NORTH CAROLINA

PUBLIC STAFF

UTILITIES COMMISSION

August 17, 2020

Ms. Kimberley A. Campbell, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Docket No. W-218, Sub 526 - Application for General Rate Increase

Dear Ms. Campbell:

Attached for filing is the Proposed Order of the Public Staff in the above-referenced docket.

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

Sincerely,

Electronically submitted
s/ Megan Jost
Staff Attorney
megan.jost@psncuc.nc.gov

MJ/cla

Attachment

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. W-218, SUB 526

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Application by Aqua North Carolina, Inc., 202 MacKenan Court, Cary, North Carolina 27511, for Authority to Adjust and Increase Rates for Water and Sewer Utility Service in All Service Areas in North Carolina	)))))	PROPOSED ORDER OF THE PUBLIC STAFF

HEARD: Tuesday, June 23, 2020, at 9:30 a.m., Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina

Wednesday, July 8, 2020, at 1:30 p.m., and continuing as required through Monday, July 13, 2020, by virtual means using the WebEx electronic platform

Monday, August 3, 2020, at 1:30 p.m., by virtual means using the WebEx electronic platform

Monday, August 3, 2020, at 6:30 p.m., by virtual means using the WebEx electronic platform

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

APPEARANCES:

For Aqua North Carolina, Inc.:

Jo Anne Sanford, Sanford Law Office, PLLC, Post Office Box 28085, Raleigh, North Carolina 27611-8085

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

For the Using and Consuming Public:

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

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

BY THE COMMISSION: On November 26, 2019, pursuant to Commission Rule R1-17(a), Aqua North Carolina, Inc. (Aqua NC or the Company), filed a letter notifying the Commission of its intent to file an application for a general rate case.

On December 31, 2019, Aqua NC filed an Application to Increase Rates and Charges (Application) with the Commission requesting authority to adjust and increase its rates for water and sewer utility services in all its service areas in North Carolina, effective for service rendered on and after January 30, 2020.

The Commission issued its Order Establishing General Rate Case and Suspending Rates on January 21, 2020. This Order declared the matter to be a general rate case, suspended the rates for up to 270 days, and established the test year period as the 12-months ending September 30, 2019.

On February 14, 2020, the Commission issued its Order Scheduling Hearings, Establishing Discovery Guidelines, and Requiring Customer Notice (Scheduling Order). Among other things, the Scheduling Order established the dates, times, and locations for six public witness hearings to take place in April 2020 and an expert witness hearing to begin on June 23, 2020.

On March 31, 2020, to assist in preventing the spread of coronavirus and in response to Governor Roy Cooper's Executive Order No. 121 imposing a statewide "stay at home" order until April 29, 2020, the Commission issued an order postponing the previously scheduled public witness hearings pending further order.

On April 29, 2020, the North Carolina Attorney General's Office (AGO) filed a notice of intervention in this docket pursuant to N.C. Gen. Stat. § 62-20.

On May 12, 2020, the Public Staff filed a motion for extension of time to file its testimony from May 19, 2020, until 5:00 p.m. on May 26, 2020, with the exception of the testimony of Public Staff witness John R. Hinton. On May 14, 2020, the Commission issued an order granting the Public Staff's motion. Pursuant to the Commission's order, the deadline for the Company to file its rebuttal testimony was extended to June 12, 2020, with the exception of the rebuttal testimony of Company witness Dylan W. D'Ascendis.

On May 19, 2020, the Public Staff filed the testimony of Public Staff witness Hinton.

On May 21, 2020, Aqua NC filed the revised exhibits to the direct testimony of its witnesses Shannon Becker and Edward Thill.

On May 26, 2020, the Public Staff filed the testimony of its witnesses Michelle M. Boswell, Lindsay Darden, Lynn Feasel, D. Michael Franklin, Windley E. Henry, and Charles M. Junis.

On June 2, 2020, Aqua NC filed the rebuttal testimony of Aqua NC witness D'Ascendis.

On June 11, 2020, Aqua NC filed a Petition for Approval of an Order Allowing Deferral of Revenues in Lieu of Rates Under Bond or, Alternatively, Notice of Intent to Place Temporary Rates in Effect Subject to a Refund Pursuant to N.C.G.S. § 62-135 (Petition).

On June 12, 2020, Aqua NC filed the rebuttal testimony of its witnesses Amanda Berger, Dean R. Gearhart, Paul J. Hanley, Joe Pearce and George Kunkel, and Edward Thill.

Also on June 12, 2020, Aqua NC filed a motion for an extension of time until 12:00 p.m., on June 13, 2020, to file the joint rebuttal testimony of its witnesses Becker and Pearce.

On June 13, 2020, Aqua NC filed the joint rebuttal testimony of its witnesses Becker and Pearce.[1]

On June 15, 2020, Aqua NC filed the rebuttal testimony of its witness Gearhart with corrected Rebuttal Exhibit 1, and the joint rebuttal testimony of its witnesses Becker and Pearce with corrected Rebuttal Exhibits.

On June 16, 2020, the Commission filed an Order Granting Extension of Time to File Rebuttal Testimony Nunc Pro Tunc allowing Aqua NC's motion for an

[1] Because June 13, 2020, fell on a Saturday, when the Chief Clerk's Office was closed, the joint rebuttal testimony of Aqua NC's witnesses Becker and Pearce was not marked filed by the Chief Clerk's Office until June 15, 2020, the next business day following June 13, 2020.

extension of time to 12:00 p.m., on June 13, 2020, to file the joint rebuttal testimony of its witnesses Becker and Pearce.

Also, on June 16, 2020, the Public Staff and the Attorney General's Office filed a joint response to Aqua NC's Petition addressing deferral of revenues or, alternatively, implementation of rates under bond, filed June 11, 2020.

On June 19, 2020, Aqua NC filed revisions to the rebuttal testimony and exhibits of Aqua NC witnesses Berger and Thill.

On June 22, 2020, the Public Staff filed the corrected testimony of its witness Junis and the corrected joint testimony and exhibits of its witnesses Henry and Junis.

On June 23, 2020, at 9:30 a.m., the Commission opened the expert witness hearing in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina, though, due to the State of Emergency relating to COVID-19, promptly recessed the hearing to resume on July 6, 2020, at 1:30 p.m., for the purpose of receiving expert witness testimony of by virtual means using the WebEx electronic platform.

On June 23, 2020, the Commission issued an order denying use of a revenue deferral mechanism. The order further approved Aqua NC's financial undertaking associated with institution of partial, temporary rates under bond and approved the Company's Notices to Customers, noting that the choice to exercise the remedy provided by N.C.G.S. § 62-135 belongs to the Company and is not determined by the Commission, and finding that Aqua NC's motion satisfied the statutory requirements necessary to place new rates into effect on a partial, temporary basis, subject to refund with interest at a rate of 10% per annum, effective July 30, 2020.

On July 1, 2020, Aqua NC filed a motion seeking Commission approval of revised Notices to Customers. In its motion, Aqua NC sought to implement partial, temporary rates under bond at a lower level than it previously requested and was authorized in the Commission's June 23, 2020 Order. Also on July 1, 2020, Aqua NC filed its executed Undertaking to Refund pursuant to N.C.G.S § 62-135(c).

On July 1, 2020, Aqua NC and the Public Staff entered into and filed a Partial Settlement Agreement and Stipulation (Stipulation). The Stipulation resolved some of the issues between the two parties in this docket. However, the following unsettled issues still existed: (1) Conservation Pilot Program; (2) rate design; (3) water quality reporting; and (4) the in-service date of plant and Aqua NC's unitization process, further described herein (collectively, the Unsettled Issues).

On July 2, 2020, the Commission issued its Order Approving Revised Customer Notices and Accepting Financial Undertaking, to approve Aqua NC's Undertaking to Refund.

On July 7, 2020, at the Commission's request, the Public Staff filed Revised Exhibits I and II of Public Staff witness Windley E. Henry, including Revised Exhibit I of Public Staff witness Lynn Feasel, and Revised Exhibits 7, 9, 13, 15, and 17 of Public Staff witness Charles M. Junis.

This matter came on for the expert witness hearing on July 8, 2020, by virtual means using the WebEx electronic platform. Aqua NC presented the testimony of its witnesses Becker, Berger, D'Ascendis, Gearhart, Hanley, Kunkel, Pearce, and Thill. The testimony of witnesses D'Ascendis, Hanley, Kunkel and Pearce was received into the record without examination by any party or the Commission. Witnesses Becker, Berger, Gearhart, and Thill participated in the proceeding and were subject to cross-examination. The Public Staff presented the testimony of its witnesses Boswell, Darden, Feasel, Franklin, Henry, Hinton, and Junis. The testimony of witnesses Boswell, Darden, Feasel, and Hinton was stipulated into the record without examination of the sponsoring witnesses. Witnesses Franklin, Henry, and Junis were available for examination by the parties and the Commission. The hearing was recessed on July 13, 2020, to be reconvened on August 3, 2020, for public witness hearings conducted by virtual means using the WebEx electronic platform.

On July 15, 2020, at the Commission's request, Aqua NC filed its Confidential Late Filed Becker Direct Exhibit 4.

On July 16, 2020, the Commission issued its Notice of Due Date for Proposed Orders and/or Briefs, requiring the parties to file proposed orders and/or briefs with the Commission no later than August 17, 2020.

On July 17, 2020, the Public Staff filed its Late Filed Exhibit 1 requesting the Commission to take judicial notice of the Commission's final orders in the three preceding Aqua NC rate cases.

On July 20, 2020, the Public Staff filed its Late Filed Exhibit 2 with responses to Commissioner Questions of Public Staff Witness Charles M. Junis.

On July 27, 2020, Aqua NC filed a Late Filed Exhibit with responses to Commissioner Questions.

On August 3, 2020, at 1:30 p.m., the first public witness hearing began by virtual means using the WebEx electronic platform. Thirteen Company customers testified as public witnesses at the first public witness hearing.

On August 3, 2020, at 6:30 p.m., the second public witness hearing began by virtual means using the WebEx electronic platform. Eleven Company customers testified as public witnesses at the second public witness hearing.

On August 17, 2020, the Public Staff and Aqua NC filed their proposed orders, and the AG filed its post-hearing brief.

All late-filed exhibits were filed by the parties as requested by the Commission during the evidentiary hearing. No objections were raised to the admission into evidence of any such late-filed exhibits and, therefore, the Commission hereby accepts such exhibits into the record.

Aqua NC's response to customer concerns, expressed at the August 3, 2020 hearings will be filed by August 24, 2020. The Public Staff's verified response will be filed by September 4, 2020, and thereafter Aqua NC's response, if any, will be filed by September 11, 2020. The parties will then file a Supplemental Proposed Order addressing issues related to the public hearings, including customer service/reporting requirements, on or before September 25, 2020.

Based on the verified Application, the NCUC Form W-1, the testimony and exhibits (both pre-filed and late-filed) received into evidence at the hearings, the Stipulation, and the record as a whole, the Commission makes the following:

FINDINGS OF FACT

General Matters

1. Aqua NC 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/or sewer utility service to customers in North Carolina. Aqua NC is a wholly-owned subsidiary of Essential Utilities Inc. (Essential Utilities) (formerly Aqua America, Inc.), located in Bryn Mawr, Pennsylvania. Aqua NC's state headquarters is located in Cary, North Carolina.

2. Aqua NC is subject to the jurisdiction of the Commission pursuant to Chapter 62 of the North Carolina General Statutes for adjudication of the Company's Application for a rate increase and for a determination of the justness and reasonableness of Aqua NC's proposed rates for its water and sewer utility operations in North Carolina.

3. The test period appropriate for use in this proceeding is the 12-month period ending September 30, 2019, updated for certain changes in plant, revenues, and costs that were not known at the time the case was filed but were based upon circumstances occurring or becoming known through March 31, 2020, and including up to the close of the evidentiary hearing on July 13, 2020.

4. Aqua NC's last general rate case was decided by Commission Order (Sub 497 Order) entered on December 18, 2018, in Docket No. W-218, Sub 497. Aqua NC’s present rates for water and sewer service in all of the Company’s service areas have been in effect since January 1, 2020, pursuant to the Commission’s Order Approving Water and Sewer System Improvement Charges on a Provisional Basis and Requiring Customer Notice issued in Docket No. W-218, Sub 497A on January 6, 2020.

Application

5. In summary, by its general rate case Application, supporting documents filed on January 24 and 29, 2020, and additional filings on subsequent dates during the proceeding, Aqua NC sought an increase in its base rates and charges to its North Carolina retail customers of $6,786,847, along with other relief, including cost deferrals, changes to its rate design, a Conservation Pilot Program, and a Consumption Adjustment Mechanism. The Application was based upon a requested rate of return on common equity of 10.1%, an embedded long-term debt cost of 4.25%, and a capital structure of 50% common equity and 50% long-term debt.

The Stipulation

6. On July 1, 2020, Aqua NC and the Public Staff (Stipulating Parties) entered into and filed the Stipulation resolving some of the disputed issues between the Stipulating Parties in this proceeding pursuant to N.C.G.S. § 62-92

and Commission Rule R1-24(c). The issues that were not resolved by the Stipulation are sometimes referred to collectively herein as the Unresolved Issues.

7. The Stipulation is the product of give-and-take in settlement negotiations between the Stipulating Parties, and it is material evidence as to the appropriate outcome of this proceeding, and is entitled to be given appropriate weight by the Commission.

<u>Stipulations Pertaining to Capital Structure, Cost of Capital, and Overall Rate of Return</u>

8. The cost of capital and revenue increase approved in this Order is intended to provide Aqua NC, through sound management, the opportunity to earn an overall rate of return of 6.81%. This overall rate of return is derived from applying an embedded cost of debt of 4.21%, and a rate of return on equity of 9.4%, to a capital structure consisting of 50% long-term debt and 50% equity.

9. A 9.4% rate of return on equity for Aqua NC is just and reasonable in this general rate case.

10. A 50% equity and 50% long-term debt ratio is a reasonable capital structure for Aqua NC in this case.

11. A 4.21% cost of debt for Aqua NC is reasonable for the purpose of this case.

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

during the unprecedented economic crisis resulting from the COVID-19 pandemic that gave rise to the Commission's disconnection moratorium.

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

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

15. The 9.4% rate of return on equity and the 50% equity capital structure approved by the Commission in this case will result in a cost of capital that is as low as reasonably possible. They appropriately balance Aqua NC's need to obtain equity and debt financing with the ratepayers' need to pay the lowest possible rates.

16. The authorized levels of overall rate of return and rate of return on equity set forth above are supported by competent, material, and substantial record evidence, are consistent with the requirements of N.C.G.S. § 62-133, and are fair to Aqua NC's customers generally and in light of the impact of changing economic conditions.

Stipulated Adjustments to Cost of Service

17. The Stipulation provides for a broad range of accounting adjustments, which are set forth in detail at Settlement Exhibit I, appended to the Stipulation filed on July 1, 2020.

18. The Stipulating Parties agree that the settlement regarding those issues will not be used as a rationale for future arguments on contested issues brought before the Commission.

19. The accounting adjustments outlined in Settlement Exhibit I, are just and reasonable to all parties in light of all the evidence presented, serve the public interest, and should be approved.

20. The Company's updates through August 14, 2020 to certain revenues, expenses, and investments, as agreed to and adjusted in the Public Staff Stipulation, are appropriate for use in this proceeding.

Acceptance of Stipulation

21. Based upon all of the evidence in the record, including consideration of the public witness testimony and the evidence from the AGO, who has not joined the Stipulations, the provisions of the Stipulation are just and reasonable to the customers of Aqua NC and to all parties to this proceeding, and serve the public interest. Therefore, the Stipulation should be approved in its entirety. In addition, the Stipulation is entitled to substantial weight and consideration in the Commission's decision in this docket.

Utility Plant In Service (UPIS) and Aqua NC's Unitization Process

22. In Ordering Paragraphs 8 and 12 of its Order Granting Partial Rate Increase and Requiring Customer Notice filed in Docket No. W-218, Sub 274 (Sub 274 Order), on April 8, 2009, the Commission ordered Aqua NC to take action regarding its accounting procedures as follows:

> 8. That Aqua NC shall adopt a consistent, accurate, and complete accounting system for its detailed plant records that maintains its plant records in compliance with the Uniform System of Accounts. Furthermore, such accounting system should keep plant additions on a system-specific basis, as required by Order issued on January 29, 2008, in Docket No. W-218, Sub 251. Such accounting system shall be in place prior to the Company filing another general rate case for any of its operations in North Carolina. If Aqua NC files a general rate case for any of its operations based upon a test year in which the plant records have not been brought into compliance, any additional rate case costs due to the inadequate records shall not be borne by the ratepayers.
>
> 12. That Aqua shall review its procedures for determining when projects are completed and should be closed and file its recommended changes to its procedures within 90 days of the issuance date of this Order.

23. Aqua North Carolina, Inc.'s First Status Report in Response to Commission Order (First Status Report) was filed on June 30, 2009. In response to Ordering Paragraph 8 of the Commission's Sub 274 Order, Aqua NC stated in part, "The Company has chosen an asset management system called "Power Plant" as the platform for conversion of existing records and for asset tracking in the future." In response to Ordering Paragraph 12, the Company stated in part, "On a monthly basis the Accounting Department sends the Regional Managers a CWIP report for review, with the request that the Managers notify Accounting of projects that are complete and in service. Accounting allows 30 to 60 days for any

trailing costs to be charged to these in-service activity numbers before closing the asset."

24. Aqua NC's accounting practices since its filing of its First Status Report have resulted in some assets being closed more than 60 days after the asset's in service date. In these instances, the Company has on occasion continued to accrue Allowance for Funds Used During Construction (AFUDC) well after the asset's in service date and has frequently postponed the start of depreciation until well after the asset's in-service date.

25. This practice can lead to an artificial decrease in accumulated depreciation and corresponding increase in rate base, thereby increasing the return on the unamortized balance of plant in service.

26. Aqua NC should utilize the functionality provided by its PowerPlan[2] asset management software to book completed but not classified costs on the in-service date and on a continual basis shortly thereafter as invoices are received and paid until the entire project can be unitized to ensure that AFUDC ends and depreciation begins on the in-service date.

Revenue Requirement

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

[2] The asset management software is properly referred to as PowerPlan.

28. Aqua NC's total annual operating revenues should be changed by amounts which, after pro forma adjustments, will produce the following increases (decreases) in total operating revenues:

Item	**Amount**
Aqua NC Water	1,981,026
Aqua NC Sewer	818,402
Fairways Water	20,932
Fairways Sewer	(36,942)
Brookwood Water	643,485
Total Aqua NC	$3,426,903

These increases (decreases) will allow Aqua NC the opportunity to earn a 6.81% overall rate of return, which the Commission has found to be reasonable upon consideration of the findings in this Order.

Conservation Pilot Program

29. In its Application, Aqua NC requests Commission approval of a Conservation Rate Pilot Program (pilot program) to implement tiered inclining block rates, including separate irrigation rates, to be charged to residential water customers in the Arbor Run, Merion, Pebble Bay, and Bayleaf-Leesville service areas (ANC Water rate entity) and The Cape service area (Fairways Water rate entity). The pilot program proposal, which is contingent upon a revenue reconciliation, incorporates a projectional repression of the three-year average usage levels already subjected to Aqua NC's proposed Conservation Normalization Factor.

30. Aqua NC withdrew its request for approval of the Conservation Normalization Factor.

31. Aqua NC failed to demonstrate that its proposed pilot program is justified.

Rate Design

32. The Commission approves a 30 percent base facility charge and a 70 percent volumetric charge rate design for all of the Aqua NC water customers, all the Brookwood Water customers, and all the Fairways water customers. This rate design is reasonable and supports and encourages customer water usage efficiency and conservation.

33. The Commission approves volumetric wastewater rates with a 60 percent base facility charge and a 40 percent volumetric charge for all the Aqua NC and Fairways wastewater customers that receive water utility service from Aqua NC or Fairways water, and have Aqua NC or Fairways water meter reading available. This rate design is reasonable and supports and encourages customer water usage efficiency and conservation.

34. All Aqua NC and all Fairways wastewater customers that do not receive water utility service from Aqua NC or Fairways with Aqua NC or Fairways water meter readings available, will remain monthly flat rate wastewater customers.

Water and Sewer System Improvement Charges

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

36. By law, the cumulative maximum charges that the Company can recover through system improvement charges between rate cases cannot exceed 5% of the total service revenues approved by the Commission in this rate case.

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

The evidence supporting these findings of fact and conclusions is contained in the verified Application, the NCUC Form W-1, the testimony and exhibits (both pre-filed and late-filed) of the witnesses, and the entire record in this proceeding. These findings and conclusions are informational, procedural, and jurisdictional in nature and are not contested by any party.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 6-7

The evidence supporting these findings of fact is contained in the Stipulation and in the testimony of Aqua NC witnesses Becker, Gearhart, Thill, and D'Ascendis, and Public Staff witnesses Henry, Hinton, and Feasel, and the entire record in this proceeding. Specifically the evidence is found as follows:

- Settlement Exhibit 1, filed with the referenced July 1, 2020 Partial Settlement Agreement and Stipulation;
- Henry Revised Exhibits I and II with supporting schedules (including Feasel Revised Exhibit I with supporting schedules); filed July 7, 2020, which provide sufficient support for the annual revenue required for the issues resolved by the Stipulation;
- Additional Direct Testimony of Shannon Becker (Tr. Vol. 2, p. 145, line 1 – p. 146, line 23) filed July 8, 2020;

- Henry Additional Direct Partial Settlement Agreement Exhibit 1; and
- Additional Direct Testimony of Windley Henry (Tr. Vol. 4, pp. 311, line 20 – p. 313, line 19) July 9, 2020.

The Stipulation is the product of the give-and-take in settlement between the Stipulating Parties, is material evidence in this proceeding, and is entitled to be given appropriate weight in this case, along with other evidence from Aqua NC, the Public Staff, and the Attorney General, the other intervening party, along with (consumer statements of position and the sworn testimony of the public witnesses concerning the Company's Application).

The Stipulation settles only some of the disputed issues between the Stipulating Parties. The Unresolved Issues include:

A. Conservation Pilot Program;
B. Rate Design;
C. Customer Service/Reporting Requirements; and
D. The in-service date of plant and Aqua NC's unitization process.

The Unresolved Issues, except for a final decision on Customer Service/Reporting Requirements are resolved by the Commission and addressed in this Order.

On July 1, 2020, Aqua NC and the Public Staff filed the Stipulation, which resolved virtually all of the financial issues in this proceeding between the Stipulating Parties and provided for a revenue requirement increase of approximately $3,232,954 for combined operations based on the settled issues. The Stipulation is based upon the same test period as Aqua NC's Application, adjusted for certain changes in plant, revenues, and costs that were not known at the time the case was filed but occurred or became known by March 31, 2020.

<u>EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 8-16</u>

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

<u>Capital Structure</u>

The Stipulating Parties agree that the capital structure appropriate for use in this proceeding is a capital structure consisting of 50.00% common equity and 50.00% long-term debt at a cost of 4.21%.

<u>Rate of Return on Equity</u>

In its Application and in the direct testimony of Aqua NC witness Dylan D'Ascendis, the Company requested approval for its rates to be set using a rate of return on equity of 10.10%, including adjustments made for Company size and floatation costs. In his rebuttal testimony, witness D'Ascendis increased his recommended rate of return on equity to 11.00%, also including adjustments for size and flotation cost. Public Staff witness Hinton recommended a rate of return of equity of 8.90% if a Consumption Adjustment Mechanism (CAM) is approved by the Commission, or 9.00 if a CAM is not approved by the Commission. For the reasons set forth herein, the Commission finds that a rate of return on equity of 9.4% is just and reasonable.

Rate of return on equity, also referred to as the cost of equity capital, is often one of the most contentious issues to be addressed in a rate case. In the absence of a settlement agreed to by all parties, the Commission must exercise its independent judgment and arrive at its own independent conclusion as to all matters at issue, including the rate of return on equity. See, e.g., State ex rel. Utils. Comm'n v. Carolina Utils. Customers Ass'n, 348 N.C. 452, 466, 500 S.E.2d 693, 707 (1998). 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, 491-93, 739 S.E.2d 541, 546-47 (2013) (Cooper I). In this case, the evidence relating to the Company's cost of equity capital was presented by Aqua NC witness D'Ascendis and Public Staff witness Hinton. No other rate of return on equity expert evidence was presented by any party.

In addition to its evaluation of the expert evidence, the Commission must also make findings of fact regarding the impact of changing economic conditions on customers when determining the proper rate of return on equity for a public utility. Cooper I, 366 N.C. at 494, 739 S.E.2d at 548. This was a factor newly announced by the Supreme Court in its Cooper I decision and not previously required by the Commission or any appellate courts as an element that must be considered in connection with the Commission's determination of an appropriate rate of return on equity. The Commission's discussion of the evidence with respect to the findings required by Cooper I is set out in detail in this Order.

