STATE OF NEW HAMPSHIRE

BEFORE THE

PUBLIC UTILITIES COMMISSION

Pennichuck Water Works, Inc.

Docket No. DW 19-084
Request for Change in Rates

&

Docket No. DW 20-055
Petition for Financing Approval

SETTLEMENT AGREEMENT

June 2020

TABLE OF CONTENTS

References to Attachments

Location of Attachments

STATE OF NEW HAMPSHIRE

BEFORE THE

PUBLIC UTILITIES COMMISSION

Pennichuck Water Works, Inc.

Docket No. DW 19-084
Request for Change in Rates

&

Docket No. DW 20-055
Petition for Financing Approval

SETTLEMENT AGREEMENT

SUMMARY: This Settlement Agreement (Agreement) is entered into by and among Pennichuck Water Works, Inc. (PWW or Company), Staff of the New Hampshire Public Utilities Commission (Staff), the Office of the Consumer Advocate (OCA), and the City of Nashua (City) (together, Settling Parties), with the intent of establishing a modified ratemaking mechanism as requested by PWW's rate case filing (Docket No. DW 19-084) and supporting PWW's request for up to $75 million in financing (Docket No. DW 20-055), as discussed below.

As part of its original rate filing, the Company proposed, among other modifications to its ratemaking structure, the addition of an annual Material Operating Expense Surcharge (MOES). The purpose of the MOES was twofold: (1) to ensure that the Company had sufficient earnings between general rate proceedings to cover its operating expenses; and (2) to stem the drastic deterioration of its Material Operating Expense Revenue Requirement – Rate Stabilization Fund (MOERR-RSF)[1] as has been experienced by the Company since its last rate proceeding.

PWW proposed an annual MOES filing that would have reconciled its most recent total annual operating expenses with the operating expenses reflected in its current rates. The resulting difference would have resulted in either a surcharge or credit in customer bills, similar to the previously approved Qualified Capital Project Adjustment Charge (QCPAC).

During the course of the rate investigation, however, the other parties expressed hesitancy to support the Company's MOES request. Staff noted the possibility that the concept is prohibited as single-issue ratemaking, and that, in conjunction with the QCPAC process, constituted an annual rate proceeding, which contrasts with RSA 378:7 ("the commission shall be under no obligation to investigate any rate matter which it has investigated within a period of 2 years, but may do so within said period at its discretion"). The parties also expressed several other concerns: undue burden on ratepayers in the years they experience a surcharge, especially when combined with other possible surcharges; ratepayer confusion regarding price signals and associated consumption patterns, especially in years resulting in a customer credit; and the difficult logistics of administering an annual reconciliation of PWW's operating expenses. As a result, the Company abandoned the MOES concept.

In order to address PWW's continued cash flow and liquidity concerns, and successfully resolve the current rate proceeding, the Settling Parties have, instead, agreed upon an alternative two-pronged approach. First, seek approval of the Company's financing petition in DW 20-055 which, if approved, (1) will sufficiently replenish, on a one-time basis, PWW's depleted

[1] The MOERR-RSF is a reserve fund currently established at an imprest level of $2,850,000 that provides cash coverage for PWW's material operating expenses between rate cases, enabling the Company to meet its obligations which allows for stable water rates. *Pennichuck Water Works, Inc.*, Order No. 26,070 (November 7, 2017) at 7-8.

MOERR-RSF, and (2) may result in the realization of a decrease in the Company's annual debt service obligations that will immediately reduce PWW's revenue requirement to be approved in Docket No. DW 19-084. Second, the Settling Parties have proposed a modification to PWW's current ratemaking structure to include an imbedded Material Operating Expense Factor (MOEF) within the existing Operating Expense Revenue Requirement (OERR)[2] component of the Company's overall revenue requirement.

The Settling Parties wish to make it clear that a Commission Order approving the Agreement, which includes modifications to PWW's revenue requirement calculation and other ratemaking adjustments proposed in Docket No. DW 19-084, <u>would not result in an immediate rate increase</u>. The Settling Parties, instead, request that, contingent upon 1) the approval of the requested financing in Docket No. DW 20-055, and 2) the ratemaking modifications proposed in Docket No. DW 19-084, the Commission issue a subsequent Order, after the approved financing is closed, which would set the final revenue requirement and resulting rates charged to customers.

The Settling Parties agree that the Commission's approval of PWW's proposed financing in Docket No. DW 20-055, and its subsequent approval of a proposed revenue requirement, as modified, coupled with other proposed measures designed to improve the Company's cash flow and liquidity in Docket No. DW 19-084, resolve all current issues in both dockets, and once the approvals are fully implemented, would result in just and reasonable rates.

---

[2] OERR includes both the MOERR and the NOERR components indicated in the flowchart schedules, Appendix 2, Attachment A.

I. PROCEDURAL HISTORY

A. Docket No. DW 19-084 (PWW) Request for Change in Rates

The Commission instituted Docket No. DW 19-084 on April 26, 2019 in response to PWW's motion requesting waiver of certain rate case filing requirements, per N.H. Admin. R., Puc 1604.01, in anticipation of its forthcoming rate case submission. On April 30, 2019 the OCA filed its letter of participation. On May 14, 2019, PWW filed a notice of intent to file rate schedules.

On July 1, 2019, PWW filed rate schedules and tariffs reflecting an effective date of August 1, 2019. The Company proposed an increase to its revenue requirement of $3,778,139, or 11.91%, resulting in allowed revenues from base rates of $35,510,803. In addition, PWW filed a petition requesting that the Commission approve further modifications to its revenue requirement methodology approved in its last rate proceeding, DW 16-806.

In support of its requests, the Company provided the pre-filed testimonies of Larry D. Goodhue, Chief Executive Officer of PWW, Donald L. Ware, Chief Operating Officer of PWW, and Gregg H. Therrien, Assistant Vice President of Concentric Energy Advisors, Inc., PWW's Cost of Service consultants. The Company also filed a Motion for Protective Order and Confidential Treatment of certain compensation and payroll information included in its rate filing. On July 16, 2019, PWW supplemented its rate filing with attachments to the pre-filed testimony of Gregg H. Therrien. On July 25, 2019, the City filed a petition to intervene. On August 21, 2019, PWW filed the supplemental testimony of Larry D. Goodhue on the subject of the bond rating process and the effect of PWW's bond rating on its ratemaking requests.

On July 31, 2019, the Commission issued Order No. 26,279 suspending the taking effect of PWW's tariffs for twelve months and scheduling a Prehearing Conference and technical session for October 3, 2019. On August 21, 2019, PWW filed affidavits confirming that the suspension order had been published in area newspapers.

At the Prehearing Conference, the Commission granted the City's intervention request. During the technical session that followed, Staff and the parties developed a proposed procedural schedule to govern the course of the proceeding. The proposed procedural schedule was filed with the Commission by Staff on October 10, 2019, and the Commission approved it on October 16, 2019. Pursuant to that schedule, the Settling Parties conducted numerous rounds of discovery and held a number of technical sessions and settlement conferences.

On March 16, 2020, PWW filed a partially assented to motion for temporary rates, per RSA 378:27. In its petition, PWW requested that its current rates be set as temporary rates with an effective date coinciding with the date of its temporary rate filing. PWW sought to recoup the difference in its current rates and the final rates determined by the Commission back to March 16, 2020, per RSA 378:29.

On April 14, 2020, the Commission issued Order No. 26,348 suspending the taking effect of PWW's temporary rate tariffs, not to exceed the suspension period set by the permanent rate tariff suspension in Order No. 26,279. The Commission also scheduled a web-based hearing on temporary rates for May 13, 2020. The Commission further ordered that PWW send notice to all of its customers of the proposed temporary rates by no later than April 15, 2020 and to publish a copy of the Commission's order on the Company's website by no later than April 14, 2020. On April 16, 2020, PWW submitted an affidavit of its compliance with all notification requirements of Order No. 26,348.

On April 29, 2020, Staff, on behalf of the other parties in the proceeding, filed a letter requesting the Commission suspend the previously approved procedural schedule and approve a technical session on May 6, 2020, where the parties would discuss a revised procedural schedule. Staff's letter further requested that the previously approved hearing dates of May 13, June 30, and July 1, 2020 be held open. On May 1, 2020, the Commission approved that request by Secretarial Letter.

