STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. W-100, SUB 59

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Investigation of Rate Design for Major Water Utilities	)))	REPLY COMMENTS OF THE PUBLIC STAFF

NOW COMES THE PUBLIC STAFF – North Carolina Utilities Commission ("Public Staff"), by and through its Executive Director, Christopher J. Ayers, and respectfully submits the following reply comments for the Commission's consideration.

On March 20, 2019, the Commission issued an Order Establishing Generic Proceeding and Requiring Comments ("March 20, 2019 Order") in this docket. The Order makes the Public Staff, Carolina Water Service, Inc. of North Carolina ("CWSNC"), and Aqua North Carolina, Inc. ("Aqua") parties to the proceeding and sets deadlines for the parties to file initial and reply comments to include "a discussion of rate design proposals that may better achieve revenue sufficiency and stability while also sending appropriate efficiency and conservation signals to consumers." On May 13, 2019, the Commission issued an Order extending the deadline for the parties to file comments to May 22, 2019, and the deadline to file reply comments to June 19, 2019. On May 22, 2019, the Public Staff filed its Comments and Aqua and CWSNC ("the Companies") filed their Joint Comments. Pursuant to the directives of the Commission's March 20, 2019 Order, the Public Staff now offers these reply comments.

Pennsylvania

Aqua and CWSNC state that their comments rely heavily on the Pennsylvania Public Utility Commission's (PPUC) Proposed Policy Statement Order[1] (PPUC Order). (Joint Comments p 6) In that proceeding, the PPUC received testimony on March 3, 2016, from researchers, energy companies, and consumer advocates. The PPUC later received comments and reply comments from electric, natural gas, water and wastewater utilities, environmental, industrial, and commercial groups, and consumer advocates. The PPUC Order requested additional comments but, to date, a subsequent PPUC order has not been issued.

The PPUC received comments on revenue decoupling, lost revenue adjustment mechanisms, straight fixed variable pricing, multiyear rate plans, demand charges, standby and backup charges, and demand side management ("DSM") performance incentive mechanisms. The PPUC Order established guidelines for specific issues that the PPUC will consider in reviewing existing rates and proposed rate structures filed by fixed utilities entitled Section 69.3302 Distribution rate considerations, restated as a) through m) on page 8 of the Joint Comments. (PPUC Order p 27 and 28)

With respect to revenue decoupling the PPUC Order stated (Id. at p 11):

> We agree that revenue decoupling may result in just and reasonable rates for fixed utilities in certain forms and in certain circumstances, so long as the revenue decoupling plan includes appropriate consumer safeguards. Among the consumer protections that could be considered are (1) a revenue adjustment cap (to limit the consumer's rate

[1] Pennsylvania Public Utility Commission, Proposed Policy Statement Order in Docket No. M-2015-2518883, released May 23, 2018. Retrieved from http://www.puc.pa.gov/about_puc/consolidated_case_view.aspx?docket=m-2015-2518883

> adjustment exposure) and (2) a reduced return on equity (to reflect possible reduced business risk for the utility). We recognize that revenue decoupling, if done in an appropriate manner removes the throughput incentive in such a way that may promote adoption of cost-effective efficiency and conservation measures.
>
> At the same time, we note that revenue decoupling may not be appropriate, may not result in just and reasonable rates, or may not be authorized by the Public Utility Code for certain fixed utilities in certain circumstances. We recognize that if done inappropriately, revenue decoupling may adversely impact customers who, due to personal circumstances, are unable to take advantage of efficiency or conservation measures to reduce their consumption. Also, customers who are the recipients of after-the-fact billing increases for past shortfalls, for whatever reason, may be unhappy in being required to make up the difference once the actual mechanics of revenue decoupling become clear. Accordingly, with this proposed policy statement, in lieu of establishing a specific rate methodology to be applied to all fixed utilities, we are proposing to establish factors the fixed utilities, complainants, intervenors, and the Commission will consider in any future fixed utility Section 1308 rate proceeding.

The PPUC did not adopt any rate design or adjustment mechanism presented. For each rate design or adjustment mechanism, the PPUC concluded with similar language as the following language (Id. at p 21):

> As stated previously, we are not adopting, nor precluding, any particular rate methodology in this proceeding. Under the proposed policy statement, any utility proposing a rate plan will need to demonstrate, in addition to the Commission's authority to approve it, that the proposed rate plan does not discourage efficiency measures, appropriately aligns costs in accordance with cost causation principles, and does not inappropriately impact low-income customers or appropriately mitigates such impacts, among other things.