Cooper I was the result of the Supreme Court's reversal and remand of the Commission's approval of the agreement regarding the rate of return on equity in a stipulation between the Public Staff and Duke Energy Carolinas, LLC (DEC) in Docket No. E-7, Sub 989. The Commission has had occasion to apply both prongs of Cooper I in subsequent orders, specifically the following:

- Order Granting General Rate Increase, Docket No. E-2, Sub 1023 (May 30, 2013) (2013 DEP Rate Order), which was affirmed by the North Carolina Supreme Court in State ex rel. Utils. Comm'n v. Cooper, 367 N.C. 444, 761 S.E.2d 640 (2014) (Cooper III)[3];

- Order on Remand, Docket No. E-7, Sub 989 (Oct. 23, 2013) (DEC Remand Order), which was affirmed by the North Carolina Supreme Court in State ex rel. Utils. Comm'n v. Cooper, 367 N.C. 644, 766 S.E.2d 827 (2014) (Cooper IV);

- Order Granting General Rate Increase, Docket No. E-7, Sub 1026 (Sep. 24, 2013), which was affirmed by the Supreme Court in State ex rel. Utils. Comm'n v. Cooper, 367 N.C. 741, 767 S.E.2d 305 (2015) (Cooper V);

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

- Order on Remand, Docket No. E-22, Sub 479 (July 23, 2015), which was not appealed to the Supreme Court;
- Order Approving Rate Increase and Cost Deferrals and Revising PJM Regulatory Conditions, Docket No. E-22, Sub 532 (Dec. 22, 2016);
- Order Accepting Stipulation, Deciding Contested Issues and Granting Partial Rate Increase, Docket No. E-2, Sub 1142 (Feb. 23, 2018);
- Order Accepting Stipulation, Deciding Contested Issues, and Requiring Revenue Reduction, Docket No. E-7, Sub 1146 (June 22, 2018); and
- Order Accepting Public Staff Stipulation In Part, Accepting CIGFUR Stipulation, Deciding Contested Issues, and Granting Partial Rate Increase, Docket No. E-22, Sub 562 (February 24, 2020).

In order to give full context to the Commission's decision herein and to elucidate its view of the requirements of the General Statutes as they relate to rate of return on equity, as interpreted by the Supreme Court in Cooper I, the Commission deems it important to provide in this Order an overview of the general principles governing this subject.

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

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

> To fix rates that do not allow a utility to recover its costs, including the cost of equity capital, would be an unconstitutional taking. In assessing the impact of changing economic conditions on customers in setting an 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. State ex rel. Utilities Commission v. General Telephone Co. of the Southeast, 281 N.C. 318, 370, 189 S.E.2d 705, 757 (1972). As the Supreme Court held in that case, these factors constitute "the test of a fair rate of return" in Bluefield and Hope. Id.

2013 DEP Rate Order, p. 29.

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

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

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

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

> While utilities enjoy varying degrees of monopoly in the sale of public utility services, they must compete with everyone else in the free open market for the input factors of production, whether it be labor, materials, machines, or capital. The prices of these inputs are set in the competitive marketplace by supply and demand, and it is these input prices which are incorporated in the cost of service computation. This is just as true for capital as for any other factor of production. Since utilities must go to the open capital market and sell their securities in competition with every other issuer, there is obviously a market price to pay for the capital they require, for example, the interest on capital debt, or the expected return on equity.
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> [T]he cost of capital to the utility is synonymous with the investor's return, and the cost of capital is the earnings which must be generated by the investment of that capital in order to pay its price, that is, in order to meet the investor's required rate of return.

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

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

However, a customer's ability to afford a rate increase has no impact upon the supply of or the demand for capital. The economic forces at work in the competitive capital market determine the cost of capital – and, therefore, the utility's required rate of return on equity.

Third, the Commission is and must always be mindful of the North Carolina Supreme Court's command that the Commission's task is to set rates as low as possible consistent with the dictates of the United States and North Carolina Constitutions. State ex rel. Utils. Comm'n v. Pub. Staff-N. Carolina Utils. Comm'n, 323 N.C. 481, 490, 374 S.E.2d 361, 370 (1988). Further, and echoing the discussion above concerning the fact that rate of return on equity represents the cost of equity capital, the Commission must execute the Supreme Court's command "irrespective of economic conditions in which ratepayers find themselves." (2013 DEP Rate Order, p. 37.) The Commission noted in that Order:

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

Id. Indeed, in Cooper I the Supreme Court emphasized "changing economic conditions" and their impact upon customers. Cooper I, at 548.

Fourth, while there is no specific and discrete numerical basis for quantifying the impact of economic conditions on customers, the impact on customers of changing economic conditions is embedded in the rate of return on equity expert witnesses' analyses. The Commission noted this in the 2013 DEP Rate Order: "This impact is essentially inherent in the ranges presented by the return on equity expert witnesses, whose testimony plainly recognized economic conditions – through the use of econometric models – as a factor to be considered in setting rates of return." 2013 DEP Rate Order, p. 38.

Fifth, under long-standing decisions of the North Carolina Supreme Court, the Commission's subjective judgment is a necessary part of determining the authorized rate of return on equity. State ex rel. Utils. Comm'n v. Pub. Staff, 323

N.C. 481, 490, 374 S.E.2d 361, 369 (1988). As the Commission also noted in the 2013 DEP Rate Order:

> Indeed, of all the components of a utility's cost of service that must be determined in the ratemaking process, the appropriate [rate of return on equity] the one requiring the greatest degree of subjective judgment by the Commission. Setting a return on equity [rate of return on equity] for regulatory purposes is not simply a mathematical exercise, despite the quantitative models used by the expert witnesses. As explained in one prominent treatise,
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> > 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.
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> > 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.
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> > In reality, the concept of a fair rate of return represents a "zone of reasonableness." As explained by the Pennsylvania commission:
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> > There is a range of reasonableness within which earnings may properly fluctuate and still be deemed

> just and reasonable and not excessive or extortionate. It is bounded at one level by investor interest against confiscation and the need for averting any threat to the security for the capital embarked upon the enterprise. At the other level it is bounded by consumer interest against excessive and unreasonable charges for service.

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

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

2013 DEP Rate Order, pp. 35-36.

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

The Supreme Court in Cooper V affirmed the 2013 DEC Rate Order, in which this framework was fully articulated. But to the framework we can add additional factors based upon the Supreme Court's decisions in Cooper III, Cooper IV, and Cooper V. Specifically, the Supreme Court held that nothing in Cooper I requires the Commission to "quantify" the influence of changing economic conditions upon customers (see, e.g., Cooper V, 367 N.C. at 745-46; Cooper IV, 367 N.C. at 650; Cooper III, 367 N.C. at 450), and, indeed, the Supreme Court reiterated that setting the rate of return on equity is a function of the Commission's subjective judgment: "Given th[e] subjectivity ordinarily inherent in the determination of a proper rate of return on common equity, there are inevitably pertinent factors which are properly taken into account but which cannot be quantified with the kind of specificity here demanded by [the appellant].” Cooper III, 367 N.C. at 450, quoting State ex rel. Utils. Comm’n v. Pub. Staff-North Carolina Utils. Comm’n, 323 N.C. 481, 490 (1988).

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

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

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

1. Evidence from Expert Witnesses on Cost of Equity Capital

Company witness D’Ascendis recommended in his direct testimony a rate of return on equity of 10.10%. This 10.10% was based upon his indicated cost of common equity of 9.80%, a recommended size adjustment of 0.20% (as compared with the members of his Utility Proxy Group), and a recommended flotation adjustment of 0.07%. He rounded up his cost of common equity with these adjustments to 10.10%. Public Staff witness Hinton recommended a rate of return of equity of 8.90% if a Consumption Adjustment Mechanism (CAM) is approved by the Commission, or 9.00% if a CAM is not approved by the Commission. In his rebuttal testimony, Company witness D'Ascendis amended his recommended cost of equity to increase to 11.00% for Aqua NC.

The results derived from witness D'Ascendis' analyses in his direct and rebuttal testimony and witness Hinton's analyses in his direct testimony are as follows:

Summary of D'Ascendis' and Hinton's Common Equity Cost Rate Analyses

	D'Ascendis Direct	D'Ascendis Rebuttal[4]	Hinton Direct
Utility Proxy Group			
Discounted Cash Flow Model	8.81%	9.07%	8.60%
Risk Premium Model	10.12	10.91/10.56	9.40
Capital Asset Pricing Model	9.35	10.90/10.67	n/a
Cost of Equity Models Applied to			
Non-Price Regulated Proxy Group			
Indicated Common Equity	11.29	11.48/11.28	n/a
Cost Rate Before Adjustments	9.80%	10.75/10.50	9.00%
Size Adjustment	0.20	0.20	n/a
Flotation Cost Adjustment	0.07	0.05	n/a
Consumption Adjustment Mechanism	n/a	n/a	0.10
Round up	0.03	n/a	n/a
Indicated Common Equity Cost Rate After Adjustments	10.07%	11.00/10.75%	8.90%
Recommended Common Equity Cost Rate After Adjustments	10.10%	11.00/10.75%	8.90%

[4] Forecast / Current

Witness D’Ascendis’ recommendation was based upon his Discounted Cash Flow (DCF) model, his Risk Premium Model (RPM), and his Capital Asset Pricing Model (CAPM), applied to market data of a proxy group of an initial proxy group of six publicly-traded water companies that, in his rebuttal testimony, he increased to seven publicly-traded water companies (Utility Proxy Group). He also applied the DCF, RPM, and CAPM to a proxy group of domestic, non-price regulated companies (Non-Price Regulated Proxy Group) which he described as comparable in total risk to the his Utility Proxy Group.

Witness D’Ascendis testified he used the single-stage constant growth DCF model. He testified his unadjusted dividend yields are based on the proxy companies’ dividends as of October 18, 2019, divided by the average of closing market prices for the 60 trading days ending October 18, 2019.[5] He made an adjustment to the dividend yield because dividends are paid periodically, usually quarterly.

For witness D’Ascendis’ direct testimony DCF growth rate, he testified he used only analysts’ five-year forecasts of earning per share (EPS) growth. He testified the mean result of his application of the single-stage DCF model is 8.73%, the median result is 8.88%, and the average of the two is 8.81% for his Utility Proxy Group.

Aqua NC witness D’Ascendis used two risk premium methods. He testified his first method is the Predictive Risk Premium Model (PRPM), while the second

[5] See Schedule DWD-3, page 1, column 1.

method is a RPM using a total market approach. He testified that the inputs to his PRPM are the historical returns on the common shares of each company in the Utility Proxy Group minus the historical monthly yield on long-term U.S. Treasury securities through September 2019. He testified he added the forecasted 30-year U.S. Treasury Bond yield, 2.64%, to each company's PRPM-derived equity risk premium to arrive at an indicated cost of common equity. He testified his direct testimony mean PRPM indicated common equity cost rate for the Utility Proxy Group is 11.30%, the median is 10.38%, and the average of the two is 10.84%.

Witness D'Ascendis testified his total market approach RPM adds a prospective public utility bond yield to an average of (1) an equity risk premium that is derived from a beta-adjusted total market equity risk premium, and (2) an equity risk premium based on the S&P Utilities Index. He calculated his adjusted prospective bond yield for the Utility Proxy Group to be 4.01%, and the average equity risk premium in his direct testimony to be 5.38% resulting in risk premium derived common equity to be 9.39% for his RPM using his total market approach.

To determine the results of his risk premium method, he testified that in his direct testimony he averaged the PRPM result of 10.84% and the RPM results of 9.39%, and the indicated cost of equity from his risk premium method was 10.12%

For his CAPM, witness D'Ascendis testified he applied both the traditional CAPM and the empirical CAPM (ECAPM) to the companies in his Utility Proxy Group and averaged the results. For his CAPM beta coefficient, he considered two methods of calculation: the average of the Beta coefficients of the Utility Proxy Group companies reported by Bloomberg Professional Services, and the average of the Beta coefficients of the Utility Proxy Group companies as reported by Value Line resulting in a mean beta of .64 and a median beta of .63.

Witness D'Ascendis testified that the risk-free rate adopted for both applications of the CAPM is 2.64%. This risk-free rate of 2.64% is based on the average of the *Blue Chip* consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six quarters ending with the first calendar quarter of 2021, and long-term projections for the years 2021 to 2025 and 2026 to 2030.

Witness D'Ascendis stated that he used three sources of data to determine the risk premium in his CAPM: historical (Ibbotson), Value Line, and Bloomberg, that when averaged, result in an average total market equity risk premium of 9.87%. He testified that the mean result of his CAPM/ECAPM analyses is 9.39%, the median is 9.31%, and the average of the mean and median is 9.35%.

Witness D'Ascendis also selected 10 domestic non-price regulated companies for his Non-Price Regulated Proxy Group that he believes are comparable in total risk to his Utility Proxy Group. He calculated common equity cost rates using the DCF, RPM, and CAPM for the Non-Price Regulated Proxy Group. His direct testimony DCF result was 11.63%, his RPM cost rate was 11.41%, and his CAPM/ECAPM cost rate was 10.44%.

Witness D'Ascendis also made a 0.20% equity cost rate adjustment due to Aqua NC's small size relative to the Utility Proxy Group. He testified that the Company has greater relative risk than the average company in the Utility Proxy Group because of its smaller size compared with the group, as measured by an estimated market capitalization of common equity for Aqua NC (whose common stock is not publicly-traded).

Public Staff witness Hinton recommended a common equity cost rate of 8.90%. Witness Hinton testified that, according to the April 2020 Mergent Bond Record, Moody's index yields on long-term "A" rated public utility bonds as of April 2020 were 3.50% as compared to 4.37% at December 18, 2018, which is the date the Commission issued its final order in the last Aqua NC rate case (Sub 497) that included a 9.70% cost of equity. Witness Hinton further testified that the difference increased to 113 basis points when compared the average 4.63% yield observed during January 2014 at the time of settlement in Docket No. W-218, Sub 363. He further testified that the substantial decrease in long-term bond yields since the last rate case is not indicative of an increase in financing costs for utilities; rather, it portends a lowering of financing costs for long-term capital.

Witness Hinton stated that the much lower current interest rates and stable inflationary environment of today indicate that borrowers are paying less for the time value of money. He testified that this is significant since utility stocks and utility capital costs are highly interest rate-sensitive relative to most industries. Furthermore, given that investors often view purchases of the common stocks of utilities as substitutes for fixed income investments, the reductions in interest rates observed over the past 10 years or more has paralleled the decreases in investor required rates of return on common equity.

Witness Hinton testified that he generally does not rely on interest rate forecasts. Rather, he believes that relying on current interest rates, especially in relation to yields on long-term bonds, is more appropriate for ratemaking in that, it is reasonable to expect that as investors are pricing bonds, they are based on expectations on future interest rates, inflation rates, etc. He testified that while he has a healthy respect for forecasting, he is aware of the risk of relying on predictions of rising interest rate cases. He presented a case that can be observed in the testimony of Company witness Ahern in the 2013 Aqua NC rate case. In that case, witness Ahern identified several point forecasts of 30-year Treasury Bond yields that were predicted to rise to 4.3% in 2015, 4.7% in 2016, 5.2% in 2017, and 5.5% for 2020 through 2024. He presented a graph of 30-Year US Treasury Bonds yields which showed in 2016 the range was approximately 2.50% to 3.10%, and in 2017 the range was approximately 2.25% to 3.10%. [Citation.] Witness Hinton testified that he had similar concerns with overestimated forecasts in Witness D'Ascendis Rebuttal Testimony in the Docket No. W-218, Sub 497, where the Blue Chip Consensus Forecasts predicted the 30-year Treasury Bonds would rise to 3.70% by the fourth quarter of 2019, though, according to the Federal Reserve, the highest observed yield on 30-year Treasury Bonds for the fourth quarter of 2019 is 2.43%, a forecast error of 127 basis points.

Witness Hinton testified he used the DCF model and the RPM to determine the cost of equity for the Company. He testified that the DCF model is a method of evaluating the expected cash flows from an investment by giving appropriate consideration to the time value of money. The DCF model is based on the theory that the price of the investment will equal the discounted cash flows of return. The return to an equity investor comes in the form of expected future dividends and price appreciation. He testified that as the new price will again be the sum of the discounted cash flows, price appreciation is ignored and attention focused on the expected stream of dividends.

Witness Hinton testified that he applied the DCF method to Essential Utilities and to a comparable group of water utilities followed by the Value Line Investment Survey (Value Line). He testified that the standard edition of Value Line covers eight water companies. He excluded Consolidated Water Co. because of its significant overseas operations.

Witness Hinton calculated the dividend yield component of the DCF by using the Value Line estimate of dividends to be declared over the next 12 months divided by the price of the stock as reported in the Value Line Summary and Index sections for each week of the 13-week period February 14, 2020 through May 8, 2020. He testified that a 13-week averaging period tends to smooth out short-term variations in the stock prices. This process resulted in an average dividend yield of 1.7% for his proxy group of seven water utilities.

To calculate the expected growth rate component of the DCF, Public Staff witness Hinton employed the growth rates of his proxy group in EPS, dividends per share (DPS), and book value per share (BVPS) as reported in Value Line over the past 10 and five years. He also employed the forecasts of the growth rates of his proxy group in EPS, DPS, and BVPS as reported in Value Line. He testified that the historical and forecast growth rates are prepared by analysts of an independent advisory service that is widely available to investors, and should also provide an estimate of investor expectations. He testified that he included both historical known growth rates and forecast growth rates, because it is reasonable to expect that investors consider both sets of data in deriving their expectations.

Witness Hinton incorporated the consensus of various analysts' forecasts of five-year EPS growth rate projections as reported in Yahoo Finance. He testified that the dividend yields and growth rates for each of the companies and for the average for his comparable proxy group are shown in Exhibit JRH-4.

Witness Hinton concluded based upon his DCF analysis that a reasonable expected dividend yield is 1.7% with an expected growth rate of 6.40% to 7.40%. Thus, he testified that his DCF analysis produces a cost of common equity for his comparable proxy group of water utilities of 8.10% to 9.10%.

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

Witness Hinton testified that his method relies on approved returns on common equity for water utility companies from various public utility commissions as reported in a RRA Water Advisory, published by the Regulatory Research Associates, Inc. (RRA), a group within S&P Global Market Intelligence (RRA Water

Advisory). In order to estimate the relationship with a representative cost of debt capital, he regressed the average annual allowed equity returns with the average Moody's A-rated yields for Public Utility bonds from 2006 through 2020. His regression analysis, which incorporates years of historical data, is combined with recent monthly yields to provide an estimate of the current cost of common equity.

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

Witness Hinton testified that the summary data of risk premiums shown on his Exhibit JRH-5, page 1 of 2, indicates that the average risk premium is 5.05% with a maximum premium of 5.97% and minimum premium of 3.73%, which when combined with the last six months of Moody's A-rated utility bond yields produces yields with an average cost of equity of 8.4%, a maximum cost of equity of 9.32%, and a minimum cost of equity of 7.08%. He performed a statistical regression analysis as shown on Exhibit JRH-5, page 2 of 2 in order to quantify the relationship of allowed equity returns and bond costs. He testified that by applying the allowed returns to the current utility bond cost of 3.35%, resulted in a risk premium of 6.05%, and a cost of equity of current estimate of the equity risk premium of equity of 9.40%.

Witness Hinton concluded that based on all of the results of his DCF model that indicate a cost of equity 8.60%, and the risk premium model that indicates a cost of equity of 9.40%, he determined that the investor required rate of return on equity for Aqua NC is between 8.60% and 9.40%. He concluded that 9.00% with the CAM, or 8.90% without the CAM, is his single best estimate of the Company's cost of common equity.

Witness Hinton testified as to the reasonableness of his recommended return, that he considered the pre-tax interest coverage ratio produced by his cost estimates for the cost of equity. He testified that based on his recommended capital structure, cost of debt, and equity return of 8.90%, the pre-tax interest coverage ratio is approximately 3.7 times. He testified that this tax interest coverage should allow Aqua NC to qualify for a single "A" bond rating.

Witness Hinton testified that his recommended return on common equity takes into consideration the impact of the water and sewer system improvement charges pursuant to N.C.G.S. § 62-113.12 on the Company's financial risk. He testified that these improvement charges are seen by debt and equity investors as supportive regulation that mitigates business risk. Witness Hinton stated that he believes that this mechanism is noteworthy and is supportive of his 8.90% return on equity recommendation

Witness Hinton testified that it is not appropriate to add a risk premium to the cost of equity due to the size of the company. He testified that from a regulatory policy perspective, ratepayers should not be required to pay higher rates because they are located in the franchise area of a utility of a size which is arbitrarily considered to be small. He further testified if such adjustments were routinely allowed, an incentive would exist for large existing utilities to form subsidiaries when merging or even to split-up into subsidiaries to obtain higher allowed returns. He further testified that Aqua NC operates in a franchise environment that insulates the Company from competition and it operates with procedures in place that allow for rate adjustments for eligible capital improvements, cost increases, and other unusual circumstances that impact its earnings. Witness Hinton observed that Aqua NC is owned 100% by Essential Utilities. A potential investor cannot purchase Aqua NC stock. All Aqua NC paid in equity capital is infused by Essential Utilities.

In his rebuttal testimony, Aqua NC witness D'Ascendis disagreed with witness Hinton that a 8.90% common equity rate is appropriate for Aqua NC and stated that the Public Staff's recommendation would not be sufficient to maintain the integrity of presently invested capital and permit the attraction of needed new capital at a reasonable cost in competition with other firms of comparable risk.

Witness D'Ascendis also disagreed with witness Hinton's exclusion of the CAPM and comparable earnings model (CEM), both of which witness Hinton used as a check on his DCF and RPM in a previous proceeding involving Aqua NC (Docket No. W-218, Sub 497). According to witness D'Ascendis, both the academic literature and the Commission support the use of multiple models in determining a return on common equity. Witness D’Ascendis then attempted to supplement what would have been witness Hinton’s analysis with a CAPM and CEM, which indicated results of 10.90% and 10.60%, respectively.

Witness D’Ascendis objected to witness Hinton's DCF analysis and he also took issue with witness Hinton’s use of historical growth rates in EPS, DPS and BVPS as well as his use of projected growth rates in DPS and BVPS. He asserted that it is appropriate to rely exclusively upon security analysts' forecasts of EPS growth rates in a DCF analysis for multiple reasons.

Witness D’Ascendis also disagreed with witness Hinton’s application of his RPM because of his use of annual average authorized returns on equity for water companies instead of using individual cases and his use of current interest rates instead of projected interest rates. According to witness D’Ascendis, using current or historical measures, such as interest rates, are inappropriate for cost of capital and ratemaking purposes.

In addition, witness D’Ascendis disagreed with witness Hinton on risk due to size. Witness D’Ascendis emphasized that smaller companies are less able to cope with significant events which affect sales, revenues and earnings. As examples, Witness D’Ascendis indicated that smaller companies face more exposure to business cycles and economic conditions, both nationally and locally; that the loss of revenues from a few large customers would have a far greater effect on a small company than on a larger company with a more diverse customer base; and that smaller companies are generally less diverse in their operations and have less financial flexibility. According to Witness D'Ascendis, consistent with the financial principle of risk and return in his direct testimony, such increased risk due to small size must be taken into account in the allowed rate of return on common equity.

Witness D'Ascendis testified that witness Hinton's corrected cost of common equity analysis results in a common equity cost rate of 10.05% for witness Hinton's comparable group of water utilities before adjustment for Aqua NC's increased risk due to size relative to the proxy group.

2. Evidence of Impact of Changing Economic Conditions on Customers

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

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

In this case, all parties had the opportunity to present the Commission with evidence concerning changing economic conditions as they affect customers, including in light of the staggering human and economic impact posed by the COVID pandemic. The testimony of witnesses D'Ascendis and Hinton, which the Commission finds entitled substantial weight, addresses changing economic conditions.

As to the impact of changing economic conditions on Aqua NC's customers, Public Staff witness Hinton testified he reviewed information on the economic conditions in the areas served by Aqua NC, specifically, the 2014, 2015, 2016, 2017, and 2018 data on total personal income from the Bureau of Economic Analysis (BEA) and the Development Tier Designations published by the North Carolina Department of Commerce for the counties in which Aqua NC's systems are located. The BEA data indicates that from 2017 to 2018, total personal income weighted by the number of water customers by county grew at a compound annual growth rate (CAGR) of 5.00%, which is slightly lower than the rate of 5.50% for the whole state, and that from 2014 to 2018, total personal income by county grew by 18.0 %, which is slightly lower than the rate of 20.3% for the whole state.

Witness Hinton testified the North Carolina Department of Commerce annually ranks the state's 100 counties based on economic well-being and assigns each a Tier designation. The most distressed counties are rated a "1" and the most prosperous counties are rated a "3". The rankings examine several economic measures such as, household income, poverty rates, unemployment rates, population growth, and per capita property tax base. The average Tier ranking that has been weighted by the number of water customers by county is 1.8. For the years 2016 through 2020, the average Tier ranking was 2.1 for the counties in the areas served by Aqua and, in each year, the average was higher than the state average. Witness Hinton testified that these economic measures indicate that Aqua NC's service areas has experienced stable economic conditions until the recent COVID pandemic.