On May 11, 2020, PWW filed a settlement agreement on temporary rates entered into by the Company, Staff, the City, and the OCA. In that settlement agreement, all of the settling parties agreed that PWW should be granted temporary rates at its current rate level for the pendency of the rate proceeding. Staff, PWW, and the City agreed that the effective date for temporary rates to take effect should be for service rendered on and after March 16, 2020, the filing date of the Company's temporary rate petition. The OCA, however, took the position that the effective date for temporary rates should be April 16, 2020 the date on which PWW's customers received notification of the temporary rate filing. The settling parties further agreed that the effective date for temporary rates was to be the only issue litigated at the temporary rate hearing.

During the May 13, 2020 hearing, the settlement agreement on temporary rates was presented for approval and the Commission heard arguments from the Company, the OCA, and Staff as to its effective date. On that same day, Staff filed a proposed amended procedural schedule, requesting two additional technical sessions and a hold on the hearing dates reserved for June 30 and July 1, 2020. The Commission approved the amended schedule on May 15, 2020. On June 2, 2020, Staff filed a final procedural schedule to govern the remaining course of the proceeding that was approved by the Commission on June 11, 2020.

B. Docket No. DW 20-055 (PWW) Petition for $75 Million in Financing

On April 23, 2020, PWW filed a petition requesting approval and authority, under RSA 369:1-4, to issue up to $75 million in an aggregate principal amount of tax-exempt or taxable bonds. As a result, the Commission instituted Docket No. DW 20-055.

On April 28, 2020, the OCA filed its letter of participation. On May 19, 2020, PWW filed an amended financing petition for the purpose of correcting two minor errors contained in its original petition. On June 1, 2020, the Commission issued an Order of Notice scheduling a web-based hearing regarding PWW's financing request on June 30, 2020. PWW was further ordered to publish a copy of the order of notice on its website by June 2, 2020.

II. HISTORY OF PWW'S RATEMAKING STRUCTURE, PRIOR COMMISSION DETERMINATIONS, AND CURRENT CONSIDERATIONS

Since approval by the Commission of the City's acquisition of PWW's parent company, Pennichuck Corporation, the Company's financial structure and, thereby, its ratemaking structure has undergone a unique process of change, as characterized in the numerous Commission-approved financings and general rate increases since that acquisition. The following section highlights those changes in PWW's financial and ratemaking structures as well as the continuing challenges the Company has encountered since its last rate proceeding. Further, the Settling Parties have provided flowcharts depicting PWW's previously approved ratemaking structure along with the further modifications proposed in this Agreement in Appendix 2, Attachment A to this document.

A. Docket Nos. DW 11-026 and DW 13-130

In Order No. 25,292 (November 23, 2011), in Docket No. DW 11-026, the Commission approved the acquisition of PWW's parent company, Pennichuck Corporation, by the City. That acquisition was completed on January 25, 2012, whereby Pennichuck Corporation ceased to be a publicly traded company. The City became its sole shareholder with a "limitation on Nashua's ability to draw dividends or other distributions from Pennichuck Corporation" (at page 45). With that limitation in place, there is no ability to sell stock. The consequences of such are that Pennichuck Corporation and its affiliates no longer have access to the equity markets for financing and are required to utilize debt, only.

As part of the acquisition, the Commission approved a modified ratemaking structure for PWW and its two affiliates, Pennichuck East Utility, Inc. (PEU) and Pittsfield Aqueduct Company, Inc. (PAC). That modification enabled those regulated utilities to earn a reasonable return on invested assets through a ratemaking methodology that still produced just and reasonable customer rates, as required under *FPC v. Hope Natural Gas*, 320 U.S. 591, 602-603 (1944). The rate structure approved also included a $5 million Rate Stabilization Fund (RSF) designed to provide assurance to creditors that PWW and its affiliates would meet the repayment requirements relative to the City's acquisition bond. *See Joint Petition of Nashua, Pennichuck Corporation, et al*, Order No. 25,292 at 30 (November 23, 2011) ("the fund is intended to provide holders of the City Acquisition Bonds with reasonable assurances of the available cash to be used to pay debt service on the City Acquisition Bonds, similar to a debt service reserve fund, and will hence facilitate Nashua's ability to borrow funds at reasonable interest rates, which will directly benefit customers in the form of a lower cost of capital").

The rate structure initially approved by the Commission was further clarified in PWW's first, post-acquisition, general rate proceeding, Docket No. DW 13-130, in Order No. 25,693 (July 15, 2014).

B. <u>Docket Nos. DW 14-130 and DW 15-196</u>

The modified ratemaking structure departed from the traditional rate-setting formula applicable to typical investor-owned utilities, which, unlike PWW, have access to equity markets for their financing needs. By contrast, post-acquisition, PWW and its affiliates were required to utilize only debt in order to meet their financing needs.

As such, it became necessary for PWW to restructure the nature of its debt financing. Pre-acquisition, the repayment terms, loan covenants, and coverage requirements associated with much of PWW's debt was characteristic of a traditional investor-owned utility, including interest only payments and balloon maturities. Post-acquisition, however, PWW's capital structure was more akin to that of a municipality, consisting of all debt. Thus, PWW restructured the repayment terms for much its existing debt to that of fully amortizing loans. PWW also renegotiated its loan covenants and coverage requirements based on terms consistent with its new debt-only capital structure. This restructuring of PWW's debt occurred though a series of Commission financing orders commencing with Order No. 25,734 (November 7, 2014) in Docket No. DW 14-130 (approval of PWW's Integrated Capital Finance Plan totaling $54.5 million), and Order No. 25,808 (September 2, 2015) in Docket No. DW 15-196 (approval of $25.5 million in tax-exempt bonds issued through the New Hampshire Business Finance Authority (NHBFA)).

C. <u>Docket No. DW 16-806</u>

To satisfy the renegotiated bank/lender coverage requirements associated with its refinanced debt and to continually attract necessary new debt under favorable loan terms for its on-going capital needs, PWW became increasingly reliant and focused on the cash flow generated from its customer rates as the key to its long-term viability. As a consequence, in

PWW's last rate proceeding, Docket No. DW 16-806, the Commission approved further modifications to PWW's already unique ratemaking structure in Order No. 26,070 (November 7, 2017).

Consequently, PWW's ratemaking structure became one exclusively intended to meet its overall cash flow needs in order to give its creditors assurance that it was both solvent and sufficiently liquid. Specifically, the Company's ratemaking structure was designed to recover the aggregate of PWW's: (1) promissory note to the City relative to its portion of the repayment on the acquisition debt (City Bond Fixed Revenue Requirement (CBFRR)), (2) utility operating expenses (Operating Expense Revenue Requirement (OERR)), and (3) debt service (Debt Service Revenue Requirement (DSRR)). See Appendix 2, Attachment A.

Further, the Commission approved the Company's annual QCPAC. Under this mechanism, the Company submits an annual QCPAC filing for approval to recover the additional revenues necessary to pay the debt service and property taxes associated with its prior year's capital expenditures. As such, the QCPAC enables the Company to sustain the cash flows necessary between general rate proceedings in order to maintain its capital expenditure program.

The Commission also approved a re-allocation of the $5 million RSF that was originally established in Docket No. DW 11-026. Initially, $1.08 million of the original RSF was allocated to PEU and PAC ($980,000 of which was subsequently allocated to PEU in its next completed rate case in Docket No. DW 17-128) to assist those utilities in meeting their cash needs.

The remaining $3.92 million of the original RSF retained by PWW, was then apportioned amongst three reserve funds to provide additional coverage for the specific cash flow needs of the Company as established in its modified revenue requirement, as follows: (1) CBFRR-RSF (PWW's obligation relative to the City's acquisition bond) – $680,000; (2) MOERR-RSF

(PWW's material operating expenses) – $2,850,000; and (3) DSRR-1.0-RSF (PWW's debt service requirements) – $390,000. The re-apportionment of PWW's RSF funds was specifically designed to provide stability to customer rates even under adverse conditions, as it could draw on those funds to meet its cash obligations under such conditions.

Overall, however, the ratemaking modifications approved in Docket No. DW 16-806, were designed to provide: 1) stability to customer rates, 2) assurance to creditors of PWW's ability to effectively meet its cash obligations, 3) sufficient cash-flow coverage for PWW's operating needs, and 4) enhancement to PWW's credit rating. All of which were anticipated to increase the Company's ability to access the credit markets and obtain lower-cost debt financing.

