hinton 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:

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

Regarding the DCF model, witness Hinton discussed the components he used; the basis for using the expected stream of dividends over time; how the dividend yield and expected growth rate components was calculated; the inclusion of both historical and future-looking calculations; and other matters.

Regarding his RPM, witness Hinton stated that it is designed to determine the difference between the expected return on a common stock and the expected return on a debt security. This difference is the rate of return investors require in order to accept the additional risk involved with investment in a stock, which has more risk, versus a bond, which has less risk. Witness Hinton explained the method he used to calculate the components of the model; the strengths of using allowed equity returns in the model; the average risk premium results; the evaluation of A-rated public utility bonds; the relationship between bond costs and equity costs; and other matters.

To assess the reasonableness of his recommendations, witness Hinton considered the pre-tax interest coverage ratio produced by his recommended cost of capital using his recommended 50/50 capital structure, 3.97% cost of debt and 9.30% (assuming WSIP) ROE. Such inputs result in a pre-tax interest coverage ratio of 4.0x, which is consistent with a single A bond rating. Witness Hinton also testified that strong and stable growth in retained earnings (compound annual growth rate greater than 14%) supports the reasonableness of his recommendation, as the stability of the growth is indicative of the relative lower investment risks associated with water utilities.

Witnesses D'Ascendis and Hinton disagreed on the following aspects of estimating Aqua's cost of equity: proper application of the DCF and RPM models; witness D'Ascendis's recommended adjustment for flotation costs; and witness Hinton's WSIP approval adjustment. Witness D'Ascendis also noted the lack of a comparable earnings analysis from witness Hinton. Witness Hinton objected to the use of interest rate forecasts.

With respect to witness Hinton's application of the DCF model, witness D'Ascendis criticized witness Hinton's use of dividends per share (DPS) and book value of equity per share (BVPS), in addition to earnings per share or EPS, 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 growth experienced by investors. He also testified that there is support in academic and financial literature for the use of projected EPS growth in a DCF analysis, but there is no such support for use of projected DPS or BVPS. In addition, witness D'Ascendis 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 relied on EPS growth projections, then witness Hinton's DCF model results would have been 10.06% (mean) and 10.80% (median), indicating that witness Hinton's proposed DCF cost rate of 9.03% is severely understated. Witness Hinton questioned witness D'Ascendis's conclusion that investors rely solely on EPS forecasts and opined that it is reasonable that expectations of dividend and book value growth, as well as historical performance, likely inform expectations as well.

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, witness D'Ascendis 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 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 ultimately happens. Tr. vol. 9, 126. Further, Witness D'Ascendis demonstrated that current interest rates are not accurate predictors of future interest rates. *Id.* at 126-27.

Second, witness D'Ascendis disagreed with witness 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, witness D'Ascendis 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's RPM results using prospective bond yields and individual rate case data, testifying 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 rate of return on equity of 10.01% (median 10.00%) based on historical returns and an average rate of return on equity of 9.81% (median 10.25%) based on projected returns. Witness D'Ascendis testified that even as a check, the comparable earnings analysis indicates witness Hinton's DCF outcome of 9.03% and overall rate of return on equity recommendation of 9.50% is woefully inadequate. Tr. vol. 9, 130-31.

Regarding flotation costs, in direct testimony witness D'Ascendis explained that they are costs associated with the issuances of common stock. They are real and necessary costs incurred by Aqua, and there is no mechanism that recovers them other than his adjustment to the rate of return on equity 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.

Tr. vol. 6, 74.

He noted that the rate of return on equity models assume no transaction costs, so the model results do not reflect flotation costs. Under cross examination, witness D'Ascendis agreed that his proposed 5 basis point adjustment to the rate of return on equity would result in Aqua receiving an additional \$346,000 in revenue over the three years of the MYRP. *Id.* at 121.

Aqua witness D'Ascendis testified that, as stated on Aqua's responses to discovery, the issuance expense incurred by Essential associated with an issuance of common equity for an employee plan during the test year and up through August 1, 2022, totaled \$221,816. Tr. vol. 6, D'Ascendis Direct Cross Ex. 8. Aqua witness D'Ascendis further testified that there was no plan in the record for Essential to issue new common stock in the near term. *Id.* at 142.

Public Staff witness Hinton testified that he does not believe a flotation cost adjustment is warranted. Witness Hinton testified that Aqua's parent company, Essential, did not have a public issuance of common stock during the 2021 test year. He testified that the parent company experienced costs associated with its employee stock purchase plan which totaled \$221,816. Witness Hinton testified that he incorporated an allocation factor based on the relative common equity balances on Aqua and Essential of 2.9410%, which resulted in an allocated level of expense to Aqua of approximately \$6,200. Regarding the issuance expense of \$8.4 million from D'Ascendis Exhibit 1, Schedule DWD-9, witness Hinton clarified that these expenses related to a forward stock sale, and any expenses occurred outside of the test year. Tr. vol. 7, 150-51.

Witness Hinton further explained his position, stating that these costs are not at the level to warrant the creation of an operating expense and an amortization schedule to reflect the costs of issuing common equity through Essential's employee plans. In addition, he testified that the North Carolina Supreme Court has ruled inclusion of costs not incurred is not warranted. *State ex rel. Utils. Comm'n v. Public Staff*, 331 N.C. 215, 221-22, 415 S.E.2d 354, 358-59 (1992). Witness Hinton testified that based on the lack of a public issuance of common equity during the test year and the low level of costs associated with Aqua's other compensation plans, he maintains that Aqua witness D'Ascendis's flotation cost adjustment is not warranted in this proceeding.

On rebuttal, witness D'Ascendis rejected witness Hinton's position 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. Witness D'Ascendis 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."

Public Staff witness Hinton testified that the Public Staff made a 20-point downward adjustment to its recommended ROE because the following WSIP features reduce Aqua's risk: (1) Aqua is, to some extent, insulated from future changes in expenses because the WSIP allows Aqua to forecast future expense levels using inflation and growth factors; (2) Aqua can include future capital investments in rate base and begin earning a return on those investments before the utility plant is used and useful and without filing a rate case application or WSIC/SSIC application. This reduces regulatory lag significantly and, in some cases, allows Aqua to begin earning a return on utility plant additions a full year earlier than it would be able to using the WSIC/SSIC mechanism set forth in N.C.G.S. § 62-133.12; and (3) Aqua's approved rates increase annually, and those increases take both the forecasted future expense levels and expedited inclusion of new capital investments in rate base into account.

Witness Hinton testified that the features he listed highlight the way in which an approved WSIP appreciably reduces regulatory lag and improves Aqua's ability to align future revenues with expected future costs.

Witness Hinton further testified that this mechanism is seen by debt and equity investors as supportive regulation that mitigates business risk and regulatory lag. For example, Moody's gives greater weight to the applicable regulatory framework and a utility's ability to recover costs and earn a return than a utility's financial metrics. Tr. vol. 8, 81. Witness Hinton testified that Moody's sees MYRPs as credit positive. He cited Moody's Credit Opinions that consider recent legislation allowing MYRPs in North Carolina and Washington. He testified that both opinions note that this new regulatory framework is a positive development toward mitigating regulatory lag, and it provides for greater revenue visibility and transparency.

Witness Hinton also testified that there are other reasons for reducing the ROE if a WSIP is approved. He testified that a stated customer benefit of the WSIP is a reduction in the frequency of rate cases. Aqua's proposed three-year amortization of the rate case expense for this instant proceeding is \$472,157. Witness Hinton testified that, in the Public Staff's view, the cost savings associated with a reduction in the frequency of rate cases is inadequate compared to the benefits received by Aqua. *Id.* at 81-82.

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, including multi-year rate plans in California, and fully forecasted test years in Iowa, Tennessee, Virginia, Pennsylvania, and New York. Witness D'Ascendis 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 difference on investor-perceived risk, or required rate of return on equity, 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.

Joint Testimony of Public Staff Witnesses Boswell, Hinton, Junis, Sun, and Zhang

Public Staff witness Hinton recommended that if the Commission approves the WSIP, an overall cost of capital of 6.63%, as shown in Public Staff WSIP Exhibit 8, should be approved. He testified that this recommendation is based upon a proposed capital structure consisting of 50.00% common equity and 50.00% long-term debt, a debt cost of 3.97%, and a 9.30% ROE. The recommended ROE includes a 20 basis point reduction due to the WSIP as shown in Public Staff WSIP Exhibit 9.

If the Commission does not approve Aqua's request for a WSIP or a CAM, the Public Staff recommended an overall cost of capital of 6.74%, as shown in Hinton Exhibit 6. This recommendation is based upon a proposed capital structure consisting of 50.00% common equity and 50.00% long-term debt, a debt cost of 3.97%, and a 9.50% ROE.

Public Staff witness Hinton testified that the Public Staff recommends a ROE of 9.40% if the Commission approves Aqua's CAM request. He testified that the Public Staff's recommended ROE, in assuming approval of the CAM, is ten basis points higher than the Public Staff's recommended ROE if Aqua's WSIP request is approved, and ten basis points lower than the Public Staff's recommended 9.50% ROE if the Commission denies Aqua's request for a CAM and WSIP. Witness Hinton testified that the reductions in ROE reflect the Public Staff's position on Aqua's risk under two different alternatives to traditional historic test year ratemaking. He testified that the differences in the reduction reflect the Public Staff's position on which mechanism has the greatest impact on Aqua's risk.

Application of the Governing Principles to the Rate of Return Decision

The Commission has carefully evaluated the testimony of Aqua witness D'Ascendis and Public Staff witness Hinton. Before accounting for the new paradigm of multi-year rates, or in what Aqua refers to as the Base Case, the rates of return on equity recommended by the expert witnesses are 9.50% for witness Hinton and 10.40% for witness D'Ascendis. Underlying witness Hinton's recommendation are model results ranging from 9.03% to 9.94%. Tr. vol. 7, 127-28. Witness D'Ascendis originally based his recommendation on model results that ranged from 9.37% to 11.32%. Tr. vol. 6, 16. Those same models, when recalculated using updated data from November 30, 2022, resulted in outputs ranging from 10.22% to 12.06%. Tr. vol. 9, 106. In both cases, witness D'Ascendis also recommends an upward flotation cost adjustment of 0.05%.

Such a wide range of estimates by expert witnesses is not atypical in proceedings before the Commission with respect to the rate of return on common 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. Nonetheless, the Commission is uniquely situated, qualified, and required to use its impartial judgment to determine the rate of return on common equity based on the

testimony and evidence in this proceeding in accordance with the legal guidelines discussed above.

The Commission concludes that because Aqua is not publicly traded, it is appropriate to look to a proxy group in modeling appropriate rates of return. The Commission notes that the utility proxy group used by witness D'Ascendis in his rebuttal testimony is the same proxy group used by witness Hinton in his testimony. The Commission finds the use of the utility proxy group and the composition of same proposed by the witnesses is warranted and appropriate.

The Commission has also considered witness D'Ascendis's testimony in support of a proxy group composed of non-utility companies. While the Commission is cognizant of the shrinking size of the water utility proxy group utilized by the expert witnesses, the Commission is unpersuaded by the comparative use of this non-utility proxy group because of the differences between the components of the unregulated proxy group and Aqua. The existence of similar aggregated risk metrics does not make the underlying companies similar in risk to Aqua. Aqua is a regulated monopoly which provides a vital and essential service, and a proxy group comprising similar companies is preferable given the unique business risks faced by such companies. Further, the results discussed by witness D'Ascendis in his direct testimony ranged from 10.68% to 11.79% and in rebuttal testimony from 10.4% to 12.53%. With the exception of the DCF results, the model outcomes are significantly above the ROE requested by Aqua and the Commission finds that these results are outliers, especially when compared to recent ROE awards by the Commission. Accordingly, the Commission gives these results no weight. The Commission concludes instead that the utility proxy group is a more representative proxy group for determining the return on equity for Aqua.

In this proceeding, both rate of return on equity witnesses presented multiple valuation models including the DCF and an RPM approach from each witness. Witness D'Ascendis also presented a CAPM and calculated a Comparable Earnings Model (CEM) which witness Hinton has used as a check in some previous rate cases.

While there is disagreement between the witnesses as to the correct approach with respect to the DCF, the Commission does not find it necessary to resolve each of these disputes. By presenting three methods of considering growth inputs in calculating the DCF, witness Hinton has demonstrated that they form a relatively tight band of results. Additionally, the Commission is persuaded that investors and analysts consider historical growth when projecting future growth and, as such, they likely place weight on each, even as the former informs estimates of the latter. Regarding witness D'Ascendis's decision to drop the DCF result of Middlesex Water Company, the Commission is persuaded by witness D'Ascendis's explanation that a result indicating equity investors would provide equity capital at a lower rate of return than the return on A-rated utility bonds is sufficient to exclude it from the calculation. Inasmuch as the Commission prefers the use of multiple models in arriving at an allowed ROE, multiple approaches to the same model can be, and is, informative in setting the rate of return on equity in this case. The results of these models, 10.22% for witness D'Ascendis, and 9.03% for witness Hinton, are also

consistent with recently granted rates of return on equity, and the Commission finds them credible, probative, and entitled to substantial weight.

The Commission turns next to the Risk Premium Models presented by each witness. Witness Hinton testified that his RPM produced a result of 9.94%. Witness D'Ascendis took issue with portions of witness Hinton's approach and recalculated the model in his rebuttal testimony. With respect to witness D'Ascendis's approach to using individual rate case data instead of annual averages, as well as the full RRA database, the Commission appreciates the added rigor of his approach. When using current interest rates – which the Commission prefers to the use of projected interest rates – witness D'Ascendis stated that his version of witness Hinton's model resulted in an estimate of required ROE of 9.98%. As such, the Commission gives substantial weight to witness Hinton's RPM result, corroborated by D'Ascendis's calculations.

With respect to witness D'Ascendis's RPM approach, the Commission concludes that the Value Line projections of three-to-five-year annual total market return of 16.74% and 15.93% upwardly bias the model's results for the Total Market Approach. Relative to the historic risk premiums used, and even the Bloomberg projections, these forecasts result in outliers in terms of equity market risk premiums. These inputs provide a third of the basis for a beta-adjusted equity risk premium of 6.69%, which is significantly higher than witness D'Ascendis's other approach to calculating equity risk premium. That estimate, based on a study using the holding period returns of public utilities with A2 rated bonds, is 4.72%. The Commission notes that had witness D'Ascendis utilized an equity risk premium of 4.72% instead of 5.71% (the average of 6.69% and 4.72%), his Total Market RPM using current interest rates would have been 10.46%, rather than the 11.45% figure which informs his RPM model outcome.

The Commission declines to give any weight to witness D'Ascendis's PRPM approach. The smallest risk premium assigned to any company in the proxy group by this method is in excess of 8%, and excluding American Water Works, they average nearly 9.25%. The Commission finds it implausible that a regulated water company would require an equity risk premium nearly the size of its currently allowed rate of return on equity, much less a full return on equity in excess of 13% once the risk-free rate is added. Even when giving full weight to the median outcome, witness D'Ascendis's PRPM results are an outlier. As such, the Commission gives no weight to witness D'Ascendis's PRPM results. Overall, the Commission gives little weight to witness D'Ascendis's RPM results.

Witness D'Ascendis's CAPM approach utilizes the same inputs for estimating the equity risk premium as his Total Market RPM approach. Due to this previously mentioned upward bias, the Commission gives witness D'Ascendis's CAPM results little weight.

The Commission accepts the CEM, as calculated by witness D'Ascendis as a check for reasonableness. Witness D'Ascendis testified that his operation of the model, using various assumptions, resulted in ROEs ranging from 9.81% to 10.25%, as presented in his schedule DWD-4R. The Commission notes that its allowed rate of return on equity in this case falls at the low end of this range.

Flotation Costs

In *State ex rel. Utils. Comm'n v. Public Staff*, the Supreme Court of North Carolina reversed and remanded the ROE portion of the Commission's Order dated October 31, 1986, Docket No. E-7, Sub 408 for Duke Power Company. *State ex rel. Utils. Comm'n v. Public Staff*, 322 N.C. 689, 370 S.E.2d 567 (1988). The Supreme Court ruled that on remand the Commission was directed to reconsider the proper rate of return on Duke Power's common equity and also support its conclusion on flotation costs with specific findings. There was no evidence in that case that Duke Power intended to issue new stock for the next three or four years. On remand, the Commission issued its second E-7, Sub 408 Order, reassessed the evidence, and issued new findings of fact and conclusions. The Commission concluded that 13.2% was a fair rate of return on Duke Power's equity and there was a 0.1% increment in the approved 13.2% ROE to cover future stock issuance costs. On the second appeal, the Supreme Court held that the Commission's inclusion of the "stock" issuance increment is not supported by substantial evidence in view of the whole record. *State ex rel. Utils. Comm'n v. Public Staff*, 331 N.C. 215, 218 (1992). The Supreme Court concluded the Commission's inclusion of a 0.1% ROE increment for purported future financing costs in the approved ROE was not based upon substantial evidence in view of the whole record. The Supreme Court stated:

As we noted on the first appeal, an 0.1% upward increment in Duke's rate of return on common equity costs ratepayers \$ 4.2 million annually in additional rates. Historically, Duke's average costs per issuance of stock was \$ 3.2 million. In light of the whole record on this issue, particularly in the absence of any evidence that Duke intended to issue stock in the immediate future, there is simply no substantial evidentiary support for the Commission's addition of a 0.1% increment to Duke's rate of return on common equity to cover future stock issuance costs.

Id. at 221-22.

The Supreme Court further stated and ruled:

On the first appeal of this case, we questioned whether the record supported *any* adjustment whatever in the rate of return for purported future stock issuance, or financing costs. We said:

Since *no* evidence was introduced that Duke intends to issue new stock for the next three or four years, and because there was no evidence regarding the probable cost of a prospective issuance, we question whether the record supports *any* financing cost adjustment. *State ex. rel. Utilities Commission v. Public Staff*, 322 N.C. at 700, 370 S.E.2d at 574 (emphasis added). We are not satisfied, for the reasons

alluded to in our first opinion, that the record supports no such adjustment in the common equity rate of return.

Id. at 221.

There has been no evidence that Essential plans to make a public stock offering in the near future, which Aqua witness D'Ascendis verified. As the Supreme Court stated above, the Commission finds there is simply no evidentiary support for Aqua's requested 0.05% rate of return on equity flotation adjustment to cover future stock issuance costs.

The Commission concludes that the rate of return on equity 0.05% flotation adjustment recommended by Aqua witness D'Ascendis is entitled to no weight and is denied. The uncontroverted evidence is that the ROE five-basis point adjustment would add \$346,000 to Aqua's revenue requirement over three years. However, Aqua's test year allocated flotation cost expense was only \$6,200. This over-recovery is grossly extravagant and is unjustified.

MYRP Adjustment

Regarding witness Hinton's proposed 20-basis point downward adjustment to reflect the reduced regulatory lag associated with a WSIP, the Commission is persuaded that this type of mechanism is prevalent across 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 the comparative risk reduction associated with a WSIP for Aqua in this case is zero. While there is not sufficient evidence in this docket to justify a discrete adjustment to the authorized rate of return on equity due to WSIP framework, the Commission has considered this testimony in the context of determining the appropriate authorized rate of return on equity.

Witness Hinton also discussed providing benefits to customers to balance the benefits received by Aqua from an MYRP as a justification for his 20 basis point MYRP adjustment. Tr. vol. 8, 82. The Commission notes that the stipulated ROE bands, which are capped at the allowed rate of return on equity, are much more favorable to the consumer than Aqua's proposed ROE bands, which extend 100 basis points above and below the requested rate of return on equity. The Commission determines that, in this regard, the Stipulation provides the meaningful benefit to customers intended by witness Hinton's MYRP adjustment.

Discussion and Conclusions

The Commission concludes that witness Hinton's DCF result of 9.03%, witness D'Ascendis's DCF result of 10.22%, and witness Hinton's RPM result of 9.94%, along with the 9.98% result of the same RPM methodology as calculated by witness D'Ascendis using slightly different inputs are credible, probative, and entitled to substantial weight. As a check method, the Commission accepts the results of witness Hinton's CEM model, as calculated by witness D'Ascendis.

The Commission gives little weight to witness D'Ascendis's RPM and CAPM models for the reasons set forth above and gives no weight to his model results utilizing projected interest rates and a non-utility proxy group.

The Commission notes that in Docket No. W-218, Sub 526, witness Hinton's cost of equity capital was 8.90%, a full 60 basis points below his recommendation in this rate case. Further, the Commission is mindful that the increase in Treasury yields since Aqua's prior rate case is significant, and as such, is a data point supporting the notion that the cost of capital in the economy has increased generally since that time.

In consideration of the foregoing, the Commission concludes that rates should be set in this proceeding utilizing an allowed rate of return on common equity for Aqua of 9.80% for the term of its MYRP. These determinations are supported by the substantial weight of the evidence in this proceeding. However, 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.

All parties in this proceeding had the opportunity to present the Commission with evidence concerning changing economic conditions as they affect customers. The testimony of witnesses D'Ascendis and Hinton, which the Commission finds is entitled to substantial weight, addresses changing economic conditions. Witness D'Ascendis testified that he reviewed state and national unemployment rates, unemployment rates in the counties served by Aqua, state and national Gross Domestic Product growth, state and national median household income, and total national personal income and consumption. Witness D'Ascendis observed that unemployment has fallen significantly since it spiked at the beginning of the COVID pandemic, 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. In addition, witness D'Ascendis testified about the current inflation environment, current market conditions, and his expectation that inflation will moderate towards 2%.

Witness Hinton testified regarding yields on debt, inflation, and the financial markets. Witness Hinton testified that the economy is experiencing a resurgence of inflation as compared to the last 30 years. He testified that while interest rates have risen across the yield curve, they have increased most dramatically for bonds with shorter maturities, indicating inflation expectations are greater in the short term relative to the longer term. Witness Hinton testified that as of September 1, 2022, the Federal Reserve Bank of Cleveland estimated the inflation rate over the next ten years to be 2.35%.

Based upon the general state of the economy and the continuing affordability of water and wastewater utility service, and after weighing and balancing factors affected by the changing economic conditions in making the subjective decisions required, the Commission concludes that an allowed rate of return on common equity of 9.80% will not cause undue hardship to customers as a whole, even though some customers will struggle to pay the increased rates resulting from this decision.

The Commission recognizes that Aqua is investing significant sums in system improvements to serve its customers, thus requiring Aqua 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 Aqua'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 Aqua 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 any level is not a guarantee to Aqua 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 Commission finds and concludes, based upon all the evidence presented, that the rate of return on common equity provided for herein will indeed afford Aqua 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. 64-68

Revenue Requirements

The evidence supporting these findings of fact is contained in the Stipulation, the direct and rebuttal testimonies of Aqua witnesses, the direct testimony and exhibits of Public Staff witnesses, Public Staff Settlement Exhibit 1, and the entire record in this proceeding.

The revenue requirements for Base Year and WSIP Rate Years 1, 2, and 3 reflected in Public Staff Settlement Exhibit 1 include the agreed upon O&M and rate base items, the Public Staff adjustments to the unsettled plant items detailed above, and the 9.3% ROE recommended by the Public Staff.