Witness Hinton testified that, while it is too early to tell its full impacts, the COVID pandemic 9 has led to an increase in unemployment throughout the state. The North Carolina Department of Commerce issued a press release on April 29, 2020, which stated that the unemployment rate increased in 97 of the state's 100 counties during March 2020. Witness Hinton testified that while the March 2020 unemployment rate for the counties in Aqua NC's service territory was slightly higher than the state's unemployment rate, that the unemployment data for April 2020 was expected to worsen with rates of 10% or more, though he expected that unemployment rates would abate and the economy would improve as the state enters phases two and three of the Governor's plans.

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

North Carolina; median household income in the United States and in North Carolina; and national income and consumption trends.

In his direct testimony on December 31, 2019, filed before the COVID pandemic spread throughout North Carolina and the United States, witness D'Ascendis testified as to the falling rate of unemployment, real Gross Domestic Product growth, and median household income growth, and the strong correlation of these measures between North Carolina and the United States. Witness D'Ascendis also testified that in the Commission's Order on Remand in Docket No. E-22, Sub 479, the Commission observed that economic conditions in North Carolina were highly correlated with national conditions, such that they were reflected in the analyses used to determine the cost of common equity. He testified that those relationships still hold

In his rebuttal testimony filed June 2, 2020, witness D'Ascendis generally agrees with Mr. Hinton's conclusions that the full effect of the Coronavirus on Aqua NC's customers is yet to be determined, and that once the crisis passes, whenever that may be, the economic slowdown will diminish.

The economic impact testimony of witnesses Hinton and D'Ascendis is credible, probative, and is entitled to substantial weight.

b. Evidence Introduced During Public Hearings and Further Conclusions

The Commission's review also includes consideration of the evidence presented during the public hearings by public witnesses, all of whom presently are customers of Aqua NC. The hearings provided 24 witnesses the opportunity to be heard regarding their respective positions on Aqua NC's Application to increase rates. The Commission held two public hearings by virtual means using the WebEx electronic platform, one afternoon and one evening, to receive public testimony from customers in Aqua NC's service territory. The testimony presented at the hearings by Aqua NC customers illustrates the difficult economic conditions facing so many North Carolina citizens during the COVID pandemic. The Commission accepts as credible, probative, and entitled to substantial weight, the testimony of the public witnesses.

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

As noted above, the Commission's duty under N.C.G.S. § 62-133 is to set rates as low as reasonably possible without impairing the Company's ability to raise the capital needed to provide reliable water and wastewater service and recover its cost of providing service. The Commission is especially mindful of this duty in light of the evidence in this case concerning the impact of current economic conditions on customers.

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

Economic conditions existing during the test year, at the time of the public hearings, and at the date of this Commission Order affect not only the ability of Aqua NC's consumers to pay water and wastewater utility rates, but also the ability of Aqua NC to earn the authorized rate of return during the period rates will be in effect. Pursuant to N.C.G.S. § 62-133, rates in North Carolina are set based on a modified historic test period.[6] A component of cost of service as important as return on investment is test year revenues.[7] The higher the level of test year revenues the lower the need for a rate increase, all else remaining equal. Historically, and in this case, test year revenues are established through resort to regression analysis, using historic rates of revenue growth or decline to determine end of test year revenues.

When costs and expenses grow at a faster pace than revenues during the period when rates will be in effect, the utility will experience a decline in its realized rate of return on investment to a level below its authorized rate of return. Differences exist between the authorized return and the earned (or realized) return.

[6] N.C.G.S. § 62-133(c).

[7] N.C.G.S. § 62-133(b)(3).

Components of the cost of service must be paid from the rates the utility charges before the equity investors are paid their return on equity. Operating and administrative expenses must be paid, depreciation must be funded, taxes must be paid, and the utility must pay interest on the debt it incurs. To the extent revenues are insufficient to cover the entire cost of service, the shortfall reduces the return to the equity investor, last in line to be paid. When this occurs, the utility's realized, or earned, return is less than the authorized return.

This phenomenon, caused by incurrence of higher costs prior to the implementation of new rates to recover those higher costs, is commonly referred to as regulatory lag. Just as the Commission confronts constitutional and statutory restrictions in making discrete decrements to rate of return on equity to mitigate the impact of rates on consumers, it also confronts statutory constraints on its ability to adjust test year revenues to mitigate for regulatory lag. However, the WSIC and SSIC legislation N.C.G.S. § 62-133.12 and Commission Rules R7-39 and R10-26, have mitigated the regulatory lag for Aqua NC. The Commission, in its expert experience and judgment and based on evidence in the record, is aware of the effects of regulatory lag in the existing economic environment. However, just as the Commission is constrained to address difficult economic times on customers' ability to pay for service by establishing a lower rate of return on equity in isolation from the many subjective determinations that must be made in a general rate case, it likewise does not address the effect of regulatory lag on the Company by establishing a higher rate of return on equity. Instead, in setting the rate of return, the Commission considers both of these negative impacts in its ultimate decision fixing Aqua NC's rates. The Commission keeps all factors affected by current economic conditions in mind in the many subjective decisions it makes in establishing rates. In doing so in the case at hand, the Commission approved the 9.4% rate of return on equity in the context of weighing and balancing numerous factors and making many subjective decisions. When these decisions are viewed as a whole, including the decision to establish the rate of return on equity at 9.4%, the Commission's overall decision fixing rates in this general rate case results in lower rates to consumers in the existing economic environment.

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

All of the scores of adjustments the Commission approves reduce the revenues to be recovered from ratepayers and the return to be paid to equity investors. Some adjustments reduce the authorized rate of return on investment financed by equity investors. The adjustments are made solely to reduce rates and provide rate stability to consumers (and return to equity investors) to recognize the difficulty for consumers to pay in the current economic environment. While the equity investor's cost was calculated by resort to a rate of return on equity of 9.4% instead of 10.10%, this is only one approved adjustment that reduced ratepayer responsibility and equity investor reward. Many other adjustments reduced the dollars the investors actually have the opportunity to receive. Therefore, nearly all of these other adjustments reduce ratepayer responsibility and equity investor returns in compliance with the Commission's responsibility to establish rates as low as reasonably permissible without transgressing constitutional constraints.

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

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

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

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

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

d. Summary and Conclusions on the Rate of Return on Equity

The Commission has carefully evaluated the return on equity testimony of Aqua NC witness D'Ascendis and Public Staff witness Hinton. The results of each of the models or methods used by these two witnesses to derive the return on equity that each witness recommends is shown below:

Summary of D'Ascendis' and Hinton's Common Equity Cost Rate Analyses

	D'Ascendis Direct	D'Ascendis Rebuttal[8]	Hinton Direct
Utility Proxy Group			
Discounted Cash Flow Model	8.81%	9.07%	8.60%
Risk Premium Model	10.12	10.91/10.56	9.40
Capital Asset Pricing Model	9.35	10.90/10.67	n/a
Cost of Equity Models Applied to			
Non-Price Regulated Proxy Group			
Indicated Common Equity	11.29	11.48/11.28	n/a
Cost Rate Before Adjustments	9.80%	10.75/10.50%	9.00%
Size Adjustment	0.20	0.20	n/a
Flotation Cost Adjustment	0.07	0.05	n/a
Consumption Adjustment Mechanism	n/a	n/a	0.10
Round up	0.03	n/a	n/a
Indicated Common Equity Cost Rate After Adjustments	10.07%	11.00/10.75%	8.90%
Recommended Common Equity Cost Rate After Adjustments	10.10%	11.00/10.75%	8.90%

The range of these results is 8.90% to 10.10%, and, despite interest rates falling, increased to 11.0% by Witness D'Ascendis' rebuttal. Further, underlying the low result of 8.90% is a range of 8.10% to 9.10%, according to witness Hinton's testimony concerning his application of the DCF. Similarly, underlying the high result of 11.0% is a range of 8.41(DCF) to 11.62% (CAPM), according to witness D'Ascendis' testimony concerning the cost of equity models applied to his Non-Price Regulated Proxy Group. Except for Witness D'Ascendis rebuttal testimony increasing the result from 10.10% to 11.0%, which cannot be given substantial

[8] Forecast / Current

weight, such a wide range of estimates by expert witnesses is not atypical in proceedings before the Commission with respect to the return on equity issue. Neither is the seemingly endless debate and habitual 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 interest of their intervening party. Nonetheless, the Commission is uniquely situated, qualified and required to use its impartial judgment to determine the return on equity based on the testimony and evidence in this proceeding in accordance with the legal guidelines discussed above.

In so doing, the Commission finds and concludes that the testimony of Company witness D'Ascendis regarding his direct and rebuttal testimony DCF, his direct testimony total market approach RPM, and his direct testimony CAPM analyses of his Utility Proxy Group, and the DCF and risk premium analysis testimony of Public Staff witness Hinton are credible, probative, and are entitled to substantial weight. The Commission approved return on equity of 9.4% is supported by – and the Commission finds credible – witness D'Ascendis' direct testimony CAPM analysis of 9.35%, his direct testimony total market approach RPM of 9.39%, and witness Hinton's risk premium analysis of 9.4%.

Company witness D'Ascendis, noting that Aqua NC is not publicly-traded, first established a group of eight relatively comparable risk water companies that are publicly-traded (Utility Proxy Group). He testified that use of the companies of relatively comparable risk companies as proxies is consistent with principles of fair rate of return established in the Hope and Bluefield cases, which are recognized as the primary standards for the establishment of a fair return for a regulated public utility. He then applied the DCF, the CAPM, and the risk premium models to the market data of the Utility Proxy Group.

Witness Hinton applied a risk premium analysis by performing a regression analysis using the allowed returns on common equity for water utilities from various public utility commissions, as reported in a RRA Water Advisory, with the average Moody's A-rated bond yields for public utility bonds from 2006 through 2020. The results of the regression analysis were combined with recent monthly yields to provide the current cost of equity. According to witness Hinton, the use of allowed returns as the basis for the expected equity return has strengths over other (risk premium) approaches that estimate the expected equity return on equity and subtract a representative cost of debt. He testified that one strength of his approach is that authorized returns on equity are generally arrived at through lengthy investigations by various parties with opposing views on the rate of return required by investors. Thus, it is reasonable to conclude that the approved returns are good estimates for the cost of equity. Witness Hinton testified that applying the significant statistical relationship of the allowed equity returns and bond yields from the regression analysis and adding current bond cost of 3.71% resulted in a current estimate of the cost of equity of 8.90%, which again, is supportive of the Commission's approved return on equity of 9.4%.

Witness Hinton also applied the DCF model to a proxy risk group of publicly traded water utilities. To determine the expected growth rate component in his application of the DCF, witness Hinton testified that the employed both historical and forecasted growth rates of earnings per share (EPS), book value per share (BVPS), and dividends per share (DPS). He concluded that an expected growth rate of 6.40% to 7.4% should be combined with a dividend yield of 1.7% which produced his cost of equity estimate of 8.10% to 9.10% for his comparable risk group based on his DCF analysis. Witness Hinton testified that it was reasonable to expect that investors consider both historic and forecast growth rates in deriving their expectations. In contrast, witness D'Ascendis relied exclusively on analysts' forecasts of EPS growth. In rebuttal, he also testified that there is a significant body of empirical evidence supporting the superiority of using analysts' EPS growth rates in a DCF analysis. Witness D'Ascendis also testified in rebuttal that it is unclear how much weight witness Hinton gave to each of his projected and historical growth rates in arriving at his high and low growth estimates for his proxy risk group, because witness Hinton's range of growth rates bears no logical relationship to the array of growth rates that witness Hinton evaluated. The Commission notes that the higher end of witness Hinton's DCF estimate of 9.10%, basis actually close to witness D'Ascendis' rebuttal DCF estimate of 9.06% and deserving of some weight. However, given the conflicting evidence concerning whether the use of historic or forecasted growth rates is more appropriate, the lack of clarity as to how the growth rate range was determined, and all the evidence in the record in this proceeding, the Commission gives little weight to the lower end of witness Hinton's DCF result.

Witness D'Ascendis also used two risk premium methods to estimate the cost of equity to Aqua NC. He testified that his first method is the PRPM and the second method is a RPM using a total market approach. In his PRPM, he employed the Eviews© statistical software applied to the historical returns on the common shares of each company in his Utility Proxy Group minus the historical monthly yields on long-term U.S. Treasury securities through September 2019 to arrive at a predicted annual equity risk premium. He then added the forecasted 30-year U.S. Treasury security to each company's PRPM derived equity risk premium. Using this approach, he calculated a cost of equity estimate of 10.84%. In his total market approach RPM, he added a prospective public utility bond yield to an average of (1) an equity risk premium that is derived from a beta-adjusted total market equity risk premium, and (2) an equity risk premium based on the S&P Utilities Index. His RPM result produced a rate of return estimate of 9.39%.

The Commission gives little weight to the risk premium testimony and result of 10.12% of witness D'Ascendis. Witness D'Ascendis included in his rebuttal testimony proxy group, Essential Utilities, the parent company of Aqua NC, from which Aqua NC receives much of its debt and equity. As shown on D'Ascendis Rebuttal Exhibit No. 1, Schedule DWD-1R, page 12, for the PRPM using current interest rates, the indicated return on equity for Essential Utilities was 15.59%, a substantial outlier, thereby resulting in Witness D'Ascendis' rebuttal PRPM not being credible. The PRPM result of 10.84% is unreasonably high. Further, the Commission is skeptical that investor expectations are influenced by a method analyzing economic time series with time-varying volatility using the statistical software employed by witness D'Ascendis. However, the Commission does note that the total market approach RPM result of 9.39% derived by witness D'Ascendis in his direct – though not rebuttal – testimony, is supportive of the Commission approved return on equity of 9.4%. Further, the Commission approves the use of current interest rates, rather than forecasted interest rates.

In addition to estimating the cost of equity for his Utility Proxy Group of publicly-traded water utilities, witness D'Ascendis attempted to estimate the cost of equity for another proxy group consisting of 10 domestic, non-price regulated companies. In order to select a proxy group of domestic, non-price regulated companies similar in risk to the Utility Proxy Group, he testified that he relied on the beta coefficients and related statistics derived from Value Line regression analyses of weekly market prices over the last five years. After selecting the 10 unregulated companies, he applied the DCF, RPM, and CAPM in the identical manner used for his Utility Proxy Group, with certain limited expectations. The results of the DCF, RPM, and CAPM applied to the non-price regulated proxy group are 11.63%, 11.41%, and 10.44%, respectively. The Commission concludes that these results are unreasonably high. Each of these results are higher than witness D'Ascendis' estimates of the cost of equity for his own Utility Proxy Group and deserve no weight, particularly with respect to the DCF. The Commission further concludes that given the difference in these results, the risk of the two groups is not equal and the Utility Proxy Group is more reliable as a proxy for the investment risk of common equity in Aqua NC.

After determining that the indicated cost of equity from the DCF, CAPM, and risk premium methods applied to both of his proxy groups equals 10.60%, witness D'Ascendis then adjusted the indicated cost of equity upward by 0.20% to reflect

Aqua NC's smaller size compared to companies in his Utility Proxy Group. He testified that the size of the company is a significant element of business risk for which investors expect to be compensated through higher returns. Witness D'Ascendis calculated his size adjustment as described in his prefiled direct testimony and stated that even though a 2.89% upward size adjustment is indicated, he applies a 0.20% size premium to Aqua NC's indicated common equity cost rate. Witness Hinton testified that he does not believe it is appropriate to add a risk premium to the cost of equity of Aqua NC due to size for several reasons. First, from a regulatory policy perspective, witness Hinton stated that ratepayers should not be required to pay higher rates because they are located in the franchise area of a utility which is arbitrarily considered to be small. Further, if such adjustments were routinely allowed, an incentive would exist for large utilities to form subsidiaries or split-up subsidiaries to obtain higher returns. In addition, he noted that Aqua NC operates in a franchise environment that insulates the Company from competition with procedures in place for rate adjustments for circumstances that impact its earnings. He noted that Aqua NC is also owned by Essential Utilities., a large publicly-traded water utility. Finally, while witness Hinton stated that while there are studies that address how the small size of a company relates to higher returns, he is aware of only one study that focuses on the size of regulated utilities and risk and that study concluded that utility stocks do not exhibit a significant size premium. In rebuttal, witness D'Ascendis maintained that a small size adjustment was necessary based on the results of studies he cited and discussed and contended that the study concerning size premiums for utilities discussed by witness Hinton was flawed. He also testified that the fact that Aqua NC is a subsidiary of Essential Utilities is irrelevant for ratemaking purposes because it is the rate base of Aqua NC to which the overall rate of return set in this proceeding will be applied which is consistent with the stand-alone nature of ratemaking

Based upon the evidence in the record in this proceeding, the Commission concludes that a size adjustment of 0.20% is not warranted and should not be approved. It is not irrelevant that Aqua NC is a subsidiary of Essential Utilities. The Commission determines there is insufficient evidence to authorize an adjustment to the approved rate of return on equity in this case. The record simply does not indicate the extent to which Aqua NC's size alone justifies added risk. While a small water/wastewater utility might face greater risk than a publicly traded peer group, because for example the service area was confined to a hurricane prone coastal geographic area, evidence of such factual predicates is absent from the record. The Commission notes that the witnesses also disagreed with respect to whether the studies discussed in the testimony concerning size and risk are reliable or even applicable to regulated utilities. The Commission concludes that the testimony regarding these studies is not convincing and does not support a size adjustment. In addition, while witness D'Ascendis calculates and testifies that a 2.89% upward size adjustment is indicated, he applies a size premium of 0.20% to Aqua NC's indicated cost of equity. The Commission thus concludes that the 0.20% adjustment is not supported by his testimony and is rather arbitrary.

Having determined that the appropriate rate of return on equity based upon the evidence in this proceeding is 9.4%, the Commission notes that there was considerable testimony concerning the authorized returns on equity for water utilities in other jurisdictions. While the Commission has relied upon the record in this proceeding and is certainly aware that returns in other jurisdictions can be influenced by many factors, such as different capital market conditions during different periods of time, settlements versus full litigation, the Commission concludes that the rate of return on equity trends and decisions by other regulatory authorities deserve some weight as (1) they provide a check or additional perspective on the case-specific circumstances, and (2) the Company must compete with other regulated utilities in the capital markets, meaning that a rate of return significantly lower than that approved for other utilities of comparable risk would undermine the Company's ability to raise necessary capital, while a rate of return significantly higher than other utilities of comparable risk would result in customers paying more than necessary. Hinton Exhibit 6, the RRA Water Advisory publication showing approved return on equity decisions for water utilities across the country from 2014 through 2019, is helpful. According to this exhibit, the average rate of return on equity for water utilities is 9.59% in 2014, 9.76% in 2015, 9.71% in 2016, 9.56% in 2017, 9.41% in 2018, 9.37% in 2019, and in the cases reported on for the first quarter of 2020 the average is 9.27% with a range of 9.27% to 9.76%. This decreasing authorized return on equity data is generally supportive of the Commission approved return on equity of 9.4% based upon the evidence in this proceeding. To the extent it is not, the record evidence justifies any such difference.

When evidence is considered and weighed by the Commission as discussed hereinabove, the Commission finds and concludes that the reasonable and appropriate return on equity is 9.4%.

The Commission notes further that its approval of a rate of return on equity at the level of 9.4% or for that matter at any level, is not a guarantee to the Company that it will earn a rate of return on equity at that level. Rather, as North Carolina law requires, setting the rate of return on equity at this level merely affords Aqua NC the opportunity to achieve such a return. The Commission finds and concludes, based upon all the evidence presented, that the rate of return on equity provided for herein will indeed afford the Company the opportunity to earn a reasonable and sufficient return for its shareholders while at the same time producing rates that are just and reasonable to its customers.

Capital Structure

Aqua NC witness D'Ascendis recommended the use of a ratemaking capital structure consisting of 50.00% long-term debt and 50.00% common equity. He testified this capital structure is based on a test year capital structure for Aqua NC, ending September 30, 2019.

Public Staff witness Hinton also testified recommending a 50.00% long-term debt and 50.00% common equity capital structure. The Stipulation also supports a

50.00% long-term debt, 50.00% common equity capital structure. No other party presented evidence as to a different capital structure.

Accordingly, the Commission finds and concludes that the recommended capital structure of 50.00% common equity and 50.00% long-term debt is just and reasonable to all parties in light of all the evidence presented.

Cost of Debt

In its Application, the Company proposed a long-term debt cost of 4.25%. Public Staff witness Hinton testified that the appropriate embedded cost of Aqua NC's long-term debt is 4.21%. The Stipulation provides for a 4.21% cost of debt. The Commission finds for the reasons set forth herein that a 4.21% cost of debt is just and reasonable. The 4.21% debt cost of the Stipulation gives customers the benefit of reductions in Aqua NC's lower cost of debt after the end of the test year.

No intervenor offered any evidence supporting a debt cost below 4.21%. The Commission, therefore, finds and concludes that the use of a debt cost of 4.21% is just and reasonable to all parties based upon all the evidence presented.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 17-20

The evidence supporting these findings of fact is contained in the Stipulation and in the testimony of Aqua NC witnesses Becker, Gearhart, Thill, and D'Ascendis, and Public Staff witnesses Henry, Hinton, and Feasel, and the entire record in this proceeding.

Summary of Evidence

On July 1, 2020, Aqua NC and the Public Staff filed the Stipulation, which resolved virtually all of the financial issues in this proceeding between the Stipulating Parties and provided for a revenue requirement increase of approximately $3,232,954 for combined operations based on the settled issues. The Stipulation is based upon the same test period as Aqua NC's Application, adjusted for certain changes in plant, revenues, and costs that were not known at the time the case was filed but occurred or became known by March 31, 2020.

The key aspects of the Stipulation resolved the following revenue requirement issues, as between the Stipulating Parties[9]:

Test Period and Updates

The test period for this rate case is the twelve months ending September 30, 2019, adjusted for certain changes in plant, revenues, and costs that were not known at the time the case was filed but are based upon circumstances occurring or becoming known through March 31, 2020. The salaries and wages, pensions and benefits, and payroll tax for Aqua NC employees were updated through March 31, 2020, based on the agreement of the Stipulating Parties.

Calculation of Revenue Requirement

The Stipulating Parties agree upon the difference in the calculation of the revenue requirement based on Company amounts [Line 2].

[9] Line references are to Exhibit 1 to Settlement Agreement.

Long-term Debt Cost, Capital Structure and Return on Equity

The appropriate long-term debt cost is 4.21% [Line 3]. The capital structure is 50% long-term debt and 50% common equity. The Stipulating Parties agree that in consideration of a number of factors, including the impacts of the Coronavirus Pandemic on customers and the changing economic conditions, the appropriate return on common equity (ROE) to use in setting rates in this proceeding is 9.4% [Line 4]. The Stipulating Parties agree that the stipulated capital structure and stipulated levels of overall rate of return and rates of return on common equity and long-term debt are consistent with the requirements of N.C.G.S. § 62-133.

Termination of Updates After March 31, 2020 Update Period

The Stipulating Parties agree that Aqua will forego inclusion in rates in this proceeding of the 11 post-test year projects completed after the close of the March 31, 2020 update period [Line 5], subject to the following conditions: (1) rates will be set in this proceeding based upon Aqua NC's actual allocated test year costs for Aqua Corporate Services and Aqua Customer Operations and (2) the Public Staff will not oppose the Company's right to recover the reasonable and prudent costs of the 11 post-March 31, 2020 projects in the Company's next rate case or, in the interim, to file a WSIC/SSIC application to recover the costs of any of the post-March 31, 2020 projects which qualify as eligible projects through a surcharge under N.C.G.S. § 62-133.12. The Stipulating Parties agree to the dollar adjustment on Line 5.

Reallocation of Vehicles and Accumulated Depreciation Related Thereto

The Company accepts the Public Staff's proposed adjustment to reallocate vehicles and accumulated depreciation related to those vehicles as set forth in the testimony of Public Staff witness Henry [Line 6].

Post-Test Year Additions to Accumulated Depreciation

The Company accepts the Public Staff's proposed adjustment to post-test year additions to accumulated depreciation [Line 7]. Following the filing of its testimony on May 26, 2020, the Public Staff made corrections to this adjustment. The Company accepted the Public Staff's adjustment, as corrected.

This does not include post-test year additions after March 31, 2020.

Accumulated Depreciation Related to Future Customers

The Company accepts the Public Staff's proposed adjustment to remove accumulated depreciation related to future customers as set forth in the testimony of Public Staff witness Henry [Line 8].

Accumulated Depreciation Related to Vehicle Allocations

The Company accepts the Public Staff's proposed adjustment to accumulated depreciation related to vehicle allocations [Line 9].