D. Current Challenges

Despite the approved modifications in DW 16-806, and as illustrated in PWW's rate case schedules and further discussed in the pre-filed testimony of Donald L. Ware, PWW's operating expenses have increased at a rate greater than the rate of inflation for each of the past three years (Bates 68). As a result, PWW's expenses have fully depleted its MOERR-RSF. As of December 31, 2019, PWW's MOERR-RSF reflected a deficit of about $2.8 million, funded through borrowings from Pennichuck Corporation's working capital line-of-credit.

The depletion experienced by PWW in its MOERR-RSF since its DW 16-806 rate proceeding has exposed a deficiency in PWW's current ratemaking structure. That being, the current structure does not enable PWW to maintain sufficient cash coverage in order to meet the inevitable increases in its material operating expenses between rate cases.

Further, as described throughout the pre-filed and supplemental testimonies of Larry D. Goodhue in this proceeding, adequate cash coverage remains a concern of PWW's bond rating agency, Standard & Poors (S&P) and has adversely impacted the Company's credit rating. As a consequence of the recognized deficiency in PWW's current rate structure and the resulting deterioration of its cash reserves, in March 2019, S&P slightly lowered the Company's bond rating from "A+" with a "stable outlook" to "A+" with a "negative outlook". Subsequently, however, in April 2020, due to a continuation of the decline in PWW's cash reserves, S&P further downgraded PWW's bond rating from "A+" to "A" with, still, a "negative outlook".

As a result, there is presently a concern that, if the Company's credit rating continues to decline, this would seriously impair PWW's ability to 1) access the debt markets for needed capital financing, and 2) attract the lowest cost of borrowings possible. If such were to occur, PWW's water rates charged to customers would also be adversely impacted.

III. SETTLEMENT AGREEMENT - DOCKET NO. DW 20-055 DEBT RESTRUCTURING

The Settling Parties agree and recommend the Commission approve PWW's request for financing in an amount up to $75 million through the issuance of taxable bonds.[3] The Settling Parties agree that the four purposes of the proposed financing (see Section A), meet the requirements of RSA 369:1-4. The Settling Parties also agree that the proposed terms of the proposed financing (see Section B) are reasonable, in accordance with RSA 369:1-4. The Settling Parties further agree that the requested financing is in the public good (see Section C), pursuant to RSA 369:1-4, and, subject to the receipt of further documentation (see Section D), should be approved by the Commission (see Section E) as the end result provides the Company with further financial stability, allowing it to continue to provide safe and adequate drinking water to its customers at reasonable rates.

[3] The initial filing indicated that the financing would consist of the issuance of taxable and/or non-taxable bonds. At the time of settlement, however, PWW determined that the issuance of non-taxable bonds was not an option available to the Company. See the Company's response to Staff 1-2 in DW 20-055 and the Company's First Amended Petition, request (b) at page 7.

A. Four Purposes of the Requested Financing

1. Replenishment of MOERR-RSF

The need to fully replenish PWW's MOERR-RSF fund at this time is based on the Company's financial structure as a debt-only funded entity. Cash flow coverage is paramount in order for PWW to remain a financially viable entity. Further, the Company's ability to maintain adequate cash coverage ultimately benefits ratepayers by enabling PWW to (1) access the debt markets to obtain the financing it needs, and (2) attract the lowest cost of borrowings possible.

PWW's overall ability to maintain proper liquidity, in both its operating cash accounts and its RSF funds, and its ability to refill and maintain those funds, is the highest risk factor that the Company currently faces as exemplified by the recent small downward adjustment in its credit rating. Although the Company's actual credit rating going forward is difficult to predict mainly due to factors relative to the economy as a whole, the Settling Parties agree that the combined effect of replenishing the MOERR-RSF with proposed modifications to PWW's overall rate structure, subsequently described in this Agreement, should have a positive impact on the credit rating agency's view of PWW.

Therefore, PWW currently estimates that approximately $5.5 million of the total proceeds from the proposed financing will be required in order to achieve full replenishment of its MOERR-RSF to its authorized imprest level of $2,850,000 and to repay amounts borrowed on Pennichuck Corporation's working capital line-of-credit used to finance the deficit in that fund, as detailed in Appendix 2, Attachment B. This is intended to be a one-time replenishment of the MOERR-RSF in this manner, as the current deficit is viewed as the result of the previously described deficiency in the Company's ratemaking structure. With proposed modifications to PWW's rate structure, it is anticipated that future reconciliations of the MOERR-RSF will be achieved via either charge or credit adjustments to PWW's revenue requirements in subsequent rate proceedings, as further described in this Agreement.

The final amount of the bond financing designated to replenish the MOERR-RSF and repay the amounts borrowed on the Pennichuck Corporation line-of-credit will be determined at the actual time of the bond issuance. If the total line-of-credit to be repaid is less than estimated, as of the date of repayment and closing of this refinancing, then the resulting bond issuance will decrease by an equivalent amount.

2. 2014A, 2015A, and 2015B Bond Refinancings

The largest portion of the overall financing request relates to the refinancing of a combined principal amount of $56,650,000 of PWW's currently outstanding Series 2014A tax-exempt bonds (remaining outstanding principal balance of $36,695,000), Series 2015A tax-exempt bonds (outstanding remaining principal balance of $18,330,000) and Series 2015B taxable bonds (outstanding remaining principal balance of $1,625,000). The refinancing is anticipated to allow the Company to reduce the cost of this existing debt with lower interest bonds as well as to extend the term to maturity of the debt, resulting in a direct benefit to existing customers.

Specifically, PWW anticipates that it would refinance these debt obligations with taxable bonds at more favorable interest rates currently estimated to be approximately 3.67% as opposed to the current interest rate on the debt of 4.271%. The repayment term of the new bonds of 35 years will effectively extend the amortization period of the refinanced debt to 41 and 40 years, respectively, for the 2014 and 2015, enabling that debt to be more closely aligned with the useful lives of their associated financed assets, thereby mitigating issues related to generational inequity. Combined, the anticipated lower interest rate and extended term on the bonds would lower the Company's annual Debt Service Revenue Requirement (DSRR) component of its overall revenue requirement. The precise redemption value of the bonds, however, will not be realized until the date of closing. PWW will not be issuing the bonds, if the annual debt service for the new bonds yields no savings on annual debt service as compared to current debt service for the refinanced debt obligations.

Based upon the current requirements relative to refinancing these obligations, the 2014A and 2015A/B bonds are subject to early refunding/redemption provisions if that occurs prior to their future "call dates" in 2024 and 2025. Pursuant to those requirements, the Company must provide an escrow deposit that is calculated as of the date of the pricing of the new bonds. That escrow deposit then is to be invested in US Treasury Instruments (State and Local Government Series debt securities). The currently estimated amount of the required escrow is $6,973,050. However, the estimated interest savings to be realized on the refinanced debt is anticipated to exceed the present value of the required escrow deposit by the third year of the serialized offering.[4]

Based on the above, the combined principal and escrow requirements related to the refinancing of the 2014A and 2015 A/B bonds is currently estimated to be $63,623,050 ($56,650,000 + $6,973,050). The exact dollar amount, however, will not be fully realized until the date of pricing for this transaction.

3. American United Life Insurance (AULI) Loan Refinancing

The proposed financing would also enable PWW to refinance a further outstanding loan relative to the $2.4 million remaining principal amount on PWW's note payable to AULI, which matures and is due in full on March 1, 2021. That loan was originally taken out in 1996, to fund

[4] See the pre-filed direct testimony of Larry D. Goodhue in DW 20-055, Bates 37.

capital projects at the time, in the amount of $8 million over 25 years, at an interest rate of 7.4% with annual sinking fund payments of $400,000. It is necessary for PWW to refinance the remaining $2.4 million due on this loan prior to its maturity because the Company's current revenue structure does not enable it to possess the necessary "cash on hand" to pay the entire amount due on that date. However, the AULI debt instrument also has a "make whole" provision if it is repaid prior to the March 1, 2021 due date. That requirement is currently estimated to be approximately $74,141 if the loan is paid on August 1, 2020, but will decrease subsequent to that date.[5] The precise amount of the "make whole" payoff will not be determined until the date of closing as its precise determination is based upon the number of days remaining until loan maturity as well as the US Treasuries rate upon which the "make whole" provision is calculated.