The 13 guidelines listed on page 8 of the Joint Comments were listed on pages 27 and 28 of the PPUC Order entitled Section 69.3302 Distribution rate

considerations. The PPUC Order also established other principles for consideration on pages 30 and 31 entitled Section 69.3303 Illustration of possible distribution ratemaking and design options for the energy industry.

The overwhelming majority of the discussion in the PPUC's Order focused on the electric and natural gas utilities. The PPUC did not list specific principles to be considered for the water and/or wastewater utilities.

Rate Design

The only rate design proposal discussed in the Joint Comments is the ratio of base facility charge and volumetric charge in the average water or wastewater bill. Specifically, the Companies state that "Aqua's current rate structure includes an approximate 40/60 split between the base facility charge and the volumetric charge, while CWSNC was approved for a 52/48 ratio in its most recent rate case." (Joint Comments p 10) The Companies recommend that rates be set with a higher proportion of base facility charge in any future rate case to more closely match the costs to provide service and to "lessen the revenue gap caused by further conservation efforts." (Id.) The Companies indicate that the volumetric rate can then be modified "utilizing inclining block rates, seasonal rates, or other similar structure to achieve desired consumer behaviors that support conservation efforts." (Id. at p 11)

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. As described in its 2018 North Carolina Water &

Wastewater Rates Report[2] ("2018 Report"), the UNC School of Government Environmental Finance Center ("EFC") states "[u]tilities can discourage excessive discretionary water use by setting high prices for the next 1,000 gallons of water at those high levels of consumption." (2018 Report p 17) As illustration, the table below shows hypothetical $50 water bills for an average usage of 5,000 gallons with base charge and volumetric charge ratios of 80:20 and 20:80, respectively.

	Base 80: Volumetric 20	Base 20: Volumetric 80
Base	$40	$10
Volumetric	$2 per kgal. x 5 kgal. = $10	$8 per kgal. x 5 kgal. = $40
Total Bill Amount	$50	$50

If the customer uses an additional 1,000 gallons under an 80:20 ratio, it would cost $2. Under a 20:80 ratio, however, that same additional 1,000 gallons of usage would cost $8. The incremental cost per 1,000 gallons of usage under a base charge and volumetric charge ratio of 20:80 compared to an 80:20 ratio is four times greater and thus provides a significantly stronger signal to the customer to increase efficiency and conversation.

Any increase in the proportion of the base facility charge slides the scales toward revenue stability and further negates the cost incentive to customers to increase efficiency and conservation. In the 2018 Report, the EFC states, "[a]nother way to measure the strength of the conservation pricing signal of water

[2] UNC School of Government Environmental Finance Center and North Carolina League of Municipalities. (2018). *2018 North Carolina Water & Wastewater Rates Report*, page 17.

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 states 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 percent reduction in bill)." (Id. at p 20 and 21) The table below shows the consumption reduction scenario for Aqua and CWSNC uniform water rate customers.

	Aqua	CWSNC
Base facility charge	$19.25	$27.53
Uniform usage charge, per 1,000 gallons	$5.83	$7.08
Bill amount, 10,000 gallons	$77.55	$98.33
Bill amount, 5,000 gallons	$48.40	$62.93
Bill reduction percentage	37.6%	36.0%

For both Aqua and CWSNC, the current uniform water rate structure provides relatively little incentive, reductions in bills of 37.6% and 36.0% respectively, for customers to significantly reduce their usage by 50%. The middle 80% of EFC surveyed North Carolina water utilities utilizing an increasing block provide a bill reduction ranging between approximately 35% and 53%. (Id. at p 21)

Billing Data

The Public Staff has provided documentation supporting its belief that properly designed increasing block rates are effective to encourage water efficiency and conservation. In order for the Commission to approve an increasing block or other rate structure, if the Commission chooses to do so in the next general rate cases, the Public Staff recommends the Commission order all Class A water and wastewater utilities to compile monthly consumption data of accounts by blocks of 1,000 gallons. This detailed consumption data will be necessary to properly design, evaluate, and implement rate structures such as increasing block.