Accumulated Depreciation for WSIC/SSIC "In Service" Date

The Company accepts the Public Staff's proposed adjustment to accumulated depreciation for the WSIC/SSIC in service date [Line 10]. Following the filing of its testimony on May 26, 2020, the Public Staff made corrections to this adjustment. The Company accepted the Public Staff's adjustment, as corrected.

Post-Test Year Additions to Contributions in Aid of Construction ("CIAC")

The Company accepts the Public Staff's proposed adjustment to post-test year additions to CIAC [Line 11].

Post-Test Year Additions to Accumulated Amortization

The Company accepts the Public Staff's proposed adjustment to post-test year additions to accumulated amortization – CIAC [Line 12]. Following the filing of its testimony on May 26, 2020, the Public Staff made corrections to this adjustment. The Company accepted the Public Staff's adjustment, as corrected.

Post-Test Year Additions Purchase Acquisition Adjustments (PAA)

The Company accepts the Public Staff's proposed adjustment to post-test year additions PAA [Line 13].

Mid-South Growth Related PAA

The Company accepts the Public Staff's proposed adjustment for Mid-South growth-related PAA to March 31, 2020 [Line 14].

Post-Test Year Additions Accumulated Amortization – PAA

The Company accepts the Public Staff's proposed adjustment to post-test year additions accumulated amortization – PAA [Line 15].

Advances for Construction

The Company accepts the Public Staff’s proposed adjustment to update advances for construction to March 31, 2020 [Line 16].

ADIT – Post-Test Year Additions

The Company accepts the Public Staff’s proposed adjustment to ADIT – post-test year additions [Line 17]. This does not include post-test year additions after March 31, 2020.

ADIT – Unamortized Rate Case Expense

The Company accepts the Public Staff’s proposed adjustment to ADIT - unamortized rate case expense [Line 18]. This adjustment will be updated for actual and estimated rate case expense through the issuance of the Commission’s final order.

ADIT – Unamortized Repair Tax Credit

The Company accepts the Public Staff’s proposed adjustment to Adjustment to ADIT - unamortized repair tax credit [Line 19].

ADIT – Protected EDIT

The Company accepts the Public Staff’s proposed adjustment to ADIT - protected EDIT [Line 20].

Customer Deposit Update

The Company accepts the Public Staff’s proposed adjustment to update customer deposits to March 31, 2020 [Line 21].

Excess Capacity Ratemaking Adjustment

The Stipulating Parties agree that no excess capacity ratemaking adjustment should be made in this rate case related to Aqua NC's wastewater treatment plants which serve the Company's Carolina Meadows, The Legacy, and Westfall service areas [Line 22].

Cash Working Capital

The Company accepts the Public Staff's proposed adjustment to cash working capital [Line 23].

Tank Painting

The Company accepts the Public Staff's adjustment for tank painting [Line 24].

Unamortized Rate Case Expense

The Company accepts the Public Staff's adjustment to unamortized rate case expense [Line 25].

Depreciation Study

The Company accepts the Public Staff's proposed adjustment to depreciation study [Line 26]

Repair Tax Credit

The Company accepts the Public Staff's proposed adjustment to repair tax credit [Line 27].

Johnston County Unamortized Transmission Charge

The Company accepts the Public Staff adjustments to remove the Johnston County unamortized transmission charge and revenue deficit [Lines 28 and 29], consistent with the Commission's decision in the Sub 497 rate case.

Deferred Accounting on Post-Test Year Plan Additions

The Stipulating Parties agree with the Public Staff's proposed adjustment related to deferred accounting on post-test year plant additions [Line 30]. Therefore, the Stipulating Parties agree to the ratemaking adjustment shown on Line 30.

Average Tax Accruals

The Company accepts the Public Staff's proposed adjustment to average tax accruals [Line 31]. This adjustment will be updated for the final calculation of unemployment tax, regulatory fee, and property tax.

Service Revenues

The Company accepts the Public Staff's proposed adjustment to service revenues [Line 32]. Further, the Company withdraws its application for a conservation normalization factor.

Late Payment Fees

The Company accepts the Public Staff's proposed adjustment to late payment fees [Line 33]. This adjustment will be updated based on the ongoing level of service revenues approved by the Commission.

Uncollectibles and Abatements

The Company accepts the Public Staff's proposed adjustment to uncollectibles and abatements [Line 34].

Capitalized Labor

The Company accepts the Public Staff's proposed adjustment to remove capitalized labor [Line 35].

Transportation Regular Payroll

The Company accepts the Public Staff's proposed adjustment to add transportation regular payroll [Line 36].

Open Positions and Update to Salaries and Wages

The Stipulating Parties agree to an adjustment in the amount of ($222,275) to remove four open positions and to update salaries and wages through March 31, 2020 [Line 37].

Leave Without Pay

The Stipulating Parties agree to an adjustment in the amount of ($5,043) to remove leave without pay [Line 38].

Standby and Overtime Salaries and Wages

The Company accepts the Public Staff's proposed adjustment to reflect actual standby and overtime salaries and wages [Line 39]. Following the filing of its testimony on May 26, 2020, the Public Staff made corrections to this adjustment. The Company accepted the Public Staff's adjustment, as corrected.

Bonuses Related to Earnings per Share (EPS)

The Public Staff agrees to withdraw its proposed adjustment to state bonuses related to EPS [Line 40]. This is consistent with the Commission's decision in the Sub 497 rate case.

Executive and Board of Directors Compensation, Bonuses and Expenses; Corporate Service and Customer Operation Allocations; Open Positions

The Stipulating Parties agree to settle issues related to Executive Compensation and bonuses and Board of Directors compensation and expenses consistent with the Commission's decision in the Sub 497 rate case by removing 25% of such expenses requested in the Company's application [Lines 41, 59, 60].

With one exception involving Line 42, the Stipulating Parties agree that no further adjustments should be made in this case regarding allocations from Aqua Corporate Services (ACS) and Aqua Customer Operations (ACO) [Lines 42 and 45]. The Stipulating Parties agree to an adjustment in the amount of ($92,050) to Line 42 related to open positions and terminations.

Capitalized Pensions and Benefits

The Company accepts the Public Staff's proposed adjustment to remove capitalized pensions and benefits [Line 43].

Open Positions and Benefits

The Stipulating Parties agree to an adjustment of ($122,256) to remove four open positions and to update benefits through March 31, 2020 [Line 44].

Corporate Sundries

The Company accepts the Public Staff's proposed adjustment to remove unqualified benefits from Corporate Sundries [Line 46].

Fuel for Production

The Company accepts the Public Staff's proposed adjustment to fuel for production [Line 47].

Sludge Removal

The Company accepts the Public Staff's proposed adjustment to sludge removal [Line 48].

Purchased Power

The Company accepts the Public Staff's proposed adjustment to purchased power [Line 49].

Materials and Supplies

The Company accepts the Public Staff's proposed adjustment to materials and supplies [Line 50].

Testing

The Company accepts the Public Staff's proposed adjustment to testing [Line 51].

Contractual Services

The Stipulating Parties agree to an adjustment to contractual services–legal [Line 52];

The Company accepts the Public Staff's adjustment to contractual services – other – pump maintenance [Line 53];

The Company accepts the Public Staff's proposed adjustment to contractual services–other-corporate sundries [Line 54];

The Company accepts the Public Staff's proposed adjustment to contractual services-other-accrued expenses [Line 55]. Following the filing of its testimony on May 26, 2020, the Public Staff made corrections to this adjustment. The Company accepted the Public Staff's adjustment, as corrected.

Insurance Expense

The Stipulating Parties agree that the Company's stipulated insurance expense [Line 56] will be subject to a 50% true-up based on actual claims paid as a regulatory asset or liability, without a return or carrying costs, to be recovered in future rate cases.

Regulatory Commission Expense

The Stipulating Parties agree that regulatory commission expense adjustment [Line 57] will be updated to represent actual rate case expenses, plus agreed upon estimated costs to complete the rate case proceeding. The

Stipulating Parties also agree with the use of a three-year amortization in this case without a return or carrying costs on the unamortized balance.

Capitalized Miscellaneous Expense

The Company accepts the Public Staff's proposed adjustment to remove capitalized miscellaneous expense [Line 58].

Miscellaneous Expenses for Corporate Sundries

The Company accepts the Public Staff's proposed adjustment to remove unqualified miscellaneous expenses for corporate sundries [Line 61].

Annualization and Consumption

The Stipulating Parties agree to an adjustment of $14,150 to annualization and consumption [Line 62].

Contra-OH Allocations

The Company accepts the Public Staff's proposed adjustment to Contra-OH allocations [Line 63].

The Company accepts the Public Staff's proposed adjustment to amortized Excess Deferred Income Taxes (EDIT) [Line 64].

Payroll Taxes

The Company accepts the Public Staff's proposed adjustment to payroll taxes [Line 65]. Payroll tax is subject to change when the salaries allocated from corporate service and ACO are changed and finalized.

Purchased Water Loss

The Stipulating Parties agree to utilize a 15% adjustment for allowable purchased water loss in this case [Line 66]. Further, the Stipulating Parties agree to work toward development of a mutually-agreeable standard based upon the methodology for purchased water systems set forth in Aqua NC's Pearce/Kunkle rebuttal testimony for implementation in the Company's next general rate case, and to report the progress of those discussions in the next case.

Contract Services – Other – Temporary Labor

The Stipulating Parties agree to an adjustment in the amount of $61,225 to contract services – other – temporary labor [Line 67].

Johnston County Purchased Sewer Rate

The Public Staff agrees to withdraw its proposed adjustment to the Johnston County purchased sewer rate [Line 68] which was proposed in the Company's Item 18 update filed April 21, 2020, and has since been confirmed by the Public Staff.

Rounding Difference

The Company accepts the Public Staff's proposed adjustment to rounding difference [Line 69].

Discussion and Conclusion

No party filed a formal statement or testimony indicating opposition to the Stipulation; however, the AGO did pursue cross-examination of Aqua NC (by way of introduction of cross-examination exhibits) concerning certain communications from the North Carolina Department of Environmental Quality. The Stipulation is binding as between Aqua NC and the Public Staff, and conditionally resolved certain specific matters in this case as between those two parties. Through the end of the evidentiary process, the AGO neither approved nor expressly disapproved of the partial settlement regarding the specific settled issues reflected in the terms of the Stipulation. There are no other parties to this proceeding.

As the Stipulation has not been adopted by all of the parties to this docket, its acceptance by the Commission is governed by the standards set out by North Carolina law. A stipulation entered into by less than all parties in a contested case proceeding under Chapter 62 “should be accorded full consideration and weighted by the Commission with all other evidence presented by any of the parties in the proceeding.” State ex rel. Utilities Commission v. Carolina Utility Customers Association, Inc., 348 N.C. 452, 466, 500 S.E. 2d 690, 700 (1998). Further, “[t]he Commission may even adopt the recommendations or provisions of the nonunanimous stipulation as long as the Commission sets forth its reasoning and makes ‘its own independent conclusion’ supported by substantial evidence on the record that the proposal is just and reasonable to all parties in light of all the evidence presented.” Id.

The Commission concludes, based upon all the evidence presented, that the Stipulation was entered into by the Stipulating Parties after full discovery and extensive negotiations and represents a reasonable and appropriate proposed negotiated resolution of certain specific matters in dispute in this proceeding and that the AGO did not expressly object to the settlement.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 21

Based upon all of the evidence in the record, the Stipulation will provide Aqua NC and its ratepayers just and reasonable rates when combined with the rate effects of the Commission's decisions regarding the Unresolved Issues in this proceeding.

The Commission gives substantial weight to the testimony of Aqua NC witness Becker regarding the Stipulating Parties' protracted efforts in negotiating the Stipulation. Further, the Commission gives significant weight to the settlement testimony of Public Staff witnesses Henry, which in his discussion of the benefits that the Stipulation will provide to customers and his testimony describing the compromise reflected in the Stipulation's terms, indicates the Public Staff's commitment to fully represent the using and consuming public.

As a result, the Commission finds and concludes that the Stipulation is the product of the give-and-take between the Stipulating Parties during their settlement negotiations in an effort to appropriately balance Aqua NC's need for increased revenues and its customers' needs to receive safe, adequate, and reliable water and wastewater service at the lowest possible rates. In addition, the Commission finds and concludes that the Stipulation was entered into by the Stipulating Parties after substantial discovery and negotiations, and, with the exception of the Unresolved Issues, that it represents a proposed negotiated resolution the matters in dispute in this docket.

The provisions of the Stipulation are entitled to substantial weight and consideration in the Commission's decision because they are based on evidence presented in the case, they are just and reasonable to all parties to this proceeding, and they serve the public interest. Therefore, the Stipulation should be approved in its entirety.

<u>EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 22-26</u>

The evidence supporting these findings of fact is contained in the testimony of Company witness Thill, the joint testimony of Public Staff witnesses Henry and Junis, and the record in this proceeding.

<u>Summary of Public Staff Testimony</u>

Public Staff witnesses Henry and Junis testified that they conducted an investigation of the Company's plant additions to rate base by reviewing Aqua NC's utility plant in service records and supporting documentation. The Public Staff typically confines its investigation to the period from the update period in the prior rate case through the update period in the current rate case. However, in order to investigate the Company's request for deferral accounting treatment made in its application in the present docket, witnesses Henry and Junis testified they investigated the Company's plant additions dating back to 2015. Tr. Vol. 4, pp. 260-61.

Witnesses Henry and Junis included in their prefiled testimony Company witness Thill's definitions of various terminology the Company uses in its asset management system. According to witness Thill, "completion date" means "a general indication that an asset is 'useful' but it is strictly informational as no system action derives from this data. Aqua NC personnel may use this field as a tickler to indicate substantial completion and to alert accounting personnel to monitor final bill processing and subsequent unitization." The term "in-service date" means "the date the asset is placed in-service and being 'used' for the benefit of customers. This date drives the retirement calendar (except for 'blankets' . . .) and terminates any AFUDC calculation." Finally, witness Thill defined "posting or unitization date" as follows:

> This is when the asset is removed from CWIP and added to UPIS, and begins depreciating. Unitization occurs after determination that an asset is both complete (useful) and in-service (used). In that Aqua has been directed by the Public Staff that projects should close only a single time, unitization is also subject to timing of vendor invoicing – that is, unitization occurs only after all vendor invoices have been processed which may be months after either (or both of) the completion or in-service dates.

Witness Thill subsequently clarified for witnesses Henry and Junis that the in-service date "drives auto-retirements (where applicable) and stops AFUDC" and that unitization "starts depreciation; must be complete and in-service." Id. at 261-62.

Witnesses Henry and Junis noted in their testimony that the issue of the Company's UPIS practices and procedures was addressed in the W-218, Sub 274, rate case, and that the Commission had ordered the Company, among other things, to "adopt a consistent, accurate, and complete accounting system for its detailed plant records that maintains its plant records in compliance with the Uniform System of Accounts," and to "review its procedures for determining when projects are completed and should be closed and file its recommended changes to its procedures within 90 days . . . ." Witnesses Henry and Junis further noted that, in its First Status Report filed in response to the Commission's Sub 274 Order, the Company stated that the Company's Accounting Department allowed 30 to 60 days after the in-service date for projects to be booked. Id. at 263-64. Relying on the Company's description of its accounting practice, the Public Staff did not review the in-service and unitization dates for projects included in rate base in the Company's W-218, Sub 497 rate case in great enough detail to recognize a number of instances in which more than 30 to 60 days elapsed between when a project was placed in-service and when it was unitized. Id. at 266. These projects, totaling approximately $4.7 million, were identified by the Public Staff in its investigation of the Company's request for deferral accounting treatment. Id. at 260-61. While some projects were booked just over 60 days from the in-service date, due to the timing of those events, the in-service date and the unitization date occurred in different years. The Public Staff did not recommend an adjustment related to the approximately $4.7 million in projects it identified for which unitization occurred more than 60 days after the in-service date. However, the Public Staff requested that the Commission take the matter into consideration in its decision. Id. at 266.

While the Public Staff identified a number of projects that were not unitized within 60 days of the in-service date, witnesses Junis and Henry noted in their testimony that they also identified instances in which the Company unitized plant additions within the same month that they were placed in-service. Witnesses Henry and Junis pointed out that this was inconsistent with explanations provided by the Company as recently as June 2019 that it took 30 to 60 days to complete the accounting process to book capital projects. Id. at 267. Witness Junis further noted on cross-examination that unitizing assets more quickly than in 30 to 60 days benefitted the Company in some instances, such as where the Company could recover the costs of a project in a WSIC/SSIC proceeding. Id. at 328. As an example, witnesses Henry and Junis testified that the Company had not updated its November 1, 2019 WSIC/SSIC application to account for ($16,354) in plant adjustments and had, therefore, recovered the incremental depreciation expense and capital costs associated with that amount through mechanism surcharges since January 1, 2020. Witnesses Henry and Junis noted that they would recommend that this excess recovery be refunded as part of the annual review and EMF at the end of 2020. Id. at 268.

Witnesses Junis and Henry noted based on their investigation that many of the unitizations they identified in the first and third quarters of each year occurred more than 60 days after the in-service date. The first and third quarters are also the second halves of the WSIC/SSIC semiannual adjustment periods, and/or during the post-test year period of rate cases. Witnesses Henry and Junis asserted that the delay in the start of depreciation that occurred as a result of the Company's UPIS accounting practices resulted in the reduction of accumulated depreciation and additional return from a corresponding increase in rate base. The witnesses testified that this delay in the start of depreciation along with the Company's unitization of plant costs close to the point when rate recovery occurs benefits the Company financially. Id. at 267.

Witness Henry explained that Aqua NC "uses a half year convention, so no matter what point in time that that asset is booked, they capture a half year of depreciation for that particular asset in the year in which it was placed in service." Id. at 326. Witnesses Henry and Junis explained that delays between the in-service date and the unitization of an asset have an especially significant impact when the in-service date occurs in one year and the unitization date occurs in a subsequent year. Witness Henry testified regarding this scenario, "you are missing out on a full year of accumulated depreciation if you unitize in the latter year versus the . . . former year when [the asset] went into service." Id. at 324. On examination by Commissioner Duffley, witness Junis further testified that unitization in the year after the in-service date functions as a deferral that essentially shifts the depreciation life of the asset a year into the future. As a result, the Company avoids losing rate recovery for a year's worth of depreciation expense due to lag and the reduction to rate base from the associated accumulated depreciation. Id. at 350-51.

With respect to the present rate case, witnesses Henry and Junis recommended several in-service date and cost adjustments to UPIS and accumulated depreciation. As part of the Public Staff's review of the Company's Application for Approval of Water and Sewer System Improvement Charge Rate Adjustments Pursuant to N.C.G.S. § 62-133.12 filed on May 1, 2019, in Docket No. W-218, Sub 497A, the Public Staff recommended removal of two Aqua NC Water filtration projects totaling $648,434 that were not in service and used and useful during the applicable WSIC/SSIC period. They also recommended that the Commission approve adjustments related to 13 projects totaling approximately $1.7 million that were placed in service in the third and fourth quarters of 2018 but were not unitized until the first quarter of 2019. These adjustments totaled $50,202, or an additional nine months' worth of accumulated depreciation. Witnesses Henry and Junis recommended that these regulatory accounting adjustments, which were not accounted for in the Company's rate case application, be approved and that Aqua NC be required to include them in all future rate cases until the assets are retired. Id. at 269-70.

The second set of adjustments recommended by witnesses Henry and Junis related to capital expenditures unitized by the Company in the post-test year period in the present rate case of October 2019 through March 2020. Public Staff witnesses Henry and Junis adjusted the unitization dates for 44 plant additions totaling approximately $1.4 million. The adjustments changed the unitization date to the in-service date specified by Aqua NC unless there was information showing that the asset was not actually placed in service on that date, and all of the adjustments resulted in the accumulation of additional depreciation in the present or future rate cases. Witness Junis explained on cross-examination that for assets that were placed in service in 2019, but unitization and the beginning of depreciation did not occur until 2020, a year of accumulated depreciation is lost. Id. at 331. Witness Henry testified that, for ratemaking purposes, the Public Staff included a full year of depreciation expense and of accumulated depreciation in the present rate case to establish a representative level of determination, and that adjustments would need to be made in the Company's next rate case to correct the Company's books for the errors in unitization dates identified by the Public Staff. Id. at 332. In addition to the adjustments to in-service dates, witnesses Henry and Junis recommended four adjustments to reduce plant for excessive accrual of AFUDC. Id. at 271, 330.

In addition to their recommended adjustments, witnesses Henry and Junis recommended in their prefiled testimony that the Commission order the Company to review its "procedures for determining when projects are complete, in service, and booked" and file recommendations in the docket. Id. at 273. On cross examination, witness Junis revised this recommendation based on new information that the Company's PowerPlan asset management system includes a function that enables the Company to designated assets as "completed but not classified."[10] Witness Junis testified that this function stops the accrual of AFUDC and begins depreciation at a general depreciation rate of the related plant. Witness Junis further testified that, after an asset is booked at the general depreciation rate, costs in sub-accounts associated with the various components of the asset would "continue to be accounted for during a designated period of time or until it is believed that all the costs have been captured." At the end of this period, the costs that have been collected and the accumulated depreciation that has accrued since

[10] Account 106, Completed Construction Not Classified - At the end of the year or such other date as a balance sheet may be required by the Commission, this account shall include the total of the balances of construction projects for service company property which has been completed and placed in service but which work orders have not been classified for transfer to the detailed utility plant accounts. Uniform System of Accounts for Class A Water Utilities (1996).

the asset's in-service date is booked to the appropriate sub-accounts. Id. at 319-21. Witness Junis testified that it was his understanding this function is utilized by various other Commission-regulated utilities in the state including Duke Energy Carolinas, LLC, Duke Energy Progress, LLC, and Piedmont Natural Gas Company, Inc. Witness Junis recommended that the Commission order Aqua NC to also utilize this function.

Summary of Company Testimony

Aqua NC witness Thill testified on rebuttal that Aqua NC disagreed with the Public Staff's conclusion that the Company's UPIS practices are inconsistent and can result in windfalls to the Company to the detriment of ratepayers. Witness Thill testified that Aqua NC has systems and processes in place to track, document, and verify its UPIS. These consist of annual reviews of internal controls performed because Aqua NC's parent company, Essential Utilities, is subject to the Sarbanes-Oxley process, Aqua NC's finance department's quarterly reviews of capital project reports and meetings with operations and engineering staff regarding the status of Construction Work in Progress (CWIP), and Essential Utilities' internal audit group's three-year rotational review of state operations. He acknowledged that "real work events" such as vacations, sick time, field staff experience levels, and communication between those field staff and accounting staff impacts the Company's UPIS processes. Witness Thill discussed some of the factors that complicate the Company's UPIS procedures, including the large volume of projects the Company processes each year, and the need to close projects for individual systems, but he opined that, overall, the Company has, in its

UPIS processes, balanced the interests of its various stakeholders, including shareholders, employees, bondholders, and customers. Tr. Vol. 6, pp 41-45.

Witness Thill opined that the Company's use of the mid-year depreciation convention minimizes the impact of the unitization date during the same calendar year. He acknowledged, however, that when an asset "crosses years" depreciation is lost. For example, when an asset that was placed in service in 2019 is unitized in 2020, one year's worth of depreciation is lost. Id. at 44-45.

Regarding the Public Staff's concerns about delays in the unitization of certain projects, witness Thill testified that factors outside the control of the Company such as vendors and regulatory agencies can contribute to such delays. Responding specifically to Public Staff witnesses Henry and Junis' Exhibit 1 to their testimony showing discrepancies between in-service dates that occurred in 2017 and unitization dates that occurred in 2018 for a number of Aqua NC plant additions, witness Thill noted that final invoice payments for some projects having in-service dates in October 2017 were not paid until December of that year and stated that projects "***cannot*** close until all costs are in." (Emphasis in original) Id. at 47. Witness Thill further testified that "information [regarding final payments] is often not known for some window of time after payments are made due to the necessary coordination between internal departments and external vendors . . . ." Id. at 47-48.

Regarding Public Staff witnesses Henry and Junis' contention that "the Company benefits financially from unitizing plant costs as close to rate recovery as possible," witness Thill opined that a more accurate statement is that "the

Company is harmed less by lag when it unitizes plant costs as close to rate recovery as possible." He acknowledged that, as identified by the Public Staff, "unitizations occur at a higher frequency in months that cut off the two semi-annual WSIC/SSIC filing periods," and suggested that this should not be considered "surprising or alarming" because part of the purpose of the WSIC/SSIC mechanism is to lessen the effects of regulatory lag. Id. at 48. Witness Thill did not explain why the Company was able to consistently unitize WSIC/SSIC projects in the same month they were placed in service, but was unable to do so for numerous other projects.