With the present inclusion of the refinancing of this loan within the proposed overall financing, it is anticipated that PWW's ratepayers will benefit from a further reduction in the Company's debt service in that the currently estimated interest rate of the proposed financing of 3.67% is less than half the interest rate of the existing loan of 7.40%. This is particularly beneficial, as refinancing the $2.4 million amount due on its own in early 2021 would not inure the same benefits as incorporating it into the overall proposed $75 million financing, as that amount on its own is too small to take to the bond markets, and would be at much higher interest rates with onerous covenants and requirements, if refinanced with a term loan at a commercial bank or the existing AULI lender.

[5] If the AULI loan is repaid on October 1, 2020, the required "make whole" provision amounts to approximately $53,000.

4. Debt Issuance Costs

The fourth and final element of the proposed financing is to fund the overall cost of issuance for the bonds, which is currently estimated to be approximately $1.3 million. Thus, the currently anticipated total value of the financing is approximately $72.9 million[6], inclusive of the estimated issuance costs. However, due to the unpredictable nature of the bond markets, PWW requests authority to issue up to $75 million in taxable bonds. This is to ensure that even in the event where the bonds are issued at a discount, the Company will 1) receive the actual cash it requires from this transaction for the purposes intended, and 2) be provided with the financial flexibility it needs in order to facilitate a bond closing under that scenario.

B. Bond Mechanism and Specific Terms

The financing will be accomplished by issuing either (1) serialized bond offerings (a series of bonds with different terms to maturity), (2) one or more term bonds with annual sinking fund payments, or (3) a combination thereof. However issued, the financing will consist of taxable bonds with a fixed interest rate applicable to each instrument. The term of the bonds, in the aggregate, will be 35 years.[7] Repayment of the bonds will be unsecured, as per the existing Bond Indenture and consistent with the Company's prior bond issuances since 2014.

Based upon market conditions existing as of the date of this Agreement, PWW has estimated that bonds, with terms and conditions similar with the Company's previously issued 2014-2020 bonds, would be issued at an estimated interest rate of between 3.50% and 4.50%

---

[6] This amount consists of the current sum of 1) MOERR-RSF replenishment - $5,500,000, 2) 2014 A and 2015 A/B bond refinancing with escrow requirement - $63,623,050, 3) AULI Loan refinancing with "make whole" requirement - $2,474,141, and 4) Debt Issuance Costs - $1,292,809. The total amount equals $72,890,000.

[7] The issuance, comprised of serial bonds and/or term bonds, would be paid off in their entirety in 35 years. The bond portfolio will be constructed such that in aggregate it will have an overall 35-year term and a level or declining annual debt service requirement over the course of the 35 years.

percent per annum, with a goal of an overall average total interest cost of approximately 3.67%, subject to PWW's credit rating and overall market conditions at the time of issuance.

As part of the bonding process, PWW will be updating its credit rating with S&P. That review by S&P must be conducted contemporaneously with the issuance of the bonds and cannot be completed prior to that timeframe. This is an essential step in the process of issuing these financial instruments and is highly impactful upon the Company's ability to issue the bonds and secure a favorable cost of interest on the bonds.

As such, PWW may see a reduction in the estimated interest rate should it receive a credit rating enhancement based on: (1) the financing transaction's ability to sufficiently improve the Company's liquidity; and (2) the Company's perceived ability to maintain that liquidity through the establishment of a Material Operating Expense Factor ("MOEF") as well as other rate structure modifications proposed as part of the DW 19-084 rate case settlement, if approved by the Commission. Conversely, the impact of COVID-19, as well as impacts to the crude oil market and the possibility of a recession in the U.S. Economy, and other factors relative to the overall taxable bond market, may result in an increase in the bond interest rate.

Attached to this Agreement as Appendix 1, Attachment A is a proforma financial net debt service cash flow projection calculated for each year of the total 35-year term of the proposed financing, or through the year 2055. The importance of this attachment is in the fact that it includes the net estimated debt service impact from this transaction, as compared to the existing debt service on the debt instruments to be refinanced, as well as the issuance of the $5.5 million of "new money" for the replenishment of the MOERR-RSF fund.

Among other assumptions, Page 1 of this model assumes that the bonds will be issued at an overall total interest cost of 3.67% resulting in year one net debt service (principal and interest) savings of $970,374. Page 2 differs in that it assumes the bonds will be issued at an overall total interest cost of 4.67% resulting in year one debt service net savings of $490,585.[8] Both scenarios further provide the calculated net debt service savings to be realized for each year leading up to the original maturity dates of the refinanced 2014A and 2015 A/B bonds culminating in 2036. It should be noted that while the calculations under each scenario extend beyond the original terms of the 2014A and 2015 A/B bonds, the indicated results during those years do not necessarily translate into an adverse change in rates to customers beginning in 2037.[9]

Because the Company's Debt Service Revenue Requirement (DSRR) component of its rate structure is tied to cash coverage for the principal and interest payments on PWW's debt obligations, and as such, maintaining or reducing the annual cash needs for those payments going forward is beneficial to the Company and, ultimately, its customers. In essence, this financing, as a subset of PWW's full DSRR portion of allowed revenues in future years, represents a more equitable distribution of debt over the useful life of capital assets and a stabilization of the DSRR portion of the Company's overall revenue requirement.

As the issuance of bonds is a true "market based" and negotiated activity, based upon supply versus demand for the bonds as of the date of issuance, the actual financing structure, i.e., rates, terms and conditions, amount, redemption provisions and coupon rate of the bonds, will be ultimately determined at the time of issuance based upon the prevailing market conditions and

[8] The calculated year one debt service savings under both scenarios have been incorporated into the calculations of PWW's estimated and maximum revenue requirements, respectively, illustrated in Appendix 2, Attachment C and discussed later in this Agreement with regard to the proposed settlement in DW 19-084.

[9] The calculated negative amounts for the years 2037 through 2055, appearing under the respective scenarios in Appendix 1, Attachment A, are merely the result of the fact that there are no anticipated debt service payments related to the existing 2014A and 2015 A/B bonds subsequent to 2036.

PWW's credit rating at the time of bond issuance. The terms of this Agreement, if approved by the Commission, place conditions and parameters around the proposed bond offering.

The bonds would be issued and sold by the New Hampshire Business Finance Authority (NHBFA), subject to approval by the NHBFA, and the Governor and the Executive Council (G&C). It is further anticipated that the bonds will be issued by the NHBFA as one or more series under the 2014 Loan and Trust Agreement that was agreed to and entered into by the NHBFA, PWW, and the Trustee, and under which the Company has previously issued bond offerings. PWW intends to issue this new debt with the covenants set forth in that agreement, which were implemented to be best aligned with the Company's current capital structure as well as its current and existing modified rate structure approved by the Commission in DW 16-806.

All payments of principal and interest on these bonds would be limited obligations of the NHBFA and would be payable solely from payments made by PWW. These bonds would not be general obligations of the State of New Hampshire, and neither the general credit nor the taxing power of the State of New Hampshire or any subdivision thereof, including the NHBFA, would secure the payment of any obligation under the bonds.

C. Public Good

The Settling Parties agree and recommend the Commission find that the proposed bond financing is in the public good for the following reasons:

1. Corresponds with PWW's Modified Rate Structure

The proposed financing will be issued with repayment terms and financial covenants that are aligned with the capital requirements of PWW as it is characterized under ownership by the City, and further supported by the ratemaking structure approved in DW 16-806 as well as the proposed modifications to that structure in PWW's instant rate proceeding, DW 19-084;

2. <u>Reduction in PWW's Debt Service</u>

The proposed financing is anticipated to refinance certain existing long-term debt at more favorable interest rates and at maturities that are better aligned with the useful lives of the originally funded capital assets. This is anticipated to benefit the Company's ratepayers both immediately and in the long-term;

3. <u>Improvement in PWW's Capitalization</u>

The proposed financing will generally improve the overall capitalization of PWW reflected in approved future revenue requirements, and more specifically DSRR components, which would be positively impacted during the years through the full maturity of the refinanced and re-termed bonds, based on reasonable projections;

4. <u>Savings to PWW's Customers</u>

The proposed financing will result in savings to PWW's customers by reducing the principal and interest payments on the financial instruments that are being refinanced, as well as through the estimated impact on the cost of money for future debt issuances, and further provides a more equitable distribution of debt over the life of capital assets; and

5. <u>Improvement in PWW's Liquidity and Cash Flow</u>

The proposed financing would fully replenish the Company's RSF funds on a "one-time" basis. Those funds are used to backstop PWW's allowed revenue structure, operating expenses, and overall liquidity position both immediately and in the long-term. This ultimately benefits PWW's customers, as it enables the Company to adequately fund its capital projects and operations at favorable interest rates, will provide PWW with full access to the debt markets.