The revenue requirement increases in this proceeding are calculated for each rate division. The revenue increases for WSIP Rate Years 2 and 3 are capped to 5% as required by the WSIP Statute. Furthermore, both Aqua and the Public Staff calculated their respective recommended WSIP Rate Years 2 and 3 revenue percentage increase based on each rate division and limited it to the 5% cap rather than applying the 5% cap total combined company operations as required by the WSIP Statute.

Discussion and Conclusions

The Commission acknowledges that Aqua has in its Application applied the 5% statutory cap on a more stringent basis than that required by the WSIP Statute which was accepted by the Public Staff. The Commission concluded in its order issued on April 26, 2023, in Docket No. W-354, Sub 400⁴ (CWSNC Rate Order) that the 5% statutory cap on the amount of revenue increase for Rate Years 2 and 3 pursuant to N.C.G.S. § 62-133.1B is to be applied on a total company basis, not on a rate division level. However, the Commission accepts for purposes of this proceeding that Aqua has requested the stricter application of the 5% statutory cap by applying it on the rate division level. Therefore, the Commission finds and concludes it is reasonable to apply the 5% statutory revenue cap for WSIP Rate Years 2 and 3 on the rate division level for purposes of this proceeding and such treatment is not inconsistent with the Commission's determination in the CWSNC Rate Order nor does it indicate a change in the Commission's position on this matter since issuance of the CWSNC Rate Order on April 26, 2023.

Further, the Commission acknowledges that both Aqua and the Public Staff applied the 5% cap to service revenues rather than total operating revenues. The Commission finds this calculation to be appropriate and in agreement with the WSIP Statute. Subsection (c) of the WSIP Statute refers to "any rate adjustment" when establishing the parameters for the 5% cap. Service revenues is the component of the revenue requirement which specifically relates to the establishment of customers' rates. Thus, the Commission concludes that it would not be appropriate to apply the 5% cap to Aqua's miscellaneous revenues, which includes such revenues as antenna leases, new account fees, reconnection fees, and sale of utility property. The Commission notes that this treatment is also consistent with the CWSNC Rate Order.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 69-72

Service Improvement Project

The evidence supporting these findings of fact and conclusions is contained in Aqua's Application and corresponding NCUC Form W-1, Item 28; the testimony and exhibits of Aqua witnesses Becker, Packer, Kellett, and Melton; the testimony and exhibits of Public Staff witnesses Feasel, Boswell, Chiu, Hinton, Junis, Sun, and Zhang; the late-filed exhibits filed by Aqua and the Public Staff at the request of the Commission at the expert witness hearing; and the entire record in this proceeding.

⁴ See Order Approving Partial Settlement Agreement and Stipulation, Deciding Contested Issues, Granting Partial Rate Increase, Approving Water and Sewer Investment Plan, and Requiring Customer Notice, *Application by Carolina Water Service, Inc. of North Carolina for Authority to Adjust and Increase Rates and Charges for Water and Sewer Utility Service in All Service Areas of North Carolina and Approval of a Three-Year Water and Sewer Investment Plan*, No. W-354, Sub 400, at 48-54 (N.C.U.C. Apr. 26, 2023) (Commission's discussion of this issue).

Summary of the Testimony of Aqua Witness Becker

Aqua witness Becker testified “Aqua has and will continue to implement an enterprise resource planning software solution” referred to as its System (sic) Improvement Plan (SIP).” Tr. vol. 5, 51. He contended that Aqua believes it is “one of the last larger utility providers that has not implemented an enterprise resource planning solution.” *Id.* Witness Becker testified that Aqua has been on the Lawson financial platform since 1999 and on the Banner customer service platform since approximately 2007. Witness Becker contended that replacement of these two “dated systems is needed and is the primary investment goal of the SIP project.” *Id.* The SIP project will create a new business software platform for Aqua. Witness Becker further contended that Aqua’s “Lawson and Banner systems are reaching the end of their useful life; some of the functions will no longer be supported by the vendors who own and service the software.” *Id.*

Witness Becker contended that “SAP has several characteristics that are inherently attractive,” which include the ability to support a multi-company and multi-utility corporate framework, integration with other commercially sold software, and the ability to utilize custom developed applications. *Id.* at 52. Witness Becker asserted that Aqua began using the new platform at the beginning of 2022 so that the entire year would be on one platform. He testified that “[s]ignificant testing and training occurred prior to the end of the year and Aqua began using the platform starting January 2022.” *Id.* Witness Becker stated that this phase of the SIP project included financial reporting, purchasing, inventory, and time reporting.

On cross-examination, Aqua witness Becker testified that part of the SIP involves transitioning from Lawson to SAP and that Lawson was used for the Sub 526 rate case and is currently still used as a reference. *Id.* at 68. In response to cross-examination by the Public Staff, witness Becker testified that Aqua complied with the requirements of the Commission order issued on October 26, 2020, in Docket No. W-218, Sub 526 (Sub 526 Order). *Id.* The Public Staff further established that Paragraph 11 of the Sub 526 Order required Aqua to conduct a review of its then current procedures and policies for determining when projects are complete, in service, and booked to plant in service, and file Aqua’s findings with the Commission. *Id.* at 68-69. Witness Becker confirmed that pursuant to the Sub 526 Order, Aqua filed its findings on January 25, 2021, and the Public Staff filed its report on March 2, 2021. The Commission issued an order on March 30, 2021, which authorized Aqua to incorporate the accounting process to utilize the completed construction, but not classified functionality of its Power Plan, among other things. *Id.* at 69. Witness Becker testified that the process of transitioning to SAP occurred during 2021 and initiation may have occurred sometime in 2020 but he was not sure. *Id.* at 70.

Summary of the Joint Testimony of Public Staff Witnesses Boswell, Feasel, and Chiu (collectively, the Public Staff Accounting Panel)

The Public Staff Accounting Panel testified that they removed from rate base the costs in the present case for the SIP project. The Panel recommended the costs be included in a regulatory asset account to be recovered in a future rate case upon

completion of milestones set forth by the Public Staff WSIP Panel, with amortization over a period of 15 years beginning in the month the expenses for the project began, with no rate recovery of amortization expense until some future rate case. Tr. vol. 7, 177.

On cross-examination, the Public Staff Accounting Panel testified that amortization should begin when costs are initially incurred and, subject to approval by the Commission, a regulatory asset typically includes a return on the unamortized balance. *Id.* at 210. The Panel further testified that the recommendation includes a return on the unamortized balance. *Id.*

Summary of the Joint Testimony of Public Staff Witnesses Boswell, Hinton, Junis, Sun, and Zhang (collectively, the Public Staff WSIP Panel)

According to the Public Staff WSIP Panel, on November 13, 2018, Peoples Gas and Aqua America filed a joint application with the Pennsylvania Public Utility Commission (PAPUC) seeking approval for Aqua America to purchase, and gain control of, Peoples Gas. PAPUC Docket A-2018-3006061. Tr. vol. 8, 26. On June 26, 2019, Aqua America, Peoples Gas, and various third parties filed in the same docket a Joint Petition for Approval of Non-Unanimous, Complete Settlement Among Most Parties (PA Settlement). PAPUC4 Docket A-2018-3006061. The PA Settlement contained various commitments from Aqua America, Aqua Pennsylvania, and the Peoples Companies, including “a cost, benefit, timetable and rate impact analysis for implementation of the Peoples Companies’ SAP system” prior to implementation with further agreement such costs would not be considered a transition cost and thus recoverable through rates. PA Settlement at 20. The analysis was required to be submitted to the Office of Consumer Advocate, Office of Small Business Advocate, and PAPUC’s Bureau of Investigation & Enforcement prior to implementation of the SAP system. In supporting documentation, the PA Settlement parties contended that SAP implementation would provide benefits to Aqua Pennsylvania customers, including a fully integrated customer contact center system that would allow customer service representatives immediate access to customer information, additional communications channels, and an online portal. PA Settlement Appendix A at 27. On January 16, 2020, the PAPUC issued an Opinion and Order approving the Joint Petition as modified by the PA Settlement. 22 PAPUC Docket A-2018-3006061. *Id.* at 27.

The Public Staff WSIP Panel testified regarding concerns with respect to the costs that will be borne by Aqua customers and delays in the SIP timeline. For example, the anticipated fully integrated customer contact center system that would allow customer service representatives immediate access to customer information, additional communications channels, and online portal no longer appear to be ready by the start of 2023. *Id.* at 30. The Public Staff WSIP Panel testified that the systems have remaining useful lives, including Banner, which Aqua is still using and will convert to SAP for customer billing by the end of 2025, and Lawson, which “all future product development would be on their cloud product (version 11 and beyond) *after Spring 2026* and that no further software development would be done on any version prior to version 11.” *Id.* at 29-30 (emphasis added).

The Public Staff WSIP Panel 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.” *Id.* at 33. The Panel further testified that “[t]he 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,” and in some instances, Aqua takes as many as 44 days to close out its books from the prior month. *Id.* at 34.

According to the Public Staff WSIP Panel, the SAP system, the staff members using the SAP system, or some combination of the two are “incapable of timely and accurately tracking project costs, including AFUDC, as [projects] are completed” and this inability has “material implications for meeting the detailed reporting requirements of Commission Rule R1-17A(j) in a timely manner.” *Id.* at 36. The Public Staff WSIP Panel also testified that there were “significant and repeated delays” in the monthly closing process after Aqua’s transition to SAP. *Id.* at 37. The Public Staff Panel supported that argument with the table shown below:

	2021		2022	
Month	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 ⁵	20
Oct	11/5/2021	5		
Nov	12/7/2021	7		
Dec	1/18/2022	18		

Id. at 37-38.

⁵ Scheduled completion of the accounting closing process.

The Public Staff WSIP Panel further testified that the failed implementation of SAP “consistently delayed the filing of regulatory reports throughout 2022 and there is no indication [that those issues] will be resolved within a reasonable time.” *Id.* at 38.

The Public Staff WSIP Panel noted that the WSIP requires an annual earnings review, which requires that Aqua be capable of accurately and timely closing out its books. Additionally, the Public Staff WSIP Panel testified that they have seen “no evidence that the SAP implementation and associated problems will be resolved in the foreseeable future.” *Id.* The Public Staff WSIP Panel contended that adopting Aqua’s proposed WSIP without resolution of the accounting system issues will materially impact the ability of the Commission and Public Staff to undertake the earnings review, and the Public Staff wants to avoid a situation where a thorough earnings review is undermined by Aqua’s inability to provide accurate information within the required timeframe. *Id.*

According to the Public Staff WSIP Panel, the SIP and related projects, which include purchase and implementation of new SAP software and applications, encompass plant additions since the Sub 526 Rate Case through the duration of the Rate Years. *Id.* at 64. In summary, the Public Staff’s concerns include: the transition from Lawson and Banner has been accelerated due, at least in part, to the acquisition of Peoples Gas; Lawson has remaining useful life; the transition from Banner to SAP for customer billing has been delayed from the start of 2024 to the end of 2025; and there are no direct savings resulting from the projects. Based on the scope of work listed as part of the SIP or, either incorporated or avoided due to the SIP, the Public Staff recommended a total of \$7,095,415 since the last rate case through August 31, 2022, be removed from plant in service. In addition, the Public Staff recommended removal of estimated capital investment totaling \$3,488,758 for the first eight months of projected 2022 and \$3,791,010 during the Rate Years. *Id.* at 65.

On cross-examination, Public Staff witness Junis testified that SAP has not been proven to be useful in this rate case. He further testified that Aqua chose when to file this rate case, including to use a test year utilizing the previous Lawson system, and anticipated an update utilizing SAP, which is a completely different system. According to witness Junis, Aqua has represented, in testimony and responses to discovery, that it knew there would be problems and continue to correct the problems. *Id.* at 120. Witness Junis asserted that there was not open transparency from the very beginning of the general rate case. For example, in January 2022, Aqua deferred closing of blanket projects and in June 2022, prior to filing its application, Aqua deferred closing larger utility plant in service projects where costs were booked in both Lawson and SAP and Aqua performed manual accounting entries. *Id.* at 124-25. Public Staff witness Boswell testified that, “[h]istorically, whenever there is change in IT processes, as we all are aware, there can be some hiccups along the way,” however, “[t]he issues in this case is it appears that there weren’t just some and it wasn’t at the initial stage, but that we’re still having them today.” *Id.* at 126. When asked if the transition issue that Aqua has is more severe or unique to Aqua compared to other companies that have switched to SAP, witness Boswell testified that Duke Energy Carolinas and Duke Energy Progress switched over to SAP and did not experience the same issues as Aqua. *Id.*

On examination by the Commission, witness Junis testified that the SIP project would result in savings of \$16 million from Peoples' previous plan, and it would be a \$58 million increase for Aqua. *Id.* at 247. Witness Junis further testified that in December of 2019, the board of directors, prior to acquisition, made a joint decision that resulted in a plan where Aqua would pay more and Peoples would pay less than previously planned separately. *Id.*

On further examination by the Commission, witness Junis testified that it is the Public Staff's understanding from Aqua's data request response that Lawson would be supported through spring of 2026. *Id.* at 255.

On examination by the Commission pertaining to whether deferring all the expenditures from the SIP to a regulatory asset account would provide sufficient protection, witness Boswell testified that the Public Staff believes it would, even without the regulatory conditions. Tr. vol. 9, 78.

Summary of the Joint Rebuttal Testimony of Aqua Witnesses Becker, Packer, Kellett, and Melton (collectively, the Aqua WSIP Panel)

The Aqua WSIP Panel testified that after SAP went live on January 1, 2022, several transition items occurred that were related to recording and closing of capital activity on Aqua's books and, as a result, the capitalization effort to record capital project cost activity in Utility Plant in Service (UPIS) in 2022 was temporarily, but purposely, deferred to address several conversion issues and ensure the eventual proper recording of the assets. However, this deferral created a gap between what was happening on the ground in real time versus what was being recorded on Aqua's books. Aqua's WSIP Panel testified that its field operations and engineering teams continued with their utility capital project work and assets were continuing to be placed in service and in use for the benefit of its customers, but they were not yet being fully recorded on Aqua's books. Additionally, the witnesses testified that this part of the SAP implementation included new processes for their field workers, supervisors, and managers. According to the Aqua WSIP Panel, for a period, recurring blanket closings were postponed so Aqua could understand the issue better and make necessary corrections and capitalization of specific projects continued on a more sporadic basis as Aqua transitioned to the new system and corrections were made. Aqua waited to capitalize these projects until necessary corrections were in place and then made corresponding manual entries to ensure AFUDC and depreciation were properly accounted for. The Aqua WSIP Panel testified that "[t]his issue was unexpected but responsibly identified and resolved." Tr. vol. 11, 82. On October 6, 2022 (over nine months after switching to SAP and three months after filing the rate case application), Aqua shared information related to this issue with the Public Staff on a virtual call and explained the temporary process in place to address the issue. According to the Aqua WSIP Panel, Aqua explained that some programming modifications were in process to address the issues with timely capitalization of projects and that Aqua was experiencing an anomaly period of catch up due to the implementation of the new financial platform and new version of Power Plan. Aqua reinforced with the Public Staff that Power Plan continues to recalculate the AFUDC on a project back to the in-service date. This is

a standard feature within Power Plan and it has stayed the same. Aqua further explained that depreciation adjustments would be recorded to account for the appropriate in-service date. The Aqua WSIP Panel contended that this one element of SAP has seemed to create a large amount of skepticism on the part of the Public Staff, is a problem that is being dealt with, and has been and continues to be remedied; but it should not be the catalyst for disallowance of SAP or the WSIP, nor should it prompt a management audit of Aqua. *Id.* at 83.

The Aqua WSIP Panel testified that “[m]ost necessary corrections, along with enhanced training efforts, were completed by late summer and Aqua began to review projects in-service that were sitting in its Construction Work In Progress (CWIP) accounts pending capitalization to calculate the appropriate catch-up depreciation and any adjusting entries to correct AFUDC,” while “[s]ome of this work is still underway and refinements continue to be made.” *Id.* at 83-84. According to the Aqua WSIP Panel, in the last few months of 2022, Aqua started “catching-up” by capitalizing assets that had been placed in service in the field during prior months and this, along with other market conditions as noted in rebuttal below, are the primary reasons the Public Staff notes that Aqua only unitized (i.e., capitalized or recorded the project as an asset on Aqua’s books) \$12 million of utility plant in service (UPIS) for the period January through August 31, 2022, compared to the \$46 million that Aqua’s application estimated. The Aqua WSIP Panel contended that Aqua’s capitalization progress is evidenced by its \$32.7 million 2022 total increase in UPIS per the end of closing the books up through November 30, 2022. *Id.* at 84.

The Aqua WSIP Panel testified that it attempted to provide a reconciliation to the Form W-1, Item 28; however, the effort was, at least during this timeframe, complicated by the integration of SAP, because the Form W-1 Item 28 was built using the prior Lawson accounting system, related processes and nomenclature, which SAP replaced on January 1, 2022, and it included over 9,000 lines of detailed information. *Id.* at 87. The Aqua WSIP Panel further testified that because of the transition to SAP on January 1, 2022, the updates included in response to Public Staff Data Request 6, Question 6, were in a different format, including different coding and project naming conventions. Tr. vol. 11, 88. The Aqua WSIP Panel asserted that the “most important point Aqua seeks to make here is that the integration issues with SAP are being managed and worked through, as it was always known they would be,” and “[t]his is an unfortunate issue of timing, the effect of which is magnified by the spotlight on the new arena in which we litigate this rate case of first impression.” *Id.* at 89.

According to the Aqua WSIP Panel, during the conversion to the SAP financial system, Aqua was unable to accommodate status updates to the projects listed in the Item 28 requested on the Public Staff’s preferred schedule due to the lengthier close process during the transition to SAP. The Aqua WSIP Panel contended that, since SAP is a far more sophisticated, comprehensive, and robust financial system than Lawson, the month-end close process takes longer to process, at least at this time. Tr. vol. 11, 117.

With respect to the acquisition of Peoples Gas, the Aqua WSIP Panel asserts that Aqua filed for approval of the Peoples Gas acquisition on December 18, 2018, and closed on the transaction on March 16, 2020, almost three years ago. *Id.* at 125. Aqua Pennsylvania included direct testimony in the Peoples acquisition proceeding before the PPUC that it would be moving to an ERP platform with the acquisition of Peoples Gas and taking advantage of acquiring a utility that already had this type of platform (e.g., SAP, Oracle), but the decision to implement SAP was not something that Aqua Pennsylvania was forced into doing to reach a settlement agreement. The parties agreed it was a benefit of the transaction. *Id.* at 127-28. Regarding the heading of internal Aqua presentation materials that describe the purpose of SAP as to “significantly enhance customer service and meet the settlement goals,” the Aqua WSIP Panel surmised that the “Public Staff is taking this reference completely out of context.” *Id.* at 128. According to the Aqua WSIP Panel, without SIP, Aqua America would have had to implement SAP from scratch and would have spent significantly more than \$158 million over six years and 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. *Id.* at 130. The Aqua WSIP Panel asserted that the total cost of SIP to Aqua America is \$110,694,235 over six years, or \$18/year for each Aqua America customer (simple average and not the rate impact to customers). *Id.* at 130-31.

The Aqua WSIP Panel testified that prior to the Peoples Gas acquisition, Aqua was proactively and thoughtfully discussing the need to transition from Lawson and Banner to an enterprise resource platform such as SAP or Oracle and 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. They contended that it would be very risky to stay on a financial platform until the last possible date of vendor support, because 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 version 10 of Lawson software, the vendor would stop training new employees on that version of the software so it would be very difficult to get support going forward. Additionally, the Panel testified that Aqua was on version 10 of Lawson software, and, although there was a version 11, it was only offered via the cloud and Aqua would have had to do an entirely new implementation of Lawson to use it. *Id.* at 131.

The Aqua WSIP Panel testified that the two primary projects of the SIP are SAP Phase 1 and SAP Phase 2. They stated that SAP Phase 1 includes all of the accounting, financials, supply chain, time sheet and payroll related items. Phase 2 of SAP is the customer relationship and billing modules. They testified that Aqua implemented SAP as the financial platform (Phase 1) on January 1, 2022, as planned. The Aqua WSIP Panel commented that no one at Aqua – in Pennsylvania or any other subsidiary – has come off the Banner legacy system yet. They stated that Banner is still Aqua’s customer information system (Phase 2). The Aqua WSIP Panel testified that Peoples implemented SAP in 2011 and uses it both for the financial platform and their customer service. *Id.* at 127.

The Aqua WSIP Panel further testified that Aqua disagrees with the Public Staff’s proposed adjustment related to Aqua’s SIP and, in particular, SAP project costs, because

SAP is Aqua's financial platform, and it is used and useful. Aqua disagreed with the Public Staff's position to remove it from rate base. The Aqua WSIP Panel contended that "SAP is in service, functioning, and a necessary component of Aqua's operation, and is used and useful." Tr. vol. 11, 157. The Aqua WSIP Panel concluded that "the SIP project, including its major component of SAP, should not be removed; nor is it appropriate to create a regulatory asset," because "the move to SAP is necessary, reasonable, currently used and useful, and will benefit customers over the long term." *Id.* They further concluded that "Aqua is using SAP as is its financial platform," "SAP is in service, working, and is used and useful," and "[t]he Company will be embarking on the customer service upgrade." *Id.* at 158.

On cross-examination, Aqua witness Kellett testified that over 10,000 hours of training has been conducted in preparation for the SAP conversion, all 1,550 employees of the water and wastewater subsidiary companies were trained to prepare for SAP, including all Aqua North Carolina employees, and the official training period was from September to December of 2021. *Id.* at 184-85. When asked about the cost of training, witness Kellett stated that,

The training costs were packaged as part of the overall, what we call, organizational change management costs, which include stakeholder engagement, communication. Preparing for our conversion includes training, it includes, you know, job aids, materials. So I do not have a breakdown of the actual in-person and WebEx training portion, because it was part of the overall change in management cost.

Id. at 186.

When asked about savings Aqua contended could be achieved by having Peoples Gas staff assist in training, witness Kellett testified "I would say we saved time and cost from having to hire additional trainers and additional subject matter experts, because we were able to leverage the employees in our gas subsidiary to help." *Id.* at 186-87. In response to a subsequent question, witness Kellett acknowledged that Aqua also hired "external vendors to help with our technical implementation as well as organizational change management." *Id.*

On cross-examination, Aqua witness Packer testified that the issue "identified in January 2022 specifically dealt with functionality of our Enterprise asset management system of SAP" and "was corrected in June and effective for plant additions and closing starting in July of 2022." *Id.* at 188. He further testified that the second issue that was identified in June 2022 dealt with overhead allocation and, as of January 3, 2023, the issues had been resolved. *Id.* at 189.

On redirect examination, Aqua witness Kellett laid out a timeline starting in October 2018 when Aqua America announced the Peoples Gas acquisition. Aqua America brought in a firm in 2018 and had them prepare an assessment of what it would take to go to an ERP system for both financial and customer information. She testified that no

presumptions were made but they started the planning process at the beginning of 2019 and sent out a request for information (RFI). The RFI informed the business case presented to the Board of Directors in December of 2019. After Board approval, Aqua America issued an official request for proposals (RFP) in the first six months of 2020. In 2020, Aqua America closed the acquisition of Peoples Gas in March, signed a contract with a SAP vendor in June, and started the SIP project in September. *Id.* at 202-05.