Witness Thill acknowledged that the Company had not updated its November 1, 2019 WSIC/SSIC application to account for ($16,354) in plant adjustments as noted by Public Staff witnesses Henry and Junis. However, witness Thill asserted that the Company included and the Public Staff was aware of all but $1,829 of the adjustments at issue. Witness Thill further asserted that the failure to include that amount was the result of an inadvertent mistake and not the product of a variance of the Company's accounting procedures or evidence that a review of those procedures is necessary as the Public Staff suggested. Id. at 50. Witness Thill did not explain whether the mistake was the result of the Company hastening to complete numerous same month unitizations for WSIC/SSIC recovery.

Witness Thill testified that Aqua NC did not challenge the Public Staff's adjustments to the in-service dates for 13 projects totaling approximately $1.7 million that were placed in service in the third and fourth quarters of 2018 but were not unitized until the first quarter of 2019. These adjustments are shown in Exhibit 4 to the joint testimony of witnesses Henry and Junis. Id. at 52-53.

Regarding the Public Staff's recommended adjustments to the unitization dates for 44 plant additions related to capital expenditures unitized by the Company in the post-test year period, witness Thill testified that the Public Staff's analysis "does not take into account the reality of the every-day operations of the utility." Witness Thill noted that the Public Staff's analysis used to support its recommendation "moved the unitization date in advance of the final vendor payment for ten (10) of the 44 line-items, *a practice unavailable to the Company as Staff has previously required that projects close a single time once all costs are final*." Id. at 54. Witness Thill contended that the projects for which the Public Staff adjusted the unitization dates made up a small fraction of the asset additions recorded in the first quarter of 2020 and that, in adjusting the unitization dates, the Public Staff disregarded its "past policy of a 30-60 day closing period" and failed to take a "holistic" view of the Company's unitization practices. Witness Thill conceded the project-specific reductions to plant recommended by the Public Staff for excessive accrual of AFUDC related to the "Bridgepoint #8 Instl AquaGuard" and the "Instl AquaGuard Coachmans Trl #3." Witness Thill disagreed with witnesses Henry and Junis' recommendation that the entire AFUDC amount of $12,526.25 be disallowed for "Field Tablets – 2019." In support of his position he stated that the Public Staff's determination that the procurement of the field tablets was not construction in progress "ignores the very nature of AFUDC, which is to recognize the capital cost of financing such a purchase." Witness Thill also disagreed with witnesses Henry and Junis' recommendation that only the portion of the total cost of the "RC New Generator Beachwood 02-196" incurred in 2018 in the amount of $10,043.95 be included in plant. In support of his position, witness Thill noted that approximately $20,000 was spent on the project in 2011 and 2012, and that the project did not restart until 2018, due to problems obtaining approval from a local official. He asserted that the usefulness of the asset should control whether the associated costs are recoverable, not the age of the costs. Id. at 58-59.

Witness Thill testified that the scope of the issues related to UPIS raised by the Public Staff was relatively small, and noted that the impact of the Public Staff's reassignment of unitization dates for $1.6 million of plant additions "yielded a $4,400 reduction in the revenue requirement in this case." In his pre-filed rebuttal testimony, in response to the witnesses Henry and Junis' recommendation in their pre-filed testimony that the Company review and file a report on its UPIS procedures, witness Thill testified that, while the Company believes the processes and procedures currently in place related to UPIS are appropriate, he stated "there is always room for improvement" and noted that Aqua NC was not opposed to reviewing its UPIS procedures but did not believe a report was necessary. Id. at 60-61.

During the evidentiary hearing, witness Thill provided an addendum to the position stated in his pre-filed rebuttal testimony. Specifically, witness Thill stated as follows:

> [I]f the Commission is so inclined and in lieu of reaching a decision on the merits based on the evidence of the record in this case, the Commission adopt the recommendation of the Public Staff witnesses Henry and Junis, quote “To order the Company to review its procedures for determining when projects are completed, in service, and booked, and file the Company’s findings of its internal practices [and] any plans to change the procedures within 90 days of the Commission’s Final Order in this proceeding,” closed quote.
>
> This would allow Aqua and the Public Staff ample time to fully explore and address the UPIS issues prior to the Company’s next rate case and either come to a consensus settlement or engage in further litigation regarding these issues in that case.

Id. at 78-79.

During its case on rebuttal, Aqua NC requested and was granted, over the objections of the Public Staff, permission to conduct supplemental rebuttal examination of witness Thill on the topic of its PowerPlan asset management system which was addressed by Public Staff witness Junis on cross examination. Witness Thill testified on supplemental rebuttal examination that Aqua NC began using the PowerPlan asset management software in 2009 or 2010. Witness Thill testified that the Company’s decision to utilize PowerPlan was associated with its acquisition of a number of disparate systems using a variety of different accounting systems and the Commission’s directives that the Company take steps to better manage its accounting processes. Witness Thill testified that he did not think the UPIS issues raised by the Public Staff in the present rate case were the same issues that had prompted Aqua NC to begin using PowerPlan. Id. at 93-101.

When asked by Commissioner Clodfelter whether the version of PowerPlan used by the Aqua NC contains the “completed but not yet categorized” module or functionality described by witness Junis on cross-examination which stops the accrual of AFUDC and begins depreciation at a general depreciation rate of the related plant, witness Thill testified “it does.” He further clarified that it was his understanding that Aqua NC’s version of PowerPlan had contained that module or functionality since Aqua NC began using the software and that it was his understanding that other Essential Utilities subsidiaries use the module or functionality. Finally, witness Thill testified that, “generally speaking,” witness Junis correctly described the manner in which the module or functionality operates with respect to costs that are captured after an asset has been placed in service. Tr. Vol. 7, p 36.

In response to a question from Commissioner McKissick regarding when depreciation should begin – on the in-service date or on the unitization date – witness Thill first provided the Uniform System of Accounts description of Construction Work in Progress (CWIP) which he stated is, “Work orders shall be cleared from this account as soon as practicable after completion of the job.” Witness Thill went on to state regarding the description, “And so it’s not even a question in here about when it’s in service. It talks about after completion. And it talks about practicable, because this is not as easy as it seems.” Id. at 44.

Witness Thill described what he believed should be the “overriding beginning principle” governing UPIS practices and procedures as follows:

> Things should move from [CWIP] into depreciable plant in service when practicable, not on a particular system date, but when practicable, that flows into the system that was developed at the time which was to say that it's going to take sometimes 30 to 60 days for us to do the complete unitization, to move this from CWIP into depreciable property. So sometimes it's going to take some time.

Witness Thill did not provide an explanation for the instances identified by witnesses Henry and Junis in which it took the Company far in excess of 30 to 60 days to complete unitization. Witness Thill contended that the Company's ability to unitize some projects within the same month as the in service date was not evidence that the Company always has the capability to do so. Id. at 46.

Regarding the "completed not classified" functionality within PowerPlan referenced by witness Junis, witness Thill testified, "He's right about the functionality." He testified that a member of Aqua NC's accounting staff who was involved in the Company's transition to PowerPlan had expressed concerns about the Company utilizing the "completed not classified" functionality of PowerPlan, which he referred to as the "106 account." However, witness Thill did not provide any detail as to nature of the concerns or explain the basis for the concerns. Id. at 47-48.

Returning to Commissioner McKissick's original question – when should depreciation begin – witness Thill ultimately answered "I'm not sure, because there may be costs associated with modifying the system in order to be able to change when that happens." He further testified, "I think the Public Staff has raised an issue which is quite frankly valid. . . . I think it's important that we all evaluate it. As I mentioned, we started looking at that a year ago and we made one modification. I don't think it's probably enough and I think it needs to continue to develop much as this entire argument has." Id. at 49-50.

Witness Thill agreed with Commissioner McKissick that the establishment of a bright line standard for when depreciation begins would be beneficial to all parties involved, but he noted that it would be important for the Company to conduct a review of the issue and understand the implications of any standard that is implemented. Id. at 51.

Discussion and Conclusion

The issue of the Company's UPIS accounting practices and procedures was addressed in the Company's rate case in Docket No. W-218, Sub 274 after the Public Staff determined that the Company's plant records were inadequate following Aqua NC's acquisition of Hydraulics and other water and wastewater utilities. The Public Staff and Aqua NC stipulated that the Company would take various steps to remedy this issue, including that the Company would "review its procedures for determining when projects are completed and should be closed and file its recommended changes to its procedures within 90 days of the issuance date of [the Sub 274] Order."

In its first report filed in response to the Sub 274 Order, Aqua NC stated that the Company's Accounting Department allowed 30 to 60 days after the in-service date for projects to be booked. However, as evidenced by the testimony and exhibits of witnesses Henry and Junis, the Company has failed to consistently book or unitize projects within that timeframe. The Company's unitization of some projects more than 60 days after they are placed in service has resulted in the Company continuing, on occasion, to accrue AFUDC after the in service date and postponing the start of depreciation. This, in turn, can lead to a decrease in accumulated depreciation and corresponding increase in rate base which can be financially beneficial to the Company and detrimental to ratepayers. The impact of delays in unitization is magnified when, as witnesses Henry and Junis demonstrated, unitization does not occur until the year after an asset is placed in service.

While, as Aqua NC witness Thill testified, the number of projects identified by the Public Staff as having unitization issues was relatively small in comparison to all of its plant additions including routine replacements, WSIC/SSIC projects, and other CWIP projects, the fact remains that inconsistency in the Company's UPIS accounting practices and procedures is a longstanding issue that has a detrimental effect on customers, although the Commission acknowledges that the controversy as to when depreciation should begin is a relatively new development. The Commission gives little weight to the rebuttal testimony of witness Thill related to the Public Staff's in service date and associated rate base adjustments as he failed to present persuasive, complete, and/or project-specific evidence to refute the Public Staff's detailed and exhaustive analysis, especially in light of the approximately $4.7 million in projects the Public Staff identified for which unitization occurred more than 60 days after the in-service date in the W-218, Sub 497, rate case.

Based upon the record evidence in this proceeding regarding the Company's UPIS practices and procedures, the Commission finds and concludes that it is reasonable and appropriate that Aqua NC begin depreciating assets on the in-service date. The evidence clearly demonstrates that the PowerPlan asset management program is widely utilized by the state's larger and more sophisticated utilities and contains a "completed construction not classified" or

"Account 106" function that stops the accrual of AFUDC and begins depreciation when the asset is placed in service, while allowing for components of the asset to "continue to be accounted for during a designated period of time or until it is believed that all the costs have been captured." Furthermore, the Commission gives substantial weight to the Public Staff's uncontroverted testimony that the in service date is the objective point in time when an asset is "used and useful," is installed, constructed, functional, and providing service. As of the in-service date, the asset is being utilized (i.e., water can flow, lift station can pump, etc.) and begins to devalue with the passage of time due to wear and tear, which is accounted for through depreciation over the expected life of the asset. Therefore, the in service date is the appropriate point in time for depreciation to begin.

The Commission further finds and concludes that Aqua NC should utilize the "completed not classified" or "Account 106" functionality within its Power Plan asset management system to track asset costs, which are associated with assets that have been placed in service, and depreciate at the general depreciation rate of the related plant for a reasonable period of time or until all vendor invoices have been received and recorded in the Company's financial accounting records, and the unitization process should be completed no later than 90 days after the in-service date for a given asset.

The Commission further finds and concludes based upon the record evidence that the adjustments recommended by the Public Staff and unopposed by the Company to the in service dates and associated accumulated depreciation, rate base, and return on certain projects related to the May 1, 2019 WSIC/SSIC

Application are reasonable and appropriate to include in this rate case. The Commission further finds and concludes that it is reasonable and appropriate that the Company track and include these adjustments as a regulatory accounting adjustment in all future rate cases until the applicable assets have fully depreciated and/or are retired.

The Commission further finds and concludes based upon the record evidence that the adjustments recommended by the Public Staff to the in service dates, AFUDC, and associated accumulated depreciation, rate base, and return on certain capital expenditures unitized by the Company in the post-test year period in the present rate case are reasonable and appropriate to include in this rate case and for the Company to track and include as a regulatory accounting adjustment in all future rate cases until the applicable assets have fully depreciated and/or are retired.

<u>EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 27-28</u>

The following schedules summarize the gross revenues and rate of return that the Company should have a reasonable opportunity to achieve based on the increases and decreases in revenues approved in this Order for each rate entity. These schedules, illustrating the Company’s gross revenue requirements, incorporate the adjustments found appropriate by the Commission in this Order.

SCHEDULE I

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Net Operating Income for a Return
For the Twelve Months Ended September 30, 2019
Combined Operations

	Present Rates	Increase Approved	After Approved Increase
Operating Revenues:			
Service revenues	$61,272,691	$3,446,081	$64,718,772
Late payment fees	105,583	6,597	112,180
Miscellaneous revenues	1,270,926	0	1,270,926
Uncollectibles & abatements	(336,714)	(25,775)	(362,489)
Total operating revenues	62,312,486	3,426,903	65,739,389
Operating Revenue Deductions:			
Salaries & wages	10,789,168	0	10,789,168
Employee pensions & benefits	3,161,501	0	3,161,501
Purchased water/sewer treatment	2,627,732	0	2,627,732
Sludge removal	760,234	0	760,234
Purchased power	3,878,492	0	3,878,492
Fuel for power production	18,494	0	18,494
Chemicals	1,330,863	0	1,330,863
Materials & supplies	535,914	0	535,914
Testing fees	1,062,424	0	1,062,424
Transportation	1,308,389	0	1,308,389
Contractual services-engineering	22,867	0	22,867
Contractual services-accounting	218,996	0	218,996
Contractual services-legal	372,517	0	372,517
Contractual services-other	4,646,229	0	4,646,229
Rent	295,836	0	295,836
Insurance	723,202	0	723,202
Regulatory commission expense	468,294	0	468,294
Miscellaneous expense	1,801,761	0	1,801,761
Interest on customer deposits	30,734	0	30,734
Annualization & consumption adjustments	98,917	0	98,917
Contra-OH allocations	(274,679)	0	(274,679)
Total O&M and G&A expense	33,877,885	0	33,877,885
Depreciation & amortization expense	10,733,726	0	10,733,726
Property taxes	678,027	0	678,027
Payroll taxes	772,558	0	772,558
Other taxes	288,922	0	288,922
Benefit costs - Pension	(1,251)	0	(1,251)
Regulatory fee	81,007	4,455	85,462
Deferred income tax	(121,271)	0	(121,271)
State income tax	272,249	85,560	357,809
Federal income tax	2,229,709	700,747	2,930,456
Total operating revenue deductions	48,811,561	790,762	49,602,323
Net operating income for return	$13,500,925	$2,636,141	$16,137,066

SCHEDULE II

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Original Cost Rate Base
For the Twelve Months Ended September 30, 2019
Combined Operations

Plant in service	$537,364,375
Accumulated depreciation	(151,179,665)
Contributions in aid of construction	(208,059,143)
Accumulated amortization of CIAC	80,039,515
Acquisition adjustments	2,159,025
Accum. amort. of acquisition adjustments	692,794
Advances for construction	(4,091,131)
Net plant in service	256,925,770
Customer deposits	(359,356)
Unclaimed refunds & cost-free capital	(193,255)
Accumulated deferred income taxes	(27,147,850)
Materials and supplies inventory	2,790,285
Excess capacity adjustment	0
Working capital allowance	5,119,829
Original cost rate base	$237,135,423

Rates of return:	
Present	5.70%
Approved	6.81%

SCHEDULE III

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Statement of Capitalization and Related Costs
For the Twelve Months Ended September 30, 2019
Combined Operations

	Ratio %	Original Cost Rate Base	Embedded Cost %	Net Operating Income
		PRESENT RATES		
Long-Term Debt	50.00	$118,567,712	4.21	$4,991,701
Common Equity	50.00	118,567,711	7.18	8,509,224
Total	100.00	$237,135,423		$13,500,925
		APPROVED RATES		
Long-Term Debt	50.00	$118,567,712	4.21	$4,991,701
Common Equity	50.00	118,567,711	9.40	11,145,365
Total	100.00	$237,135,423		$16,137,066

SCHEDULE I-A

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Net Operating Income for a Return
For the Twelve Months Ended September 30, 2019
Aqua Water Operations

	Present Rates	Increase Approved	After Approved Increase
Operating Revenues:			
Service revenues	$36,559,502	$1,986,987	$38,546,489
Late payment fees	62,868	3,417	66,285
Miscellaneous revenues	759,977	0	759,977
Uncollectibles & abatements	(172,554)	(9,378)	(181,932)
Total operating revenues	37,209,793	1,981,026	39,190,819
Operating Revenue Deductions:			
Salaries & wages	7,029,367	0	7,029,367
Employee pensions & benefits	2,041,979	0	2,041,979
Purchased water	1,787,711	0	1,787,711
Purchased power	2,368,986	0	2,368,986
Fuel for power production	(1,571)	0	(1,571)
Chemicals	460,830	0	460,830
Materials & supplies	378,521	0	378,521
Testing fees	681,418	0	681,418
Transportation	885,052	0	885,052
Contractual services-engineering	9,986	0	9,986
Contractual services-accounting	135,888	0	135,888
Contractual services-legal	228,668	0	228,668
Contractual services-other	2,189,056	0	2,189,056
Rent	209,235	0	209,235
Insurance	442,138	0	442,138
Regulatory commission expense	290,858	0	290,858
Miscellaneous expense	1,086,984	0	1,086,984
Interest on customer deposits	23,936	0	23,936
Annualization & consumption adjustments	58,269	0	58,269
Contra-OH allocations	(200,909)	0	(200,909)
Total O&M and G&A expense	20,106,402	0	20,106,402
Depreciation & amortization expense	6,770,258	0	6,770,258
Property taxes	534,225	0	534,225
Payroll taxes	493,985	0	493,985
Other taxes	179,292	0	179,292
Benefit costs - Pension	(504)	0	(504)
Regulatory fee	48,373	2,575	50,948
Deferred income tax	(75,322)	0	(75,322)
State income tax	155,422	49,461	204,883
Federal income tax	1,272,902)	405,088	1,677,990
Total operating revenue deductions	29,485,032	457,124	29,942,156
Net operating income for return	$7,724,761	$1,523,902	$9,248,663

SCHEDULE II-A

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Original Cost Rate Base
For the Twelve Months Ended September 30, 2019
Aqua Water Operations

Plant in service	$297,497,315
Accumulated depreciation	(90,717,400)
Contributions in aid of construction	(98,979,231)
Accumulated amortization of CIAC	37,254,305
Acquisition adjustments	6,192,960
Accum. amort. of acquisition adjustments	(2,433,069)
Advances for construction	(2,748,037
Net plant in service	146,066,843
Customer deposits	(281,444)
Unclaimed refunds & cost-free capital	(46,582)
Accumulated deferred income taxes	(15,220,457)
Materials and supplies inventory	2,235,302
Excess capacity adjustment	0
Working capital allowance	3,156,148
Original cost rate base	$135,909,810

Rates of return:	
Present	5.69%
Approved	6.81%

SCHEDULE III-A

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Statement of Capitalization and Related Costs
For the Twelve Months Ended September 30, 2019
Aqua Water Operations

	Ratio %	Original Cost Rate Base	Embedded Cost %	Net Operating Income
		PRESENT RATES		
Long-Term Debt	50.00	$67,954,905	4.21	$2,860,902
Common Equity	50.00	67,954,905	7.16	4,863,859
Total	100.00	$135,909,810		$7,724,761
		APPROVED RATES		
Long-Term Debt	50.00	$67,954,905	4.21	$2,860,902
Common Equity	50.00	67,954,905	9.40	6,387,761
Total	100.00	$135,909,810		$9,248,663

SCHEDULE I-B

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Net Operating Income for a Return
For the Twelve Months Ended September 30, 2019
Aqua Sewer Operations

	Present Rates	Increase Approved	After Approved Increase
Operating Revenues:			
Service revenues	$15,607,641	$818,429	$16,426,070
Late payment fees	18,813	987	19,800
Miscellaneous revenues	32,029	0	32,029
Uncollectibles & abatements	(19,331)	(1,014)	(20,345)
Total operating revenues	15,639,152	818,402	16,457,554
Operating Revenue Deductions:			
Salaries & wages	2,424,519	0	2,424,519
Employee pensions & benefits	696,455	0	696,455
Purchased sewer	570,367	0	570,367
Sludge removal	590,239	0	590,239
Purchased power	1,054,929	0	1,054,929
Fuel for power production	19,318	0	19,318
Chemicals	520,589	0	520,589
Materials & supplies	98,861	0	98,861
Testing fees	281,394	0	281,394
Transportation	301,127	0	301,127
Contractual services-engineering	11,385	0	11,385
Contractual services-accounting	35,728	0	35,728
Contractual services-legal	64,081	0	64,081
Contractual services-other	1,430,357	0	1,430,357
Rent	42,751	0	42,751
Insurance	177,221	0	177,221
Regulatory commission expense	76,800	0	76,800
Miscellaneous expense	407,765	0	407,765
Interest on customer deposits	683	0	683
Annualization & consumption adjustments	49,804	0	49,804
Contra-OH allocations	(50,524)	0	(50,524)
Total O&M and G&A expense	8,803,849	0	8,803,849
Depreciation & amortization expense	2,434,103	0	2,434,103
Property taxes	17,637	0	17,637
Payroll taxes	205,084	0	205,084
Other taxes	47,134	0	47,134
Benefit costs - Pension	(474)	0	(474)
Regulatory fee	20,331	1,064	21,395
Deferred income tax	(19,888)	0	(19,888)
State income tax	71,017	20,433	91,450
Federal income tax	581,626	167,350	748,976
Total operating revenue deductions	12,160,420	188,847	12,349,267
Net operating income for return	$3,478,732	$629,555	$4,108,287

SCHEDULE II-B

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Original Cost Rate Base
For the Twelve Months Ended September 30, 2019
Aqua Sewer Operations

Plant in service	$165,414,907
Accumulated depreciation	(44,951,137)
Contributions in aid of construction	(84,910,644)
Accumulated amortization of CIAC	32,786,629
Acquisition adjustments	(4,002,509)
Accum. amort. of acquisition adjustments	3,096,868
Advances for construction	(1,287,424)
Net plant in service	66,146,690
Customer deposits	(7,128)
Unclaimed refunds & cost-free capital	(6,342)
Accumulated deferred income taxes	(7,249,727)
Materials and supplies inventory	400,302
Excess capacity adjustment	0
Working capital allowance	1,087,814
Original cost rate base	$60,371,609

Rates of return:	
Present	5.76%
Approved	6.81%

SCHEDULE III-B

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Statement of Capitalization and Related Costs
For the Twelve Months Ended September 30, 2019
Aqua Sewer Operations

	Ratio %	Original Cost Rate Base	Embedded Cost %	Net Operating Income
		PRESENT RATES		
Long-Term Debt	50.00	$30,185,804	4.21	$1,270,822
Common Equity	50.00	30,185,805	7.31	2,207,910
Total	100.00	$60,371,609		$3,478,732
		APPROVED RATES		
Long-Term Debt	50.00	$30,185,804	4.21	$1,270,822
Common Equity	50.00	30,185,805	9.40	2,837,466
Total	100.00	$60,371,609		$4,108,288

SCHEDULE I-C

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Net Operating Income for a Return
For the Twelve Months Ended September 30, 2019
Fairways Water Operations

	Present Rates	Increase Approved	After Approved Increase
Operating Revenues:			
Service revenues	$1,138,759	$20,949	$1,159,708
Late payment fees	1,621	30	1,651
Miscellaneous revenues	91,092	0	91,092
Uncollectibles & abatements	(2,544)	(47)	(2,591)
Total operating revenues	1,228,928	20,932	1,249,860
Operating Revenue Deductions:			
Salaries & wages	267,676	0	267,676
Employee pensions & benefits	85,115	0	85,115
Purchased water	0	0	0
Purchased power	75,588	0	75,588
Fuel for power production	(209)	0	(209)
Chemicals	24,115	0	24,115
Materials & supplies	9,810	0	9,810
Testing fees	19,827	0	19,827
Transportation	21,442	0	21,442
Contractual services-engineering	323	0	323
Contractual services-accounting	10,230	0	10,230
Contractual services-legal	17,214	0	17,214
Contractual services-other	151,349	0	151,349
Rent	14,202	0	14,202
Insurance	16,629	0	16,629
Regulatory commission expense	22,197	0	22,197
Miscellaneous expense	61,683	0	61,683
Interest on customer deposits	558	0	558
Annualization & consumption adjustments	(5,834)	0	(5,834)
Contra-OH allocations	(2,539)	0	(2,539)
Total O&M and G&A expense	789,376	0	789,376
Depreciation & amortization expense	133,475	0	133,475
Property taxes	30,683	0	30,683
Payroll taxes	14,300	0	14,300
Other taxes	13,481	0	13,481
Benefit costs - Pension	(147)	0	(147)
Regulatory fee	1,598	27	1,625
Deferred income tax	(5,748)	0	(5,748)
State income tax	4,394	522	4,916
Federal income tax	35,984	4,281	40,265
Total operating revenue deductions	1,017,396	4,830	1,022,226
Net operating income for return	$211,532	$16,102	$227,634

SCHEDULE II-C

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Original Cost Rate Base
For the Twelve Months Ended September 30, 2019
Fairways Water Operations