6. Projected Impact on PWW's Average Residential Customers

The proposed financing is currently projected to result in a savings of $1.73 per month, or $20.76 annually, in the billings of PWW's current average residential customers. This is based on an estimated total interest cost of 3.67% and pertains to residential customers using 7.77 ccf of water per month. This projection is conditional, however, on the actual terms and conditions obtained by PWW for the bond financing when it concludes this transaction later this year.

D. Status of Required Approvals and Consents

In order to consummate the transactions contemplated by the proposed financings, the following approvals and consents are required:

(1) The requested approvals and findings of this Commission as required by RSA Chapter 369;

(2) Approval by the NHBFA and the G&C to issue taxable bonds through the NHBFA;

(3) Authorization of PWW's Board of Directors;

(4) Authorization by Pennichuck Corporation's Board of Directors; and

(5) Approval by the City of Nashua, in its capacity as Pennichuck Corporation's sole shareholder.

The respective Boards of Directors of PWW and Pennichuck Corporation have previously provided preliminary approval for the proposed financing and have authorized PWW's management to pursue all steps necessary to complete that transaction. Copies of those approval actions are attached to this Agreement under Appendix 1 as Attachments B and C. PWW's Board of Directors will also approve the final structure and terms of the proposed financing and the Bond Purchase Agreement, pursuant to which the proposed bonds will be issued.

PWW filed a request for approval with the City of Nashua. It is anticipated that the City's approval will be granted on June 23, 2020. As such, the Settling Parties agree that PWW will file documentation with the Commission of the City of Nashua's approval of the financing prior to the issuance of the Commission's order approving the proposed financing.

PWW submitted an application to obtain preliminary approval by the NHBFA Board of Directors to issue taxable and/or tax-exempt bonds on behalf of PWW. The NHBFA approved PWW's application on May 18, 2020. A copy of that approval is attached to this Agreement under Appendix 1 as Attachment D. The NHBFA has not actually reserved any portion of its bonding limit at this time, as it awaits approval by this Commission of PWW's financing request in the instant proceeding. At such time, the NHBFA will make a firm commitment to purchase/issue the bonds through its agency. PWW anticipates that the NHBFA Board of Directors will take final approval action with respect to the proposed financing plan as part of the overall bond approval process. As such, the Settling Parties agree that PWW will file documentation with the Commission of the NHBFA's subsequent approval action as soon as it becomes available.

It is anticipated that the G&C will consider approval of PWW's proposed financing on June 24, 2020. As such, the Settling Parties agree and recommend the Commission approve that PWW will file documentation with the Commission of the G&C's approval of the proposed financing prior to the issuance of the Commission's order approving the proposed financing.

E. Estimated Timeline of Bonding Process and Requested Issuance Date for Commission Order Approving Proposed Financing

The Settling Parties agree that PWW should take all steps necessary to close on the proposed financing and issue the taxable bonds by as soon as September 1, 2020 but by no later than early to mid-October, 2020. Resolution of the total debt service from this financing is instrumental to the proposed MOEF in PWW's DW 19-084 rate proceeding, discussed subsequently in this Agreement, and whether the MOEF will be able to fully support or replenish the MOERR-RSF on a going-forward basis. Additionally, PWW and its investment bankers consider it to be extremely important that this bond issuance be completed prior to the 2020 Presidential Election, as the impact of the results of that election upon the financial markets in the U.S. would most likely add another layer of uncertainty with regard to the overall cost of and ability to issue these bonds, during or after the election.

PWW estimates that it would take from 5-8 weeks to complete the entire process of documenting, processing, marketing, and closing on a bond issuance to the markets. The Company anticipates that process would not commence until after the Commission issues an order approving the proposed financing.

For the reasons previously described, including the desire to consummate the transactions as soon as possible, and in light of the timing for which this process is directly impactful on the concurrent rate proceeding in DW 19-084, which includes the requested approval of the MOEF along with other rate structure modifications, the Settling Parties agree and respectfully request that the Commission issue an order approving the proposed bond financing in the instant docket by no later than July 24, 2020.

IV. SETTLEMENT AGREEMENT - DOCKET NO. DW 19-084 RATE PROCEEDING

A. Revenue Requirement

1. Modifications to Structure of PWW's Revenue Requirement

The Settling Parties agree and recommend the Commission approve two modifications relative to the formulation of PWW's revenue requirement last approved in DW 16-806. The first, a Material Operating Expense Factor, or MOEF, is intended to be a permanent component of PWW's ratemaking structure. The second, a reduction in PWW's revenue requirement relative to anticipated debt service savings resulting from the Company's DW 20-055 bond financing, is intended to be a one-time adjustment applicable only to the approved revenue requirement in the instant rate proceeding.

a. Material Operating Expense Factor (MOEF)

The Settling Parties agree and recommend the Commission approve the establishment of a MOEF. The Settling Parties further recommend that the MOEF should become a permanent component of the revenue requirement structure utilized by PWW in the calculation of its permanent rates in this and subsequent rate proceedings.

The Settling Parties agree that the MOEF would work in similar manner to the Debt Service Revenue Requirement-0.1 (DSRR-0.1) established in DW 16-806 that provides a 10% over-cover for PWW's annual debt service obligations in order to satisfy debt lending requirements. In similar fashion, the MOEF would be a percentage factor applied to PWW's Material Operating Expense Revenue Requirement (MOERR) as established in each rate proceeding.[10] The result of which would be included in the Operating Expense Revenue Requirement (OERR) component of PWW's overall revenue requirement. Unlike the DSRR-0.1 revenue component, however, which remains fixed during each succeeding rate proceeding, the MOEF would be an adjustable factor, the sufficiency of which would be re-evaluated and revised, as necessary, in succeeding rate cases.

[10] The approved DW 16-806 Settlement Agreement, Commission Order No. 26,070 (November 7, 2017), at 12 defines the Material Operating Expense Revenue Requirement (MOERR) component as that consisting of all of the operating expenses included in PWW's overall Operating Expense Revenue Requirement (OERR) with the exception of those expenses specified as Non-Material Operating Expense Revenue Requirement (NOERR) items.

The intended purpose of the MOEF is to sufficiently enhance the MOERR portion of PWW's allowed revenues to better enable adequate cash flow coverage between rate cases for increases in material operating expenses experienced by the Company. The MOEF would be specifically established so as to enable PWW to adequately maintain the MOERR-RSF at its established imprest level. Thus, in each rate proceeding, the MOEF would be re-established in conjunction with the MOERR-RSF. It is anticipated that doing so would enable the MOERR-RSF to become a more effective buffer against unanticipated revenue fluctuations due to weather as well as the impact of regulatory lag experienced by the Company, which, for PWW, is exacerbated by the fact that it is a debt-only financed utility.

For purposes of the instant rate proceeding, the Settling Parties agree and recommend the Commission approve a MOEF not to exceed 9.50%. The Settling Parties agree that such would enable PWW to adequately maintain the MOERR-RSF at the recommended imprest level of $2,850,000[11] through the Company's next rate proceeding, which is currently anticipated to be finalized in 2023. The financial model in support of the adequacy of the recommended 9.50% MOEF is attached to this Agreement as Appendix 2, Attachment B.

The Settling Parties recognize that the MOEF will increase the revenues of the Company. However, ratepayers are protected from this additional revenue requirement, because, as noted in Section II, A of this Agreement,the order approving the settlement agreement in DW 11-026 places limitations on the dividends paid by PWW to its sole shareholder. The Settling Parties agree that these limitations are an underlying principle to this and previous ratemaking structure

[11] The Commission previously approved an imprest level for the MOERR-RSF in Order No. 26,070 in Docket No. DW 16-806. In this Agreement, the Settling Parties are recommending the MOERR-RSF remain at that level.

changes and agree that once the City Bond has been paid in full and the CBFRR is reduced to zero, that the dividend payments by PWW will effectively be reduced to zero.

b. Anticipated Cash Flow Savings from DW 20-055 Financing

As previously discussed, the Settling Parties anticipate significant cash flow savings with regard to PWW's debt service requirements to result from the proposed bond financing in DW 20-055. As such, the Settling Parties agree and recommend the Commission approve that any net savings realized from the DW 20-055 bond issuance shall be incorporated into the calculation of the final permanent revenue requirement to be approved in this rate proceeding. The Settling Parties further agree that this is a one-time adjustment to PWW's revenue requirement structure, anticipated to only be applicable within the instant rate proceeding. It is currently anticipated that the bond closing and associated realization of these debt service savings will occur during September 2020.