Aqua witness Kellett testified that the service improvement program was budgeted for \$158 million over five years. She further testified that to build SAP without leveraging the experience and staff of Peoples Gas, the project would have cost approximately \$220 million, or an increase of 40 percent. *Id.* at 201-02.

Aqua witness Kellett testified to issues with the Lawson accounting system and the Banner customer information systems. She described Lawson as a nice product but stated that it was not sized, scalable, and functional to meet Aqua's needs anymore. Witness Kellett testified that only five to six utilities still use Banner, which was written for and is used by universities across the country and not specifically intended for utilities. *Id.* at 207-08.

On examination by the Commission, Aqua witness Kellett testified that SIP refers to service improvement project, which is a multiyear technology roadmap that has 29 different projects and SAP in one of those. *Id.* at 219-20. When asked about benefits, witness Kellett testified that: (1) in November of 2021, a call back feature was implemented; (2) a digital time-keeping system for employees; and (3) modifications to IVR options. *Id.* at 221-23. Speaking from the corporate level, witness Kellett testified "our numbers were 100 percent accurate at go-live, in terms of how much money do we have in our cash accounts; what do we have in each of our settlement and clearing accounts; what our trial balance is." *Id.* at 229.

On further examination by the Commission, Aqua witness Kellett testified that "the total cost of all projects for the Service Improvement Project for North Carolina, as we defined in the budget, is approximately \$10,848,035, which represents roughly 9.8 percent, right, of the overall project for the program." Tr. vol. 12, 10. To date, she stated that Aqua has spent \$7,832,121 for SAP phase one, as well as our new payroll system, our new timekeeping system, and some of the other projects, and roughly \$3,000,000 will be spent on phase two. *Id.* at 10-11.

In response to questions from the Commission concerning whether the time frame for the month-end closing process will become shorter going-forward, Aqua witness Packer stated that in both November 2022 and December 2022 Aqua completed the month-end closing process in 18 days. He commented that was a 100% improvement over the 44 days it took in the beginning of 2022. Witness Packer stated that Aqua will continue to refine the closing process. Tr. vol. 11, 230-31.

Based on the Updated Form W-1, Item 28, filed on March 31, 2023, Aqua seeks rate recovery of SIP and related projects costs as follows: (1) \$7,095,415 since the last rate case through August 31, 2022; (2) \$2,708,584 for the period of September through

December of 2022; (3) \$2,346,850 for 2023 in Rate Year 1; (4) \$766,250 for Rate Year 2; and (5) \$505,550 for Rate Year 3.

Discussion and Conclusions

Aqua witness Becker testified that the SIP project will create a new business software platform for Aqua. He stated that Aqua's Lawson and Banner systems are reaching the end of their useful lives and that some of the functions will no longer be supported by the vendors who own and service the software. Witness Becker testified that Aqua has been on the Lawson financial platform since 1999 and on the Banner customer service platform since approximately 2007. Witness Becker maintained that replacement of these two dated systems is needed and is the primary investment goal of the SIP project.

Witness Becker explained that Phase 1 of SAP replaces the Lawson program and provides software integration for accounting, financials, supply chain, time sheet, and payroll needs and Phase 2 of the project will replace the Banner program and will provide customer relationship and billing modules. In direct testimony, witness Becker stated that Phase 1 of SAP, went live in January 2022 and the conversion of Banner to SAP (Phase 2) is anticipated to occur at the end of 2023.

Aqua filed Updated Form W-1, Item 28, on March 31, 2023, and seeks rate recovery of the following SIP and related projects costs in the WSIP: (1) \$7,095,415 since the last rate case through August 31, 2022; (2) \$2,708,584 for the period of September through December of 2022; (3) \$2,346,850 for 2023 in Rate Year 1; (4) \$766,250 for Rate Year 2; and (5) \$505,550 for Rate Year 3.

The Public Staff WSIP Panel expressed numerous concerns related to the SIP, including: the transition to SAP caused delays in Aqua discovery responses and has not proven to be useful in this rate case proceeding; the transition from Lawson and Banner has been accelerated due, at least in part, to the acquisition of Peoples Gas by Essential; Lawson and Banner have remaining useful lives; the transition from Banner to SAP for customer billing has been delayed from the start of 2024 to the end of 2025; there are no direct savings resulting from the projects; Aqua customers in North Carolina would bear SAP costs that should be allocated to other jurisdictions; the new software did not allow Aqua to track spending on capital projects in a timely manner; Aqua would not be able to fulfill the WSIP reporting requirements of Rule R1-17A on a timely basis; and issues related to the reorganization of Essential which are pending before the Commission in other dockets should be decided before allowing SAP costs into rates in this proceeding.

The Public Staff removed from rate base the costs in the present case for the SIP project. The Panel recommended that the SIP costs be included in a regulatory asset account to be recovered in a future rate case upon completion of milestones set forth by the Public Staff WSIP Panel, with amortization over a period of 15 years beginning in the

month the expenses for the project began, with no rate recovery of amortization expense until some future rate case.

Based upon careful consideration of the entire record in this proceeding, the Commission reaches the following conclusions, as discussed in detail below, regarding the Service Improvement Project:

- (1) The Commission concludes it is appropriate for the SIP expenses incurred since the end of the last rate case through August 2022, in the amount of \$7,095,415, should be included in rate base with depreciation starting in the same month in which the costs were incurred. These project costs, which relate to Aqua's conversion of Lawson to SAP that were incurred through the historic test year capital update period should be included in establishing revenue requirements in the current rate case proceeding.
- (2) The Commission concludes that with respect to the additional SIP project costs which the Company is seeking recovery in Rate Years 1-3, that is, \$2,708,584⁶ for the period of September through December of 2022; \$2,346,850 for 2023 in Rate Year 1; \$766,250 for Rate Year 2; and \$505,550 for Rate Year 3, these project costs should not be allowed rate recovery in the present proceeding. Aqua should record these costs in a regulatory asset account, with amortization beginning in the month the expenses for the project are incurred and amortized over a period of 15 years, including a return on the unamortized balance, using the net-of-tax overall rate of return approved in this Order, with the ratemaking treatment of the unamortized costs to be addressed in a future rate case proceeding.

The Commission finds that Aqua has demonstrated the need for retiring the Lawson and Banner software. Lawson, which Aqua has used as its financial platform since 1999, and Banner, the customer service platform since approximately 2007, are outdated, losing vendor support, and in need of replacement. Aqua evaluated SAP along with other enterprise resource planning options and in a systematic and reasonable process chose SAP as the best fit for Aqua. Because Peoples Gas was already using SAP, Aqua was able to leverage the SAP knowledge, expertise, and experience from Peoples Gas to transition to SAP.

The Commission acknowledges that the transition issues for SAP created challenges for the Public Staff during its audit for this proceeding. Public Staff witness Junis testified that SAP has not been proven to be useful in this rate case. Witness Junis testified that Aqua chose when to file this rate case, including to use a test year utilizing the previous Lawson system, and anticipated an update utilizing SAP, which is a completely different system. According to witness Junis, the Company represented in testimony and responses to discovery that it knew there would be problems and that it continued to correct the problems. Aqua responded that transition issues are a normal

⁶ The bridge period is from September to December 2022.

part of deploying a major new software platform and Aqua took reasonable management action to minimize the disruptions. Aqua acknowledged that the transition issues were ongoing during the rate case investigation period.

The Aqua WSIP Panel testified that after SAP went live on January 1, 2022, several transition items occurred that were related to recording and closing of capital activity on Aqua's books and, as a result, the capitalization effort to record capital project cost activity in utility plant in service in 2022 was temporarily, but purposely, deferred to address several conversion issues and ensure the eventual proper recording of the assets. The Panel explained that this deferral created a gap between what was happening on the ground in real time versus what was being recorded on Aqua's books. The Panel stated that Aqua waited to capitalize these projects until necessary corrections were in place and then made corresponding manual entries to ensure AFUDC and depreciation were accounted for properly.

The Commission is concerned about Aqua's inability to provide timely and detailed updates on capital projects throughout 2022, and the data request responses from Aqua to the Public Staff disclosing the deferral of project capitalization. The Commission acknowledges that in the Stipulation, Aqua and the Public Staff agreed that Aqua will file quarterly reports with the Commission regarding the steps the Company is taking to modify its current system of verifying completion of plant to be used and useful and will also provide various information concerning manual accounting entries into the plant accounting software beginning with Q4 2022. According to the Stipulation, this quarterly reporting requirement will continue through Q4 of Rate Year 3 of the WSIP. The Commission finds that this period of oversight by the Public Staff during the WSIP will provide the Public Staff with valuable insight into how the new financial platform is performing in conjunction with the plant accounting software and whether all issues concerning the timing of project capitalization on Aqua's books are sufficiently resolved for the next general rate case proceeding.

The Commission finds that further refinement by Aqua of its month-end close process is required and further review by the Commission of the steps Aqua has taken to modify its current system for verifying completion of plant to be used and useful are necessary. The Commission acknowledges that the Aqua WSIP Panel testified that the issues raised by the Public Staff regarding the SAP transition have now been resolved; however, neither the Public Staff nor the Commission has any direct evidence that the SAP transition issues have been fully resolved. The Commission also acknowledges that witness Packer testified at the April 2023 hearing that for the months of November and December 2022, it took 18 days for Aqua to complete the month-end close process, which was a significant improvement over the 44 days it took for the month-end close process at the beginning of 2022. Although shorter month-end close time frames have recently been achieved by Aqua, the Commission finds that further refinement in Aqua's month-end close process is necessary for Aqua to complete the month-end closing time frame in the range of approximately 5-12 days, which was the time period prior to the conversion to SAP. Shorter month-end closing time frames are

necessary for Aqua to respond in a timely manner to Commission-required reporting and other regulatory matters as they arise.

The Public Staff expressed concerns that the new software did not allow Aqua to track spending on capital projects in a timely manner. The Public Staff WSIP Panel also expressed concerns that this inability will have material implications for meeting the detailed reporting requirements of Commission Rule R1-17A(j) in a timely manner. With respect to SAP integration issues that the Company is continuing to address, the Public Staff and the Commission will be apprised of whether such issues are fully resolved by the WSIP quarterly reporting requirements, the quarterly reporting agreed to in the Stipulation regarding Aqua's system of verifying completion of plant to be used and useful, and the WSIP annual earnings review. The Commission determines that recording a portion of the SIP project costs to a regulatory asset account for future review for rate recovery is reasonable as it allows for the Public Staff to review and for the Commission to confirm that all remaining issues with implementation of Phase 1 of SAP and any issues with implementation or transition of Phase 2 of the project are sufficiently resolved prior to receiving rate recovery from customers.

The Public Staff WSIP Panel testified that the transition from Lawson and Banner has been accelerated due, at least in part, to the acquisition of Peoples Gas by Essential. The Panel testified that on November 13, 2018, Peoples Gas and Aqua America filed a joint application with the PAPUC seeking approval for Essential to purchase, and gain control of, Peoples Gas. The Public Staff WSIP Panel stated that in supporting documentation, the PA Settlement parties contended that SAP implementation would provide benefits to Aqua Pennsylvania customers, including a fully integrated customer contact center system that would allow customer service representatives immediate access to customer information, additional communications channels, and an online portal. According to the Public Staff WSIP Panel, Aqua's SAP implementation is part of a larger SIP that is designed to significantly enhance customer service and meet the terms of the PA Settlement, which was entered into for the purpose of obtaining PAPUC approval of the transaction between Essential and Peoples Gas. 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 agreed it was a benefit of the transaction. Aqua stated that Peoples Gas has used SAP as its legacy system since 2011, and Aqua was able to leverage the SAP knowledge, expertise from Peoples Gas to transition from Lawson to SAP faster than if Aqua had to build a new SAP system from scratch.

Further, Aqua maintained that Banner is not being replaced because of a commitment to meet certain customer service metrics in Pennsylvania. Rather, Aqua contended 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.

During the hearing, 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 a request for information (RFI) in early 2019, followed by a request for proposals (RFP) in early 2020. Witness Kellett stated that Essential received four bids and then performed an exhaustive analysis of each bid to make the determination to purchase the SAP software.

The Commission finds that the purchase of the SAP software was conducted through an appropriate and thorough process to acquire an ERP that would deliver the services and results that Aqua needed. The Commission determines based on the testimony of the Aqua witnesses that Essential Utilities was going to move to an enterprise management system with or without the acquisition of Peoples Gas due to the age of the Lawson and Banner platforms and because these systems would no longer be supported by the vendor. Further, the Commission finds that leveraging the SAP knowledge and expertise from Peoples Gas to transition to SAP is beneficial to Aqua and its customers.

The Public Staff WSIP Panel testified regarding its concerns with respect to the costs that will be borne by Aqua customers and delays in the SIP timeline. The Panel stated that the fully integrated customer contact center system that would allow customer service representatives immediate access to customer information, additional communications channels, and online portal would no longer be ready by the start of 2023. The Panel testified that Aqua is still using Banner and conversion to SAP for customer billing has been delayed to the end of 2025. The Public Staff WSIP Panel expressed concern that Aqua water customers would be bearing substantial SIP costs for Peoples Gas compared to a stand-alone plan for Aqua. Aqua responded in rebuttal testimony that Aqua did not move capital costs to the water business. Aqua witnesses testified that Peoples Gas has had SAP functionality on both the financial platform and the customer service side for quite some time. The Aqua witnesses stated that without SIP, Essential 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 information technology plan using the assumption it would have to implement a technology platform from scratch. At the hearing, witness Kellett stated that if Aqua had to build SAP and all the associated systems from scratch, the estimated cost would be between \$200 and \$220 million.

The Commission notes that the Public Staff has not proposed an adjustment in the present rate case proceeding related to any inappropriate costs allocated to Aqua's North Carolina customers because of the Peoples Gas acquisition by Essential. However, matters pertaining to the acquisition of Peoples Gas by Essential are still pending before the Commission. The Commission acknowledges that the Stipulating Parties have agreed that they will work together in Docket No. W-218, Subs 570 and 571 to finalize regulatory conditions related to the Company's request for approval of an Affiliated Interest

Agreement between Aqua and Aqua Services, Inc., as the Company filed in Docket No. W-218, Sub 570, and its Verified Petition for Approval of Restructuring Pursuant to North Carolina General Statute § 62-111 (a) filed in Docket No. W-218, Sub 571. Thus, the Commission's decisions in this rate case proceeding to defer a portion of the SIP project to a regulatory asset for recovery in a future rate case will provide sufficient protections to customers until such time the regulatory conditions are finalized.

The Commission determines it is reasonable to postpone recovery of the SIP costs incurred during the bridge period and projected to be incurred during Rate Years 1-3, related to project costs because of the need for Aqua to continue to refine its accounting processes to fully alleviate the numerous problems with the conversion of Lawson to SAP such as those encountered by the Public Staff during its rate case investigation. Also, with respect to the capital costs incurred during the bridge period, these costs were not fully audited by the Public Staff in the present proceeding. Postponing recovery of the bridge period costs until the next general rate case proceeding will provide the Public Staff the opportunity to audit and challenge any of these costs it determines to be unreasonable, imprudent, or an improper allocation from Essential to Aqua North Carolina operations.

The Commission finds that it is reasonable and appropriate for Aqua to convert from Banner to SAP for review by the Public Staff in the next general rate case proceeding prior to obtaining cost recovery. The Public Staff's review of these costs in the next general rate case proceeding will ensure that the costs are reasonable and prudent and will ensure that Phase 2 has been fully implemented and is totally functional, operational, and providing benefits to customers. The Public Staff testified that the transition from Banner to SAP for customer billing has been delayed from the start of 2024 to the end of 2025. Further, the Aqua WSIP Panel testified that none of the Aqua entities, including Aqua Pennsylvania, have converted from the Banner platform. Banner is currently being used by all Aqua entities as the customer information system. Based on the delayed timeline for implementing Phase 2 of the SIP, the Commission is not convinced that these costs will be used and useful and providing benefits to customers during the WSIP period.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 73-89

PFOS and PFOA Projects

The evidence supporting these findings of fact and conclusions is contained in the Application and corresponding NCUC Form W-1, Item 28; the testimony and exhibits of Aqua witnesses Berger, Becker, Packer, Kellett, and Melton; the testimony and exhibits of Public Staff witnesses Houser, Feasel, Boswell, Hinton, Junis, Sun, and Zhang; the late-filed exhibits filed by Aqua and the Public Staff at the request of the Commission at the expert witness hearing; and the entire record in this proceeding.

Additional evidence is found in the form of recent announcements from EPA Administrator, Michael S. Regan, on March 13, 2023,⁷ 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). On March 29, 2023, the EPA published the proposed rule in the Federal Register.⁸ This action is not final and does not require any actions until after the EPA considers public input and finalizes the regulation. The EPA anticipates finalizing the regulation by the end of 2023.

Report on Customer Comments

In its Report on Customer Comments from Virtual Hearing Held on October 20, 2022, filed on November 9, 2022 (Virtual Hearing Report), Aqua addressed concerns raised by customers and provided context with regards to PFAS. Aqua explained that PFAS is currently considered an unregulated contaminant and is not regulated by the EPA or NCDEQ. Until the 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 through 2025 or the system previously participated in UCMR between 2013 and 2015. Aqua stated it is voluntarily monitoring its systems based on occurrence and environmental factors. Aqua stated that it is currently in litigation with the manufacturers of PFAS on behalf of its customers to mitigate financial harm that may result from future treatment requirements to address these contaminants.

In 2020, Aqua's parent company, Essential, established an internal company goal for PFOS, PFOA, and PFNA of 13 ppt based on what was one of the lowest state standards adopted at that time. Aqua has capital investments planned to address the systems identified through its water quality monitoring program that exceeded this internal limit.

In its Report on Customer Comments from Public Hearings in Wilmington on October 26, 2022, and in Gastonia on October 27, 2022, filed on November 15, 2022 (Wilmington and Gastonia Hearings Report), Aqua addressed concerns raised by customers and provided context with regards to PFAS, including an extensive explanation regarding PFAS contaminant levels, the regulatory oversight structure, and the regulatory differences between a Health Advisory Limit (HAL) and a maximum contaminant level (MCL). Aqua responded that MCLs do not currently exist for PFAS contaminants but Aqua anticipated the EPA would release a proposed MCL for PFOS and PFOA by year-end 2022. Aqua explained its expectation to install treatment for PFAS over the next several

⁷ Pre-Publication Federal Register Notice. Available at https://www.epa.gov/system/files/documents/2023-03/Pre-Publication%20Federal%20Register%20Notice_PFAS%20NPDWR_NPRM_Final_3.13.23.pdf.

⁸ PFAS National Primary Drinking Water Regulation Rulemaking: Preliminary regulatory determination and proposed rule; request for public comment; notice of public hearing. Available at <https://www.federalregister.gov/documents/2023/03/29/2023-05471/pfas-national-primary-drinking-water-regulation-rulemaking#addresses>.

years and that it does have filtration placeholders included within its multi-year capital plan to address systems that exceeded Aqua's internally adopted standard of 13 ppt, which was the lowest Essential state standard being utilized for PFAS contaminants at the time. Aqua further explained that it has voluntarily monitored all its public water systems and has established quarterly monitoring for systems exceeding the Aqua internal standard, or needing monitoring based on proximity to potential sources or environmental factors.

In response to the Wilmington area customers, Aqua stated it is actively engaged in monitoring the status of pending changes to the EPA regulations concerning PFAS contaminants so that Aqua can be positioned to make necessary operational and treatment changes required to provide water that meets all applicable standards to its customers.

Summary of the Prefiled Testimony of Public Staff Witness Houser

Public Staff witness Houser testified that PFOS and PFOA are chemical compounds that are part of the larger PFAS family of compounds. In 2020 Essential adopted a 13 ppt limit for PFOS and PFOA to align with the New Jersey MCL and Pennsylvania's proposed MCL. 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. Aqua plans to complete approximately ten PFOS/PFOA filtration projects in North Carolina, with estimated in-service dates between October 2022 and 2025. Witness Houser noted that the filters Aqua plans to install aim to achieve filtration to or below 10 ppt for PFOS and PFOA. Tr. vol. 6, 344.

During the evidentiary hearing, on January 10, 2023, witness Houser testified that the EPA and NCDEQ had not issued a MCL on PFAS compounds in drinking water, and that the current Interim EPA health advisories for PFOS and PFOA were 0.02 ppt and 0.004 ppt, respectively. According to witness Houser, the EPA noted in its June 2022 webinar that the minimum reporting level (MRL) is 4 ppt for both substances. The EPA issued a proposal to designate PFOS and PFOA as hazardous substances under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or "Superfund," on August 26, 2022. On page 16 of the EPA's proposed rule dated August 26, 2022, states:

The EPA Science Advisory Board is reviewing EPA's analyses, and therefore, the interim health advisories are subject to change. However, EPA does not anticipate changes that will result in health advisory levels that are greater than the minimum reporting levels. The interim health advisories are intended to provide information to states and public water systems until the PFAS National Primary Drinking Water Regulation takes effect.

Id. at 345-46.

Based on the excerpt above, Public Staff witness Houser stated, “it is likely that the final rule on PFOS and PFOA limits for drinking water will set limits near the current MRL of 4 ppt, which is less than one-third of the internal limit established by Essential.” Tr. vol. 6, 346.

The EPA states in its PFAS Strategic Roadmap that it plans to issue a final rule for PFOS and PFOA by Fall of 2023. The most recent primary drinking water rule update by the EPA was the Lead and Copper Rule Revisions, which was initially published on January 15, 2021, with an effective date of March 16, 2021, and a compliance date of January 16, 2024. Using this timeframe as a reference, Public Staff witness Houser stated that, “the EPA’s final rule on PFOS and PFOA compound may not have a compliance date until Fall of 2026, assuming it is released on time.” *Id.*

Public Staff witness Houser testified that the Public Staff understands the public’s concerns regarding PFOS and PFOA in drinking water; however, the Public Staff does not believe Aqua’s approach to addressing these substances is reasonable or prudent at this time, given that neither the EPA nor NCDEQ has issued final regulations, and Aqua’s planned projects may not achieve the limits ultimately set by those agencies. *Id.* at 346-47.

When asked by the Commission whether there were some “no regret” actions Aqua could take before MCLs are adopted in order to act quickly and cost-effectively, Public Staff witness Houser testified that, in North Carolina, Aqua’s five largest systems account for 33% of their customers, with a median number of 48 customers per system. He noted that this means that Aqua has 369 water systems with 48 or fewer customers. Witness Houser further noted that most of Aqua’s systems rely on groundwater. *Id.* at 372-75. He testified that Aqua will need to develop a holistic approach to compliance with the future MCL or MCGL including a combination of treatment, interconnections, and decommissioning. He noted that this cannot be done until Aqua knows how many systems need treatment based on the final regulation and how many customers are impacted. Tr. vol. 6, 375-76. In response to further questions by the Commission, witness Houser clarified that it would be prudent for Aqua to characterize the scope and extent of the issue before a final regulation is in place. *Id.* at 376-77.