Plant in service	$13,024,429
Accumulated depreciation	(3,544,128)
Contributions in aid of construction	(8,239,542)
Accumulated amortization of CIAC	2,419,869
Acquisition adjustments	0
Accum. amort. of acquisition adjustments	0
Advances for construction	(69,670)
Net plant in service	3,590,957
Customer deposits	(5,931)
Unclaimed refunds & cost-free capital	(7,339)
Accumulated deferred income taxes	(380,042)
Materials and supplies inventory	21,017
Excess capacity adjustment	0
Working capital allowance	126,431
Original cost rate base	$3,345,093

Rates of return:	
Present	6.33%
Approved	6.81%

SCHEDULE III-C

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Statement of Capitalization and Related Costs
For the Twelve Months Ended September 30, 2019
Fairways Water Operations

	Ratio %	Original Cost Rate Base	Embedded Cost %	Net Operating Income
		PRESENT RATES		
Long-Term Debt	50.00	$1,672,547	4.21	$70,414
Common Equity	50.00	1,672,546	8.44	141,118
Total	100.00	$3,345,093		$211,532
		APPROVED RATES		
Long-Term Debt	50.00	$1,672,547	4.21	$70,414
Common Equity	50.00	1,672,546	9.40	157,219
Total	100.00	$3,345,093		$227,633

SCHEDULE I-D

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Net Operating Income for a Return
For the Twelve Months Ended September 30, 2019
Fairways Sewer Operations

	Present Rates	Decrease Approved	After Approved Decrease
Operating Revenues:			
Service revenues	$2,189,589	$(37,003)	$2,152,586
Late payment fees	2,833	(48)	2,785
Miscellaneous revenues	40	0	40
Uncollectibles & abatements	(6,413)	109	(6,304)
Total operating revenues	2,186,049	(36,942)	2,149,107
Operating Revenue Deductions:			
Salaries & wages	235,581	0	235,581
Employee pensions & benefits	74,007	0	74,007
Purchased sewer	5,320	0	5,320
Sludge removal	169,995	0	169,995
Purchased power	107,989	0	107,989
Fuel for power production	1,569	0	1,569
Chemicals	28,526	0	28,526
Materials & supplies	14,503	0	14,503
Testing fees	13,848	0	13,848
Transportation	23,554	0	23,554
Contractual services-engineering	207	0	207
Contractual services-accounting	6,544	0	6,544
Contractual services-legal	11,020	0	11,020
Contractual services-other	147,857	0	147,857
Rent	8,916	0	8,916
Insurance	21,869	0	21,869
Regulatory commission expense	14,142	0	14,142
Miscellaneous expense	53,820	0	53,820
Interest on customer deposits	8	0	8
Annualization & consumption adjustments	(10,321)	0	(10,321)
Contra-OH allocations	(2,807)	0	(2,807)
Total O&M and G&A expense	926,147	0	926,147
Depreciation & amortization expense	342,524	0	342,524
Property taxes	2,322	0	2,322
Payroll taxes	15,183	0	15,183
Other taxes	8,619	0	8,619
Benefit costs - Pension	(137)	0	(137)
Regulatory fee	2,842	(48)	2,794
Deferred income tax	(3,662)	0	(3,662)
State income tax	16,722	(922)	15,800
Federal income tax	136,955	(7,554)	129,401
Total operating revenue deductions	1,447,515	(8,524)	1,438,991
Net operating income for return	$738,534	($28,418)	$710,116

SCHEDULE II-D

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Original Cost Rate Base
For the Twelve Months Ended September 30, 2019
Fairways Sewer Operations

Plant in service	$20,037,782
Accumulated depreciation	(2,601,325)
Contributions in aid of construction	(7,928,978)
Accumulated amortization of CIAC	2,005,203
Acquisition adjustments	0
Accum. amort. of acquisition adjustments	0
Advances for construction	14,000
Net plant in service	11,526,682
Customer deposits	(92)
Unclaimed refunds & cost-free capital	(217)
Accumulated deferred income taxes	(1,223,091)
Materials and supplies inventory	7,306
Excess capacity adjustment	0
Working capital allowance	124,618
Original cost rate base	$10,435,206

Rates of return:	
Present	7.08%
Approved	6.81%

SCHEDULE III-D

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Statement of Capitalization and Related Costs
For the Twelve Months Ended September 30, 2019
Fairways Water Operations

	Ratio %	Original Cost Rate Base	Embedded Cost %	Net Operating Income
		PRESENT RATES		
Long-Term Debt	50.00	$5,217,603	4.21	$219,661
Common Equity	50.00	5,217,603	9.94	518,873
Total	100.00	$10,435,206		$738,534
		APPROVED RATES		
Long-Term Debt	50.00	$5,217,603	4.21	$219,661
Common Equity	50.00	5,217,603	9.40	490,455
Total	100.00	$10,435,206		$710,116

SCHEDULE I-E

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Net Operating Income for a Return
For the Twelve Months Ended September 30, 2019
Brookwood Water Operations

	Present Rates	Increase Approved	After Approved Increase
Operating Revenues:			
Service revenues	$5,777,200	$656,719	$6,433,919
Late payment fees	19,448	2,211	21,659
Miscellaneous revenues	387,788	0	387,788
Uncollectibles & abatements	(135,872)	(15,445)	(151,317)
Total operating revenues	6,048,564	643,485	6,692,049
Operating Revenue Deductions:			
Salaries & wages	832,025	0	832,025
Employee pensions & benefits	263,945	0	263,945
Purchased water	264,334	0	264,334
Purchased power	271,000	0	271,000
Fuel for power production	(613)	0	(613)
Chemicals	296,803	0	296,803
Materials & supplies	34,219	0	34,219
Testing fees	65,937	0	65,937
Transportation	77,214	0	77,214
Contractual services-engineering	966	0	966
Contractual services-accounting	30,606	0	30,606
Contractual services-legal	51,534	0	51,534
Contractual services-other	727,610	0	727,610
Rent	20,732	0	20,732
Insurance	65,345	0	65,345
Regulatory commission expense	64,297	0	64,297
Miscellaneous expense	191,509	0	191,509
Interest on customer deposits	5,549	0	5,549
Annualization & consumption adjustments	6,999	0	6,999
Contra-OH allocations	(17,900)	0	(17,900)
Total O&M and G&A expense	3,252,111	0	3,252,111
Depreciation & amortization expense	1,053,366	0	1,053,366
Property taxes	93,160	0	93,160
Payroll taxes	44,006	0	44,006
Other taxes	40,396	0	40,396
Benefit costs - Pension	11	0	11
Regulatory fee	7,863	837	8,700
Deferred income tax	(16,651)	0	(16,651)
State income tax	24,694	16,066	40,760
Federal income tax	202,242	131,582	333,824
Total operating revenue deductions	4,701,198	148,485	4,849,683
Net operating income for return	$1,347,366	$495,000	$1,842,366

SCHEDULE II-E

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Original Cost Rate Base
For the Twelve Months Ended September 30, 2019
Brookwood Water Operations

Plant in service	$41,389,941
Accumulated depreciation	(9,365,674)
Contributions in aid of construction	(8,000,748)
Accumulated amortization of CIAC	5,573,511
Acquisition adjustments	(31,426)
Accum. amort. of acquisition adjustments	28,995
Advances for construction	0
Net plant in service	29,594,599
Customer deposits	(64,761)
Unclaimed refunds & cost-free capital	(132,775)
Accumulated deferred income taxes	(3,074,533)
Materials and supplies inventory	126,358
Excess capacity adjustment	0
Working capital allowance	624,818
Original cost rate base	$27,073,706

Rates of return:	
Present	4.98%
Approved	6.81%

SCHEDULE III-E

Aqua North Carolina, Inc.
Docket No. W-218, Sub 526
Statement of Capitalization and Related Costs
For the Twelve Months Ended September 30, 2019
Brookwood Water Operations

	Ratio %	Original Cost Rate Base	Embedded Cost %	Net Operating Income
		PRESENT RATES		
Long-Term Debt	50.00	$13,536,853	4.21	$569,902
Common Equity	50.00	13,536,853	5.74	777,464
Total	100.00	$27,073,706		$1,347,366
		APPROVED RATES		
Long-Term Debt	50.00	$13,536,853	4.21	$569,902
Common Equity	50.00	13,536,853	9.40	1,272,464
Total	100.00	$27,073,706		$1,842,366

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 29-31

The evidence supporting these findings of fact is contained in the Application and Form W-1 of Aqua, the testimony and exhibits of Company witnesses Becker and Thill and Public Staff witness Junis, the late-filed exhibits filed at the request of various Commissioners on the record at the evidentiary hearing, and the entire record in this proceeding.

In its Application, Aqua NC requests authority to implement a pilot program. The Application states that the pilot program for five systems across Aqua NC Water and Fairways Water rate entities applies a rate design using several volumetric rate tiers at various consumption levels to determine the impacts on customer usage patterns with a goal of promoting conservation. Aqua NC contends the pilot program is reasonable in complexity and representative of the long-range scope, so rate tiers may be amended as appropriate to provide intended outcomes and applied to the consolidated customer population in the future. The Application further states that the pilot program is intended to reduce average per customer consumption and therefore introduces the additional risk of not meeting the Company's approved revenue requirement. Aqua NC's request for the pilot program is contingent upon the Commission's approval of a revenue reconciliation process to reconcile differences in the actual and approved revenues based on average per customer consumption.

Aqua NC witness Becker stated in his summary of his direct testimony that the Company proposed several innovative ideas, including a revenue reconciliation upon installation of the proposed pilot program, in an effort to close the rate of return gap and fully utilize the potential ratemaking tools currently available. Witness Becker stated that this would help minimize lag, provide for recovery of actual costs incurred, and address the impacts of declining consumption trends. Tr. Vol. 2, pp. 142-143. In his direct testimony, witness Becker introduced the proposed pilot program, including a footnote indicating that the pilot program was proposed in the Company's comments submitted on June 19, 2019, in Docket No. W-100, Sub 59. Id. at 107.

While discussing rate design in his direct testimony, Aqua NC witness Thill stated, "it would be disingenuous for the Company to request an increase in its base facility charges in order to rebalance its ratio of fixed costs, while also proposing to institute a conservation pilot intended to specifically drive average consumption lower." Tr. Vol. 4, p. 16. Witness Thill asserted that the purpose of the pilot program is to examine a new inclining block structure that could send conservation-inducing price signals to residential customers, while preserving the Company's opportunity for appropriate cost recovery. Id. at 26. In addition, witness Thill stated that each of the pilot program systems is being stressed to meet peak demand and could require capital investment if conservation is not realized. Id. at 28.

Witness Thill contended that "it would be imprudent to subject the entire customer base to such a dramatic structural change without first determining the effects of that change on a smaller representative sample of customers." Id. at 27.

On cross-examination, witness Thill clarified that the pilot program systems are representative of the type of systems in which the Company was trying to induce conservation. Id. at 72. When presented with the difference in the average usage per month per customer of approximately 3,271 gallons between the four pilot program systems (7,420 gallons) and the rest of the ANC Water systems (4,149 gallons), witness Thill testified that it would make sense for the systems in the pilot program to have higher usage since they were chosen to induce conservation. Id. at 73-74.

Witness Thill asserted that the pilot program systems, Arbor Bay, Bayleaf, Merion, and Pebble Bay (ANC Water rate entity) and The Cape (Fairways Water rate entity) represent approximately 13% of the Company's water customers and were selected because they provide the "greatest opportunity for both conservation and operational relief, while also ensuring the pilot group was sufficient in size and diversity to provide meaningful results that we might extrapolate across the Company's full customer base in future rate design considerations." Id. at 27-28.

On cross-examination, witness Thill was asked to read the following data request and the Company's responses[11]:

> On page 15, line 2, through page 28, line 14, of his direct testimony, witness Thill discusses the Company's proposed Conservation Pilot Program. In reference to this section, please provide the following:
>
> a. A detailed description of the process and/or criteria used to identify systems with the "greatest opportunity for. . . operational relief," including all calculations, analyses, and/or other supporting documentation;
>
> b. Whether the Company estimated the potential cost savings, including avoided capital costs, reduced operating expenses, etc., expected from the operational relief associated with

[11] Ex. Vol. 4, Public Staff Thill Direct Cross-Examination Exhibit 1.

water conservation prior to filing testimony on December 31, 2019;

i. If yes, please provide the estimated cost savings amount and supporting workpapers and documentation.

Response

a. The Company did not perform a scientific study to determine systems for inclusion in the conservation pilot but rather relied on the subjective input of the operations team that manage the challenges of these stressed systems each and every day. Bayleaf and The Cape were early nominations for inclusion due to their known operational challenges, particularly during irrigation season, as well as their vast sizes that might allow for greater conservation impact. Arbor Run, Merion and Pebble Bay each experiences operational challenges as well and were added to the pilot in order to add further diversity in geographic location and customer consumption patterns.

b. Regarding operational cost savings, the Company has assumed a certain level of repression in the consumption rates of the pilot customers as explained in Testimony. The cost savings associated with that reduced volume flows through variable operating expenses such as power and chemicals in the consumption adjustment factor.

Id. at 74-77.

In his direct testimony, witness Thill stated that significant research has been conducted regarding water rate design but no consensus exists as to an optimal structure, which he contends is evidenced by variation in inclining block rates used by the seven largest cities in North Carolina. Witness Thill asserted that, because the pilot is intended to be revenue neutral or zero-sum in total, there would be winners and losers as the lower users will experience an overall reduction in their average monthly bills at the expense of the highest users. He further contended that this is consistent with the concept that, although most of the Company's expenses are fixed, it is the peak demand requirement of a system's highest users that is responsible for the greatest incremental cost. Therefore, he concluded that Aqua NC's focus was on providing rate relief for customers whose usage falls within the lower blocks and inducing conservation in customers whose usage extends to the higher block levels. Id. at 28-29. The inclining rates and usage blocks were proposed for the selected pilot program systems as follows:

	Aqua NC Water		Fairways Water	
Base Facility Charge	0 gallons	$21.57	0 gallons	$ 9.10
Block 1	1-4,000	$ 4.65	1-5,000	$ 0.71
Block 2	4,001-8,000	$ 6.98	5,001-10,000	$ 1.42
Block 3	8,001-15,000	$10.46	10,001-20,000	$ 2.49
Block 4	15,001+	$13.95	20,001+	$ 3.55

On cross-examination, witness Thill conceded that the pilot program would not provide much relief to customers with lower usage. He then agreed that reducing the base facility charge and/or the price of first block would help low income or low usage customers. Id. at 71.

On redirect, witness Thill testified the Company's pilot program was intended to target "that person who's using 20,000, 30,000 [gallons per month]" and "customers with 100,000 gallons of irrigation going out in the summertime." Id. at 87. Witness Thill testified that under the pilot program there would be high usage customers who would experience a doubling of their bills. He stated that these were not customers who were presently paying $30 and would pay $60 under the pilot program but rather "[t]hey're the people who are paying $1,000 and will see it increased to $2,000." Id. at 88. Witness Thill further testified that, "If you're already paying $1,000, they're well off. They're doing something well in their financial portfolio. So how much that increase to $2,000 is going to affect them, we don't know." Id. at 88.

Witness Thill proposed that Aqua NC Water customers with irrigation meters would pay the Block 3 rate for their first 15,000 gallons per month and the Block 4 rate for consumption above that threshold. Similarly, Fairways Water irrigation customers would pay the Block 3 rate for their first 20,000 gallons per month and the Block 4 rate above that threshold. He further stated that the Company would be unable to separately assess irrigation for homes irrigating through their standard household meters, but expected that most irrigation would be captured in Blocks 3 and 4. The Company therefore determined that this structure provides equitable treatment and similar conservation signals to its irrigation customers regardless of the presence or absence of separate meters. Id. at 31-32.

Witness Thill contended that establishment of rates must take into consideration the intended result of reduced consumption, or the Company's revenues would assuredly fall short of the authorized levels. Witness Thill stated the Company attempted to address revenue sufficiency and stability in two ways: the proposed repression of consumption based on price elasticity and a revenue reconciliation. He stated that the consumption estimates the Company used to determine pricing bands in the pilot program had been reduced to reflect demonstrated trends in price elasticity, which measures the responsiveness of customer's consumption to price changes. Witness Thill recognized there are many factors that influence water demand such as price, weather, and income, but he contended that research was particularly extensive on price elasticity. The Company incorporated an elasticity of negative 0.3 in its consumption projections, which assumed that a ten percent increase in cost will result in a three percent decrease in consumption. Witness Thill referenced the 2008 National Bureau of Economic Research (NBER) report title “Comparing Price and Non-Price Approaches to Urban Water Conservation,” and the 2009 University of North Carolina Environmental Finance Center (EFC) report filed in Docket Nos. W-218, Sub 274, and W-224, Sub 15, as the basis for the implementation of a price elasticity adjustment of negative 0.3 to consumption. Witness Thill contended the incorporation of a consumption decline or repression, which would ensure that the Company is not working against its own interest and carrying the burden of an initial revenue shortfall, should be paired with a revenue reconciliation, which would ensure revenue adequacy and stability specific to the pilot program. Id. at 32-34.

On redirect, witness Thill testified that the Company conservatively chose a price elasticity of negative 0.3 to calculate a repression in consumption for the pilot program customers based on the EFC report specific to North Carolina and the NBER report that was a compilation of “hundreds of studies over time and across the USA.” Id. at 90-91.

On examination by Commissioner McKissick, witness Thill testified that the repression in consumption for price elasticity is “projected” and a “guess.” Id. at 92. Witness Thill explained the repression calculation process utilized a model to evaluate each individual premise bill during the test year ending September 30,

2019. He further explained that if an individual bill increased by more than 10% under the initially proposed rate design then a negative adjustment of 3% was applied to the usage. Id. at 93. After applying the repression, the proposed rates were increased to offset the repressed consumption and generate the volumetric revenue requirement.

On examination by Commissioner Hughes about the "link between how much [customers] pay and how much [water] they use" and the disconnect when customers utilize direct draft payment, witness Thill cited the 2008 NBER Report and asserted that "the proper notice on billing alone can increase elasticity by I believe. . . a factor of 0.3." Id. at 102-103. In June 2020, Aqua NC issued a total of 92,254 bills, of which 52,099 (56%) were printed/mailed and 40,155 (44%) were electronic bills/emailed.[12] Furthermore, 32,207 (35%) were direct pay.

Witness Thill contended the ratemaking equation is X number of customers should pay an average of Y dollars each to produce Z dollars of revenue. He further explained that expenses, the driver of Z, and customer count are fixed to the extent they are known and measurable as of the end of the post-test year period. From this simplified ratemaking equation, witness Thill contended the calculation is deficient in that the average revenue per customer, Y, requires the use of an unknowable amount of consumption and asserted the proposed revenue reconciliation corrects this deficiency. Witness Thill stated that "the intent [of the

[12] Aqua NC Late Filed Exhibit No. 4, Paperless Delivery and Direct Pay, filed on July 27, 2020, in Docket No. W-218, Sub 526.

revenue reconciliation] is that the Company should receive its full authorized revenue requirement, no more and no less." Id. at 35.

On cross-examination, witness Thill was presented with a hypothetical scenario in which gross revenues during a 12-month period exceeded the revenue requirement established in a rate case. He stated the determination of whether the revenue requirement was met depended on which customers were being considered. He further stated growth in customers is a future occurrence and no more a part of the calculations to determine the revenue requirement than future increases in costs. Id. at 81-82. On redirect, witness Thill contended that the proposed revenue reconciliation does not adjust for growth but utilizes average per customer usage and is consistent with the language of the legislation and the Commission's Order regarding the consumption adjustment mechanism (CAM). Id. at 84-85.

In describing how the proposed revenue reconciliation would work, witness Thill explained that the difference between the "Revenue per Bill – as Authorized," which is equal to the volumetric revenue requirement divided by the number of bills used in determining rates, and the "Revenue per Bill – Actual," which is equal to the actual volumetric revenues divided by the number of bills during the 12 full months following implementation of rates, would result in the "Average per Customer Usage Excess/Deficit." He further explained that the Excess/Deficit divided by the Revenue per Bill – as Authorized would equal the "Excess/Deficit Rate" to then be multiplied by the originally authorized volumetric revenue to determine the value of the excess or deficit. Id. at 36.

On examination by Presiding Commissioner Brown-Bland, witness Thill testified that the Company did not consider any methods other than the average revenue per bill for the reconciliation process. Id. at 106-107.

In examination by Commissioner McKissick about how the revenue reconciliation would work within the pilot program, witness Thill described a hypothetical scenario in which average monthly consumption per customer decreased by 100 gallons and was multiplied by the average usage rate across 50,000 customers to determine the detriment to the Company. Id. at 95. He further clarified that, if the Commission should decide to include carrying costs, they would be applied similarly to any excess or deficit. Id. at 97.

Witness Thill testified that the Company proposed to recover any deficit through a volumetric surcharge, while excess revenues would be returned to customers through a surcredit to the base facility charge over the next 12 months. He further explained that any difference in the recovery of the surcredits/surcharges would be rolled into the subsequent period's calculation of the excess/deficit. Id. at 37.

Witness Thill asserted that the proposed revenue reconciliation calculation is computed based on "average per customer usage" and is therefore consistent with the explicit language of House Bill 529. He then contended that computing the revenue reconciliation at a gross level of revenue would "ignore that a portion of future revenue may be attributed to customers added after the test year and would therefore incorporate a projective component to the ratemaking equation," which the Company believes should not be permitted without incorporating future cost increases. Id. at 37.

Witness Thill testified that the proposed revenue reconciliation is limited to the pilot program because the variables intended to promote conservation and impact of those variables is confined to the selected systems, any reconciliation should similarly be confined. Id. at 38. Witness Thill contended the revenue reconciliation is in the public interest, because the purpose is to correct for unknowable consumption levels in the ratemaking calculation to achieve the authorized revenue amount already determined by the Commission to be reasonable and in the public interest. Id. at 38-39.

Witness Thill testified that if revenue sufficiency, through periodic true-up, cannot be guaranteed within the proposed conservation pilot program, the Company believed it would be imprudent to accept, on behalf of its shareholders, the additional financial exposure that this or any other conservation program might create. For this reason, the Company reserved the right to withdraw its request to implement the proposed pilot rates and instead requested that the consolidated rate design be applied to all customers within their applicable rate entities. Id. at 39.

On cross-examination, witness Thill testified that the Company withdrew its proposed CAM. Id. at 67. Witness Thill agreed that in its next general rate case Aqua NC could apply for increasing block rates for all its water systems and, if approved, a CAM would better protect the Company's revenues. Id. at 78. He also agreed that the revenue reconciliation was conceptually similar to the CAM that the Commission denied in the rulemaking proceeding.

On examination by Commissioner McKissick, witness Thill testified that the pilot should last "at least two to three full cycles in order to get usable data." He expounded that because Aqua NC anticipated future rate cases every 15 to 18 months, it would probably be two rate cases before meaningful data would be available to determine whether the pilot should be terminated, expanded to the entire customer base, or modified. Id. at 98-99.

In response to questions on Commission questions, witness Thill testified that the pilot program would delay the design, proposal, and full implementation of conservation rates to be charged to all customers for three or four years. Id. at 112-113.

In his direct testimony, Public Staff witness Junis testified that the Company's proposed pilot program "incorporates a projective repression of usage levels below the three-year average already subjected to the Company's proposed Conservation Normalization Factor." He further testified that the Company requested a revenue reconciliation be computed within the pilot program that would guarantee recovery in rates of the revenue requirement per bill. Tr. Vol. 5, p. 33.

Witness Junis testified that the Public Staff has concerns about the "practicability, fairness, and value of the proposed pilot program." Specifically, he identified the following concerns:

> 1) the pilot program is a limited and unrepresentative sample of residential customers, 2) it would not "provide meaningful results that we might extrapolate across the Company's full customer base in future rate design considerations" as the Company claims, 3) it reverts to ratemaking with system-specific rates as opposed to uniform rates, 4) it ignores the overlapping purposes of House Bill 529 and Commission Rules R7-40 and R10-27, 5) the potential benefit(s) of the pilot program may be outweighed by the valuable personnel resources of the Company, Public Staff, and Commission required to implement and track the pilot program, and 6) nearly guarantees service revenues, thus reducing risk.

Id. at 34. Witness Junis further asserted that singling out groups of customers to participate in the pilot program would be discriminatory and potentially prejudicial if those customers' bills increased significantly under the inclining block rates in comparison to customers charged uniform usage rates, or vice versa for low usage customers.

In reference to Thill Revised Exhibit 3[13], witness Junis asserted that the systems selected by the Company for participation in the pilot program are "above average or high-usage systems that are not representative of uniform water residential customers." Id. at 35. Based on the direct testimony of Aqua NC witness Thill and responses by the Company to Public Staff discovery requests, witness Junis asserted that the potential benefits of the pilot program are subjective based on the limited supporting documentation in the record. He noted that the Company described operations in crises due to high volume users, but failed to meet its burden to demonstrate how the pilot program would provide relief to the selected systems or avoid capital expenditures. Id. at 35-36.