2. <u>Estimated Revenue Requirement</u>

Based on the proposed modifications to PWW's revenue requirement structure described above, the Settling Parties have provided an estimated calculation of the Company's revenue requirement. See Appendix 2, Attachment C, Summary (middle column). The estimated calculation is based on a scenario whereby the proposed bonds contemplated in DW 20-055 are issued at an all-in total interest cost of 3.67%, which would result in year-one net annual debt service savings of $970,374[12] (line 17), which after applying the 1.1x debt service factor (line 18), would result in a realized reduction in PWW's revenue requirement of $1,067,411 (line 19). That would also enable the Company to fully implement the proposed MOEF at the full 9.50%

[12] See Appendix 1, Attachment A, Page 1.

(line 10) proposed by the Settling Parties, resulting in an increase in the OERR component of PWW's revenue requirement by $1,799,471 (line 10).

Upon implementation of these modifications, the CBFRR would be $7,729,032 (line 1), the OERR would be $21,296,617 (line 12), and the unadjusted DSRR of $7,702,894 (line 15) combined with the estimated savings from DW 20-055 of $1,067,411 (line 19) would result in an adjusted DSRR of $6,635,482 ($7,702,894 - $1,067,411). Combined, the Settling Parties calculate an estimated total revenue requirement for PWW of $35,661,131 (line 21), of which, after eliminating pro forma other operating revenues of $420,712 (line 22), would result in $35,240,419 (line 23) in revenues to be derived from base rates. This represents a base rate revenue increase of $3,591,103, or 11.35% (line 25).

However, since the Company's pro forma test year includes pro forma QCPAC revenues granted in DW 18-022 and DW 19-029[13] amounting to $1,248,097 (line 26), which, per the parameters of the QCPAC mechanism approved in DW 16-806, are subsumed into the proposed base rate revenues of $35,240,419, the actual increase in billed water revenues to be realized from customers, based on DW 19-084 and DW 20-055, is $2,343,006, or 7.40% (line 27).

3. <u>Maximum Revenue Requirement</u>

The Settling Parties agree and recommend the Commission approve a proposed maximum revenue requirement for the Company that shall not exceed the percentage increase in water revenues from base rates proposed in PWW's original rate filing of 11.91%. The calculation of which is contained in Appendix 2, Attachment C, Summary (right column). As such, the Settling Parties agree and recommend the Commission approve a total revenue

---

[13] See, *Pennichuck Water Works, Inc*., Docket No. DW 18-022, Order No. 26,183 (October 29, 2018); and *Pennichuck Water Works, Inc.*, Docket No. DW 19-029, Order No. 26,247 (May 3, 2019).

requirement for PWW not to exceed $35,839,461 (line 21), and a maximum amount of water revenues to be derived from base rates of $35,418,749 (line 23).

This calculation is based on a scenario whereby the proposed bonds contemplated in DW 20-055 are issued at an all-in total interest cost of 4.67%, which would result in year-one net annual debt service savings of $490,585[14] (line 17), which after applying the 1.1x debt service factor (line 18) would result in a reduction of $539,644 (line 19) in PWW's unadjusted DSRR from $7,702,894 (line 15) to an adjusted DSRR of $7,163,250 ($7,702,894 - $539,644). In order not to exceed the stipulated maximum revenue requirement, the Company would apply a MOEF of only 7.66% (line 10), rather than 9.50% as previously stipulated, thereby increasing the OERR component of PWW's revenue requirement by $1,450,033 (line 11) to $20,947,179 (line 12). With the addition of the CBFRR of $7,729,032 (line 1), the combined elements result in the proposed maximum revenue requirement of $35,839,461 (line 20).

The resulting maximum increase in base rate revenues would be $3,769,433, or 11.91% (line 25). However, after taking into account the fact that PWW's pro forma test year includes QCPAC revenues of $1,248,097 (line 26), as explained previously, the increase in total annual billed water revenues realized from customers, based on DW 19-084 and DW 20-055, is estimated to be $2,521,336, or 7.97% (line 27).

4. Summary of Requested Commission Approvals in DW 19-084

In addition to the Commission order previously requested in this Agreement for approval of the proposed bond financing in DW 20-055, the Settling Parties agree and recommend the Commission issue two further orders relative to the DW 19-084 rate proceeding, as follows:

[14] See Appendix 1, Attachment A, Page 2.

a. Initial Order Approving Proposed Modifications to PWW's Ratemaking Structure

The Settling Parties agree and recommend that the Commission issue an initial order approving the structural modifications to PWW's ratemaking mechanism including the MOEF and the application of anticipated debt service savings from DW 20-055 discussed previously, as well as the other proposed modifications to PWW's overall ratemaking structure that will be subsequently discussed. The Settling Parties agree that an order issued as soon as possible approving these proposed rate structure modifications will be important to the bond issuance process in DW 20-055 so as to provide the bond rating agency and potential creditors assurance that PWW is instituting measures to resolve its cash coverage issues as well as stabilize and maintain its cash reserves. It is anticipated that a Commission Order approving these measures may even result in an improvement to PWW's credit rating, and therefore, possibly a reduction in the overall anticipated interest rate of the contemplated bond issuance. The importance of which would be that it would enable the Company, relative to both its DW 20-055 and subsequent financings, to 1) gain access to the debt markets, and 2) attract the lowest cost of borrowings possible. Such would ultimately benefit PWW's customers through lower water rates.

Therefore, given the fact that a bond closing could be achieved as soon as 5-8 weeks following Commission approval of the DW 20-055 financing petition, and the positive impact and potential savings that may result relative to that bonding process if approvals are granted regarding the proposed rate structure modifications in the instant docket, the Settling Parties agree and respectfully request the Commission issue an initial order in this proceeding approving those rate structure modifications by no later than July 31, 2020.

The Settling Parties emphasize that the requested initial order will not result in the immediate establishment of a rate increase for PWW's customers, but, merely, the establishment of revenue requirement modifications to be employed in the subsequent determination of a proposed revenue requirement and resulting customer rates to be submitted for Commission approval during the Fall of 2020, as discussed below. The Settling Parties further emphasize that the proposed rate making modifications requested for initial Commission approval will not eventually result in the establishment of a proposed base rate revenue requirement that exceeds $35,418,749, as discussed previously.

The Settling Parties further agree that the proposed permanent rate tariffs, submitted by the Company on July 1, 2019, with an effective date of August 1, and suspended for a period of 12 months by Order No. 26,279 (July 31, 2019), will not take effect.

b. Subsequent Order Approving Revenue Requirement and Rates

The Settling Parties agree and recommend the Commission issue a subsequent order after the closing date of PWW's anticipated bond issuance in DW 20-055, approving a revenue requirement and customer rates that are reflective of the actual debt service savings realized by the Company as a result of that bond issuance. As previously recommended, the approved revenue requirement from base rates shall not exceed $35,418,749, reflecting a percentage increase of 11.91% as originally proposed by PWW in its initial rate filing.

To facilitate the institution of rates resulting from this rate proceeding, the Settling Parties agree and recommend the Commission approve that PWW shall file its final proposal for a revenue requirement along with a final calculation of permanent rates by no later than twenty-one (21) days after the closing date of the bond issuance in DW 20-055. PWW's subsequent filing is currently anticipated to occur by mid- to late-September 2020. As previously recommended, the final revenue requirement proposed by PWW shall incorporate the full net debt service savings realized by the Company as a result of the DW 20-055 bond issuance. The Settling Parties further agree that the only modifications that may result to the estimated revenue requirement calculations appearing on Appendix 2, Attachment C, Summary (middle/right columns) previously discussed, will be to the MOEF (line 10), the MOEF Calculated Amount (line 11), the OERR (line 12), the Debt Service Savings from DW 20-055 (line 17), the calculated Reduction in Revenue Requirement (line 19), and the Proposed Revenue Requirement (line 20) as well as the following (lines 21, 23, 25, and 27).