Other Topics

The Public Staff interpreted the Commission's March 20, 2019 Order as requesting comments regarding rate structures as opposed to general rate making principles or cost recovery mechanisms and, therefore, did not directly address these topics in its comments. Nonetheless, the Public Staff responds to the Companies' discussion of these topics in their Joint Comments as follows.

Ratemaking Mechanisms

The Companies recommended numerous ratemaking mechanisms seeking to increase their ability to earn the allowable rate of return by nearly eliminating regulatory lag and guaranteeing revenue stability and sufficiency. It is the Public Staff's opinion that, because the risk to the Companies would be significantly reduced through the ratemaking mechanisms they describe, the maximum allowable return on equity ("ROE") and rate of return should be reduced in order

to offset that reduction in risk and ensure just and reasonable rates. It is also the Public Staff's opinion that statutory authorization would be required in order for the Commission to adopt any of the ratemaking mechanisms described by the Companies. In such instances, the Commission should exercise its inherent rulemaking authority to establish clear objectives, procedures, and customer protections when implementing the legislation.

Multi-Year Rate Plan

As N.C. Gen. Stat. § 62-133(c) requires use of a historical test year, any multi-year rate mechanism must be statutorily authorized by the North Carolina General Assembly ("General Assembly"). While a multi-year rate mechanism can help reduce a utility's regulatory lag on utility plant investment, NRRI's Financing and Ratemaking Alternatives Report (NRRI Report) highlights several of the downsides of multi-year plans:

> A potentially serious problem with multi-year rate plans is trying to derive reasonably accurate forecasts over a three- or five-year period. Poor forecasts can lead to extreme utility earnings, either on the high side or low side. These plans also require more time on the part of commission staff and other parties to evaluate them, in addition to increasing the complexity of rate cases.[3]

In light of these issues, if multi-year plans are authorized by the legislature, it is important that the Commission impose appropriate customer protections

[3] Beecher, J. A., Mann, P. C., & Stanford, J. D. (1993). *Meeting Water Utility Revenue Requirements: Financing and Ratemaking Alternatives.* The National Regulatory Research Institute, page 36. Retrieved from http://ipu.msu.edu/wp-content/uploads/2016/12/Beecher-Revenue-Requirements-93-13-Nov-93-1.pdf

through rulemaking to ensure rates remain just and reasonable. Such customer protections include, but are not limited to:

- Annual review of the costs incurred during the prior year to ensure 1) cost recovery aligns with the plan's implementation, 2) incurred costs are reasonable and prudent, and 3) incurred costs are only for plant that is used and useful
- A mechanism to refund overearnings to ensure customers only pay for cost of service plus a reasonable rate of return
- Performance metrics for service quality
- Retention of Commission authority to initiate a general rate case at any time if it is determined to be in the public interest
- Requirement for the utility to file a general rate case upon conclusion of the multi-year plan

Limited Revenue Decoupling

The Companies conclude in their Joint Comments that "implementation of a Multi-Year Rate Plan with Limited Revenue Decoupling could best serve the competing interests of the utility, its customers and public policy." (Joint Comments p 12) The proposed Limited Revenue Decoupling is similar to an annual Consumption Adjustment Mechanism ("CAM"), which separates a utility's revenues from its commodity sales. The intended result of any such mechanism is to stabilize revenues during periods of commodity usage variance.

In their Joint Comments, the Companies express the same financial concerns expressed in their most recent rate cases regarding the determination of

consumption levels for ratemaking purposes. Consumption is variable and dependent on a number of factors, including, but not limited to temperature, rainfall, lot size/landscaping, and water efficient appliances/fixtures; it is that unforeseen variability that gives rise to the financial concerns. The Public Staff notes that implementation of a CAM will mitigate any perceived need to forecast consumption data instead of utilizing a historic test year or multi-year average for ratemaking purposes by resolving the issue of revenue instability from fluctuations in consumption, especially reduced consumption as the result of rates designed to aggressively promote water efficiency and conservation.

As a stand-alone rate mechanism, a CAM typically reduces the utility's risk by allowing the utility to adjust rates to maintain revenue levels when customer consumption decreases. However, a CAM must be reciprocal. If customer rates increase when consumption decreases, then customer rates should decrease when consumption increases. A utility should not be allowed to take additional revenue when consumption decreases without giving it back when consumption increases.