In response to another question from the Commission about exposure to PFOS and PFOA, witness Houser testified that, for water, the EPA typically uses a relative source contribution of 20% and some industry presentations have stated 25% of the intake of PFAS comes from water and the other 75% from diet. *Id.* at 388-89.

Summary of the Public Staff WSIP Panel

The Public Staff WSIP Panel testified that the Public Staff recommends the Commission, at minimum, reduce the planned capital investment allowed for rate recovery through Aqua’s proposed WSIP as detailed in Aqua’s Form W-1, Item 28, including the removal of PFOS/PFOA filtration projects. Tr. vol. 8, 63. The Public Staff WSIP Panel echoed Public Staff witness Houser’s testimony that, while the Public Staff understands the public’s concerns regarding PFOS and PFOA in drinking water, it does not believe Aqua’s current plan for addressing these substances is reasonable or prudent

because neither the EPA nor NCDEQ has issued proposed or final regulations, and Aqua's planned projects may not achieve the limits ultimately set by those agencies. The Public Staff recommended removal of estimated capital investment totaling \$7,810,000 during the Rate Years.⁹ *Id.* at 65-66.

When asked by the Commission regarding whether there is a difference between the situation Aqua is facing with respect to PFAS and the situation that confronted electric utilities operating coal plants during the period prior to the adoption of the CCR Rule, Public Staff witness Junis indicated he believed they were different. Tr. vol. 9, 60. Witness Junis testified that the regulation of coal ash was complex and there were several issues that delayed regulation, including changes in federal government administrations. He noted that in the case of PFAS, there has been assessment by the EPA with one UCMR to collect data on PFOS/PFOA and another UCMR that expands the collection of data to 29 variations of PFAS. *Id.* at 61. Witness Junis maintained that the EPA is progressing through a regulatory process, and previously indicated that a proposed rule would be issued in December of 2022 and the standard would be finalized at the end of 2023. Witness Junis contended that an entire regulatory process must happen to establish an MCL for compliance purposes, and Aqua is proposing to act before this process is completed. *Id.* at 62-63.

Public Staff witness Junis noted that, in response to discovery and each of the ten line items or buckets of costs that address PFOS/PFOA in the Form W-1, Item 28, Aqua referenced the corporate goal of 13 ppt based on a New Jersey standard. When asked in discovery for the risk reduction of going from the levels Aqua is detecting to below 13 ppt, Aqua directed the Public Staff to the EPA, which has not completed its regulatory process. Witness Junis concluded the proposed projects have not been justified by a cost-benefit analysis. *Id.* at 63-64.

Witness Junis further testified there needs to be a holistic approach to PFOS and PFOA, but it is generally unknown how expansive the problem is, what the solutions are, and what is the risk reduction. Tr. vol. 9, 65-67. He referenced Aqua witness Berger's representation that PFOS and/or PFOA exceeds the corporate standard of 13 ppt but were detectable in over 300 entry points. *Id.* at 66. In response to discovery and the Form W-1, Item 28, Aqua proposed ten line items to address 30 entry points mitigated with treatment to a corporate standard of 13 ppt. *Id.* at 65. However, in her prefiled rebuttal testimony, Aqua witness Berger referenced treatment or other alternatives such as purchased water, deactivation, or drilling a new well. Aqua has not provided any detailed information regarding how it evaluated these alternatives nor a cost-benefit analysis to support its plan. *Id.* at 65-66. Witness Junis described the Brookwood service area as an example of the need for a holistic approach if a substantial number of the wells have concerning water quality. Witness Junis noted a majority of Aqua's Brookwood system is served by wells and is located to the south of the City of Fayetteville. He further noted

⁹ Based on Aqua's modification of the projects for the bridge period of September through December of 2022, and parts of Rate Year 1 (2023) proposed in its Form W-1, Item 28 of the WSIP, the Public Staff recommends removal of estimated capital investment for PFOS and PFOA projects in the amount of \$353,928 in 2022, \$2,150,000 in 2023, \$2,900,000 in 2024, and \$2,300,000 in 2025.

that another portion of Brookwood is served by Aqua with purchased water from the City through the water main that runs through the portion of Brookwood supplied by wells. Witness Junis suggested purchased water or other alternatives to treatment of the wells need to be analyzed for Brookwood and he raised concerns about Aqua determining treatment for individual entry points in a vacuum instead of performing a holistic evaluation after determining how many and which systems are impacted. *Id.* at 65-67. Witness Junis further testified that “[t]here are a multitude of options that we have not seen an analysis from Aqua to support immediate action” and “[t]hat does not mean that they cannot start planning.” Tr. vol. 9, 67. With continued improvements in testing technology, concentrations are being detected at lower and lower levels, but there is not a proper risk assessment to quantify the incremental benefits of varying levels of treatment effectiveness. *Id.*

With regard to funding projects, Witness Junis testified that prospective cost recovery in rates should be denied because of the unknowns he described and because there is no true-up mechanism in the WSIP to prevent Aqua from receiving federal or state funding for the same projects and thereby being compensated twice. Witness Junis strongly supported planning and seeking funding. He noted that the Division of Water Infrastructure Funding Program has not incorporated federal Infrastructure Investment and Jobs Act (IIJA) funding yet and anticipated implementation as part of the spring 2023 application period, but that does not prevent Aqua from seeking funds. *Id.* at 68. Witness Junis also testified that both Carolina Water Service of North Carolina, Inc. (CWSNC) and Aqua, as part of the rulemaking proceeding, provided comments that the unplanned emergencies clause of the WSIP Statute could be utilized to address PFOS and PFOA if a standard is established. He contended that this is another reason it is not necessary to approve prospective cost recovery. *Id.* at 68-69.

Witness Junis testified that in the water industry, there are still many unknowns regarding PFOS and PFOA. *Id.* at 69-70. He noted there are a number of questions related to scope – the number of entry points, treatment goal, quantification of risk reduction, and cost-benefit analysis – that remain unanswered and are an impediment to a holistic and cost-effective approach. *Id.* at 71. Witness Junis concluded that Aqua’s ten buckets (or projects) related to PFOS and PFOA in the proposed WSIP lack the level of detail necessary to make a determination that they are “reasonably known and measurable” as required by the statute. *Id.* at 73.

Summary of the Rebuttal Testimony of Aqua Witness Berger

Aqua witness Berger prefiled rebuttal testimony on December 19, 2022, at which time the EPA and NCDEQ had not established a MCL – or enforceable standard – for PFAS compounds in drinking water. The EPA issued a PFAS Strategic Roadmap on October 18, 2021. Tr. vol. 10, 32. The document outlined the EPA’s strategy to address PFAS compounds by developing final toxicity assessments, establishing national primary drinking water regulations, or MCLs, for PFOA and PFOS, designating certain PFAS substance as hazardous under CERCLA regulation, and finalizing risk assessment for PFOA and PFOS in wastewater biosolids. The EPA has 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. Aqua witness Berger testified that, “the proposed MCL is 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 – for PFOS and PFOA of 4 parts per trillion (ppt).” *Id.* at 33. In June 2022, the EPA also lowered the HAL for PFOS and PFOA from a combined 70 ppt to 2 parts per quadrillion (ppq) for PFOS and 4 ppq for PFOA. Witness Berger opined that, “[w]hile a HAL is not an enforceable standard by the EPA or NCDEQ, the average consumer interprets this value to mean anything greater than the HAL could be a health concern.” *Id.*

Aqua witness Berger testified the Bipartisan Infrastructure Law (BIL) will provide the EPA with \$4 billion over five years through the Drinking Water State Revolving Fund (DWSRF) and \$5 billion over five years for small or disadvantaged communities. The EPA has stated it is currently working to assist states in the implementation of their programs.

Witness Berger further testified that Aqua performed a survey of over 1,300 entry points between 2019 and 2020 and placed all entry points that exceeded 13 ppt for PFOS, PFOA, and/or PFNA on quarterly monitoring, similar to regulation under the Safe Drinking Water Act, and a Running Annual Average (RAA) was calculated for these sites. Essential adopted a 13 ppt limit in 2020 to align with the New Jersey MCL and Center for Disease Control minimal risk level for children at the time. Entry points that demonstrated a RAA greater than 13 ppt were identified in the Capital Improvement Plan (CIP) for filtration within five years. Witness Berger further testified that Aqua has identified 30 entry points that have consistently exceeded Essential’s adopted limit of 13 ppt and prioritized those sites for treatment or other alternatives to be in service by year-end 2025. She also testified that these sites are the highest priority and will likely require filtration after the EPA establishes an MCL, which she expected to be well below 13 ppt. *Id.* at 34.

Aqua witness Berger contended that Public Staff witness Houser’s testimony inaccurately stated that Aqua plans to complete ten PFOS/PFOA filtration projects with estimated in-service dates between October 2022 and 2025.¹⁰ She asserted that Aqua has identified 30 entry points that exceed the Essential standard of 13 ppt and that each of these entry points has been prioritized for treatment or other alternatives, such as purchase water, inactivation, or possibly drilling a new well, through year end 2025. *Id.* at 36-37. She also took issue with witness Houser’s testimony that the Essential standard of 13 ppt was anticipated to be three times the proposed MCL and asserted that he did not provide any commentary on sites that fall between 13 ppt and the anticipated MCL of 4 ppt. *Id.* at 37-38. Witness Berger represented that PFOS and/or PFOA were detected in over 300 entry points throughout Aqua’s inventory with a minimum detection level of 2 ppt and that Aqua would perform follow-up sampling on each of these sites to confirm that the detection is not a result of environmental or sampling technique influences. Tr. vol. 10, 38.

Aqua witness Berger also testified that because many of the sampled sites had confirmed detections, the CIP will require modification for Aqua to achieve compliance by

¹⁰ Form W-1, Item 28, lists ten PFOS/PFOA filtration projects with estimated in-service dates between October 2022 and 2025.

the end of the compliance period, which is anticipated to be in 2026. Witness Berger contended the reasonable and prudent path is to address the knowns – 30 entry points that exceed 13 ppt – while working to confirm, plan, and pursue federal funding where possible for multiple other projects that will be required in the next five years. *Id.*

Witness Berger also took issue with the testimony of Public Staff witness Houser, that Aqua’s aim is to achieve filtration to or below 10 ppt. She acknowledged that Aqua worked with its filter vendor to complete a pilot project at one location in 2022 with a treatment efficiency of 10 ppt or less; however, she testified that project utilized a new technology and, at the time of design, 10 ppt was sufficient to meet Aqua standard. She further asserted that while recognizing that a proposed MCL of 4 ppt is detectable PFOS and/or PFOA, Aqua’s aim is that all future treatment will be based on treatment and operational goals of non-detect, including treatment for the projects currently identified in the CIP and for any future projects that result from Aqua’s ongoing sampling program. *Id.*

On examination by the Commission, witness Berger testified that Aqua is pursuing treatment for 28 of the 30 entry points with concentrations of PFOS or PFOA above the Essential standard of 13 ppt while continuing to evaluate an entry point in a system that is paralleled by another utility and a well that is currently not in service for deactivation. Tr. vol. 10, 87-88. Witness Berger also testified that Aqua’s treatment goal is no longer below 10 ppt but, rather, is non-detect for all future PFOS and PFOA projects due to the regulatory shift within the past six months. *Id.* at 89-91. Regarding whether it is reasonable for Aqua to proceed now with treatment, witness Berger contended that Aqua needs to address it now because the EPA is statutorily required to announce an MCLG and an MCL or treatment technique by March 3, 2023. However, the exact date of promulgation and the compliance deadline is still in question. *Id.* at 91. Witness Berger contended that if Aqua waits until 2025, 30 sites that require some level of treatment or alternative by 2026 or 2027 will necessitate a “huge capital expenditure in a very short amount of time.” *Id.* In summation, witness Berger testified that Aqua should “do something now, while we continue to expand our knowledge of the gravity [sic] of the situation and then further enhance our capital plan.” *Id.* at 92. Witness Berger testified that treatment for the approximate 30 entry points would be “no-regrets investments.” *Id.* She explained that the treatment techniques Aqua is proposing are known treatments that have been available for some time, such as activated carbon or ion exchange, and are listed as best management practices in the EPA’s rules. *Id.* at 93.

Summary of the Aqua WSIP Panel

The Aqua WSIP Panel testified that Aqua disagrees with removing \$7.8 million of PFOS/PFOA treatment from rate base and the issue is addressed in more detail in Aqua witness Berger’s rebuttal testimony. Tr. vol. 11, 158. The Aqua WSIP Panel contended that Aqua has and continues to provide its best efforts to protect public health, and despite what is currently deemed as an MCL in North Carolina, there is increasingly concern by the EPA and other health officials over this emerging contaminant. The Aqua WSIP Panel asserted that Aqua will be required to install filters for these contaminants and the sites identified are highly likely to far exceed the assumed final MCL set by the EPA. The Aqua

WSIP Panel further testified that Aqua will continue moving forward with the design, permitting, and installation of PFOS/PFOA treatment, which Aqua indicated is planned to meet expected EPA PFOS/PFOA regulation. The Aqua WSIP Panel noted that in the Public Staff's Joint WSIP testimony indicated that the Commission has authority in the next general rate case to disallow costs, prospectively, related to capital included in a WSIP that is later determined to be imprudent and, in the meantime, these projects, upon completion, will also be subject to future review should the Public Staff want to challenge their prudence. *Id.* at 158-59.

Discussion and Conclusions

Based upon careful consideration of the entire record in this proceeding and the developing regulations, the Commission reaches the following conclusions discussed below regarding the important and complex issues surrounding PFAS.

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, since the expert witness hearing in this proceeding, on March 14, 2023, the EPA released a proposed rule to establish legally enforceable levels for six PFAS, including PFOS and PFOA, at limits lower than Essential's internal policy. In 2020, Essential adopted a 13 ppt limit for PFOS and PFOA to align with the New Jersey MCL, which was the most stringent standard within Essential's footprint at time of adoption of its internal policy. Aqua witness Berger testified at the expert witness hearing that Aqua's treatment goal is now non-detect for all future PFOS and PFOA projects because of recent information provided by the EPA concerning the PFOS and PFOA current interim health advisory levels and the minimum reporting level. Public Staff witness Houser testified that it is likely that the final rule on PFOS and PFOA limits for drinking water the EPA will set limits near the minimum reporting level established in the summer of 2022. In its proposed regulation released in March of 2023, the EPA recommended a threshold of 4 ppt.

Between 2019 and 2020, Aqua performed a survey of over 1,300 entry points and placed all entry points that exceeded 13 ppt for PFOS, PFOA, and/or PFNA on quarterly monitoring and a Running Annual Average was calculated for these sites. Aqua identified 30 entry points that have consistently exceeded Essential's adopted limit of 13 ppt and prioritized those sites for treatment or other alternatives to be in service by year-end 2025. Of the 30, one is paralleled by another utility, and another is currently not in service. For the remaining 28 entry points, Aqua has been unable to find alternative sources other than treatment for PFAS. The Commission finds that Aqua's proactive, studied approach to the PFAS issue has placed Aqua in the position to refine its program as necessary to effectively deal with the final EPA rule regarding PFAS.

The Commission finds that it is prudent and necessary for Aqua to address the public health risks of PFOS and PFOA on both a current and a forward-looking basis. The recent issuance by the EPA of its proposed rule to establish legally enforceable levels for six PFAS at limits lower than Essential's policy supports this finding. The Commission determines that it would be imprudent to wait for an 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 earlier this year.

The Public Staff contests Aqua's approach to addressing these substances now and including proposed treatment projects in Aqua's WSIP, principally because neither the EPA nor NCDEQ has issued final regulations. The Public Staff testifies that because final regulations and compliance dates are not actually in force at the time of its testimony, it believes Aqua's planned projects "... may not achieve the limits ultimately set by those agencies." Aqua witness Berger testified that Aqua believes its pending treatment protocol will be sufficient to reduce the levels of PFOS and PFOA to or below 10 ppt. More importantly, witness Berger made clear in responses to questions from the Commission that the filtration efforts Aqua will undertake going forward are expected to bring the levels down to "non-detect," which is essentially at or below 4.0 ppt.

The Public Staff contends that because the final legally enforceable levels and compliance schedule are unknown at this time and could significantly impact the scope of the issue and potential solutions, it is not possible for Aqua to come up with a holistic plan shown to be cost-beneficial to customers. The Public Staff further contends that Aqua's plan was formulated for 30 entry points identified based on Essential's policy and that number would potentially balloon to over 300 entry points based on the proposed regulation and would materially change the calculus for formulating a plan of action. The Public Staff maintains that Aqua's proposed plan of ten PFOS/PFOA treatment "projects" is not definitive and Aqua's rebuttal testimony was even less definitive, stating the 30 entry points are prioritized for treatment or other alternatives, such as purchase water, inactivation, or possibly drilling a new well.

The Commission finds that Aqua is operationally and managerially responsible for determining the methodology to lower the level of PFAS in its drinking water in accordance with known information at the time and emphasizes that Aqua's decisions and spending regarding capital projects approved in the WSIP will be subject to a review for reasonableness and prudence in Aqua's next general rate case. Aqua has developed a plan for addressing the PFAS issue that starts with the 30 entry points that Aqua identified as Aqua's highest priority sites because they consistently exceeded the 13 ppt internal company standard. Aqua has prioritized these sites for treatment or other alternatives to be in service by year-end 2025. Aqua testified that the filtration efforts Aqua will undertake going forward are expected to bring the levels down to "non-detect," which is essentially at or below 4.0 ppt, the EPA's currently proposed standard. Based on information known at this time, the Commission determines it is appropriate for Aqua to proceed to lower the level of PFAS in its drinking water simultaneously with EPA's process of finalizing the enforceable standard.

When asked by the Commission whether there is a difference between the situation Aqua is facing with respect to PFAS and the situation that confronted electric utilities operating coal plants during the period prior to the adoption of the Coal Ash Combustion Rule, Public Staff witness Junis indicated he believed they were different. He

testified that the regulation of coal ash was complex and there were several issues that delayed regulation, including changes in federal government administrations. Witness Junis contended that in the case of PFAS, the EPA is progressing through a regulatory process, and a proposed rule was expected to be issued in December of 2022, with the standard anticipated to be finalized at the end of 2023. Witness Junis concluded there is an entire process that must happen to establish an MCL for compliance purposes, and Aqua is proposing to act to treat the level of PFAS in its drinking water before the EPA's process is completed.

Public Staff witness Junis noted that the North Carolina Division of Water Infrastructure is anticipated to incorporate federal IIJA funding as part of the spring 2023 application period. In November 2022, in Docket No. M-100, Sub 164, the Commission directed North Carolina utilities to take all reasonable and prudent actions to obtain, directly or indirectly, federal grants, low interest loans, or other benefits available under the IIJA to benefit North Carolina retail customers by enhancing the utilities' ability to provide adequate, reliable, and economical utility service. The Commission observes that, subsequent to the evidentiary hearing on May 10, 2023, Aqua filed its first report in Docket No. M-100, Sub 164, providing, among other things, an update on Aqua's efforts to obtain funding under the IIJA. In its report, Aqua stated that Aqua has filed two applications requesting project funding (via grant and/or loans) for \$3,375,675 from NCDEQ Division of Water Infrastructure by the May 1, 2023 application due date. Aqua further stated that one application requested \$2,343,800 for the installation of treatment systems for PFOS/PFOA at four wells of concern located in its Brookwood service area and the second application requested \$1,031,875 for the mitigation of PFOS/PFOA at two wells in Aqua Wyntree and Willow Hill service areas. Aqua commented that Wyntree will be provided with treatment for both PFOS/PFOA and iron and manganese, and Willow Hill will be interconnected to an adjacent water system.

The Commission directs Aqua that its ongoing efforts to obtain state and federal funding should include, as reasonable and appropriate, working with entities that are direct recipients of funds that public utilities are not able to receive directly. Aqua should also continue its pursuit of litigation with the manufacturers of PFAS on behalf of its customers.

The Commission acknowledges that no adjustment has been proposed by Aqua in the present proceeding to reflect the benefits to customers of Aqua receiving funding assistance from available sources, if approved. Witness Berger testified that Aqua's current plan is for Aqua to address the 30 entry points that exceed 13 ppt while working to confirm, plan, and pursue federal funding where possible for multiple other PFOS/PFOA projects that will be required in the next five years. The Commission acknowledges that Aqua is complying with the directive given in November 2022, in Docket No. M-100, Sub 164, that North Carolina utilities take all reasonable and prudent actions to obtain, directly or indirectly, federal grants, low interest loans, or other benefits available under the IIJA to benefit North Carolina retail customers. The Commission finds that the amount and timing of the receipt of any federal or state assistance to Aqua related to PFOS/PFOA projects included in the WSIP is unknown at this time due to the investigation period necessary for Aqua to identify available funding opportunities for

these specific capital projects. Additionally once funding opportunities are identified by Aqua, the required applications must then be completed, processed, and approved before Aqua would receive the funding. For this reason, the Commission determines that the PFOS/PFOA capital projects approved for the WSIP period should be reduced from the levels requested by Aqua.

The Commission determines that the PFOS/PFOA projects costs of \$353,928 incurred by Aqua in the last quarter of 2022 and a portion of the total costs projected by Aqua, which is \$3,974,325 for Rate Years 1-3 are reasonable and appropriate for approval as part of the WSIP capital projects. The Commission further concludes that the total amount of \$4,328,253 for PFOS/PFOA capital projects approved herein should be included for purposes of calculating WSIP revenue requirements in the following Rate Years: Rate Year 1: \$ 1,328,253; Rate Year 2: \$1,500,000; Rate Year 3: \$1,500,000.

Further, the Commission determines that Aqua should establish a regulatory liability on its books for review in Aqua's next general rate case proceeding to accumulate any actual federal or state funding benefits received related to PFOS/PFOA capital projects in excess of the \$3,375,675 for which Aqua applied to NCDEQ by the May 1, 2023 due date as well as any other federal or state funding received for capital projects included in the WSIP. To the extent that Aqua does not receive approval by NCDEQ for any portion of the \$3,375,675 in requested funding, because this estimated amount has reduced revenue requirements for the WSIP period, Aqua may record the difference between the actual amount of funding realized and the amount estimated to be received herein to a regulatory asset account for consideration for rate recovery in a future general rate case proceeding.

In addition, the Commission determines that Aqua should establish a regulatory liability account to accumulate any settlement funds received from its current litigation with the manufacturers of PFAS for review in Aqua's next general rate case proceeding.