The Settling Parties further agree and recommend that Staff and the Parties issue recommendations to the Commission regarding PWW's proposed final revenue requirement and resulting rates by no later than twenty-one (21) days following the Company's submission. The Settling Parties agree and respectfully request the Commission issue its subsequent order approving PWW's revenue requirement and resulting customer rates in the instant proceeding by no later than thirty (30) days following the filing of recommendations by Staff and the other Parties.

The Settling Parties further agree and acknowledge that the permanent revenue requirement and resulting rates will not be set until after the 12 month suspension period and investigation initially set by the Commission in Order No. 26,279. The Settling Parties further agree that, despite the extension beyond the 12 month investigatory period, and dependent upon Commission approval of the Settlement Agreement, a rate increase will not be instituted until approved by the Commission in the subsequent order issued, as described above.

B. Other Modifications to PWW's Overall Ratemaking Structure

1. Modification to the Calculation of the 5-Year Average for Revenues

As part of the modifications approved in DW 16-806, PWW calculates its revenue requirement based on a trailing 5-year average for revenues. With regard to the instant rate proceeding, the calculation of the 5-year average would have encompassed the years 2014 through 2018. However, as stated in the direct pre-filed testimony of Donald L. Ware (Bates 64), 2016 was a drought year resulting in record water consumption by its customers. As such, the inclusion of 2016's data in the 5-year average calculation would have provided for a significantly skewed result leading, ultimately, to a possible understatement of PWW's calculated revenue requirement. As such, PWW proposed the elimination of the Company's 2016 data and a trailing average revenue calculation based on the four remaining years. Staff, however, argued that the calculation of the Company's trailing average revenues should be based on a full 5-years of data so as to conform with that which was approved in DW 16-806.

As a result, the Settling Parties agree and recommend the Commission approve that in rate proceedings where an "atypical" year would be included in the calculation of PWW's 5-year trailing average for revenues, that "atypical" year's data would be substituted for data from the next most recent preceding typical operating year's data. The Settling Parties further agree that an "atypical" year should be defined as one in which that year's water consumption either exceeds or falls short of the calculated trailing 5-year average of water consumption by more than 15%.[15] The Settling Parties also agree that this should be a permanent modification to PWW's overall ratemaking structure.

---

[15] For purposes of determining whether an "atypical" year exists, that calculation shall be based on the trailing 5-year average of the test year as well as the four immediately preceeding years. Therefore, the

With regard to the instant rate proceeding, the Settling Parties agree that the consumption data for 2016 would classify it as an "atypical" year for purposes of providing an accurate calculation of PWW's trailing 5-year revenue average. As such, the Settling Parties further agree and recommend the Commission find that PWW's operating data for 2016 should be replaced by the data from the next most recent preceding typical operating year, or 2013, for purposes of calculating the Company's trailing 5-year revenue average in this proceeding.

2. Inclusion of Actual NHBET Cash Payment in Revenue Requirement

As stated in the pre-filed testimony of Larry D. Goodhue (Bates 40), recent changes occurring to Federal tax laws will result in a more rapid than anticipated exhaustion of available Net Operating Loss (NOL) carryforwards that are used to offset current taxable income. As a result, PWW may be subject to actual cash costs related to Federal Income Taxes prior to its next fully promulgated rate proceeding. Additionally, the Company currently incurs actual cash payments relative to both the corporate Business Profits Tax (BPT) and Business Enterprise Tax (BET) assessed by the State of New Hampshire (NH), regardless of its NOL carryforward position. In its original filing, PWW requested the inclusion of the actual cash costs incurred for Federal income taxes and NH business taxes in the OERR component of its allowed revenues in this and future permanent rate cases. The purpose of which would be to have the necessary cash available from rates to pay these annual obligations. The Company's pro forma test year in this proceeding, however, only reflects PWW's actual cash payment relative to the NHBET in the amount of $103,249 but does not include cash payments relative to either the NHBPT or Federal income taxes.

---

underlying trailing 5-year average data used in that determination shall be inclusive of the data pertaining to the potential "atypical" year.

As such, the Settling Parties agree and recommend the Commission approve that the actual cash cost of taxes for the NHBET should be included as an MOERR component of PWW's overall revenue requirement in this and future rate proceedings. The Settling Parties further agree that consideration of the inclusion of any actual cash outlays associated with the NHBPT and Federal income taxes in the Company's revenue requirement should be deferred to PWW's next rate proceeding.

3. Re-Prioritization of Usage of Available DSRR-0.1 Funds

Per the approved ratemaking mechanism in DW 16-806, revenues collected by PWW via its DSRR-0.1 component of its overall revenue requirement are deposited in a DSRR-0.1 account. See Appendix 2, Attachment A. Further, the current priority relative to the usage of any funds available in the Company's DSRR-0.1 account is as a funding source for PWW's annual capital improvements program so as to mitigate the incurrence of debt by the Company. However, as stated in the direct pre-filed testimony of Larry D. Goodhue (Bates 41), the present priority for uses of the DSRR-0.1 funds are illogical, especially in light of the present necessity for the Company to stabilize its MOERR-RSF and avert diminishment of all its RSFs between general rate proceedings.

Therefore, the Settling Parties agree and recommend the Commission authorize that, effective January 1, 2021 and thereafter, the Company re-prioritize its usage of funds available in its DSRR-0.1 account in the following manner, by order of priority: 1) fund the cost of PWW's deferred assets (i.e. studies, engineering design work completed in advance of construction bids and construction, and other intangible assets) that do not qualify for debt financing and, thus, QCPAC recovery; 2) replenish PWW's RSF fund balances to their fully approved imprest values; and 3) fund PWW's capital improvements, as previously authorized in DW 16-806.

4. Recovery of SRF and DWGTF Debt Issuance Costs

Prior to its acquisition by the City, the debt issuance costs incurred by PWW to obtain loans through such programs as the State of New Hampshire's Drinking Water State Revolving Loan Fund (DWSRF) or Drinking Water and Groundwater Trust Fund (DWGTF) were recovered as part of its cost of debt via the annual amortization of these costs over the life of the loan. However, as explained in the direct pre-filed testimony of Larry D. Goodhue (Bates 44-45) under PWW's present ratemaking structure, the amortization of debt acquisition expenses associated with DWSRF and DWGTF loans are no longer recoverable as they are not included in the OERR component of PWW's overall revenue requirement. Although, on average these costs might be considered *di minimis.*[16] However, during a given year, such might represent an expense to the Company for which it has no cash coverage. By contrast, PWW is able to recover the debt issuance costs associated with its taxable and tax-exempt bonds by virtue of the fact that these costs are included as part of the overall bond issuances that are recovered via the DSRR component of its overall revenue requirement.

As a remedy to the cash coverage shortfall that PWW presently experiences relative to its debt acquisition costs incurred for procuring DWSRF and DWGTF loans, the Settling Parties agree and recommend the Commission authorize PWW, commencing as of January 1, 2021 and thereafter, to record such costs in its Outside Services Expense account to be recovered through the OERR revenue component of its overall revenue requirement. It should be noted that per the approved Settlement Agreement in DW 16-806, Outside Services Expense is classified as a Non-

---

[16] Based on the Company's response to Staff 1-12 (Exhibit 10), the average issuance costs associated with these loans are approximately $7,200 . Additionally, the Company, on average, has procured one such loan each year during the ten years leading up to and including its 2018 test year.

Material Operating Revenue Requirement (NOERR) account. As such, there would be no cash over-cover for these expenses through PWW's MOERR-RSF.

5. Re-establishment of Imprest Levels of RSF Accounts Retention of Reconciliation Mechanism

The Settling Parties agree and recommend that the Commission approve the re-establishment of the imprest values of the CBFRR-RSF, MOERR-RSF and DSRR-1.0-RSF at the respective levels provided for and approved in Docket No. DW 16-806. Specifically, the CBFRR-RSF at \$680,000; the MOERR-RSF at \$2,850,000; and the DSRR-1.0-RSF at \$390,000. For purposes of this rate proceeding, these funds will be restored to the proposed imprest values on a one-time basis via a portion of the proceeds received from the proposed bond financing in DW 20-055. See Appendix 2, Attachment B.