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[13] Revised Exhibits for Aqua Witnesses Becker and Thill filed by Aqua NC on May 21, 2020, in Docket No. W-218, Sub 526, page 3 of 7.

With regard to the Company's proposed application of a price elasticity constant of negative 0.3, witness Junis testified that it was not specific to Aqua NC's customer base and that this projectional repression applied to the customer consumption data was at least partially redundant with the Company's Conservation Normalization Factor. Witness Junis asserted that the factor would most certainly include some degree of price elasticity impact as Aqua had increased its rates three times during the analysis period of three-year averages from October 1, 2008, to September 30, 2019 (updated to April 1, 2009, to March 31, 2020). Id. at 36-37. Witness Junis further asserted the repression ignored the socio-economic demographics of the pilot program systems that may make them less sensitive to price signals and in combination with the price elasticity and Conservation Normalization Factor is likely to result in the overestimation of the expected consumption reduction. Witness Junis testified that the Company's attempt to reserve the right to withdraw its revenue reconciliation, pilot program, and/or CAM requests due to any variation the Company deems unacceptable creates a scenario rife with uncertainty that could drastically impact interrelated issues such as the pilot program, CAM, rate design, and rate of return. Id. at 37.

Witness Junis testified that the Company's proposed revenue reconciliation in the pilot program and CAM are nearly identical calculations and procedures and are therefore effectively denied by the Commission's Order Adopting Commission Rule R7-40 and R10-27 issued in the rulemaking proceeding in Docket No. W-100, Sub 61. Id. at 39-40. The Order stated that, "the Commission is not persuaded that the Companies' proposal is a reasonable or appropriate means of implementing the CAM Statute."[14] Based on this denial and until the Company either withdrew or amended its request, witness Junis asserted that it would be premature for the Public Staff to evaluate the request or proffer any recommendation.

Witness Junis recommended that the Commission deny the utilization of the proposed Conservation Normalization Factor as the average monthly consumption per bill has stabilized in the last five years and it would be unreasonable to further reduce average consumption based on historical data that is not representative of current usage habits and conditions. Witness Junis testified that the average consumption during the years 2008 through 2012 were higher and trended downward. However, witness Junis testified that the downward trend is no longer occurring and, therefore, application of the proposed factor would underestimate average monthly consumption per customer. Witness Junis asserted that this was especially important when the number of customers and the total consumption continues to increase and, as concluded by the EFC, that growth in revenues outpaces the associated variable expenses. Id. at 50-51.

On examination by Commissioner McKissick, witness Junis testified that the pilot program systems are not representative of the greater customer base and referenced the cross-examination of Aqua NC witness Thill during which he was presented with the difference in the average usage per month per customer of approximately 3,271 gallons between the four pilot program systems (7,420 gallons) and the rest of the ANC Water systems (4,149 gallons).[15] Id. at 81.

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[14] Order Adopting Commission Rule R7-40 and Commission Rule R10-27, page 11, issued on May 12, 2020, in Docket No. W-100, Sub 61.

[15] Tr. Vol. 4, pp. 73-74.

Witness Junis further testified the pilot program would need to be a representative sample to extrapolate any findings to the rest of the customer base and the new information disclosed within the hearing that Aqua NC intends to collect data from the pilot for one or two more rate cases would unreasonably delay implementation of conservation rates. He further clarified that in addition to usage habits, the pilot program should be geographically and socioeconomically representative. Regarding the price elasticity constant, witness Junis testified that the NBER Report was a national study on urban water systems. Id. at 85. The price elasticity constant of negative 0.3 was applied in the repression process to consumption levels already reduced by the Conservation Normalization Factor, which was an annual percentage of the change in three-year average monthly consumption data from over ten years including three rate cases and numerous WSIC/SSIC surcharges and was withdrawn by the Company. Id. at 85-86. The pilot program rate design was not updated through March 31, 2020, or for the withdrawal of the Conservation Normalization Factor. Witness Junis testified that the Company did not provide any analysis of potential quality of service improvements or avoided costs that could be reasonably expected or estimated based on varying levels of consumption conservation induced by the pilot program. Id. at 93-94.

On further examination by Commissioner McKissick, Witness Junis contended that growth would be included in Aqua NC's reconciliation procedure since actual volumetric revenues would be divided by the total number of customer bills, including all new, replacement, and move out customers. He noted, however, this methodology ignores the fact that the total number of customers, amount of consumption, and revenues have all continually increased. Id. at 86-87. Witness Junis testified that Aqua NC's proposed revenue reconciliation within the pilot program would fully guarantee over $4 million of volumetric revenues. Id. at 81-82. He testified that rates currently charged using a 40:60 ratio of base facility charge to volumetric charges would be 100% guaranteed on an unprecedented revenue per customer basis under the Company's proposal, thereby creating an opportunity for the Company to over earn. Id. at 88. As a potential solution for concerns about the CAM and pilot revenue reconciliations, witness Junis proffered a two-pronged test for comparing rate case and actual average consumption levels and revenues. Under this test, actual levels that are both higher would trigger a credit and actual levels that are both lower that would trigger a surcharge to generate the volumetric revenue requirement approved by the Commission. Id. at 89-90.

On examination by Presiding Commissioner Brown-Bland, witness Junis clarified that the Public Staff would accept a reconciliation cap based on the total revenue requirement for the selected customers. Id. at 96-98.

On examination by Commissioner Duffley, witness Junis testified that the duration of a potential pilot program cannot be predetermined because it is impossible to predict how long it will take to obtain representative data or an acceptable amount of data to produce an acceptable average. Witness Junis noted that the current abnormally frequent and heavy rainfall and people being in their homes more due to COVID-19 concerns could significantly impact consumption levels. He further stated that many uncontrolled variables, such as weather and COVID-19, factor into the complexity, validity, and accuracy of the evaluation of the pilot program rate design impacts on customer usage habits. Id. at 100-101. Based on the anticipated filing of another general rate case by Aqua NC in the near future, witness Junis recommended that the pilot program be denied in the pending proceeding and that a "better, more thoughtful, [and] holistic approach" be considered next rate case such as Company-wide inclining block rates and a balanced CAM. Id. at 103. When asked what type of report should be filed if the Commission were to approve the pilot program, witness Junis responded that the report should be filed quarterly and should include information such as system-specific customer counts, consumption data, days of service for partial month bills, socioeconomic statistics, and weather data. Id. at 104-106. He further testified that, in that hypothetical scenario, the Public Staff should be afforded a period of time for review and discovery after the Company filed its report and prior to the Public Staff filing its own comments. Id. at 106-107.

On examination by Commissioner Gray, witness Junis testified that no Commission regulated water utilities used inclining block rates to his knowledge.[16] Id. at 107. He further stated that inclining block rates can be successful in achieving water conservation by customers. Id. at 107-108. When asked for arguments against inclining block rates, witness Junis responded that large families with higher levels of nondiscretionary usage may be charged higher bills and that water usage due to leaks would be more costly, perhaps requiring leniency and/or forgiveness by the Company. Id. at 108-109. He explained that with the automatic

[16] Mountain Air Utilities Corporation has been charging inclining block water rates since the Commission approved the rate structure in its Interlocutory Order Granting Franchise and Approving Interim Rates issued on May 16, 2001, in Docket No. W-1148, Sub 0, and the Final Order was effective June 5, 2001.

meter reading (AMR) technology there was the potential that a leak would not be detected until the monthly read date and billing process occurs, whereas the advanced metering infrastructure (AMI) is capable of almost instantaneously informing the utility and the customer of leak conditions. Id. at 109.

On further examination by Commissioner Gray, witness Junis was asked about discretionary usage and more specifically average minimum usage per person, or nondiscretionary usage, and the average household size in Aqua NC's customer base. Id. at 110-111. In response to this question, the Public Staff filed Public Staff Late Filed Exhibit No. 2 on July 20, 2020. In the late filed exhibit, witness Junis asserted that a reasonable estimate of average minimum usage per person in North Carolina is 60 gallons per day. Based on the average household size in North Carolina of 2.52 persons, the average monthly consumption would be approximately 4,536 gallons (2.52 persons multiplied by 60 gallons and 30 days).[17] In his direct testimony, witness Junis testified that on an Aqua NC consolidated basis the three-year average usage per month was 5,087 gallons. Id. at 47-48.

On examination by Commissioner Clodfelter, witness Junis was presented with a scenario in which "the most effective inclining block rate structure in a particular system, because of its geography, it[s] demographics, its economics and its weather, is very different" from the structure imposed in a different area of the state. He responded that this would complicate uniformity of rates and create issues with determining cost of service at greater granularity than the existing five

[17] Available at https://www.census.gov/quickfacts/NC (Last visited August 12, 2020).

rate entities. Id. at 113-114. When presented with the scenario of the Commission adopting uniform inclining block rate structures by rate entity, witness Junis testified that doing so would be an approximation that is hopefully representative of all the relevant variables such as geography, weather demographics, economics, etc. Id. at 115. Witness Junis testified that there are enough case studies and best practices currently available that inclining block rates could be implemented across all Aqua NC customers without waiting for pilot data that will still be an approximation intended to be extrapolated to an unrepresented population. Id. at 116-117.

On examination by Commissioner Hughes, witness Junis testified that nearly all of the Fairways Sewer customers are also Fairways Water customers. Id. at 125-126. Of Fairways Water customers, all of which the Company proposed be included in the pilot program, approximately 68% are water and sewer customers.[18] Similarly, approximately 12% of ANC Water customers in the proposed pilot program are also ANC Sewer customers that the Public Staff recommended be transitioned from flat-rate to metered sewer rates.

On redirect, witness Junis testified that it would not be an unreasonable delay for statewide, rate entity specific, inclining block rates to be instituted in the next general rate case instead of the proposed pilot program, because the Company has indicated it would file rate cases more frequently and as early as January or March 2021. Id. at 137. Witness Junis further testified that there was

[18] Aqua NC Late-Filed Exhibit No. 5, Number of Customers in Pilot Program, filed on July 27, 2020, in Docket No. W-218, Sub 526.

enough information from the seven largest government-owned water utilities and other large water systems in North Carolina to implement inclining block rates that would be reasonably expected to accomplish conservation and that would be representative geographically, economically, demographically, and usage-wise. Id. at 135-138.

Aqua NC witness Thill testified that the purpose of his rebuttal testimony was to rebut the testimony of Public Staff witness Junis concerning the "appropriateness in concept and design of the Conservation Pilot Program." Tr. Vol. 6, p. 10. With regard to the Public Staff's concerns that the pilot program was limited and unrepresentative and would not provide meaningful results to extrapolate, witness Thill asserted that "Fairways Water [was] one large system in its own rate division, the entirety of that rate entity [was] included in the proposed pilot," and therefore it was a reasonable representation. Id. at 12. He contended that Public Staff witness Junis' testimony, stating "From this table, it is clear that these are above average or high-usage systems that are not representative of uniform water residential customers," in reference to Thill Revised Exhibit 3 implied conservation programs should be "equally focused on both high-usage and low-usage systems." He then opined that a block structure for customers below the increasing blocks provides "no information on the cause-and-effect relationship of pricing and conservation." Id. at 12. Witness Thill further contended that although the Bayleaf Master System would be appropriately deemed a high-usage system with average usage of over 7,300 gallons per month, the customer base is not a uniform group of high-consumption households because 26% have significant volatility (ratio greater than 4.0) and 20% have minimal volatility (ratio lesser than 1.5). Witness Thill defined the volatility ratios as consumption in customer's second highest usage month divided by consumption in customer's second lowest usage month. He explained that the second highest and second lowest months were selected to minimize the impact of potential anomalies in the billing data such as billing errors, leaks, and/or other adjustments. Id. at 13. Witness Thill contended that the proposed pilot program includes 10% of ANC Water and 100% of Fairways Water residential customers and that should provide "worthful data on the effectiveness of the proposed design and valuable customer behavior information that can be used to refine the rate structure and apply it to the larger customer population in the future cases." Id. at 14.

On cross-examination, witness Thill stated that he could not "opine on the legal differentiation" of whether the proposed Aqua NC Water pilot rates would be discriminatory and, therefore, prohibited by N.C.G.S. § 62-140(a). Id. at 116-117.

On redirect, witness Thill testified that he did not think that Aqua NC would propose a pilot program that the Company thought was discriminatory and in violation of a statute. Tr. Vol. 7, p. 32.

With regard to the Public Staff's concern that the pilot program would result in the reversion to system-specific rates, witness Thill stated this objection would preclude any pilot program and that the Company believed that both customers and the utility are better served by testing the inclining block rate design on a "representative few systems" before imposing such a drastic change in rate structure with “many unknown consequences” on all customers. Tr. Vol. 6, pp. 14-15.

On cross-examination, witness Thill conceded that he did not believe the Aqua NC Water pilot program systems were representative of the entire Aqua NC Water customer base, but contended they are representative of customers the Company was trying to induce to conserve. Id. at 105.

With regard to the Public Staff’s concern that the pilot program ignored the overlapping purpose of House Bill 529 and Commission Rules R-40 and R10-27, witness Thill contended that the Company’s proposed pilot program “embraces” House Bill 529 by making the revenue reconciliation process a condition of its request. He testified that intentionally reducing consumption and not factoring that repression into ratemaking would assign the full cost to the utility and reduce its opportunity to achieve authorized returns, while implementing an unknowable repression without a reconciliation would add risk to both customers and the utility. Id. at 15.

With regard to the Public Staff’s concern that the potential benefit(s) of the pilot program might be outweighed by the resources required of the Company, the Public Staff, and the Commission to implement and track the pilot program, witness Thill again stated this objection would preclude the implementation of any pilot program. He then quoted the testimony of Public Staff witness Junis that stated:

> The potential benefits are subjective based on the limited supporting documentation referred to above. The Company appears to describe operations in crises due to high volume users on one hand, yet on the other hand, fails to meet its burden to describe how the pilot may

result in relief to these systems or an avoidance of capital expenditures.

Id. at 16. Witness Thill contended that the Public Staff was requiring "definitive quantification of savings that might be had from a pilot that has never been implemented, essentially past proof of future benefits." Id. at 16. Witness Thill testified that the Company assumed certain "truths" already existed regarding reduced consumption and block rate structures and then he asserted that those "truths" were echoed in the following comments of the Public Staff:[19]

> Decreased usage is a decrease in demand. In addition to the revenue and short-term variable expense effects, decreases in demand can delay or even eliminate the need to undertake capital-intensive projects such as the expansion of plant capacity. For the larger privately-owned public utilities, this can add up to thousands or possibly millions of dollars of savings that would otherwise be booked. (Pages 2-3)
>
> . . . decreased usage results in decreased pumping which, in turn, increases the longevity and reliability of wells. (Page 3)
>
> Due to higher prices for greater consumption, increasing block rates also send a strong conservation signal to customers. During times when a system's capacity may be limited, such as during periods of increased irrigation, the demand increase is captured by a higher cost for above average water usage. This increased cost may encourage customers to focus on conservation measures. (Page 8)
>
> When the demand exceeds the well pumping supply and effective storage capacity, the customers can experience low pressure, degradation of water quality, and/or a complete outage. (Page 27)
>
> Based on the foregoing review of rate structures, and based on its experience and expertise, the Public Staff is of the opinion that, to best balance the objectives of sufficient and stable revenue for the utility with appropriate signals to consumers that support and encourage efficiency and conservation, water and wastewater rates should be volumetric with one or more increasing blocks. (Page 31)

[19] Comments of the Public Staff filed on May 22, 2019, in Docket No. W-100, Sub 59.

Witness Thill further contended the Company and its customers, would "hopefully experience operational relief. . . ." Witness Thill concluded that the "economic impact to the utility [was] actually a reduction of future capital investment and therefore a reduction of future earnings." Id. at 17.

Witness Thill testified that the following excerpt of Public Staff witness Junis' testimony conflated two independent measures:

> While a price elasticity of -0.3 may be expected on average, the projective repression applied to the customer consumption data is in addition to the Company's Conservation Normalization Factor. The Company's proposed factor most certainly includes some degree of price elasticity impact as Aqua has increased its rates three times during the analysis period of three-year averages from October 1, 2008, to September 30, 2019, (updated to April 1, 2009, to March 31, 2020).

Id. at 18. Witness Thill contended that the Conservation Normalization Factor measured the reduced consumption experienced in the past and was independent of the reason for that reduction, while the repression was a research-based projection of the amount that future consumption is likely to decline as a direct consequence of an increase in rates. Id. at 17-18. With regard to Public Staff witness Junis' testimony that the "Company's combination of the price elasticity, Conservation Normalization Factor, and failure to take into account socio-economic demographics [was] likely to result in the overestimation of the expected consumption reduction," Company witness Thill acknowledged that the "modeled repression of -0.3 most certainly **will not** exactly be experienced" and "actualized repression **will** result in the Company receiving more or less than intended by the Commission – unless a reconciliation measure is adopted in concert with the pilot." (Emphasis in original) Id. at 19.

On cross-examination, witness Thill read a number of passages from the NBER paper titled "Comparing Price and Non-Price Approaches to Urban Water Conservation," including the following:[20]

> That said, water demand in the residential sector is sensitive to price, but demand is inelastic at current prices. (Page 7)
>
> The price elasticity of residential demand varies substantially across place and time, but on average, in the United States, a 10 percent increase in the marginal price of water in the urban residential sector can be expected to diminish demand by about 3 to 4 percent in the short run.
>
> . . . .
>
> There are some important caveats worth mentioning.
>
> . . . .
>
> Third, price elasticities is varied with many other factors. In the residential sector, high-income households tend to be much less sensitive to water price increases than low-income households. (Pages 8-9)
>
> Thus, if water demand management occurs solely through price increases, low-income households will contribute a greater fraction of the cities' aggregate water savings than high-income households. (Page 14)
>
> Under price-based approaches, low-income households are likely to contribute a greater share of a cities aggregate water consumption reduction than they do under certain types of non-price demand management policies. (Page 18)

With regard to the Public Staff's concern that the pilot program would nearly guarantee service revenues and thereby reduce business risk, witness Thill contended the reconciliation was a safeguard for customers and the Company and would prevent the Company from sacrificing its opportunity to earn its authorized

[20] Ex. Vol. 7, Public Staff Thill Rebuttal Cross Examination Exhibit 1.

revenue. Witness Thill suggested that "[implementation of] a pilot rate design that fully satisfies the totality of the Public Staff's objections would result in a design encompassing 100% of Aqua NC's customer base, with no elasticity assumption and no revenue reconciliation." Witness Thill then rhetorically asked, "And Staff's concern is that Aqua might want to reduce risk?" Tr. Vol. 6, p. 20.

Witness Thill summarized that the proposed pilot program covered a "representative group of users in mostly high-volume, operationally challenged systems that have significant opportunity for benefit and where consumer behavior can best be evaluated in terms of the effectiveness of conservation price signals." Witness Thill further testified that the proposed revenue reconciliation provided a critical safeguard and if the Commission determined that the revenue reconciliation process should not be approved, then the Company would withdraw its proposed conservation pilot program.

On cross-examination, witness Thill testified that the seven largest cities in North Carolina utilize inclining block rates and the customer bases are demographically diverse including in terms of socioeconomic, and income factors and sizes of houses and lawns. He opined that Aqua NC has the capacity to design an inclining block rate structure that could cover all its demographics in its next general rate case and that could be modified as necessary in future rate cases. Id. at 112-113. He further testified that if said the Company's statewide inclining block rate proposal was coupled with a consumption adjustment mechanism, including carrying costs, any reduction in the Company's revenues as a result of realized conservation would be made up. Id. at 113-114.

On examination by Commissioner Duffley, when presented with the scenario of the Commission modifying the revenue reconciliation within the pilot program, witness Thill testified that the word “modify” could be a “very dangerous word” and that the Company could not commit to changes without reviewing them. Tr. Vol. 7, pp. 38-39.

On examination by Presiding Commissioner Brown-Bland, witness Thill testified that he did not think the Company would be agreeable to the revenue reconciliation being capped to the revenue requirement or excluding a portion of organic customer growth. Id. at 57-61.

Summarizing his rebuttal testimony, witness Thill stated that the Company withdrew its proposed Conservation Normalization Factor as part of the partial settlement reached with the Public Staff. Tr. Vol. 6, p. 75.

Discussion and Conclusions

The Commission has carefully reviewed the evidence and contentions of the parties on the issue of a pilot program to implement rates intended to induce conservation, while ensuring a balancing of risk between Aqua NC and customers.

N.C.G.S. § 62-140(a) states in part, “No public utility shall establish or maintain any unreasonable difference as to rates or services either as between localities or as between classes of service.” The Commission notes that the proposed pilot program intentionally shifts the burden of rate recovery through inclining block rates to higher usage customers in discrete systems or localities.

The Commission gives weight to Aqua NC's admission that the systems in the Aqua NC Water rate division selected for the pilot program are not representative of the entire customer base but rather were selected due to their higher-than-average usage and their corresponding higher capacity to conserve. The Commission notes that a pilot sample of customers that are not representative in terms of geographic location, demographics, and usage would unnecessarily complicate and reduce the accuracy of any approximation and extrapolation to the greater customer base.

The Commission gives significant weight to Public Staff witness Junis' uncontroverted testimony that the potential benefits of the pilot program were not clearly described and the Company failed to meet its burden to identify and provide evidence supporting any asserted benefits. The Commission finds unpersuasive Aqua NC witness Thill's testimony which contended that the Public Staff was requiring "definitive quantification of savings that might be had from a pilot that has never been implemented, essentially past proof of future benefits." It would have been appropriate for the Company to provide some reasonably expected demonstration of the impacts to operations and previously planned capital projects if the approximated conservation was fulfilled and by not doing so failed to meet its burden of evidence.

The Commission notes that the revenue reconciliation requested by Aqua NC as part of its pilot program is fundamentally the same as the consumption adjustment mechanism, which the Commission deemed inappropriate and did not adopt in Docket No. W-100, Sub 61. In addition, the Commission gives weight to

Public Staff witness Junis' testimony that Aqua NC's rigid parameters for such a reconciliation procedure and insistence on its right to withdraw the pilot depending on the outcome creates a situation rife with uncertainty that directly impacts the interrelated issues of setting rates such as rate design and rate of return.

The Commissions notes that the revenue reconciliation shifts risk by guaranteeing the revenue requirement of the pilot customers and is proposed to be imposed on an unprecedented per bill basis, which would create a discrete method for the Company to over earn during a period of reduced average per customer consumption.

Based upon the foregoing and the entire record herein, the Commission finds that Aqua NC has failed to demonstrate that its proposed Conservation Pilot Program, including the revenue reconciliation, is reasonable or justified for the purposes of this case. The Commission, therefore, concludes that Aqua NC's request for approval to implement its proposed Conservation Pilot Program should be denied.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 32-34

Aqua NC – Rate Design Water

Aqua NC witness Thill testified that the Company proposes to utilize the same fixed/variable ratio that was proposed by the Public Staff and approved by the Commission in Aqua NC's most recent rate case in Docket No. W-218, Sub 497. Tr. Vol. 4, pp. 53-54. That structure included allocations of base facility charges (BFC) and volumetric charges for the average water customers as follows:

Rate Entity	BFC	Volumetric
Aqua North Carolina	40%	60%
Brookwood	41%	59%
Fairways	44%	56%

Witness Thill testified, although high fixed expenses are best matched by high allocations of fixed revenues, the Company recognizes that there are critical considerations in ratemaking beyond the contemporaneous matching of the Company's revenue and expenses. Id. at 16. He testified these considerations include customer affordability and conservation. Id. at 60. He testified these specific public policy goals in particular are better supported by ratemaking structures that recover a greater portion of costs from volumetric rates. Id.

Witness Thill further testified a balance must be struck that promotes consumption conservation while also providing the Company with a reasonable opportunity to earn its authorized return on equity. Id. at 61. For this reason, Aqua NC's rate proposal in this case seeks only to maintain the same ratios approved in the Sub 497 rate case Order. Aqua NC did not request any changes to the volumetric rates on purchased water systems.

Junis Direct Testimony

Public Staff witness Junis testified that the Public Staff believes the volumetric water rates for Aqua NC systems that are charged pass-through purchased water volumetric rates should closely match the volumetric expense incurred by the Company from the provider. Tr. Vol. 5, p. 55. He testified the base facilities charges and a reasonable amount of water loss are typically included in the cost of service to determine the uniform base facilities charges. Id. He testified for purchased water providers with a uniform volumetric rate, the Public Staff recommended that Aqua NC's volumetric rate be equal to the provider's rate, plus the Commission's regulatory fee of 0.13%. Id. at 55-56.