The Commission finds that Aqua should monitor the progress of the EPA's proposed regulation, which is anticipated to be finalized in late 2023, and continue to evaluate, analyze, and plan for the appropriate treatment options and alternatives to comply with the EPA's new proposed MCLs for PFOA and PFOS once finalized. If necessary, Aqua may, under the provisions of N.C.G.S. § 62-133.1B(c), petition the Commission for consideration of unplanned emergency capital investments for PFOS/PFOA treatment required based upon the EPA's final regulation, the results of Aqua's efforts to obtain state and federal funding for PFOS/PFOA projects, and the settlement proceeds, if any, from its current litigation with the PFAS manufacturers. The Commission acknowledges that witness Junis testified, both CWSNC and Aqua, as part of the WSIP rulemaking proceeding, provided comments that the unplanned emergencies clause of the WSIP Statute could be utilized to address PFOS and PFOA if a standard is established during a WSIP period. Section 62-133.1B(c) provides in part that, "[u]pon a petition to the Commission, the Commission may consider the addition of unplanned emergency capital investments that must be undertaken during a plan term to address risk of noncompliance with primary drinking water or effluent standards. . . even if such

expenditures would cause the above-referenced cap to be exceeded.” In the joint filing made by CWSNC and Aqua on March 1, 2022, the Companies state, “[c]ircumstances that could legitimately trigger the utility to file a petition would include. . .material changes to primary water or sewer treatment standards such as PFAS/PFOA” and “[t]he utility would effectively be required to complete the capital investment in order to remain compliant with primary drinking water or effluent standards.”

Finally, the Commission will require Aqua to file annual reports providing the status of the EPA proposed regulation and final approved requirements; indirectly the receipt of any federal and state funding for any capital projects included in the WSIP; the status or outcome of litigation against the manufacturers of PFAS; and the status of Aqua’s progress towards PFAS mitigation, including project cost estimates by year.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 90-92

Conservation Pilot Program

The evidence for these findings of fact is contained in the verified Application; the prefiled and evidentiary hearing direct testimony of Aqua witness Haddad; the direct evidentiary hearing testimony of Aqua witness Gearhart; the prefiled and evidentiary hearing testimony of Public Staff witness Darden; and the prefiled and evidentiary hearing rebuttal testimony of Aqua witness Franceski.

Summary of Aqua Witness Haddad’s Prefiled Direct Testimony

Aqua witness Haddad testified that finding of fact 12 of the Commission’s Order of October 26, 2020, issued in Docket No. W-218, Sub 526, directs Aqua to (1) establish and implement a Conservation Rate Pilot Program (Pilot) and (2) use the data the Pilot produced to inform development of future rate structures. Witness Haddad testified that the Pilot was to last “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.” Tr. vol. 5, 131-32. Witness Haddad stated that the Pilot had only been in place for one full irrigation season when Aqua filed its Application and the results thus far are insufficient and cannot be adequately utilized for the development of future rate structures. *Id.* at 132. Witness Haddad stated that Aqua is requesting continuation of the previously approved Pilot and revenue reconciliation component so that Aqua can use the results of its Pilot to inform future rate structures. *Id.*

Summary of Aqua Witness Haddad’s Testimony in Response to Cross-Examination

In cross-examination, Witness Haddad stated that Aqua would like to continue the Pilot and related revenue reconciliation component through the end of the 2023 irrigation season so Aqua will have enough data to inform future rate structures. He testified that Aqua is not seeking to use the Pilot through 2025 and that references to continuing the Pilot beyond the 2023 irrigation season in his prefiled direct testimony were errors.

Witness Haddad stated that customers were due a credit for the first year of the Pilot because of higher customer usage. Tr. vol. 5, 144. He stated Aqua's filing did not include an analysis of usage for the second year of the Pilot because information about the 2022 irrigation season was not available when Aqua's Application was filed.

Summary of Aqua Witness Gearhart's Direct Testimony in Response to Questions from the Commission

Aqua witness Gearhart provided testimony about the Pilot in response to questions from the Commission. Witness Gearhart testified that Aqua received information about the 2022 irrigation season while the evidentiary hearing was underway. Witness Gearhart further testified that the average consumption for the 2022 irrigation season was 2.7% below the baseline established for the Pilot. Tr. vol. 5, 218. Aqua provided 2022 usage data in Late-Filed Hearing Exhibit 5.

Summary of Public Staff Witness Darden's Prefiled Direct Testimony

Public Staff witness Darden testified that the Public Staff opposes Aqua's request to continue the Pilot because (1) Aqua has data for two irrigation seasons, which satisfies the data collection requirement the Commission established in the Sub 526 Rate Case; (2) the two irrigation seasons of usage data are sufficient to complete Aqua's analysis; (3) the Pilot would last more than five years if Aqua's request for a WSIP is approved, which violates the duration limitation the Commission established in the Sub 526 Rate Case; and (4) the Pilot further complicates metric reporting and the earnings test required as part of the WSIP, should Aqua's request be approved. Tr. vol. 7, 39-41. Witness Darden also testified that the Public Staff continues to have concerns about the practicability, fairness, and value of the Pilot Program. *Id.* at 40.

Witness Darden stated that the Public Staff recommends that the Commission deny Aqua's request to continue the Pilot and direct Aqua to use the data collected between October 26, 2020, and the issue date of the Commission's final order in this proceeding (which encompasses be over two years of data) to complete its analysis. *Id.* at 39-40.

Summary of Public Staff Witness Darden's Testimony in Response to Cross-Examination, Questions from the Commission, and on Redirect

In response to cross-examination in reference to the time period over which Aqua would be able to collect data for the Pilot, witness Darden stated that Aqua will be able to collect data through the date on which new rates are implemented in this rate case. Tr. vol. 7, 51. Witness Darden confirmed that the Public Staff is concerned with conservation and noted that the purpose of the Pilot has changed since it was originally approved. She stated that the presence of a multi-year rate plan creates implementation issues tied to changing rate design in the middle of a rate year. Witness Darden stated that the original purpose of the Pilot – to propose a new rate design for all customers – will be very difficult to implement in the middle of a WSIP. She stated that there would be issues with customer notice and

questioned whether customers would be shifted back to uniform rates or subject to a new proposed rate design at the conclusion of the Pilot. *Id.* at 53.

Witness Darden testified that when the Pilot was initially proposed, the Public Staff had concerns about whether the systems chosen for the Pilot were representative of Aqua's customer base as a whole. Witness Darden stated that the Public Staff continues to have concerns about Aqua's ability to accurately extrapolate the results of the Pilot to its entire customer base. *Id.* at 56-57.

In reference to the Commission's question asking whether the Public Staff had seen any of its original concerns with the Pilot come to fruition, witness Darden stated that the Public Staff had not been provided with the 2022 data that Aqua witness Gearhart referenced on the stand. She stated that the purpose of the Pilot is unclear. The impact and value additional data will have on any conclusions drawn from the Pilot are also unclear because the customers participating in the Pilot are not a representative sample of Aqua's customer base. Similarly, witness Darden stated that the Public Staff does not believe additional data will lead to conclusive results because the systems chosen to be part of the Pilot are not representative of Aqua's entire customer base. *Id.* at 76. Witness Darden confirmed that the Public Staff's position in this proceeding is consistent with its position in the Sub 526 Rate Case. *Id.* at 60. She further testified that neither Aqua nor the Public Staff had reached out to the other to discuss the Pilot. *Id.* at 82. In addition, she confirmed that Pilot customers are higher-than-average users and that the Public Staff previously speculated that, because of socio-economic factors unique to Pilot customers, higher consumption was to be expected.

Summary of Aqua Witness Franceski's Prefiled Rebuttal Testimony

Aqua witness Franceski testified that Aqua did not have enough usage data for the 2022 irrigation season to perform relevant conservation trend analysis in advance of Aqua's filing on June 30, 2022. He further testified that usage data through the end of the update period does not accurately reflect the 2022 irrigation season because the irrigation season in North Carolina continues through at least September. Tr. vol. 5, 160. Witness Franceski stated that 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 had just begun 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." *Id.* Witness Franceski stated that 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. He testified that Aqua believes the Commission has the authority to terminate or change the rate design at that time, outside of a rate case per N.C.G.S. § 63-133.1B:

In approving an application submitted under this section, the Commission may impose any conditions in the implementation of a Water and Sewer Investment Plan that the Commission considers necessary to ensure that

the utility complies with the plan, and that the plan and associated rates are just, reasonable, and in the public interest, and the plan reasonably ensures the provision of safe, reliable, and cost-effective service to customers.

Id. at 160-61.

Witness Franceski testified that prematurely eliminating the pilot rate structure without an appropriate sample period of results and a completed formal impact analysis will render the Pilot meaningless. Witness Franceski also stated that “[a]nother 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.” *Id.* at 161.

Discussion and Conclusions

The Commission notes that 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 Pilot 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 39 in the Sub 526 Order with: “Aqua NC should implement the pilot program for a period of time that allows Aqua to accumulate sufficient information to analyze the results of the pilot and to apply such results to designing proposed future rate structures.” The Commission finds that the testimony of Public Staff witness Darden and Aqua witnesses Franceski and Becker, as summarized below, provide pertinent information for the Commission’s decision on this contested issue.

Witness Darden recommended that the Pilot end and that Aqua should 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.

Witness Franceski contended in rebuttal that there has not been accumulation of sufficient information to support a useful analysis. According to Aqua, very little summer usage data was available to perform relevant conservation trend analysis in advance of Aqua’s filing on June 30, 2022. Furthermore, Aqua contends that 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 had just begun to receive bills higher than in previous seasons). Therefore, 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.

Aqua testified that it received positive verbal feedback from the Bayleaf focus group members for implementing a tiered conservation rate structure upon its initial roll-out. Aqua maintained that 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. Also, during the expert witness hearing, in response to questions from the Commission, witness Becker testified that the Pilot Program helps Aqua's operations. Witness Becker stated that if the Pilot works, it helps Aqua's operations by providing additional capacity and reducing the demands of that capacity.

Based upon a careful consideration of the entire record in this proceeding, the Commission finds and concludes that it is reasonable and appropriate to continue the Pilot through October 31, 2023, which will be three summer irrigation seasons after the issuance of Aqua's rate case order in Docket No. W-218, Sub 526. The Commission acknowledges the Public Staff's concern that implementing Aqua's first WSIP is going to be challenging as the Parties and the Commission navigate how to complete novel tasks required by the WSIP Statute such as applying PBMs or computing the earnings test. However, the Commission determines 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 have resulted in much of a decrease when the high-use customers had just begun to receive bills higher than in previous seasons. Therefore, data from the second and third season should be collected before making conclusions about extending tiered rates to other areas.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 93-96

Customer Assistance Program (CAP)

The evidence for these findings of fact is contained in the verified Application, the prefiled direct testimony and cross-examination of Aqua witness Becker, the prefiled direct testimony and cross-examination of Public Staff witness Darden, and the prefiled rebuttal testimony and cross-examination of Aqua witnesses Becker, Packer, Kellett, and Melton.

Summary of Aqua Witness Becker's Prefiled Direct Testimony

Aqua witness Becker provided testimony about the customer assistance program (CAP) that Aqua is proposing to assist low-income customers with payment arrears. According to witness Becker, Aqua used a three-step process to calculate a projected number of Aqua households living in poverty. Witness Becker testified that Aqua began its analysis by reviewing census data to identify the percentage of households in poverty for every county Aqua serves. Next, Aqua obtained information from its customer information system regarding the number of customers Aqua serves in each of the identified counties. Finally, Aqua applied the percentage of households in poverty in each county to the number of customers served in the county. Witness Becker further testified that Aqua performed the calculation separately for water and wastewater customers and determined that approximately 12% (or 10,058) of its water customers and 11% (or 2,247) of its wastewater

customers meet the definition of poverty using the U.S. Census Bureau's poverty thresholds. Tr. vol. 5, 56. Aqua's analysis is provided in Becker Exhibit 5.

Witness Becker testified that he believes "a grant program that provides assistance to income eligible households at risk of termination or without water service would provide an important resource for low-income families and seniors." *Id.* at 57. Witness Becker further testified "such a grant program could use 150% of the federal poverty level as the income guideline." *Id.*

According to witness Becker, the CAP, if approved, will be funded by repurposing \$45,000, or approximately 5%, of non-utility funds received from antenna revenues. Witness Becker testified that, if approved, Aqua plans to work with Dollar Energy Fund to administer the CAP. According to witness Becker, Dollar Energy Fund is a non-profit 501c(3) organization that provides software and training to local social service agencies to allow those agencies to receive applications and income documentation on behalf of customers who are seeking assistance. Witness Becker stated that the Dollar Energy Fund offers an online application option. Per witness Becker, customers interested in participating in the CAP will complete the application process and provide their income documentation to verify their eligibility. Dollar Energy Fund will review and qualify customers for assistance. Aqua will then receive the qualified accounts, approve the grant amounts, and ensure the grants are posted appropriately to the customer's account. Tr. vol. 5, 58.

Witness Becker testified that the costs to administer the program are included in, and will be deducted from, the proposed annual contribution of \$45,000. According to witness Becker, Dollar Energy Fund charges an operating fee, which has historically been 8.75% of the grant amount, and a per-application remuneration fee, varying between \$5 and \$10 per application, for each application processed. *Id.* at 58-59.

Witness Becker further testified that Dollar Energy Fund's software provides tracking and reporting tools that can be used to access the funding level and review the number of applications received and processed. Witness Becker stated that Aqua will "be able to provide regular reporting to external stakeholders as well as our internal leadership team on the utilization of the fund." *Id.* at 58. According to witness Becker, if the CAP is approved, Aqua would like to report on the CAP's annual program activity as part of Aqua's annual reporting requirement.

Summary of Aqua Witness Becker's Testimony in Response to Cross-Examination and Questions from the Commission

During cross-examination, witness Becker testified that the needs analysis Aqua completed to estimate the number of Aqua customers living in poverty was not tied to 150% of the federal poverty level and Aqua has not determined the number of Aqua customers living at or below that level. However, he further testified that the CAP could use 150% of the federal poverty level as the eligibility threshold. Tr. vol. 5, 73-74.

Witness Becker confirmed that the customer assistance program established by Aqua Pennsylvania, Helping Hand, has three defined eligibility criteria and one of those eligibility criteria requires household income that is less than 200% of the federal poverty level. *Id.* at 76. He also confirmed that Aqua America shareholders contribute to Aqua Pennsylvania's Helping Hand program and there is not a proposal for Aqua shareholders to contribute to the CAP at this time. *Id.* at 77-78.

In response to questions from the Commission, witness Becker testified that Aqua's proposed CAP is similar to the Low Income Household Water Assistance Program (LIHWAP) but is a separate program that is meant to provide a long-term resource that Aqua's customers can access. Tr. vol. 5, 92. Witness Becker testified that he believes the LIHWAP is a temporary program but conceded that he is "not aware that it's definitively going to end, and it may continue." *Id.* at 93. He stated that, while somewhat similar, Aqua's proposed CAP is separate and would be administered for the long-term. *Id.* at 92.

Witness Becker testified that Aqua plans to use the Dollar Energy Fund to administer the CAP because Dollar Energy Fund is "a one-stop shop that facilitates [Companies] need [and] can also expand and offer assistance to [Aqua] customers that [is not] necessarily directly facilitated by [Aqua]." *Id.* at 92. He also testified that he does not know how many applications Dollar Energy Fund would process in connection with Aqua's proposed CAP.

Summary of Public Staff Witness Darden's Prefiled Direct Testimony

Public Staff witness Darden testified about several features of the proposed CAP based on information the Public Staff received from Aqua in discovery. According to witness Darden, the CAP would be available on an annual basis until the funds for the year are exhausted. Any unused funds at the calendar year-end carry over to the following year. Tr. vol. 7, 34. Witness Darden stated that eligible customers can receive one grant of up to \$500 per year. The amount of assistance awarded is determined by customer need and is limited to a single grant per year "[b]ecause the program is intended to assist customers with arrears and not to be an ongoing support program." *Id.* at 35. Witness Darden testified that Aqua "stated that the \$45,000 of annual funding was not derived from the number of participants or anticipated grant levels." *Id.* Witness Darden further testified that Aqua stated that it did not allocate any costs to the internal work associated with the proposed CAP because "the technology used by Dollar Energy Fund is very well-suited to utilities and the time required to review pending applications via [Dollar Energy Fund's] online portal is expected to be minimal for Aqua staff." *Id.* at 34.

Public Staff witness Darden further testified that the Public Staff has three major concerns about the proposed CAP: (1) the lack of support and analysis for the development of the program; (2) the cost-benefit to customers; and (3) the philosophy of the program. *Id.* at 35. Witness Darden stated that Aqua did not assess the actual needs of its customers while developing the proposal because Aqua admitted that it did not examine its customer base using the only eligibility threshold discussed in connection with the proposed CAP- household income at or below 150% of the federal poverty

guideline. According to witness Darden, it is difficult to determine expected need and the projected customer impact when the pool of eligible customers has not been identified. Witness Darden testified that Aqua's proposal to base the proposed CAP's funding on 5% of the annual antenna revenues is arbitrary and totally unrelated to the affordability of water and sewer utility service. Witness Darden stated that the program should be based on expected need and the projected customer impact. Tr. vol. 7, 35-36. According to witness Darden, the absence of projections about the number of eligible customers makes it unclear if \$45,000 is an appropriate amount to provide meaningful relief to low-income customers.

Witness Darden testified that a total of 80 customers a year could receive a \$500 grant after Dollar Energy Fund's fee of 8.75% of the total grant amount is deducted from the \$45,000 Aqua proposes to use for the CAP. Witness Darden provided the following example: with the \$45,000 program amount, if customers apply for a grant to cover one average water and sewer bill at ANC uniform rates (approximately \$129) the funding would only provide relief for 300 customers, or 2.4% of customers that meet the poverty line. *Id.* at 36. Witness Darden testified that the Public Staff also has concerns about the high administrative fees associated with the proposed CAP. *Id.* Witness Darden further stated that approximately 10% of the program funding could go to pay administrative fees as opposed to directly assisting customers. *Id.* Witness Darden stated that, while the Public Staff does not oppose a well-designed and properly justified low-income assistance program, Aqua has failed to show the need for and purpose of the program. Witness Darden also testified that, due to the imputed non-utility revenues, the funding of this program affects all rate payers; as such, Aqua needs to address the purpose of the program and clarify the benefits to all ratepayers. *Id.* at 37. Witness Darden stated that the Public Staff recommends further analysis to determine the proposed CAP's impact on all Aqua customers and suggests that a separate docket be opened to further investigate the program. *Id.* at 38.

Summary of Public Staff Witness Darden's Testimony in Response to Cross-Examination, Questions from the Commission, and on Redirect

In response to questions from the Commission, witness Darden testified that the Public Staff opposes the proposed CAP because additional analysis is needed. Witness Darden stated that the Public Staff is seeking additional information including the number of customers in need of assistance, the number of customers with arrearages, the number of customers Aqua expects will seek assistance, insights from similar programs operated by Essential, and the way Aqua's proposed CAP will work in association with other available programs such as LIHWAP. Tr. vol. 7, 59. Witness Darden also reiterated the Public Staff's concerns with the high administration costs associated with the proposed CAP.

Witness Darden stated that the Public Staff did not know Aqua was planning to propose a CAP and the Public Staff and Aqua did not discuss anything related to a potential CAP while Aqua was developing its proposal. *Id.* at 70-71. In addition, witness Darden confirmed that the customer eligibility information listed on a printout from the Helping Hand website, provided on Becker Direct Public Staff Cross Examination

Exhibit 1, is an example of the kind of information the Public Staff is seeking before it will be comfortable with ratepayers funding the proposed CAP. *Id.* at 91.

Summary of Aqua Witnesses Becker, Packer, Kellett, and Melton Prefiled Rebuttal Testimony

Aqua witnesses Becker, Parker, Kellett, and Melton responded to the Public Staff's concerns about the proposed CAP. The panel testified that Aqua "used census data to identify the percentage of households in poverty of each county within Aqua's service territory, in conjunction with customer data, to determine the potential population of customers with low income that are potentially payment troubled as a result of low household income." Tr. vol. 11, 166. The panel further testified that Aqua's analysis gave Aqua "a general picture of the financial need across Aqua's territory as it highlights that roughly one in ten customers likely has income at or below poverty level." *Id.* The panel further testified that, upon reviewing the data, Aqua recognized that a safety net customer assistance program would be an important tool to support low-income households that face potential loss of service due inability to pay arrears. *Id.*

The panel further testified that Aqua disagrees with witness Darden's assertion that Aqua's decision to repurpose 5% of antenna revenues to fund the proposed CAP was an arbitrary figure. Aqua believes that repurposing 5% of antenna revenues for use in a CAP would have a relatively small impact to ratepayers overall and balances the needs of those participating in a safety net program with the costs of the program to other ratepayers. The panel stated that a CAP based on need could be quite sizeable in light of Aqua's assessment that one in ten customers are likely in poverty. According to the panel, Aqua wants "to fund the CAP using 5% of antenna revenue as an initial funding point [in order to] gain experience with the program's use to further determine the appropriate funding levels of the future. *Id.* at 167.

The panel testified that Aqua disagrees with witness Darden's calculation that only 80 customers would be served under the proposed CAP. Aqua explained that the maximum grant available under our proposal is \$500. However, it is important to note that the approved grant amount would be based on need, rather than the maximum. Average grants are typically less than the maximum. A review of Aqua's November delinquencies for customers with arrears greater than 60 days shows an average amount of \$157. *Id.* at 168.

The panel responded to Public Staff witness Darden's testimony regarding the administrative costs by defending Aqua's decision to partner with Dollar Energy Fund and clarifying Aqua's earlier testimony regarding the application processing fee. The panel testified that the fee is not retained by Dollar Energy Fund. Instead, it is passed back to the local social services agency that assisted the customer with the completion of the application as remuneration for the agency employee's time and effort. Tr. vol. 11, 169. The panel stated that Aqua does not believe that automatic qualification is the best path for Aqua's proposed CAP because the CAP is a safety net program with limited annual funding. The panel stated that Aqua believes customers should be required to substantiate their income during the

application process to ensure that only income eligible consumers receive the benefit of the limited available funding. *Id.* at 169-170. The panel testified that Aqua does not agree with the Public Staff's recommendation regarding establishment of a separate docket to further investigate the program. According to the panel, this docket is the proper venue for reviewing Aqua's proposed CAP because Aqua is proposing to re-purpose antenna revenues to fund the CAP in this proceeding. *Id.* at 170.

Summary of Aqua Witnesses Becker, Packer, Kellett, and Melton Rebuttal Panel in Response to Questions from the Commission

In response to questions regarding the iPartner© system, Aqua witness Becker testified that iPartner© is the system that Dollar Energy Fund uses to vet applicants, but that he did not know what benefits Aqua or the customers would receive from using iPartner©. *Id.* at 217.

Discussion and Conclusions

Based upon careful consideration of the entire record in this proceeding, the Commission recognizes the utmost importance of a customer assistance program to assist low-income customers who have accrued payment arrearages and are in danger of disconnection, but finds that it is reasonable and appropriate to deny Aqua's requested CAP at this time. The Commission acknowledges that Commission-approval of such a customer assistance program, especially when the proposed CAP will be funded entirely by ratepayers without shareholder contributions, should not be given lightly. Before approving such a program, the Commission must understand the benefits the program will provide, the cost of the program to ratepayers, and the way in which the proposed CAP will be implemented.