The NRRI Report states, "[t]he major concern with revenue decoupling is that, while ostensibly beneficial to a utility, the gains to customers are less transparent."[4] Thus, it is important that the Commission impose customer protections through rulemaking for any CAM or similar mechanism statutorily

[4] Beecher, J. A., Mann, P. C., & Stanford, J. D. (1993). *Meeting Water Utility Revenue Requirements: Financing and Ratemaking Alternatives.* The National Regulatory Research Institute, page 40. Retrieved from http://ipu.msu.edu/wp-content/uploads/2016/12/Beecher-Revenue-Requirements-93-13-Nov-93-1.pdf

authorized by the General Assembly to ensure rates remain just and reasonable. Such customer protections include, but are not limited to:

- Annual review of the billing and revenue data from the prior year to ensure 1) the quantification and inclusion of customer growth to prevent the company from overearning and 2) that the delineation and equity between rate categories is maintained
- A mechanism to refund overearnings to ensure customers only pay for cost of service plus a reasonable rate of return

Should the North Carolina Utilities Commission implement revenue decoupling for water and/or wastewater utilities, it is essential that customer growth be included in the adjustment mechanism as customer growth increases the utilities' revenues and, for existing well production systems, customer growth materially increases the utilities' net income.

Production Cost Reconciliation

The Companies propose in their Joint Comments that any limited revenue decoupling or CAM include a production cost reconciliation to address expense fluctuations that are directly related to consumption fluctuations. Short-term variable expenses should have a direct relationship to consumption, but the relationship is dependent upon both volume and unit price. For example, if a decrease in consumption occurs, the quantity of chemicals needed for treatment of water decreases. However, if the chemical unit price increased since the last general rate case, then the overall expense may still increase even with the decrease in production.

These quantity and price changes of variable expenses are adjusted in general rate cases. If the unit pricing or quantity changes after the rate case, a utility has the potential to over- or under-collect their authorized expense amount. However, adjusting these expenses between general rate cases constitutes single-issue ratemaking, which this Commission and the Public Staff have historically disfavored.

As with decoupling or a CAM, the mechanism must be reciprocal such that the customer receives the benefit of quantity and cost decreases realized by the utility. Additionally, it is important that the Commission impose customer protections through rulemaking for any production cost reconciliation mechanism statutorily authorized by the General Assembly to ensure rates remain just and reasonable. Such customer protections include, but are not limited to:

- Annual review of the actual incurred variable expense data during the prior year to ensure the incurred expenses are reasonable and prudent
- Annual review of the billing and revenue data from the prior year to ensure the quantification and inclusion of customer growth to prevent the company from overearning
- A mechanism to refund overearnings to ensure customers only pay for cost of service plus a reasonable rate of return

The implementation of a production cost reconciliation mechanism would require personnel resources of stakeholders, including utilities, the Public Staff, the Commission, and outside vendors (e.g., laboratories) to complete an appropriate review and effectuate rate increases or issue customer credits.

Annual Investment Adjustment

In their Joint Comments, the Companies recommend the implementation of an annual rate increase, outside of a general rate case proceeding, to recover the incremental depreciation expense and capital costs of investment during the previous year. This proposal would constitute single-issue ratemaking, which this Commission and the Public Staff has historically disfavored. Absent a more comprehensive review of capital costs, including accumulated depreciation and rate of return, such a mechanism would give the utility beneficial adjustments without considering the corresponding beneficial adjustments for customers. Viewed another way, it would be a comprehensive expansion of the current WSIC/SSIC, which is for specific eligible water sewer system improvements, to include all capital investment with no cap. Furthermore, adoption of such a mechanism would eliminate the opportunity for customers to participate in the public hearing process where service quality can be evaluated, and corrective action required, by the Commission.