Witness Junis testified the Public Staff agrees with the Commission's statements in the generic rate design proceeding, Docket No. W-100, Sub 59, that a balance should be struck between achieving revenue sufficiency and stability to ensure quality, reliability, and long-term viability for properly operated and well-managed utilities on the one hand, and setting fair and reasonable rates that effectively promote efficiency and conservation on the other hand. Id. at 56-57. He testified the Public Staff recommends an average water bill service revenue ratio of 30:70 (base facilities charge: usage charge) for Aqua NC Water, Brookwood Water, and Fairways Water customers. Id. at 57. He testified the incremental shift to higher volumetric charges sends a price signal that properly promotes efficiency and conservation. Id. He further testified the Company's total service revenues continue to increase annually and the customer growth revenues are expected to outpace the associated variable expenses. Id. In addition, he testified that the average monthly consumption per customer has been shown to be stabilizing. Id. This combination of growth and stabilizing consumption makes it unlikely that the revenue instability and insufficiency the Company warns against will come to pass. Id.

The direct testimony of witness Junis incorporated by reference the Comments of the Public Staff filed on May 22, 2019, and the Reply Comments of the Public Staff filed on June 19, 2019, in the generic rate design proceeding in Docket No. W-100, Sub 59. Id. at 58. The Public Staff's May 22, 2019 Comments stated on pages 32 and 33:

> By decreasing the base facility charge there is an incentive for residential customers to use water prudently and conserve.
>
> . . . .
>
> The primary beneficiaries of the lower base charges are retired persons on fixed incomes, other single and/or two person households, and customers with discretionary usage that can be reduced.

The Public Staff's June 19, 2019 Reply Comments stated on pages 4 and 5, "To more effectively promote and support efficiency and conservation, the volumetric charge should be a greater proportion of the average bill. Otherwise, the cost signal is ineffective because customers have minimal incentive to reduce their water consumption."

The Public Staff's Reply Comments again quoted the 2018 Report that stated, "[a]nother way to measure the strength of the conservation pricing signal of water rates is to determine how much of a financial reward (decrease in water bill) a customer will receive by lowering their water consumption from a high volume (10,000 gallons) to an average level (5,000 gallons)." (2018 Report p 20) The EFC further stated that some utilities reward customers substantially in terms of bill reduction percentage for cutting back (e.g., nearly halving the bill when customers halve their consumption) whereas other utilities provide relatively little incentive (e.g., only a 30% bill reduction). Id. at 58-59.

Witness Junis testified the present Aqua NC Water uniform water rate structure provides customers relatively little incentive to reduce their consumption because, if customers significantly reduce their usage by 50%, they experience a bill reduction of only 37.6%. Id. at 59. He testified the middle 80% of EFC-surveyed North Carolina water utilities utilizing a uniform rate provide a bill reduction ranging between approximately 32% and 48%, and the median bill reduction is 40%.[21] Id.

Witness Junis further testified if Aqua NC Water uniform residential rates had been implemented at the 30:70 ratio in the Docket No. W-218, Sub 497, rate case, utilizing the billing data and average monthly usage per customer from that proceeding, the bill reduction percentage would have increased from 37.6% to 41.2%. Id.

Witness Junis further testified a lower base facilities charge reduces the cost burden on customers for access to utility service before they use any service. Id. at 60. It allows customers to have greater control over their total bills by changing their usage through improved efficiency and conservation. Id. Witness Junis testified the base facilities charge is a frequently discussed and highly controversial issue in electric, natural gas, water, and wastewater rate cases. Id. at 61. There are advantages and disadvantages to the different base to usage ratios for the utility, rate groups, and individual customers. Id. Witness Junis testified that during his Public Staff career, electric and natural gas residential base facilities charges have remained in the $10 to $15 range, while water base facilities

[21] Id. At 21.

charges have continued to increase and wastewater rates have historically been a flat rate or a very high percentage of the average residential bill. Id.

Witness Junis testified that in the 2020 North Carolina Water & Wastewater Rates Report, the EFC and NCLM conducted a survey with representation from 495 of 517 rate-charging water and wastewater utilities in North Carolina.[22] Id. at 61-62. The median monthly base charge amount was $17 for water utilities and $19 for wastewater utilities.[23] Id. at 62.

Witness Junis further testified neither flat rates nor metered rates with moderate to high base facilities charges properly balance revenue sufficiency and stability with the promotion of efficiency and conservation. Id. at 63. He testified flat rates or low volumetric rates promote discretionary usage and wasteful practices. Id.

Junis Commissioner Questions

Witness Junis testified in response to questions from Commissioner McKissick that, should there be a decrease in customer consumption, Aqua NC's 2% annual customer growth with additional base charges and the volumetric revenues from the 2% customer growth offset the consumption decrease. Id. at 86-88. He testified the EFC quantified that only 11% of water expenses are variable. Id. at 88.

[22] This report is just one resource in a series on North Carolina water and wastewater rates funded by the North Carolina Department of Environmental Quality's Division of Water Infrastructure (DWI) and compiled by the North Carolina League of Municipalities and the EFC at the School of Government at UNC-Chapel Hill.
https://efc.sog.unc.edu/sites/default/files/2020/NC%202020 Final.pdf (Last visited May 23, 2020).

[23] Id. At 4.

Witness Junis testified in response to questions from Commissioner Hughes that the Public Staff recommendation for a 30/70 versus 40/60 split is a conservative policy approach in that it is a small incremental step promoting conservation and still remains fairly consistent with the status quo. Id. at 118.

Public Staff witness Junis testified he calculated the water consumption averages using a three-year average from April 2017 through March 2020. Id. at 42. He testified he disagreed with Aqua NC's contentions that there was a downward trend in Aqua NC's water customers' consumption. Id. at 45. He cited the EFC Report filed in Docket No. W-218, Sub 363A, on March 31, 2016, which stated on page 58 that average consumption for Aqua NC water customers stabilized in 2015 close to 5,000 gallons per month average for Aqua NC's uniform rate customers. Id. at 43-44. Junis Exhibit 1 showed the following consumption averages for the Company's uniform rate customers:

Test Year Ended	Average Gallons/Month	3-Year Average Gallons/Month
Sept 14	4,915	4,933
Sept 15	5,022	4,882
Sept 16	4,912	4,950
Sept 17	4,980	4,971
Sept 18	4,866	4,919
Sept 19	4,837	4,894

Witness Junis testified the three-year average is a relatively accurate representation of expected consumption in the short term. Id. at 45. He testified with Aqua NC's consistent gradual growth in both customers and total gallons billed, actual total revenues have increased from year to year and would exceed the revenue requirement approved by the Commission in Aqua NC's prior two rate cases. Id. at 46.

Junis Exhibit 1 also presented the average water consumption at Fairways Water for the years 2014 through 2019:

Test Year Ended	Average Gallons/Month	3-Year Average Gallons/Month
Sept 14	7,058	7,212
Sept 15	7,008	6,919
Sept 16	7,084	7,050
Sept 17	6,815	6,966
Sept 18	6,662	6,846
Sept 19	7,983	7,174

Witness Junis testified that Brookwood Water is the exception as Brookwood Water has a consistent downward trend in average monthly consumption, and also that Fairways average consumption spiked in the most recent 12-month period ending March 31, 2020. Id. at 47. He testified it would be reasonable to expect the Brookwood Water average monthly consumption to eventually flatten and stabilize and for Fairways Water to return to equilibrium. Id. He testified as shown on Junis Exhibit 1 on a consolidated basis, there has been a clear leveling or stabilizing of average monthly consumption:

Test Year Ended	Average Gallons/Month	3-Year Average Gallons/Month
Sept 14	5,192	5,196
Sept 15	5,212	5,125
Sept 16	5,102	5,168
Sept 17	5,128	5,147
Sept 18	5,024	5,084
Sept 19	5,058	5,070

Witness Junis testified as shown on Junis Table 5 that under the Company's present rates the following were the annual revenues and percentages:

Aqua NC Water	$36,559,502	84.1%
Brookwood Water	5,777,200	13.3%
Fairways Water	1,138,759	2.6%
Total	$43,475,461	100.0%

Thill Rebuttal Testimony

Aqua NC witness Thill testified on rebuttal that he disagreed with the Public Staff's position that the average water consumption levels by Aqua NC Water and Fairways Water customers have stabilized. Tr. Vol. 6, pp. 21-22. He testified that the Company agreed that a narrowing of the band of variation has occurred, but true stabilization would imply essentially no volatility at all. Id. at 23.

Witness Thill testified that the Company does not agree that a shift to greater volumetric water rates is appropriate. Id. at 33. The reasons given by witness Thill for this disagreement were that it is debatable whether consumption stabilization has actually occurred and that, with regard to customer and revenue growth, the Public Staff focused only on short-term variable expenses and ignored the comprehensive cost of providing service. Id. at 33-35. He testified the Public Staff's 30/70 recommendation provides customers with an incentive for efficiency and conservation, but increases the Company's concerns regarding revenue sufficiency and stability. Id. at 35.

Cross Examination Thill

On cross examination, witness Thill testified that Public Staff Thill Rebuttal Cross Examination Exhibit 2, the 2018 North Carolina Water and Wastewater Rates Report by EFC, the NC League of Municipalities, and NCDEQ Division of Water Infrastructure (2018 Report), states on page 3 that of the 508 water utilities studied almost 25% of the monthly base charges for residential customers are between \$11 and \$15, and 25% are \$16 to \$20. Tr. Vol. 7, pp. 15-16. He testified that the median monthly water base charge was \$16.13. Id. at 17. He further testified that page 4 of the 2020 North Carolina Water and Wastewater Rates Report stated the median monthly water base charge was \$17.00. Id. at 19.

On redirect witness Thill testified that the Public Staff's recommended 30/70 ratio would create additional risk that the Company will not achieve its authorized revenue requirement. Id. at 30.

Rate Design Water Conclusion

The Commission concludes that a 30% base monthly charge and 70% volumetric charges are the reasonable and appropriate water rate structures for Aqua NC Water, Brookwood Water, and Fairways Water. The Commission's generic rate design proceeding Docket No. W-100, Sub 59, required the filing of comments on rate design proposals that may better achieve revenue sufficiency and stability while also sending appropriate efficiency and conservation signals to the Company's customers. Reducing the base facilities charge incentivizes customers to use water prudently and conserve. The primary beneficiaries of the lower base charges are retired persons on fixed incomes, other single and/or two person households, and customers with discretionary usage that can be reduced.

The six-year consumption averages from October 1, 2013, through September 30, 2019, provided by Public Staff witness Junis demonstrate that the previous downward trend in average monthly consumption for Aqua NC Water and Fairways Water customers has stabilized. The Brookwood Water average consumption has declined each of the past six years, but the average Brookwood Water consumption during the 12 months ending September 2019 was 5,054 gallons per customer, compared to the six-year average of 4,922 gallons per month per customer for the Aqua NC Water customers.

The Company withdrew its request for Commission approval of a CAM. Aqua NC has not demonstrated that the 30% base facilities charge would prevent it from achieving revenue sufficiency and stability. As shown with the significant increase in the Fairways Water average consumption per customer for the test year ending September 30, 2019, the Company may see increases in the average consumption in all three of its rate divisions.

Aqua NC – Rate Design Wastewater

Aqua NC witness Thill testified that the Company proposed the continuation of the flat rate wastewater rates for residential customers. Tr. Vol. 4, p. 15. Aqua NC bills commercial wastewater customers – a volumetric rate. Aqua NC also bills residential wastewater customers a volumetric rate on systems for which the Company purchases bulk wastewater treatment from Charlotte Water. In its Application, the Company proposed to increase the monthly residential wastewater flat rate from $72.04 to $80.18.

Witness Thill testified that in response to the Commission's Rate Case Order in Docket No. W-218, Sub 363, the EFC produced a report dated March 31, 2016, titled "Studies of Volumetric Wastewater Rate Structures and a Consumption Adjustment Mechanism for Water Rates of Aqua North Carolina, Inc." (EFC Report). Id. at 15-16. The EFC Report noted that short-term fixed expenses accounted for 83% (or more) of Aqua NC's expenses for wastewater and 89% (or more) for water services.

Witness Thill testified although high fixed expenses are best matched by high allocations of fixed revenues, the Company recognizes that there are critical considerations in ratemaking beyond the contemporaneous matching of the Company's revenue and expenses. Id. at 16. He testified these considerations include customer affordability and conservation. Id. He testified these specific public policy goals in particular are better supported by ratemaking structures that recover a greater portion of costs from volumetric rates. Id. He testified a balance must be struck that promotes consumption conservation while also providing the Company with a reasonable opportunity to earn its authorized return on equity. Id.

Junis Direct Testimony

Public Staff witness Junis testified that the Public Staff recommended the service charges to Aqua NC Sewer and Fairways Sewer customers who are also Aqua NC Water and Fairways Water customers be converted from a flat rate to a volumetric rate based on their metered water usage. Tr. Vol. 5, p.64. He testified this has been considered in past Aqua NC rate cases dating back to the general rate case in Docket No. W-218, Sub 274. Id. During Aqua NC's general rate case filed on August 2, 2013, in Docket No. W-218, Sub 363, the Public Staff and Aqua NC entered into a stipulation and settlement agreement wherein Aqua NC agreed to commission a study conducted by the EFC that included the possible implementation of volumetric residential wastewater rates.

On March 31, 2016, the EFC Report was filed jointly by Aqua NC and the Public Staff in Docket No. W-218, Sub 363A. One of the main goals of the studies was to "assess the effect on customer bills and Aqua revenues by implementing a volumetric wastewater rate structure or implementing a consumption adjustment mechanism water rate structures relative to the status quo."[24]

Witness Junis testified the Public Staff would prefer to uniformly move the ratio of base facilities charge to volumetric charge toward 30:70. Id. at 66. However, the rate structure shift from flat to 30:70 would be expected to result in

[24] EFC Report at 1.

significant rate shock for some customers. While the average bill remains nearly the same, low users' bills would decrease and high users' bills would increase. He testified as a means of mitigating rate shock while still progressing toward an effective price signal, the Public Staff recommended an incremental approach of a 60:40 ratio for Aqua NC Sewer and Fairways Sewer customers. Id.

Junis Cross Examination & Commissioner Questions

Witness Junis testified on cross examination that approximately 1,000 Aqua NC Sewer residential customers already have volumetric wastewater rates as they receive bulk wastewater service from Charlotte Water. Id. at 78. He testified the current rate design for those customers is 35%base facilities charge and 65% volumetric. Id. He further testified the Public Staff recommends these customers have the same 60% base charge and 40% volumetric charge as the Public Staff recommend for all the Aqua NC Sewer customers that have Aqua NC Water metered service, excluding purchased water systems. Id.

In response to questions from Commissioner Hughes, witness Junis testified that customers in previous Aqua NC rate cases have testified in support of volumetric wastewater billing in order to have more control over their bills. Id. at 120. He testified that by switching to metered wastewater, customers that are both water and wastewater have a double incentive to control their consumption. Id. He further testified based upon the NC League of Municipalities and EFC annual reports that there are not very many volumetric wastewater rates with caps. Id. at 121-122.

Public Staff witness Junis further testified in response to questions from Commissioner Hughes that the volumetric wastewater study in Docket No. W-218, Sub 363, justifies customers' interest in volumetric wastewater. Id. at 122-123. He further testified data from that study is available but is not being utilized, and that the study demonstrated that customers wanted volumetric wastewater rates and therefore justified the shift to volumetric wastewater rates. Id.

Witness Junis further testified as of March 31, 2020, there were approximately 9,000 residential customers that would be shifted from flat rate to metered wastewater rates, which is approximately 57% of the Aqua NC Sewer flat rate residential customers.[25] Id. at 124.

Witness Junis testified in response to questions from Commissioner Gray that the Public Staff's volumetric residential wastewater rates recommendation was not discriminatory as the Public Staff was taking the entire group of the ANC Sewer customers that had Aqua NC water meter readings available at no additional cost, and assigning those customers to volumetric wastewater. Id. at 131. He further testified low users would have lower bills with metered wastewater billing and high users would have higher bills. He testified the Public Staff

[25] The Public Staff filed Public Staff Late Filed Exhibit No. 2 on July 20, 2020, in the present docket. In response to Commissioner Hughes request to witness Junis, the Public Staff provided the following more detailed response:

As of March 31, 2020, there were 15,675 ANC Sewer residential flat rate customers. Aqua proposed that approximately 149 (~1%) of those customers who live in the Woodland Farms and Rocky Ridge subdivisions be converted from residential flat rate to Carolina Water metered rates. In addition, the Public Staff recommended that 8,853 ANC Water and Sewer customers (~56%) be converted from residential flat rate to ANC Sewer metered rates. Based on the combined recommendations of Aqua and the Public Staff, approximately 6,673 customers (~43%) would remain residential flat rate customers.

recommended the incremental approach of a 60/40 rate design, which keeps the base facility charge on the higher end, in order to avoid too significant of an increase in high user bills. Id. at 132.

On redirect examination, witness Junis testified of the approximately 6,000 residential customers on the Bayleaf Master water system, there are less than 800 wastewater customers. Id. at 140. He also testified it was possible an Aqua NC wastewater customer who did not have Aqua NC water utility service could provide the Company that customer's water meter readings so that the Company could bill the customer using a metered wastewater rate. Id. at 141.

Thill Rebuttal Testimony

Witness Thill testified on rebuttal that Aqua NC does not agree with a shift to volumetric wastewater rates for many of the same reasons expressed earlier concerning the Public Staff's recommendation for a greater volumetric element for water revenues. Tr. Vol. 6, p. 37. He testified volumetric wastewater rates create further instability and insufficiency in Aqua NC's revenue stream without safeguards for the Company or ROE compensation for the added risk. Id. at 38. He further testified the Public Staff's recommendation "makes no provision in the rate design for the price elasticity and creates further imbalance between the Aqua NC's highly fixed expense structure (83% short-term fixed expenses for wastewater entities as determined by the EFC Study[26]) and Aqua NC's current mixed revenue structure. Id.

[26] Page 6 of the EFC Study

Thill Cross Examination

On cross examination, witness Thill testified that Public Staff Thill Cross Examination Exhibit 2 is the 2018 North Carolina Water and Wastewater Rates Report, and the three contributors are the EFC, the North Carolina League of Municipalities, and the NCDEQ Division of Water Infrastructure (2018 Report). Tr. Vol. 7, p. 12. He testified there were 396 utilities with wastewater service in this survey. Id. at 13. He testified that this 2018 Report stated the median base charge for wastewater rate structures was $18.00. Id. at 17.

Witness Thill further testified that Public Staff Thill Cross Examination Exhibit 3 was the 2020 North Carolina Water and Wastewater Rates Report compiled by same three contributors (2020 Report), and the median wastewater base charge was $19.00. Id. at 19. Witness Thill testified that the Public Staff comments filed in Docket No. W-100, Sub 59, the generic rate design proceeding, on May 22, 2019, included Exhibit 1 titled "Fiscal year 2018-2019 Wastewater Residential Flat Rate Structures" which was taken from the publication "Water and Wastewater Rates and Rate Structures" in North Carolina as of January 2019 by the EFC. Id. at 20. He testified that, of the 396 wastewater systems listed in Exhibit 1, there were only five flat rate wastewater government systems. Id. These five systems were Bald Head Island with a population served of 3,150, Cumberland County – Kelly Hills District with a population served of 920, Lake Lure with a population served of 940, Powellsville with a population served of 643, and Proctorville with a population served of 114. He testified Exhibit 1 stated Powellsville bills flat rate water, Proctorville provides no water bills, and

Cumberland County – Kelly Hills District does not provide water utility service. Id. at 21-23.

Thill Redirect Examination

On redirect examination, witness Thill testified that Public Staff Thill Rebuttal Cross Examination Exhibit 2 lists two for-profit multi-system utilities which he believes are Aqua NC and Carolina Water Service, Inc. of North Carolina. Id. at 26-27. He again testified that any increase in the volumetric element puts the Company more at risk. Id. at 30. He testified with or without the pilot program, no changes should be made to Aqua NC's existing rate design. Id. at 31.

Conclusion Wastewater Rates

The Commission concludes that the 60% base facilities charge and 40% volumetric charge wastewater rates recommended by the Public Staff are reasonable and appropriately send signals to consumers that support and encourage water efficiency and conservation. The Commission approves just and reasonable rates that are fair to both the public utilities and to the customers. The flat rate residential rates requested by Aqua NC do nothing to encourage water efficiency and conservation, which are two of the stated goals in the Docket No. W-100, Sub 59, generic rate design proceeding. Furthermore, Aqua NC had the opportunity to request Commission approval of a CAM to achieve revenue stability, but the Company withdrew its request.

Volumetric residential wastewater rates will encourage reasonable water efficiency for some customers. The uncontroverted evidence is that, of the 396 government wastewater utilities in the EFC Study, all but five systems had volumetric wastewater residential rates. The five flat rate systems were smaller systems serving relatively small populations. The EFC Report lists the population served, rather than the number of residential customers.

The Commission approves the Public Staff's recommended 60/40 ratio for all the Aqua NC Sewer and Fairways Sewer residential customers that have Aqua NC Water and Fairways Water metered utility service. As stated in Public Staff Late Filed Exhibit No. 2, there are 8,853 Aqua NC Sewer and 2,877 Fairways Sewer customers that have Aqua NC metered water utility service. There are 6,673 Aqua NC Sewer and 151 Fairways Sewer customers that obtain their water from providers other than the Company. These customers will remain flat rate wastewater customers. This approval of the 11,730 wastewater customers for volumetric wastewater rates is not an unreasonable preference or advantage to those residential customers, as the group includes all the Company's residential wastewater customers that received metered water utility service from the Company for which water meter readings are available monthly. Similarly, all the Company's remaining residential wastewater customers that do not received metered water utility service from the Company with meter readings will continue to receive flat rate wastewater service. For the flat rate customers, should the Company obtain the water meter readings from the respective water utility provider, then the respective customers can be converted to the Commission-approved residential volumetric wastewater rates.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 35-36

The evidence supporting these findings of fact is contained in the testimony of Aqua NC witnesses Becker and Gearhart and Public Staff witness Henry.

Witness Becker testified that the Company's WSIC and SSIC surcharges will reset to zero as of the effective date of the approved rates in this proceeding. Tr. Vol. 2, p. 132. Witness Gearhart confirmed that Aqua had requested a "re-set" of the WSIC and SSIC to zero upon issuance of the Commission's final Order in the present proceeding pursuant to N.C.G.S. § 63-133.12 and Commission Rules R7-39 and R10-26. Tr. Vol. 3 p. 140.

The Commission's previously approved WSIC/SSIC improvement charge rate adjustment mechanisms continue in effect, although these surcharges have been reset to zero in this rate case. The WSIC/SSIC mechanisms are designed to recover, between rate case proceedings, the costs associated with investment in certain completed, eligible projects for water or sewer improvements. The WSIC/SSIC surcharges are subject to Commission approval and to audit and refund provisions. Any cumulative system improvement charge recovered pursuant to the WSIC/SSIC mechanisms may not exceed 5% of the total annual service revenues approved by the Commission in this rate case proceeding.

Based on the service revenues set forth and approved in this Order, the maximum WSIC/SSIC charges as of the effective date of this Order are:

	Service **Revenues**		WSIC & **SSIC Cap**
Aqua NC Water	$38,546,489	x 5% =	$1,927,324
Aqua NC Sewer	$16,426,070	x 5% =	$ 821,304
Fairways Water	$ 1,159,708	x 5% =	$ 57,985
Fairways Sewer	$ 2,152,586	x 5% =	$ 107,629
Brookwood Water	$ 6,433,919	x 5% =	$ 321,696

IT IS, THEREFORE, ORDERED as follows:

1. That the Stipulation filed with the Commission on July 1, 2020, is hereby approved in its entirety.

2. That neither the Stipulation entered and filed on July 1, 2020, nor the parts of this Order pertaining to the contents of that agreement shall be cited or treated as precedent in future proceedings.

3. That Aqua NC shall, within 15 days following the issuance of this Order, file an affidavit stating either the Company will begin utilizing the “completed not classified” functionality of its PowerPlan asset management system within the next 30 days or explaining why it is not possible for the Company to do so. The Public Staff and/or any intervening party shall have 15 days to file comments on the Company’s filing.

4. That Aqua NC shall track, as a regulatory accounting adjustment, each of the in service date, AFUDC, and associated rate base adjustments recommended by the Public Staff in this proceeding and contained in Henry Schedule 2-2. These regulatory accounting adjustments shall be tracked and incorporated by the Company in its future rate case filings until such time that each individual asset has fully depreciated and/or been retired.

5. That the Conservation Pilot Program, including the revenue reconciliation, requested by Aqua NC is deemed to not be just and reasonable and is hereby denied.

6. That the Schedule of Rates, attached hereto as Appendices A-1, A-2, A-3 and A-4, are hereby approved and deemed filed with the Commission pursuant to N.C.G.S. § 62-138.

7. That the Chief Clerk shall close Docket No. W-218, Sub 497A.

ISSUED BY ORDER OF THE COMMISSION.

This the ____ day of ___________, 2020.

NORTH CAROLINA UTILITIES COMMISSION

Kimberley A. Campbell, Chief Clerk