The Commission agrees with the Public Staff that Aqua's current proposal is underdeveloped and needs refinement. The Commission also agrees with the Public Staff's assessment that the eligibility criteria and projected impact of Aqua's proposed CAP need to be further defined and quantified. A fully developed proposal ripe for the Commission's consideration must, at a minimum, include the following information: (1) an assessment of the number of Aqua customers in need using the program's eligibility criteria; (2) an assessment of the number of Aqua customers in need based on arrearage data; (3) an assessment of the number of Aqua customers the program can assist considering arrearage data and the program's funding; (4) a discussion of similar programs used by Aqua affiliates; (5) a discussion outlining the ways in which the proposed CAP will work alongside other need based programs such as the LIHWAP; (6) a detailed description of how the program will be administered; (7) clearly defined eligibility criteria; (8) a detailed description of the proposed CAP's benefits, including but not limited to estimates of expected reduced costs associated with disconnections, reconnections, debt collection activities, and bad debt writeoffs; (9) a detailed analysis of the costs to fund and operate the program; (10) a detailed description of the ways in which program success will be evaluated; and (11) a discussion of program reporting requirements.

The Commission appreciates Aqua's efforts to implement the CAP and understands that Aqua seeks to gain experience with the CAP to better determine the appropriate funding levels for the program in the future. However, the Commission concludes that without a fully developed and comprehensive proposal for the CAP, Aqua's request to implement this program is premature. The Commission encourages Aqua to further develop its CAP proposal with the eleven items of information requested by the Commission, along with the possibility of funding some portion of the program from shareholder contribution. The Commission, therefore, directs that a separate docket be opened for Aqua to propose a fully developed program.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 97-103

Wakefield Filter Project

The evidence supporting these findings of fact is contained in the testimony of Public Staff witness Lucas and testimony of Aqua witness Melton.

Prefiled Testimony of Public Staff Witness Lucas

In his prefiled direct testimony, Public Staff witness Lucas explained that in 2016 Aqua began a project to install a treatment system to remove iron and manganese at Well #6 and Well #8 in its Wakefield service area (Funding Project 35800060544) with an approved cost projection of \$370,000 to \$395,000. Tr. vol. 6, 247. Witness Lucas stated that the final cost of the project more than doubled to \$857,797, Aqua did not complete the project until 2021, and it incurred unreasonably excessive costs due to problems with internal staffing and with an engineering consultant that, according to Aqua, did not provide adequate work. Witness Lucas testified that Aqua had pursued an easement to connect Well #6 and Well #8, which would allow it to build just one treatment system and simultaneously had contracted with an initial engineering consultant for the design. However, according to witness Lucas, Aqua should not have proceeded with the design without having acquired the final easement. After later encountering difficulty obtaining the easement from the property owner, Aqua pursued installing treatment systems at both wells as an alternative. Aqua then abandoned this plan after eventually obtaining the easement to connect the wells. Witness Lucas further testified that Aqua paid the initial engineering consultant to design the project but failed to seek reimbursement for what was unsatisfactory design work. Witness Lucas testified that Aqua managed this project imprudently, which resulted in the project's unreasonably excessive costs, and the full final cost of \$857,797 should not be placed on Aqua's customers. Witness Lucas recommended that the Commission disallow 25% or \$214,449 of the project's final cost. Witness Lucas testified that the amount of disallowance approximates the charges from the original engineer whose work was unsatisfactory, AFUDC, and Aqua charges such as capitalized time and allocations. Tr. vol. 6, 247-48.

Summary of Witness Lucas' Testimony in Response to Cross-Examination and Questions from the Commission

Upon cross-examination, witness Lucas testified that Aqua's previous engineering manager left Aqua in May 2017, and the engineer assigned to the Wakefield project left Aqua in April 2018. Tr. vol. 6, 260. Aqua's current engineering manager, Mr. Michael Melton, assumed this managerial position with Aqua in January 2018, and assigned a new engineer, Mr. Norris, to the project in late 2018. *Id.* at 265.

Witness Lucas testified that Aqua should not have hired its first engineering consultant nor begun purchasing equipment for the project before it had acquired an easement to connect Well #6 and Well #8. *Id.* at 264. On redirect, witness Lucas further testified that Aqua should not have paid its first engineering consultant for work that it believed was late and unsatisfactory, and that it is improper for Aqua to claim AFUDC for the entire project term. *Id.* at 270-73. Witness Lucas maintained that a prudent company would have a contingency plan for completing projects if a key employee with direct responsibility leaves. He contended that Aqua's failure to adequately staff the project delayed the project which caused Aqua to incur additional AFUDC costs. He testified that Aqua's staffing issues were not the fault of the customers. Witness Lucas maintained that because the project was ultimately delayed by approximately five years, there was "a fair amount of AFUDC that should not have been the responsibility of the customers." *Id.* at 270.

In response to questions from the Commission, witness Lucas acknowledged that he did not have the preliminary engineering estimate of the project totaling \$641,900 or other detailed information concerning project costs and the timing of the events included in Melton Rebuttal Exhibit 3 when he filed his direct testimony. Witness Lucas stated that Aqua did not respond well to the Public Staff's data requests. He testified he did not make an exact calculation of the amount of excessive AFUDC to be disallowed. He commented that the Public Staff did not want to disallow all the AFUDC because some of the later costs by AdEdge and Tyndall Builders were legitimate AFUDC. Witness Lucas stated that it was hard to determine the specific date to draw the line to determine when to start allowing AFUDC for the project because the Public Staff did not know the exact chronology of all the events. Witness Lucas maintained that the project should only have taken six months to complete as originally estimated by Aqua.

Summary of the Prefiled Rebuttal Testimony of Aqua Witness Melton

Aqua witness Melton explained in his prefiled rebuttal testimony that the Public Staff recommended approval, and the Commission gave approval for Aqua's project to remove excess iron and manganese from the water system in its the Wakefield service area. Tr. vol. 10, 133. Aqua started the project in March 2016 with the original plan to combine Well #6 and Well #8 so that it would have to build one treatment system instead of two. Witness Melton testified that combining the wells would require installation of a pipe, which would require an easement for Bayleaf Baptist Church. Witness Melton stated that the church told Aqua that to obtain the easement it would need the church boards approval the church told Aqua the process of approval for an easement was to present it to the church board's

approval. Witness Melton testified that based on this initial conversation, Aqua believed the church was open to granting an easement and decided to make that request to the church board. *Id.* at 134-35.

Witness Melton stated that Aqua's original plan to combine Well #6 and Well #8 for the Wakefield filter project was disrupted because negotiation of an easement was delayed by the indecision of the church board. Witness Melton explained its staff engineer made several attempts to work with the church but was unable to get the church to arrive at a decision to grant the easement. Witness Melton further testified that because of indecision by the church, Aqua decided not to connect Well #6 and Well #8 but to build two treatment systems instead of one. *Id.* at 135. Later, Bayleaf Baptist Church became Crossroads Fellowship Church, which granted Aqua the easement allowing it to connect the wells and build one treatment system. *Id.* at 137.

Witness Melton stated that around 2017 or 2018 Crossroads Fellowship Church had new leadership, which provided the new engineers at Aqua with an opportunity to restart negotiations for an easement. Witness Melton stated that in late 2018, the Wakefield project was assigned to new staff engineer and Aqua was then able to negotiate an easement with the new church leadership. He noted that even then, it still took roughly a year for Aqua to reach an agreement with the church on terms ultimately agreed upon and approved by the church. *Id.* at 137.

Witness Melton also testified that Aqua's original engineering consultant provided a design that was incomplete, Aqua had to contract with a second consultant which added further delays to the project. He further testified that pursuing repayment from the first consultant would be cost prohibitive. *Id.* at 140-42. He noted that Aqua's staff engineer worked with Aqua's first engineering consultant on the new design for two treatment systems until her departure from Aqua in April 2018. Tr. vol. 10, 136.

Summary of Aqua Witness Melton's Testimony in Response to Questions from the Commission

In response to questions from the Commission, witness Melton stated the cost of the project with one iron and manganese filtration system would have been \$642,000 and with two filtration systems the cost would have been \$700,000. The annual operation cost for a filter is \$4,000 to \$5,000 depending on the size of the filter. Tr. vol. 10, 162. The easement to connect Well #6 and Well #8 cost \$26,469. *Id.* at 165. Witness Melton testified that Aqua asked the initial consulting engineer to pause the project, but instead, the consultant terminated it. *Id.* at 162-63. Witness Melton further testified that the second consulting engineer was able to use about 10% to 15% of the initial consulting engineer's work. *Id.* at 164.

Discussion and Conclusions

The Commission finds that the testimony of Aqua witness Melton and Public Staff witness Lucas, as summarized in pertinent part below, inform the Commission's decision on this contested issue.

Aqua witness Melton described the history of the project and Aqua'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, Aqua 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, Aqua 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. According to Aqua, the church had indicated it was open to negotiating an easement, and Aqua had no reason to disbelieve the church. Witness Melton also testified that Aqua was informed during its initial verbal communications with the church that the process for approval of an easement was to present the request to the church board.

The Commission finds that Aqua's decisions to proceed with engineering design and to purchase equipment in parallel with seeking an easement was premature since at that time Aqua knew it had to seek approval from the church board. Aqua should not have proceeded with the project until it had substantial confirmation that an easement would be obtained from the church. Aqua's decision to proceed without substantial confirmation of the necessary easement created undue risks for both Aqua's customers and shareholders and ultimately resulted in significant increased costs related to the project.

Public Staff 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 testified 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.

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 the six-month period anticipated. According to witness Lucas, the final cost of the project was \$857,797 and it took five years and six months to complete. These facts are undisputed by Aqua. The Commission observes that the Public Staff report filed on February 23, 2016, in Docket No. W-218, Sub 363A, related to Aqua's request for the filtration system on Wakefield Well #6 and Well #8 (combined entry of two wells with filtration by one system) and stated Aqua's estimated costs for the project was between \$370,000 and \$395,000. These cost amounts for Wakefield Well #6 and Well #8 were also listed in the Commission's Order Approving Secondary Water Quality Improvement Projects issued on March 1, 2016. The Commission further observes that Aqua noted an estimated date of project completion as September 2016 in its request for project approval filed in Docket No. W-218, Sub 363A.

Concerning the approximately \$70,000 in engineering costs recommended for disallowance by Public Staff witness Lucas, the Commission notes that witness Melton testified on rebuttal that in 2016, Aqua budgeted approximately \$35,000 for engineering costs for the Wakefield filter project and that the actual contract with the first consulting engineering was less than that at \$26,520. Witness Melton explained that when it appeared that the church was not going to grant Aqua the necessary easement to interconnect the two wells, Aqua requested the consulting engineer to re-design the project plan for separate filtration at each well. Witness Melton noted that Aqua's current engineering staff began having difficulty about the lack of detail on the second design for the two separate filters in late 2018. In addition, witness Melton stated that Aqua's new staff engineer noted that the consulting engineer was slow in responding to emails and calls in a timely manner and the inexperienced engineer assigned to the project required close supervision and oversight by Aqua. Further, witness Melton responded to a Public Staff data request stating that the work received from the first consulting engineer was not adequate. Based on the evidence, the Commission concludes that a disallowance for inadequate and excessive engineering costs is appropriate.

With regard to the Public Staff's assertion that Aqua's internal staffing issues led to excessive costs, witness Melton testified 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 negotiate an easement and the lengthy negotiations that followed. Witness Melton testified that its staff engineer had made reasonable efforts to work with the first church to obtain the necessary easement beginning in March 2016, but was unable to get the church to grant the easement before she left Aqua in April 2018. He explained that when Aqua's original engineer assigned to the project left in April of 2018, along with another engineer, it took Aqua 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. The easement was negotiated and obtained after the new engineers were in place. The Commission agrees with witness Melton that completion of the project was delayed due to the numerous factors he explained. However, the Commission finds that customers should not pay additional projects costs resulting from delays caused by Aqua's internal staffing issues. Aqua should have a contingency plan for completing projects if a key employee assigned to a project leaves. The Commission finds that Aqua's

failure to implement a contingency plan for the project within a reasonable time upon the departure of its engineering staff delayed easement negotiations and caused Aqua to incur excessive project costs. The Commission concludes it is inappropriate for customers to pay for excessive AFUDC costs resulting from Aqua's internal staffing issues. Further, the Commission concludes that witness Lucas's adjustment to remove a portion of Aqua's salaries and overheads related to this project due to the excessive time and amounts spent on the project is reasonable.

Based on the foregoing, the Commission finds that Aqua imprudently incurred costs for engineering and equipment before it had the easement necessary to complete the project as planned, and imprudently paid its first consulting engineer for work that it believed was late and inadequate. The Commission further finds that Aqua's internal staffing problems delayed the project, and, for the other stated reasons discussed herein, the project took five years and six months to complete, resulting in an excessive amount of AFUDC. Therefore, it is appropriate to disallow from recovery through customer rates the charges from the original consulting engineer whose work was unsatisfactory, a portion of the AFUDC related to the project, and other Aqua costs such as capitalized time and allocations as recommended by Public Staff witness Lucas. The Commission concludes that the amount of utility plant in service for this project should be decreased by 25% of \$857,797 resulting in a \$214,449 disallowance.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 104-105

Performance Based Metrics

The evidence supporting these findings of fact is contained in the direct testimony of Aqua witness Becker; the joint rebuttal testimony of Aqua witnesses Becker, Packer, Kellett, and Melton (collectively, the Aqua WSIP Panel); the joint testimony of Aqua witnesses Becker, Joseph Pearce, Melton, and Berger (collectively, the Aqua PBM Panel); the joint testimony of Public Staff witnesses Boswell, Hinton, Junis, Sun, and Zhang (collectively, the Public Staff WSIP Panel); witness Becker's, the Aqua WSIP Panel's, the Aqua PBM Panel's, and the Public Staff WSIP Panel's evidentiary hearing testimony; and the entire record in this proceeding.

Summary of the Parties' Positions

Aqua, 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 WSIP testimony. After the conclusion of the evidentiary hearing, Aqua and the Public Staff met several times to negotiate appropriate PBMs to be adopted in this proceeding. Ultimately, the Parties agreed to 13 PBMs, some to include proposed penalties or incentives and others to be tracking only, as described in detail in the Stipulation. The parties discussed four additional PBMs. These PBMs are filed as Public Staff Supplemental WSIP Exhibit 7 and are referenced in the settlement testimony of Aqua witness Becker.

The Public Staff would attach penalties to the four additional PBMs. However, Aqua opposes penalties and views them as appropriate for tracking only. Two of the contested PBMs relate to Aqua's compliance with Safe Drinking Water and Clean Water Act standards. Aqua does not oppose use of these PBMs for tracking purposes, but does not agree there should be penalties associated with them. If penalties are to be imposed, the parties disagree on the level of noncompliance that would result in penalties.

The remaining two contested PBMs are the capital project completion on schedule and on budget metrics. Aqua has accepted these metrics as tracking metrics only and disagrees with any associated penalties.

Summary of the Direct Testimony of Aqua Witness Becker

Witness Becker testified that "PBMs are required to benefit customers, drive utility performance, or support Commission goals that ensure the provision of safe, reliable, and cost-effective service by the water or sewer utility." Tr. vol. 5, 37. Witness Becker testified that Commission Rule R1-17A(c)(10) requires that at least one PBM be established in each of four categories: (1) operational compliance; (2) customer service; (3) service reliability; and (4) workplace health and safety. *Id.*

Witness Becker initially recommended that the parties "focus on the development of baseline PBMs to be used as its tracking metrics" and did not propose any incentives or penalties. Tr. vol. 5, 37. In support of this recommendation, witness Becker stated, "establishment of a target and related penalty or incentive associated with that target would be premature due to the lack of well-recognized and consistently calculated industry metric standards or the lack of established Company-specific trends or patterns for the proposed metrics." *Id.* at 38.

Witness Becker testified that Aqua proposed one PBM in each of the four categories set out in Commission Rule R1-17A(c)(10). For operational compliance, Aqua proposed to use compliance with the Safe Drinking Water Act (SDWA) and the Clean Water Act. Witness Becker stated that compliance with the EPA established guidelines "requires utilities to effectively operate the utility, monitor and treat for pollutants, and invest in infrastructure to protect drinking water sources from pollutants that impact human health and the environment." *Id.* at 40. He further stated that "[c]ontinuous or severe non-compliance with these regulations is an indication of substandard operation of a utility." *Id.* Witness Becker proposed to use as a SDWA compliance rate the MCL standard for health-based violations calculated by dividing health-based violations by the number of Public Water Systems operated by Aqua and regulated by the EPA. *Id.* at 41. For Clean Water Act compliance, witness Becker proposed to compare Aqua's Significant Non-Compliance (SNC) rate developed by the EPA to the SNC rates of similarly sized treatment facilities across the United States.

In addition to Aqua's proposed operational compliance metric, Aqua proposed a modified version of the American Water Works Association benchmark to monitor water quality as a Customer Service metric and as a replacement to the Semi-Annual

Secondary Water Quality Report the Commission directed Aqua to file in its final order in the Docket No. W-218, Sub 363 rate case; unplanned water and sewer service interruptions as a Service Reliability metric; and Occupational Health and Safety Administration (OSHA) recordable work-related injuries and illness as a Workplace Health and Safety metric. Aqua and the Public Staff agreed to metrics in these categories as part of the Stipulation.

Summary of Aqua Witness Becker's Testimony in Response to Cross-Examination and Questions from the Commission

When asked whether the Commission would be missing an opportunity to further the goal of incentivizing Aqua to provide safe, reliable, and cost-effective service if the Commission did not attach incentives and penalties to the PBMs, witness Becker suggested that incentives and penalties could be used “as long as they are balanced” and once “metrics are validated and are relevant” and are “not duplicative of where we have other requirements on reporting” Tr. vol. 5, 101.

According to witness Becker, N.C.G.S. § 62-133.1B does not discuss incentives or penalties tied to PBMs. However, witness Becker acknowledged that Commission Rule R1-17A(b)(1) provides that “[t]he Commission may approve penalties or incentives based on the results of approved metrics” and that “[s]ome metrics may be tracking metrics with or without targets or benchmarks to measure utility achievement.” *Id.* at 117. When asked if he had an opinion about how long it would take to validate metrics, witness Becker stated, “I would have no doubt by the end of this WSIP period . . . we would be able to assess whether or not those are relevant metrics that mean something to the Commission and to the Public Staff and to our consumers and to the shareholders.” *Id.* at 102.

The Commission suggested it was of the opinion that “the statute doesn’t contemplate this . . . period of time to determine what metrics are appropriate or not” and asked witness Becker why Aqua had not gotten together with the Public Staff to establish a set of PBMs “that could be workable this time around.” Tr. vol. 5, 103. In response, witness Becker testified:

My view was the performance-based metrics are a requirement of the WSIP, you know, in those four categories. So we tried to identify the most relevant - - what we thought would be very relevant to the Commission to monitor. And I say monitor because they have to be worked out. We don’t always know what the nuances are of what’s going to affect that. If we write it one way - - and if you look at some of the recommendations from the Public Staff, if you write it one way, it could be interpreted differently.

Id. at 105.

Witness Becker further testified that he hoped that some of the metrics could reflect industry level standards. *Id.* The Commission asked witness Becker what cost savings

would be achieved for customers as a result of the WSIP. *Id.* at 109. In response, witness Becker testified:

[T]hose penalties and incentives down the road will be beneficial to - - will likely be[] beneficial, whether we can reduce O&M for a project or going out and getting additional grant monies. That will be beneficial down the road. I just think that the performance-based metrics need to be vetted. The guardrails need to be vetted before we install them and enact them.

Id. at 110.

Summary of the Public Staff WSIP Panel

The Public Staff WSIP Panel testified that the PBMs proposed by Aqua do not provide any insight into Aqua's ability to control costs while maintaining service quality, use revenue and assets effectively and efficiently, and complete capital projects on time and on budget. The Public Staff WSIP Panel further testified that it was concerned about Aqua's failure to provide benchmarks and targets to measure Aqua's performance and to provide context to the data produced by the metrics. Tr. vol. 8, 74. The Public Staff WSIP Panel testified, "[b]enchmarks are crucial to the Commission's ability to monitor Aqua's performance and determine, for itself, whether Aqua is satisfying a threshold requirement for a WSIP: the provision of reliable, safe, and compliant water and wastewater services." *Id.* at 75. The Public Staff WSIP panel further testified that "[p]erformance-based ratemaking without meaningful benchmarks to evaluate the utility's performance defeats the purpose of the performance-based aspect of a WSIP." *Id.*

Due to these concerns about Aqua's proposed PBMs, the Public Staff WSIP Panel recommended modifications to Aqua's proposed PBMs; and additional PBMs, including incentives and penalties. The Panel also recommended that the Commission require Aqua to collect data needed to measure Aqua's achievement on certain performance-based indicators. *Id.* at 74.

The Public Staff WSIP Panel recommended the following additional PBMs, incentives, and penalties, which are set out in Public Staff Supplemental WSIP Exhibit 7, and which have not been agreed upon by the Stipulating Parties:

Description	Measure	Incentive/Penalty
Timely Completion of CIP Projects	Percentage of CIP projects \$200K or over in the approved WSIP incomplete during the planned rate year on a company basis	Ten basis point ROE reduction to the high-end of the Commission authorized band if measure exceeds: 15% in Rate Year 1 25% in Rate Year 2 35% in Rate Year 3
Completion of CIP Projects on Budget	Percentage of CIP projects \$200K or over that cost in excess of 110% of the estimate in the approved WSIP on a company basis	Ten basis point ROE reduction to the high-end of the band if measure exceeds: 15% in Rate Year 1 25% in Rate Year 2 35% in Rate Year 3
Safe Drinking Water Act Compliance	% days in compliance - (sum of all days - sum of all days out of compliance) / sum of all days Sum of all days = No. of systems x 365 days	Ten basis point ROE reduction to the high-end of the band if less than 100% compliance on company basis
Clean Water Act Compliance	% days in Compliance - sum of all days - sum of all days out of compliance) / sum of all days	Ten basis point ROE reduction to the high-end of the band if less than 100% compliance on company basis

The Public Staff WSIP Panel noted that its recommended metrics “add a level of granularity that is not present within Aqua’s proposed metrics and can be interpreted together to assess whether Aqua is excelling in one area at the expense of poor performance in another area.” Tr. vol. 8, 76. By way of example, the Public Staff WSIP Panel noted that “a company’s ability to complete capital projects on time should not come at the expense of cost overruns,” and therefore “it is important to measure both timeliness of completion and adherence to budget so that the outcomes can be evaluated together.” *Id.*

Regarding the penalties and incentives attached to its recommended PBMs, the Public Staff WSIP Panel testified that implementation of the Public Staff’s penalties and incentives encourages good business practices to control costs and ensure responsiveness to customers by providing corrective action if Aqua’s performance declines. *Id.* at 78. The Panel noted that Aqua’s performance on each metric should be reviewed as part of the quarterly reporting process, and any necessary adjustments to ROE would be applied to the earnings test of the WSIP Rate Year that is the subject of the annual review. *Id.*

Summary of the Public Staff WSIP Panel's Testimony in Response to Questions from the Commission

When asked whether incentives or penalties in this WSIP proceeding would be necessary or required to show customer benefit in this docket, witness Junis responded that, based on his experience in the CWSNC rate case and the order issued by the Commission in the Commission Rule R1-17A rulemaking docket, he understands that the Commission considers incentives/penalties to be required in a WSIP. Tr. vol. 8, 257-58. Witness Junis testified that the Public Staff agrees that incentives and penalties are required in a WSIP and the Public Staff took that into account in its approach to PBMs. He further testified:

We also tried to take a measured approach with the penalties and incentives. We are only addressing the top end of the band. There is no, if you don't do this, then you have to refund a million dollars to customers. We're talking about basis point incentives to at least quantify some motivation, some skin in the game of you are going to do better, or at least as good as you are, depending on the metric.