It is important that the Commission impose customer protections through rulemaking for any such investment adjustment mechanism statutorily authorized by the General Assembly to ensure rates remain just and reasonable. Such customer protections include, but are not limited to:

- Annual review of the costs incurred during the prior year to ensure 1) incurred costs are reasonable and prudent and 2) incurred costs are only for plant that is used and useful

- Annual review of the existing rate base to ensure the removal of plant that has fully depreciated since the last general rate case
- A mechanism to refund overearnings to ensure customers only pay for cost of service plus a reasonable rate of return
- Retention of Commission authority to initiate a general rate case at any time if it is determined to be in the public interest
- Customer service metrics and periodic customer hearings to evaluate service quality

The Companies stated that this adjustment would lead to fewer rate cases, which would in turn result in decreased internal resource allocation pressures on the Public Staff and the Companies. Although the review of an annual investment adjustment would occur outside of a general rate case, there would still be a need for personnel resources to compile and review such filings, including a rate adjustment order from the Commission. The Public Staff would still be required to audit the annual capital investments and the Commission would have to determine if the investments were reasonable and prudent and used and useful.

Finally, it is the opinion of the Public Staff that the sole purpose of the recommended annual investment adjustment is to achieve financial certainty for the utilities and that such a mechanism has no bearing on the goal of sending appropriate signals to consumers that support and encourage water efficiency and conservation.

Advanced Metering Technologies

The Commission's March 20, 2019 Order directs the Companies to address the following topics in their comments:

> [W]hether more sophisticated or innovative rate designs based on the cost of service can be supported by consumption data collected through advanced metering technology when combined with their respective customer information systems, the extent to which consumption data is available and has been analyzed in this regard, the extent to which the utilities have engaged in planning to obtain, use and analyze this data going forward, and the quality of available data as it currently exists.

In their joint comments, the Companies claim that advanced metering technologies, such as advanced metering infrastructure ("AMI"), can aid conservation efforts. The Companies note that the detailed data available through advanced metering technologies can aid utilities in making informed operational and business decisions. Despite recognizing the potential benefits of advanced metering technologies, the Companies suggest that such technologies cannot be employed at present due to the need to "invest[] in the full array of metering technology" and to "develop[] a customer base more accustomed to navigating digital opportunities and responding to new levels of data."

Some water utilities have implemented advanced metering technologies capable of capturing customer usage data. For example, as of the time of its last general rate case, in 2018, Aqua had invested $4.039 million to replace standard meters with AMR meters and install encoder receiver transmitters ("ERTs"). While these AMR meters have the capability to collect up to a 40-day history of daily water usage readings (recorded at 12:01 am ET), this data is not available to

customers and, therefore, cannot be used by customers to adjust their usage to conserve either in real-time or daily basis.

The Companies further note that AMI meters "would provide customers with much more granular, real-time data with which to make decisions on their consumption patterns, and more direct control of their water usage." While the Public Staff recognizes the potential benefits of advanced metering technologies capable of delivering real-time data, the Public Staff would likely oppose the recovery of any stranded costs resulting from the replacement of installed advanced meters before the end of their useful life. Utilities must balance the desire to continuously roll out new advanced meters with the customers' needs, wants, and ability to pay.

Stakeholder Impacts

The Companies claim numerous stakeholder benefits arising from the proposed ratemaking mechanisms and changes to the ratemaking process. (Joint Comments p 16 and 17) For consumers and the utility, the Companies claim, without evidence or supporting documentation, that there would be reduced regulatory costs. In all likelihood, the Companies' proposals should require detailed filings submitted with regular frequency, which would be subject to a Public Staff audit/investigation, a potential public and/or evidentiary hearing, and an order by the Commission. The electric fuel rider proceedings, which require significant investigation by the Public Staff, is an example of what an annual proceeding might resemble.

The Companies claim the mechanisms would result in "fewer rate cases, which decreases internal resource allocation pressures on the Public Staff" and "increased periodic oversight of utility financials and operations." Recently, CWSNC has filed general rate cases nearly annually. On the other hand, Aqua has gone over 4 years between general rate cases in Docket Nos. W-218, Subs 274, 363, and 497. It is premature to conclude that there would be a significant enough reduction in the frequency of rate cases across the industry to offset the demand on resources required to properly oversee the Companies' proposed mechanisms and modifications to the ratemaking process.

WHEREFORE, the Public Staff respectfully requests that the Commission consider these reply comments in making its determination in this docket.

This the 19th day of June, 2019.

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CERTIFICATE OF SERVICE

I certify that a copy of these Comments have been served on all parties of record or their attorneys, or both, by United States mail, first class or better; by hand delivery; or by means of facsimile or electronic delivery upon agreement of the receiving party.

This the 19th day of June, 2019.

Electronically submitted
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