Id. at 258.

In response to a question about the need for historical data, witness Junis testified that it is "not a requirement to establish a metric." *Id.* at 259.

When asked in reference to Public Staff WSIP Panel Exhibit 7 why it is appropriate to have more penalties than incentives, witness Junis noted that Public Staff was very concerned about whether Aqua would adhere to the WSIP, which includes important benefits to customers and, therefore, the Public Staff believed it was appropriate to use penalties to ensure that Aqua does not simply modify the approved plan or incur high costs. Witness Junis further noted that some of the metrics, such as compliance with environmental regulations, are required by Commission Rules and are therefore baseline requirements that Aqua should incur a penalty for noncompliance. *Id.* at 260. Witness Junis testified that the Public Staff viewed some metrics as appropriate for tracking, without incentives or penalties, to establish benchmarks. *Id.* at 261-62.

The Commission asked the Public Staff WSIP Panel questions directed at specific PBMs proposed by the Public Staff. Regarding the Public Staff's recommended PBMs for Timely Completion of CIP Projects and Completion of CIP Projects on Budget, the Commission asked whether the Public Staff agreed with Aqua's assertion that these metrics rely on factors outside Aqua's control. In response witness Junis testified that "none of this can be viewed in a vacuum," but ultimately, Aqua controls its costs and its management of projects. Tr. vol. 9, 10. He noted that, in recognition of the fact that there is some uncertainty, the Public Staff incorporated a "buffer" into these PBMs that expands each year to account for additional uncertainty inherent in each additional year further removed from the formulation of the CIP. Witness Junis further noted that the two PBMs

were paired appropriately so that Aqua does not incur substantially higher costs in order to complete a project in the specified WSIP Rate Year. *Id.*

Regarding the Public Staff's Safe Drinking Water Act Compliance and Clean Water Act Compliance metrics, the Commission asked whether the Public Staff would require 100% compliance in order for Aqua to avoid the imposition of a penalty. Witness Junis confirmed that the Public Staff's PBMs would assess a penalty for less than 100% compliance and testified, "[t]he hard part with environmental compliance is we don't want to represent that 80 percent is good enough, 90 percent is good enough. The expectation is compliance. That's actually a Commission rule, both on the water and wastewater side." Tr. vol. 9, 21. Witness Junis later testified that the Public Staff would be open to discussion of the appropriate level of compliance. *Id.* at 23.

Summary of the Joint Rebuttal Testimony of the Aqua PBM Panel

The Aqua PBM Panel gave the following testimony regarding Aqua's position on PBMs:

Aqua continues to believe that relevant metrics must be "clearly defined, measurable, and easily verified by stakeholders," and is supportive of identifying metrics for tracking purposes during at least this first Aqua request for a WSIP. However, establishing arbitrary targets by which the utility will be measured and assessing penalties or incentives without an established baseline would be premature.

Tr. vol. 10, 180.

The Aqua PBM Panel testified that incentives can "promote behavior necessary to exceed [standard operational expectations] or to attain other Commission priorities" and that penalties can be imposed for "failing to meet meaningful industry metrics and certain Commission prioritized standards" but also recommended that the Commission "avoid the establishment of penalties and incentives on any metric at the outset of the WSIP." *Id.* at 182. The Aqua PBM Panel warned that "the establishment of an incentive or penalty using an arbitrarily determined target may be misguided and incent behavior necessary to meet the metric but resulting in an unintended outcome." *Id.* By way of example, the Aqua PBM Panel testified that "assessing a penalty based on achievement of a projected amount or estimated completion date for a project may have the unintended result of reduced quality or longevity in a project. *Id.*

In addition to asserting that it is premature to establish penalties and incentives for metrics, the Aqua PBM Panel asserted that the Public Staff's recommended PBMs were "not based on established norms, standards established for peer utilities, or even improvements against historic company baselines," and that they were "lopsided and heavily in favor of penalties." *Id.* at 183.

Regarding the Public Staff's recommended PBM on Timely Completion of CIP Projects, the Aqua PBM Panel testified that any failure by Aqua to complete CIP projects within a particular rate year "is not typically due to lack of proper Aqua project management and planning but rather is due to contractor issues with materials, supply, and staffing." Tr. vol. 10, 185. The Aqua PBM Panel asserted that Aqua would have to "institute a higher dollar amount liquidated damage clause into contracts for these projects. In return, the contractors would increase their prices to cover their risk of paying liquidated damages." *Id.* at 185-86. The Aqua PBM Panel did not provide any example of such a price increase occurring or otherwise support its assertion. Additional critiques by the Aqua PBM Panel of the Public Staff's recommended Timely Completion of CIP Projects included that the recommendation did not take into account the need to reprioritize projects based on environmental risks and operational challenges, and that tracking and reporting on such a metric would be burdensome. *Id.* at 186.

Regarding the Public Staff's recommended PBM for Completion of CIP Projects on Budget, the Aqua PBM Panel testified that the metric does not recognize that Aqua does not recover the project cost exceedances associated with WSIP projects until the next annual reconciliation and the additional cost of capital would be borne by Aqua. The Panel also asserted that the WSIP budget does not include the higher level of liquidated damage provisions it contends would be required if the Public Staff's Timely Completion of CIP Projects metric were implemented and that it does not account for cost increases outside Aqua's control. Tr. vol. 10, 187.

The Aqua PBM Panel testified that the Public Staff's recommended Safe Drinking Water Act Compliance metric "does not provide granularity towards Aqua's ability to provide safe drinking water" and is based on a standard of absolute perfection. Tr. vol. 10, 189-90. The Aqua PBM Panel noted that violation citations can be issued to Aqua for reporting failures or for violations at systems Aqua did not own at the time. The Aqua PBM Panel testified that such violations would not impact the safety of the drinking water provided by Aqua, nor would it demonstrate whether Aqua is operating efficiently and cost-effectively. *Id.* at 190.

The Aqua PBM Panel's critiques of the Public Staff's recommended Clean Water Act Compliance metric were similar to its critiques of the Public Staff's recommended Safe Drinking Water Act metric. In addition, the Aqua PBM Panel noted that, as was stated in witness Berger's individual rebuttal testimony, Aqua's wastewater systems "are not designed with the necessary redundancies and capacity to achieve 100% compliance," and that the EPA has targeted Significant Non-Compliance that could harm the environment or human health, as opposed to addressing every National Pollutant Discharge Elimination System non-compliance event. Tr. vol. 10, 191-92. Finally, the Aqua PBM Panel stated that the Public Staff's recommended PBM "does not provide any real measurement of the utility's performance, although historical data and context was provided to the Public Staff . . ." *Id.* at 192.

Summary of the Aqua PBM Panel's Testimony in Response to Cross-Examination and Questions from the Commission

The Aqua PBM Panel was asked on cross-examination whether Aqua currently collected the data that would be needed to utilize the Public Staff's recommended PBMs. In response, the Aqua PBM Panel testified that it does not currently monitor completion of projects "against the months that . . . have been requested as part of the WSIP." Tr. vol. 10, 201-02. Regarding completion of projects on budget, the Aqua PBM Panel testified that moving to the WSIP and "going from a budgetary cash allocation need to a 'when it is actually gonna be in service'" was a significant change in Aqua's project budget tracking practices, and Aqua had not "established that refinement of reporting." *Id.* at 202.

Regarding the Public Staff's proposed operational compliance PBMs, Witness Berger testified that Aqua tracks Safe Drinking Water Act and Clean Water Act compliance separately based on MCL violations and monitoring and reporting violations, as opposed to all violations being combined. *Id.* at 203.

The Aqua PBM Panel was asked by the Commission why the parties were not further along in terms of developing mutually agreeable PBMs. In response, witness Becker testified, "Our efforts [in proposing the WSIP to the General Assembly] focused on the contents of the WSIP through the . . . three-year projection and a lot of the guardrails that are established here" and that he "relied heavily on the fact that, although the PBMs are a required component of the WSIP, the Commission may identify and apply incentives or penalties." Tr. vol. 10, 217-18. In response to concerns expressed by the Commission that opportunities need to be identified to reduce pressure on rates resulting from the costs Aqua is incurring through the WSIP and whether Aqua intended to find time to work with the Public Staff to develop PBMs, witness Becker proposed that if Aqua and the Public Staff were able to come to an agreement, "maybe by the time we get into year two of the WSIP, those things can be established and identified and incorporated." *Id.* at 223.

In response to a question about whether there could be PBMs that provide a more direct financial benefit to customers, witness Becker testified that customer would receive financial benefits in the form of rate caps in WSIP Rate Years 2 and 3. He also suggested the incorporation of conservation rates. *Id.* at 228.

When asked by the Commission what Aqua's position is on operational compliance metrics that focus only on health-based violations, witness Berger stated, "Our position on the health-based standards is that, when reviewing the rule, it says 'safe, reliable drinking water. . . . Monitoring and reporting violations can result from actions that are not reflective of anything of Aqua's wrongdoing.'" *Id.* at 241. When asked whether Aqua could come to an agreement about a margin of error or reasonable amount of deviation in Aqua's compliance rate, witness Berger stated that she believed the concern with the Public Staff's recommendation was 100% compliance.

On March 30, 2023, the Public Staff filed Public Staff Supplemental WSIP Exhibit 7 which reflects modifications the Public Staff made to four of its recommended PBMs in

recognition of comments and questions from the Commission at the evidentiary hearing. The modified PBMs are Timely Completion of CIP Projects, Completion of CIP Projects on Budget, Safe Drinking Water Act Compliance, and Clean Water Act Compliance. As compared to the original exhibit, the Supplemental Exhibit reduces the threshold for penalties associated with the Timely Completion of CIP Projects and Completion of CIP Projects on Budget metrics and reduces the compliance level below which a penalty is assessed from 100% compliance to Aqua's three-year average rate of compliance with health-based standards.

Discussion and Conclusions

Safe Drinking Water and Clean Water Act Compliance

On the issues of Safe Drinking Water Act and Clean Water Act Compliance, Aqua proposes simply to track performance, while the Public Staff proposes penalties to be imposed if Aqua falls below the three-year average. In other words, there would be a penalty for even slightly below average performance. The Public Staff testifies that it offered these PBMs in an effort to create consistency with the outcome in Docket No. W-354, Sub 400, in which CWSNC proposed similar metrics and penalties. In the instant case, there is no company support for penalties in this docket, and no evidence that Aqua's performance with respect to these metrics has been less than acceptable, if not perfect.

The Commission finds that there is no evidence in the record to suggest that Aqua's compliance rate needs to be improved in such a way that would warrant imposition of penalties for falling below recent prior years' average. The Commission concludes that it has time to take a more measured approach with respect to developing this metric and can leverage the information gleaned from the tracking metrics to develop these performance measures and appropriate standards for penalties and incentives. It would not be appropriate to penalize Aqua in this instance if it were performing well above industry standards, and no party has supported an alternative standard for use during the WSIP. The Commission declines to arbitrarily select a standard below which a PBM-related penalty would be appropriate. Indeed, to the extent evidence is presented in future rate cases that service by Aqua needs significant improvement, or warrants PBMs with associated penalties, the Commission retains that discretion. Aqua's legal obligation to comply with Safe Drinking Water Act and Clean Water Act standards are sufficient in this case to ensure Aqua is incentivized to continue its record of compliance.

The Commission emphasizes that 100% compliance with federal law is already expected and required – full compliance is to be the floor rather than the ceiling – but understands for a variety of reasons 100% compliance might not be achieved or maintained. In performance-based ratemaking what is being incentivized is not simply compliance with the law (that is already expected and required) but improvement upon historical performance. To this end, the Commission finds that Aqua's proposal to track performance is just and reasonable. To date Aqua's record reflects adequate compliance by Aqua. Continued improvement of this performance, with reasonable amounts of year-to-year variance is the standard to which Aqua should be held. To the extent there is a

meaningful improvement or deterioration in performance during the WSIP period, the Commission's WSIP Rule allows a penalty to be assessed or incentive to be granted. However, Aqua does not support such penalties or incentives, and the Commission is not persuaded by the evidence presented by the Public Staff that any are needed for purposes of this WSIP. The Commission will carefully consider the reporting of these metrics in determining any appropriate incentives or penalties for Aqua relating to them in Aqua's next WSIP proceeding, if any.

Completion of Projects on Budget

The Public Staff recommends a penalty if the percentage of CIP projects placed into service that are completed more than 10% over budget exceeds certain thresholds per rate year. The Commission declines to adopt this penalty.

The Commission recognizes that Aqua has every incentive to maintain budget discipline with respect to the projects being placed into service. It will have to fund costs of any overages without the opportunity to incrementally adjust rates until its next rate case, much as it does under traditional ratemaking. During the next rate case, all of the capital Aqua has invested will be subject to review for prudence and possible disallowance. The Commission concludes that this check is sufficient to incentivize budget discipline and, as such, the Commission declines to add another. To the extent costs rise and budget predictions turn out to be low, such a penalty mechanism could create a perverse incentive for Aqua to eliminate prudent costs, which would ultimately be to the detriment of ratepayers.

Timely Completion of Projects

The Public Staff supports a penalty only PBM, which Aqua opposes. Aqua's testimony indicates that implementing projects on schedule and on budget years into the future may prove difficult, and that the prospect of a penalty for late projects may cause capital expenditures to be higher than they might otherwise be. The Commission is not persuaded by these arguments. Implementation of the capital plan during the MYRP period is a baseline expectation of the Commission. Indeed, the Public Staff's proposed benchmarks give Aqua significant leeway in completing projects late due to unforeseen circumstances which may be outside of Aqua's control.

In its April 6, 2023 filing, the Public Staff recommends cumulative benchmarks of 15%, 25% and 35% incomplete projects in Rate Years 1, 2 and 3 respectively as triggering a penalty (a 10-basis point reduction to the high end of the ROE band). Previously the Public Staff had recommended 10%, 20% and 30% thresholds. The Public Staff has consistently argued that it intended the Timely and On Budget Completion metrics to be paired, so that Aqua's incentive to go over budget in order to complete a project would be mitigated. The Commission adopts the Public Staff's thresholds as originally envisioned, with the caveat that the benchmarks are applied to net movement in the number of projects placed in service in a Rate Year. The Commission recognizes that over the course of the MYRP, the relative priority of projects is likely to change, and some projects will inevitably be delayed. At the same time, others may need to be accelerated relative to the plan as approved. Allowing

Aqua the flexibility to efficiently manage its business and provide adequate and reasonable quality of service, without incurring a penalty on an individual project basis is a reasonable accommodation to the inherent uncertainty of creating capital plans, and will mitigate Aqua's incentive to incur unnecessary costs simply in the name of putting projects into service in order to avoid a penalty.

Summary of Penalties and Incentives

Consistent with the above discussion, the Commission concludes that PBMs shall be established as tracking metrics only with regard to Safe Water Drinking Act compliance, Clean Water Act compliance, and completion of projects on budget. With regard to timely completion of projects, a PBM with a penalty of a 10 basis point reduction to the top end of the ROE band, as set forth by the Public Staff, premised on 10%, 20% and 30% of net movement in projects failed to be completed in Rate Years 1, 2 and 3 is appropriate for use in this WSIP.

OTHER MATTERS

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 106-107

Rate Case Expense

The evidence for this finding of fact is contained in Aqua's April 24, 2023 filing in this docket and in the Public Staff's May 1, 2023 responsive filing.

On April 24, 2023, Aqua filed an update to rate case expense related to the present docket to reflect additional costs related to the settlement proceeding. On May 1, 2023, the Public Staff filed a letter stating it had reviewed Aqua's update rate case expense and supporting documentation and stated that such costs are appropriate for recovery by Aqua.

Based on the foregoing, the Commission finds that it is reasonable to update Aqua's rate case expense for this proceeding to reflect the additional costs related to the settlement proceeding as requested by Aqua and reviewed and accepted by the Public Staff.

Aqua's Strategic Plan for Meter Data Management and Advanced Analytics

The evidence for this finding of fact is contained in Becker Exhibit 4A, attached to the direct testimony of Aqua witness Becker, the records of the Commission, and prior Commission orders in Docket No. W-218, Subs 497 and 526.

Aqua witness Becker provided in Becker Exhibit 4A, the status of various matters pertaining to the reporting requirements established in the Commission's Sub 526 Order. Witness Becker testified concerning Decretal Paragraph No. 25, which required that Aqua file its Aqua's Strategic Plan for Meter Data Management and Advanced Analytics upon completion, that the Data Management project requirements are included in the SIP project. Witness Becker further testified that Essential Utilities will enable a solution, such

that all Aqua North Carolina customers will have access to a new, much-improved self-service customer portal through Aqua's corporate website. He explained that by using that portal, Aqua's North Carolina customers will be able to view their billing and payment details, view usage data, make payments, start/stop service, and utilize other services. Aqua's customers in North Carolina who have been converted to automated meter reading (AMR) technology will then be able to view daily usage data through that portal, including their 40-day meter read data. Witness Becker commented that the target implementation date for this new portal is the end of 2023. He stated that the usage data maintained in AMR is now currently available for internal use in table and graphic form. It is currently used for customer dispute resolution, provided upon customer request, and for other ad hoc requests. Witness Becker testified that field staff can also readily access the 40-day usage information on their tablets, which includes a link to the daily usage graph for a specific customer for help in troubleshooting work orders, including addressing high consumption inquiries by customers.

Regarding providing of AMR meter data to customers, the Commission notes its determination in the Sub 497 Order that it was appropriate to include Aqua's investment in AMR technology in rates was premised in part on the Commission's finding that the functionalities of AMR technology were being utilized to the benefit of ratepayers and that benefits to ratepayers would incrementally increase as Aqua fully deployed the technology. Witness Becker testified that the Data Management project requirements related to the AMR technology are included in the SIP project and that the target implementation date for the new portal on Aqua's corporate website for customers to then view daily usage data, including their 40-day meter read data, is the end of 2023.

The Commission acknowledges the testimony of the Public Staff WSIP Panel that the transition from Banner, Aqua's current customer information platform, to SAP has been delayed from the start of 2024 to the end of 2025. Based on the foregoing, the Commission finds that it is reasonable for Aqua to file with the Commission annual status update reports, beginning in 2024, 60 days after the end of the previous calendar year until its Strategic Plan for Meter Data Management and Advanced Analytics is complete and to file its completed Plan when it is final.

IT IS, THEREFORE, ORDERED as follows:

1. That the Stipulation between Aqua and the Public Staff is hereby approved in its entirety and is incorporated herein by reference;
2. That the exhibits to the Stipulation are hereby admitted into evidence;
3. That all late-filed and supplemental exhibits filed by Aqua and the Public Staff in this docket are hereby admitted into evidence;
4. That Aqua's update to rate case expense filed on April 24, 2023, and the Public Staff's responsive letter filed on May 1, 2023, are hereby admitted into evidence;

5. That all of the findings, conclusions, and decisions reflected hereinabove are so ordered by the Commission and the parties shall comply with same;

6. That the Commission considers neither the Stipulation filed on March 31, 2023, nor the parts of this Order pertaining to the contents of the Stipulation, as having precedential value with respect to future proceedings and the same shall not be cited, argued, or treated as such;

7. That, consistent with the Stipulation and this Order, Aqua is hereby authorized to implement a WSIP. WSIP Rate Year 1 shall begin on January 1, 2023, and end on December 31, 2023; WSIP Rate Year 2 shall begin on January 1, 2024, and end on December 31, 2024; and WSIP Rate Year 3 shall begin on January 1, 2025, and end on December 31, 2025;

8. That Aqua shall not seek to recover the revenue requirement increase related to Rate Year 1 for the period January 1, 2023, through the issuance date of this Order, as agreed by Aqua during the expert witness hearing;

9. That the 5% cap in N.C.G.S. § 62-133.1B(c) shall be implemented as requested by Aqua on a per rate division basis, a stricter basis than required by the WSIP Statute and applied to service revenues;

10. That Aqua's rates during the term of the WSIP shall reflect an authorized rate of return on common equity of 9.80% and an authorized overall rate of return of 6.885%;

11. That, consistent with the Stipulation and this Order, a banding of authorized returns shall be established and used to credit customers with earnings above the high end of the applicable Rate Year band;

12. That, consistent with the WSIP Statute, the Stipulation, and the Commission's decisions in this Order, Aqua shall adopt the performance-based metrics set forth in Appendix A, attached hereto;

13. That consistent with the WSIP Statute and Commission Rule R1-17A(g)(1)(b), Aqua shall monitor and report annually its performance with respect to the Performance Based Metrics approved herein;

14. That the incentives and/or penalties related to Performance Based Metrics approved herein shall be retroactive to January 1, 2023, the beginning of WSIP Rate Year 1;

15. That Aqua shall file all quarterly and annual reports required by N.C.G.S. § 62-133.1B and Commission Rule R1-17A;

16. That Aqua is authorized to continue to use its bulk purchased water and sewer pass-through mechanisms;

17. That Aqua shall, during the term of its WSIP, 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 shall be reset to zero as of the effective date of the approved rates in this proceeding;

18. That Aqua shall be allowed to utilize the WSIC/SSIC mechanism after the WSIP plan period and that no WSIC/SSIC eligible projects included in the WSIP shall be recovered through the WSIC/SSIC mechanism;

19. That, consistent with the Stipulation and this Order, Aqua is authorized to modify its Sewer Tariff to include a Sewer Use Rule, as described above and set forth in Appendix B, attached hereto;

20. That, consistent with the Stipulation and this Order, Aqua shall apply for State Revolving Fund grants to comply with the corresponding Performance Based Metric;

21. That, consistent with the Stipulation and this Order, Aqua and the Public Staff shall agree upon selection of a third-party, competent, qualified, and independent consulting firm that Aqua shall retain, with the goal of ensuring that implementation of the multi-year components of the WSIP will benefit the using and consuming public and Aqua. All costs associated with the engagement will be borne by Aqua and will not be recovered from customers;

22. That Aqua shall file a letter with the Commission within 14 days of retaining the consulting firm selected per ordering paragraph 21. Aqua shall grant sufficient access in a timely manner to allow it to perform an independent assessment and complete its report related to the topics listed below in ordering paragraph 23. The Public Staff shall work with Aqua and the consultant to facilitate the completion of the assessment in no more than a 3-month timeframe after the consultant is chosen. Any recommendations that Aqua accepts shall include timeframes for implementation. Upon conclusion of the engagement, Aqua shall file the consulting firm's report detailing its findings and recommendations with the Commission. Aqua shall also file its own report addressing the timelines for implementation of the accepted consulting firm's recommendations. Aqua shall file quarterly status reports on the implementation of such recommendations for one year after the date of the report addressing the timelines for implementation of the consulting firm's recommendations;

23. That the retained consulting firm's report shall detail the consulting firm's findings and recommendations related to Aqua's operations and management in the following areas: assessment of current Aqua staffing levels and organizational structure; determination of whether anticipated Aqua staffing levels and structure are sufficient to fully and properly implement the WSIP; succession planning to ensure continuity of WSIP operational and regulatory filing capabilities during workforce transitions throughout the WSIP period; assurance of efficient information flow within the organization to facilitate timely decision making and implementation of these decisions consistent with the WSIP

objectives; assurance of appropriate internal decision-making, managerial oversight, and accountability during WSIP implementation; assurance of current training for current and future employees, cross-training, and back up support associated with the WSIP and meeting WSIP reporting obligations; and assurance that the WSIP is implemented consistent with statutory and regulatory requirements;

24. That, consistent with the Stipulation and this Order, Aqua shall file quarterly reports with the Commission that include: (1) the steps Aqua 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 Aqua 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 Aqua, 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. Aqua shall file the first report on the same date as it files the report for Q2 of WSIP Rate Year 1 and shall continue to file reports with each subsequent quarterly report through Q4 of Rate Year 3;

25. That, consistent with the Stipulation and this Order, Aqua shall file the 2018 Affiliate Interest Agreement in Docket No. W-218, Sub 570;

26. That, consistent with the Stipulation and this Order, regulatory conditions related to the pending restructure of Essential Utilities shall be addressed in Docket No. W-218, Sub 571;

27. That, consistent with the Stipulation and this Order, Aqua shall use its best efforts to communicate with the Public Staff, Commission, and other Class A water and sewer utilities regarding scheduling of future rate case filings in an effort to limit concurrent filings by these utilities going forward;

28. That Aqua and the Public Staff shall jointly work together to file with the Commission within seven business days of the issuance date of this Order the updated Base Case and WSIP Rate Years 1, 2, and 3 revenue requirements reflecting the decisions in this Order on Disputed Issues, as discussed herein. The updated revenue requirements for each period shall be filed in the same format as Public Staff Settlement Exhibit 1;

29. That Aqua and the Public Staff shall jointly file with the Commission within seven business days of the issuance date of this Order the WSIP Rate Year 1 Schedules of Rates, labeled as Appendix A-1, that reflect the Commission's decisions herein, for approval by the Commission. In addition, Aqua and the Public Staff shall jointly file the Bulk Purchased Water System Usage Rates and Purchased Sewer Rates, labeled as Appendix A-2; the Schedule of Connection Fees, labeled as Appendix A-3, and the Water and Sewer System Improvement Charges (reset to zero), labeled as Appendix A-4, for approval by the Commission. Upon approval by further order of the Commission, the WSIP Rate Year 1 Schedules of Rates shall be effective for service rendered on and after the date of this Order through December 31, 2023;

30. That in conjunction with ordering paragraph 29, Aqua and the Public Staff shall file the applicable Notice to Customers for each of Aqua's five rate divisions for WSIP Rate Year 1 for approval by further order of the Commission;

31. That Aqua and the Public Staff shall jointly file with the Commission within seven business days of the issuance date of this Order the WSIP Rate Year 2 Schedules of Rates for approval by the Commission. Aqua and the Public Staff shall also file the applicable Notice to Customers for each of Aqua's five rate divisions. Upon approval by further order of the Commission, the WSIP Rate Year 2 Schedules of Rates shall become effective for service rendered on and after January 1, 2024, through December 31, 2024;

32. That Aqua and the Public Staff shall jointly file with the Commission within seven business days of the issuance date of this Order the WSIP Rate Year 3 Schedules of Rates for approval by the Commission. Aqua and the Public Staff shall also file the applicable Notice to Customers for each of Aqua's five rate divisions. Upon approval by further order of the Commission, the WSIP Rate Year 3 Schedules of Rates shall become effective for service rendered on and after January 1, 2025, through December 31, 2025;

33. That the joint filings by Aqua and the Public Staff, in ordering paragraphs 30, 31, and 32, shall include a schedule comparing the revenue that would have been produced by the requested rates in Aqua's Application using the mutually agreeable billing determinants during the updated test period and Rate Years 1-3 with the revenue that will be produced under the schedules filed to produce the revenue requirement established by this Order. The Public Staff shall work with Aqua to ensure the rate schedules adhere to the rate design described in the Stipulation;

34. That at least 30 days prior to implementation of rates effective for Rate Years 2 and 3, Aqua shall provide further notice to customers of the rates to be implemented as of those respective effective dates;

35. That the Public Staff shall be permitted to audit the payroll and payroll-related costs associated with the open positions during the WSIP annual review and recommend for Commission approval adjustments to rates for Rate Years 2 and 3 accordingly;

36. That Aqua shall record the additional SIP costs incurred from September through December 2022 and the SIP costs incurred during WSIP Rate Years 1-3 in a regulatory asset account, with amortization beginning in the same month expenses for the SIP are incurred and amortized over a period of 15 years, including a return on the unamortized balance, using the net-of-tax overall rate of return approved in this Order, with the ratemaking treatment of the unamortized costs to be addressed in a future rate case proceeding;

37. That Aqua shall establish a regulatory liability on its books for review in Aqua's next general rate case proceeding to accumulate the customer benefits related to the actual receipt of state and federal funding related to PFOS/PFOA capital projects in

excess of the \$3,375,675 for which Aqua applied to NCDEQ by the May 1, 2023 application due date as well as any other federal and state funding received for capital projects included in the WSIP;

38. That to the extent Aqua does not receive approval by NCDEQ for any portion of the \$3,375,675 in funding for which Aqua applied, Aqua may record the difference between the actual amount of funding received and the amount estimated to be received to a regulatory asset account for consideration for rate recovery in a future general rate case proceeding;

39. That Aqua shall establish a regulatory liability account to accumulate any settlement funds received from its current litigation with the manufacturers of PFAS for review in Aqua's next general rate case proceeding;

40. That the amount of utility plant in service for the Wakefield Filter project shall be decreased by 25% of \$857,797 resulting in a \$214,449 disallowance from plant in service;

41. That rate case expense for this proceeding shall be updated for the settlement proceeding as requested by Aqua in its April 24, 2023 filing in this docket, which supporting documentation has been reviewed and accepted by the Public Staff;

42. That Aqua shall continue its Conservation Pilot Program, including the revenue reconciliation, approved in Docket No. W-218, Sub 526. Aqua shall file its analysis of the Pilot for the period ended October 31, 2023, including its recommendation of ongoing rates for the Pilot Program service areas, in the first quarter of 2024 with the WSIP annual review process. Rates for the Pilot Program service areas shall thereafter be continued, modified, or terminated by further order of the Commission based on the analysis filed by Aqua and any comments filed by the Public Staff or other parties. Aqua shall continue to charge the currently approved Pilot Program surcharge through December 31, 2023, pursuant to the Commission's order issued on April 25, 2023;

43. That Aqua's request to establish a Customer Assistance Program is hereby denied;

44. That Aqua shall further develop its CAP proposal with the additional information and analysis to support the program required herein, and shall file its fully developed CAP proposal in a separate docket for consideration by the Public Staff and Commission;

45. That the Chief Clerk shall establish the next available Aqua sub number for Aqua to file its fully developed CAP proposal and such docket shall be described as "Petition for Consumer Assistance Program";

46. That Aqua and the Public Staff shall continue to work together regarding the development of appropriate recommendations and solutions to improve secondary water quality as impacted by the levels of iron and manganese at Aqua's affected water systems;

47. That the Public Staff and Aqua are required to file a written report with the Commission, on March 1 and September 1 each year in which the WSIP is in effect, on secondary quality concerns that are affecting its customers. If a particular secondary water quality concern has affected or is affecting 10% of the customers in an individual subdivision service area or 25 billing customers in an individual service area, whichever is less, the customers affected and the estimated expenditures that are necessary to eradicate to the extent practicable water quality issues related to iron and manganese shall be detailed in the written report. The written report shall also contain a recommendation as to whether the Commission should order Aqua to pursue such corrective action and an underlying reason why the action should or should not be undertaken. If there are no secondary water quality issues or if the secondary water quality issues are below the 10%/25 threshold previously set forth, Aqua and the Public Staff shall so inform the Commission;

48. That at any time after a year from the issuance date of this Order, Aqua 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;

49. That, Aqua shall file with the Commission the Strategic Plan for Meter Data Management and Advanced Analytics upon its completion and provide status update reports annually beginning in 2024, 60 days after the end of the previous calendar year until such completion;

50. That Aqua 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;

51. That Aqua shall file a refund plan for the excess partial, temporary rates and charges collected from the customers, if any, in the Aqua NC Water, Aqua NC Sewer, and Brookwood Water Rate Divisions within 30 days of the date of this Order and the Public Staff shall file a response to said refund plan no later than 60 days from the date of this Order;

52. That the Chief Clerk shall establish Docket No. W-218, Sub 573A as the single docket to be used for all future Commission-required reports as ordered herein, including WSIP filings, and also for any other reporting requirements, applications, or petitions previously filed in Docket No. W-218, Sub 526A; and

53. That the Chief Clerk shall close Docket No. W-218, Sub 526A.

ISSUED BY ORDER OF THE COMMISSION.

This the 5th day of June, 2023.

NORTH CAROLINA UTILITIES COMMISSION

A handwritten signature in cursive script that reads "Tamika R. Conyers". The signature is written in black ink and is positioned above the printed name.

Tamika Conyers, Deputy Clerk

Commissioner Floyd B. McKissick, Jr., did not participate in this decision.

Commissioner ToNola D. Brown-Bland dissents in part.

Commissioner Jeffrey A. Hughes dissents in part.

DOCKET NO. W-218, SUB 573

Commissioner ToNola D. Brown-Bland, dissenting in part:

I join Commissioner Hughes in respectfully dissenting from the Majority's decision to deny approval of the Customer Assistance Program proposed by the Company. I appreciate that the Company made the effort on its own initiative to propose a program to address the increasing economic hardship faced by a segment of its customers and note that the Majority agrees that such a program is important to assist low-income customers.

While historically all of the non-utility, non-regulated antenna revenue has been used to reduce the full amount of revenue that would otherwise be required from all customers, I find reallocating only 5% of the antenna revenue to assist a specific subset of customers in need is another (equally) reasonable and beneficial use of these non-utility funds. I am persuaded, as the Company testified, that the Company balanced the interests of all its customers in conservatively proposing a modest reallocation of a small portion of its non-utility revenues, all of which (minus the administrative costs of the proposed CAP) would still be used to the benefit of Aqua customers.

I agree with Commissioner Hughes that the CAP should be approved as a pilot, which would be in line with testimony from Aqua's witnesses that funding the CAP with 5% of the antenna revenues would be an "initial funding point." This first step in exploring and developing a tool to bring more immediate assistance to customers in need could provide valuable information that would help us learn more about the effectiveness and usefulness of such programs as well as about whether and how any change in the funding level would impact the program and all of Aqua's customers going forward, if it were later determined the pilot should become a permanent program as the industry continues to experience increasing costs in providing utility service.

Finally, I believe the program could be approved now and possibly improved upon during the term of the WSIP to meet some of the concerns appropriately raised by the Public Staff without impacting the rates set in this proceeding.

Respectfully dissenting

/s/ ToNola D. Brown-Bland
Commissioner ToNola D. Brown-Bland

DOCKET NO. W-218, SUB 573

Commissioner Jeffrey A. Hughes, dissenting in part:

I am in agreement with most of the majority's conclusions in this case. I agree that the Stipulation should be accepted in its entirety for the reasons cited in the order. I also agree that implementing a multi-year rate plan (MYRP) or Water and Sewer Investment Plan (WSIP) is generally in the public interest. That said, I have concerns as to whether customers will receive benefits from the implementation of this new approach commensurate with the benefits that will accrue to the Company's investors. Absent a declared and demonstratable downward adjustment to the rate of return on equity (ROE) specifically attributed to the reduced financial risk and increased revenue that clearly accrues due to the new rate setting framework, I do not believe customers have received a fair share of the benefit.

Put simply, the majority's approved ROE of 9.80% fails to sufficiently consider and quantify the reduced risk to shareholders that necessarily flows from the transition from a historic test year to a multi-year more forward-looking approach. I believe a basis point reduction close to the 20 basis point adjustment proposed by Public Staff witness Hinton is appropriate.

There is no dispute that Aqua and its shareholders benefit substantially from the utilization of a WSIP. Section 62-133.1B provides water utilities in North Carolina with a new rate setting paradigm. Prior to its enactment, revenue requirements and rates for water utilities were determined based on a historic test year with limited adjustments for known and measurable changes through the date of the expert witness hearing. In a typical environment where costs are rising and the utility is making significant capital investments to replace and rehabilitate aging infrastructure, by the time rates are determined and become effective, the revenue from the rates is often insufficient to achieve a utility's authorized return, an outcome that is referred to as "regulatory lag." Aqua identifies regulatory lag as a significant detriment to shareholders and has supported a move away from historic test year to more future facing forecasting of expenditures to mitigate this lag. Aqua requested that the Commission exercise this new statutory authority when it filed this general rate case, which strongly suggests it has determined that the WSIP would be in its best financial interest.

The first step in utilizing the WSIP ratemaking mechanism is to calculate "base rates" a process which closely resembles the historic rate year approach used in the past. Comparing the revenue that Aqua would collect if using the traditional approach with what it is authorized to collect under the new WSIP mechanism it is evident that the transition from historic test to forward-looking rate years will immediately generate significant additional revenue for the utility due to its inclusion of projected capital investments and upwardly adjusted operating expenses. For example, in Aqua's rate case application, under its WSIP proposal, the Company requests additional service revenues on a company-wide basis for Rate Year 1 of \$18,098,466, an increase of 25.7% over present authorized service revenues. At the same time, Aqua's application shows that if it relied

on a more traditional approach, it would only request an increase of \$13,702,277 in service revenue. In other words, the new rate setting approach leads to an approved revenue requirement over \$4.4 million more than if the traditional approach had been used. The new approach not only reduces regulatory lag in out years, but also produces a significant increase in revenue for the company just by including projected costs rather than historic costs in revenue requirements.

When a utility asks the Commission to apply the WSIP mechanism, the burden falls upon the utility to quantify the extent to which that reduces its risk profile for its investors, and thus to explain how it contributes to the calculation of the appropriate ROE, as part of its burden of proof to demonstrate that utilizing the WSIP mechanism results in rates that are just and reasonable and are in the public interest as required by N.C.G.S. § 62-133.1B(b). Here, the only customer benefits Aqua can identify are potentially reduced rate case expenses and more level rate increases. These modest benefits, which are by no means guaranteed to materialize do not in my view meet the statutory public interest requirement.

In contrast, applying a basis point reduction in ROE would provide a clear and meaningful financial benefit to customers due to this transition. The table below shows an estimation of financial impact by rate year of applying a 9.65% ROE versus a 9.80% ROE using the capital and operating expenditure recommendations included in the Public Staff’s latest revenue requirement filing¹ (Public Staff Settlement Ex. 1). Adjusting the ROE by 15 basis points under that scenario would reduce the amount customers are being asked to pay without changing the service they receive by \$338,085 in Rate Year 1, \$355,829 in Rate Year 2, and \$374,569 in Rate Year 3.

	Base Year	Rate Year 1	Rate Year 2	Rate Year 3
ROE 9.80%	\$74,433,366	\$83,397,441	\$87,020,031	\$91,066,016
ROE 9.65%	\$74,157,285	\$83,059,356	\$86,664,202	\$90,691,447
Difference	\$276,081	\$338,085	\$355,829	\$374,569

The demonstratable customer savings resulting from a downward adjusted ROE, alongside potential reduced rate case expenses and rate leveling benefits (reduced rate

¹ This calculation does not reflect the Commission’s decisions in this Order concerning the contested issues between Aqua and the Public Staff that impact total service revenues. For example, the above amounts do not include the revenue requirement impact of the Commission’s decision to include portions of the capital costs in plant in service that Aqua requested in its application related to PFOS/PFOA treatment equipment and SIP project costs which were entirely rejected by the Public Staff and not included in Public Staff Settlement Exhibit 1. However, the above impacts do provide meaningful minimum impacts for purposes of this discussion.

shock) of a MYRP, would constitute a reasonable customer benefit to justify implementing an MYRP in the public interest.

Company witness D'Ascendis testified that North Carolina's WSIP mechanism is not unique relative to the proxy group, and he cited several examples of similar mechanisms in place for proxy group utilities to address regulatory lag — for example, multi-year rate plans in California, as well as fully forecasted test years in Iowa, Tennessee, Virginia, Pennsylvania, and New York. As a result, witness D'Ascendis believes that any risk reduction attributable to a multi-year rate plan is already reflected in those utilities' market data and a further reduction to Aqua's rate of return on equity would double-count that risk reduction.

The majority accepted witness D'Ascendis' explanation and rejected any application of a specific adjustment to the ROE that would consider the impact of a shift from historic single year rate paradigm to a forward looking MYRP. The majority apparently accepts that the models that led to the ranges of ROE under different approaches already internalize any impact of a more favorable rate setting process because many utilities included in the proxy group already had rate setting options similar to North Carolina's new approach. I interpret this consideration a bit differently. To me the inability of the models to test for the specific impact of extremely different rate setting approaches is a limitation in the modeling, making it very difficult to rely on its outputs alone when considering the impact this momentous transition warrants. As such, I believe that an adjustment outside the models is appropriate.

The majority opinion settles on a proposed ROE of 9.80% by reviewing the numerous results of models that were presented as evidence and selecting four model outputs it believes are superior to other outputs and deserve more weight. I find the review and selection of the four modeling results reasonable, but do not believe that the final recommended ROE should be a simple average of the four results but instead should have been in the lower area of this range. I would find an ROE of 9.65% for WSIP Rate Years 1, 2, and 3, to be fair and just to both the utility, its investors, and its customers.

Customer Assistance Program

I also disagree with the Majority's denial of the proposed Customer Assistance Program and rejection of the associated reallocation of \$45,000 in antenna revenue to fund the program. The majority's order calls for a new docket to study and design a more comprehensive Customer Assistance Program over an extended period. While I do not have a problem with creating a new docket to consider future affordability measures in a more comprehensive manner. I fear denying the modest reallocation of funds included in the company's application could lead to an absence of any utility funded customer assistance program being established until the next rate case. I believe the problem of affordability is too great to delay doing something in the more immediate term. I am disappointed that the Company failed to include a shareholder contribution in the program and the administrative costs of the program seemed high, but rather than deny the proposed \$45,000 reallocation of funds from the Company's antenna revenue, I would

have approved the reallocation and the establishment of a Customer Assistance Program as a Pilot program that hopefully could have been improved during the MYRP as work on the other affordability docket proceeds. I believe the scale of the proposed program is quite modest and could provide important learning opportunities that could inform future more comprehensive programs.”

/s/ Jeffrey A. Hughes
Commissioner Jeffrey A. Hughes

Description	Measure	Penalty	Incentive
Timely Completion of CIP Projects	<p>Percentage of projects \$200,000 or over in the approved WSIP incomplete 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>Ten basis point (BP) reduction to the high-end of the Commission authorized band if measure exceeds (on a net basis):</p> <p>10% in Rate Year 1 20% in Rate Year 2 30% in Rate Year 3</p>	None
Completion of CIP Projects on Budget	<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>	Tracking Metric	None
Safe Drinking Water Compliance (Quality)	<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>	Tracking Metric	None
Clean Water Act Compliance (Quality)	<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>	Tracking Metric	None

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 BP increase to the high-end of 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 Aqua 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 Aqua 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 systems during the WSIP rate year.	Tracking metric	Tracking metric
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 /employee Field Employee means staff member who works outside the office at least one-half of the year Safety training means structured and organized training (not peer to peer training)	Tracking metric	Tracking metric
Employee Turnover	Number of employees that leave / total number of employees for same time period	Tracking metric	Tracking metric

**AQUA NORTH CAROLINA, INC.
SEWER USE RULE**

1. DEFINITIONS

- ***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.
- ***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.
- ***Industrial waste permit or contract*** shall mean a wastewater permit or contract issued as required by Aqua to an industrial user.
- ***Industrial waste pretreatment program*** shall mean a program established by Aqua 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.
- ***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.
- ***User or Discharger*** shall mean any person that discharges, causes or permits the discharge of wastewater into a Company sanitary sewer system.
- ***Person*** shall mean any individual, firm, company, association, society, corporation, institution, group, or any other legal entity.
- ***Shall*** is mandatory; ***may*** is permissive.
- ***Company*** shall mean Aqua North Carolina, Inc.

- **Waste** shall mean rejected, unutilized or superfluous substances in liquid, gaseous, or solid form resulting from domestic and nondomestic activities.
- **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.
- **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.
- **Contributory industrial user** shall mean any user that Aqua has determined discharges specific pollutants to the treatment works at concentrations greater than typical domestic/commercial wastewaters.
- **Sanitary Sewer System** shall refer to all mains, laterals, treatment plants and all appurtenances or infrastructure necessary to convey and treat wastewater.

2. GENERAL REQUIREMENTS

- A. The User shall cooperate with Aqua in its efforts to implement or enforce its sewer use rule, including any monitoring, reporting and treatment that Aqua 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 Aqua shall notify Aqua in advance and obtain a permit or contract from Aqua if required by Aqua.
- B. It is agreed and understood that Aqua'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).
- C. 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.

- D. 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.
- E. Grease and oil traps shall be provided when necessary for the proper handling of liquid wastes containing grease or oil when required by Aqua. 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 Aqua for approval.
- F. 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 Aqua prior to commencement of discharge into the sewage collection system or wastewater treatment plant.
- G. The User will indemnify and hold harmless Aqua 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 Aqua's Sewer Use requirements by the User. Aqua shall have the right to charge the User as a part of the User's wastewater service charges any expenses or costs incurred by Aqua 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 Aqua's Sewer Use Control requirements by the User.
- H. Aqua 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 Aqua's Sewer Use requirements by the User.
- I. Aqua 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. Aqua agrees to use its best efforts to provide continuous service.
- J. 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.

- K. Where necessary in Aqua'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 Aqua 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.
- L. Aqua reserves the right to refuse connection to its sanitary sewer system or to compel the discontinuance of the use of the sanitary sewer where Aqua deems the discharge of the waste harmful to the sewer system or have an adverse effect on the sewage treatment processes or Company personnel.

3. 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 Aqua.
- 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 Aqua.
- 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 Aqua, 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. Aqua reserves the right to set more stringent limitations by contract or permit with the User if Aqua 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 Aqua's applicable permits.

4. GENERAL EFFLUENT LIMITATIONS

Maximum Allowable Limits (Grab Sample)		Maximum Allowable Limits (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, Aqua may accept the discharge of wastewater with constituents in excess of such concentrations provided that Aqua 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 Aqua and any User whereby an industrial waste of unusual strength or character may be accepted by Aqua for treatment, subject to the requirements of the Categorical Standards for Industrial Users. For such waste, Aqua 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 Aqua prior to reconnection, as established in Aqua's tariffs approved by the North Carolina Utilities Commission. Repeat violations may result in permanent disconnection.
 - D. Aqua 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 Aqua 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. Aqua 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 Aqua.
 - 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. Aqua 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 Aqua deems advisable, it may require any User discharging wastes to install and maintain, at their own expense, in a manner approved by Aqua, 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 Aqua 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 Aqua.
- D. Copies of all operational records, analyses, shall be filed with the company unless otherwise directed by Aqua.