In Docket No. DW 11-026, an RSF reconciliation mechanism was established wherein the Commission required PWW to maintain the target amount for the original \$5 million rate stabilization fund through adjustments, i.e. charges or credits, to PWW's revenue requirement in connection with its full rate proceedings. Subsequently, with the reallocation of \$3.92 million of the original rate stabilization fund amongst PWW's CBRFF-RSF, MOERR-RSF, and DSRR-1.0-RSF in Docket No. DW 16-806, as previously discussed, the original RSF reconciliation feature in Docket No. DW 11-026 was retained and applied to the established targets of the three RSF accounts. The Settling Parties agree and affirm the continuation of the RSF reconciliation mechanism in PWW's subsequent rate proceedings, whereby the target RSF balances will be maintained via charge or credit adjustments to PWW's established revenue requirements in those proceedings. Further, the Settling Parties agree that the addition of the MOEF will not alter that reconciliation mechanism. See Appendix 2, Attachment A.

C. Permanent Customer Rates

1. Background

An ACOSS was conducted by Concentric Energy Advisors to implement an overall rate increase of 11.91%. The ACOSS recommended the following rate increases by customer class: General Metered (G-M) and Special Contracts 7.85%; Municipal Fire Customers – 24.20%; and Private Fire Customers – 72.09%. There was also a recommendation to shift the split of G-M revenues from 35.5% fixed / 64.5% volumetric to 42.8% fixed / 57.2% volumetric. However, the Company recommended in testimony not implementing this shift because it would: 1) cause the largest rate impact on the small users, especially retired rate payers; 2) discourage conservation due to the lower volumetric rate; and 3) result in less revenues from the Company's special contract customers who already benefit from a reduced volumetric rate. Due to municipal budget considerations, the Settling Parties negotiated a more gradual implementation of the 24.20% increase to the Municipal Fire rate class but provided for a return in later years to those customers seeing a larger percentage increase than the recommended 7.85% (under the maximum revenue requirement scenario) in the first year.

2. Specific Settlement Terms Regarding Proposed Phase-in

The Settling Parties agree and recommend the Commission approve a modification to the percentage allocations to the rate-class recommendations contained in the original ACOSS. The modifications appear below. Appendix 2, Attachment D, Page 1 contains calculations and projected rate impacts based on the maximum proposed increase in PWW's revenue requirement from base rates of 11.91%. Appendix 2, Attachment D, Page 2 contains calculations and projected rate impacts based on the estimated increase in PWW's revenue requirement from base rates of 11.35%. Appendix 2, Attachment D, pages 3 and 4 contain the percent changes (increase and decrease) among customer classes in years one and two as a result of the COSS settlement phase-in under both the 11.91% and 11.35% revenue requirement increase scenarios, respectively. For illustrative purposes,the following terms are based on the proposed maximum increase in revenues from base rates of 11.91%.

a. The monthly customer charge for G-M Residential Fixed will increase by 7.85%.

b. All Other G-M Charges, including G-M Residential Volumetric and rates for Municipal Fire Protection Service will increase by 10.25%.

c. Special Contract customers' rates shall be adjusted in accordance with the terms of the existing special contracts.

d. The rates for Private Fire Protection Service will increase by 72.09%.

e. During each subsequent year following initial implementation of the new rates and ending with year 6, the Municipal Fire Protection Service rates will increase by 3.00% over the prior year's rate. Concurrently, all Other G-M Charges[17] will decrease by a corresponding percentage designed to equalize the previously approved revenue requirement. For example, during the first subsequent year, Other G-M Charges will decrease by approximately 0.53%. During the second subsequent year, these charges will decrease by approximately 0.55%.

f. In PWW's next rate case, with a projected test year 2021, the adjustments described in (d) will be applied prior to implementation of the revenue requirement approved in that proceeding. The approved revenue requirement will then be applied uniformly across all rate classes. A similar process will be applied with regard to the subsequent rate case, with a projected test year of 2024.

g. PWW shall undertake its next ACOSS in conjunction with its third subsequent rate case following the instant proceeding, with a projected test year of 2027.

---

[17] This specifically excludes G-M Residential Fixed Charges, Private Fire Protection Service Charges, and Special Contract Fixed Charges.

The Settling Parties further agree that in the likely event that PWW's approved revenue increase from base rates is less than 11.91%, the above parameters will be adjusted on a pro-rata basis after issuance of the Commission's subsequent order in this proceeding approving a finalized revenue requirement that is reflective of the actual debt service savings realized by the Company from its DW 20-055 bond issuance.

3. Projected Impacts on Residential Customers

The Settling Parties agree that under the scenario whereby the estimated overall increase in PWW's revenue requirement from base rates is 11.35%, PWW's residential customers will realize an increase of $4.49 in their average monthly bills ($53.88 on an annual basis) from approximately $51.02 per month to approximately $55.51 per month. If the QCPAC surcharges customers already pay is factored into the increase, the net increase is only $2.42 per month. The Settling Parties further agree that under the scenario whereby the overall increase in PWW's revenue requirement from base rates results in the stipulated 11.91% maximum increase, PWW's residential customers will realize an increase of $4.71 in their monthly bills ($56.52 on an annual basis) from approximately $51.02 per month to approximately $55.73 per month. The Settling Parties agree that these projections are based on an average residential monthly usage amount of 7.77 ccf.

D. Effective Date for Permanent Rates

1. The Settling Parties agree and recommend that the effective date for Permanent Rates shall be pursuant to the Commission's order in this proceeding regarding the settlement agreement on temporary rates presented at hearing on May 13, 2020, and specifically, the Commission's decision in that order regarding an appropriate effective date for temporary rates in this proceeding.

2. Pursuant to RSA 378:29, in order to reconcile the difference between temporary rates and permanent rates, the Settling Parties agree and recommend the Commission authorize PWW to charge customers an amount equal to the difference between the revenues the Company would have collected had the agreed upon level of permanent rates been in effect for service rendered on and after the established effective date for temporary rates through the issuance date of the Commission's subsequent order in this proceeding approving a finalized revenue requirement (the recoupment period), and the actual revenues collected by PWW during that recoupment period. Upon the issuance of the Commission's subsequent order approving a finalized permanent rate revenue requirement and resulting customer rates in this proceeding, PWW agrees to file, within thirty (30) days of that order, a calculation of the temporary-permanent rate recoupment and a surcharge recommendation for Commission review and approval. PWW agrees to calculate the surcharges based on each customer's actual usage during the recoupment period. The Settling Parties agree that they will have an opportunity to review PWW's proposal and provide recommendations to the Commission for its consideration prior to the issuance of an order.

The resulting surcharge shall be reflected as a separate item on all customers' bills. Upon receipt of the Commission's order approving a temporary-permanent rate recoupment, PWW agrees to file, within fifteen (15) days of that order, a compliance tariff supplement including the approved surcharge relating to the total recoupment of the difference between the level of temporary rates and permanent rates, as well as the average monthly surcharge for each customer class based on customers' individual usage.

E. Additional Requirements for Monthly, Semi-Annual and Annual Reporting

Given the issues previously described with regard to PWW's difficulties relative to cash flow coverage and maintaining an adequate cash balance in its respective RSF reserve accounts, resulting in the proposed establishment of the MOEF as well as other rate structure modifications, the Settling Parties agree and recommend the Commission approve that in addition to other Commission reports required from PWW by rule and by statute that, commencing on January 1, 2021, the Company shall file the following additional reports with the Commission:

1. Monthly Reporting

The Settling Parties agree and recommend the Commission approve that PWW will file the following monthly reports with the Commission within forty-five (45) days after the last day of the reported month:

a. **Income Statement** showing monthly and year-to-date activity.

b. **Balance Sheet** by month and to date including the GAAP basis cash balances of the CBFRR-RSF, MOERR-RSF, DSRR-1.0-RSF, and DSRR-0.1 accounts.

2. Semi-Annual Reporting

The Settling Parties agree and recommend the Commission approve that PWW will file the following semi-annual reports with the Commission within forty-five (45) days after June 30 and within ninety (90) days after December 31:

a. **Detailed Debt Service Schedule** showing the actual principal and interest cash payments made by the Company on each of its outstanding debt issuances.

b. **NHBET and NHBPT** actual cash payments made or refunds received.

c. **Federal Income Tax** actual cash payments made or refunds received.

d. **MOERR Variance Report**: The Company will provide a written narrative for year-to-date amounts as of June 30 and December 31, substantiating and explaining the major items that comprise the difference between actual current year MOERR expenses versus the allowed MOERR expenses as authorized from the most recently completed permanent rate case. This report will provide the basis and explanation for up to 80% of the MOERR expense differential, as it relates to the overall aggregate dollar difference.

3. **Annual Reporting**

In addition to the annual report filing required from PWW in accordance with N.H. Admin. R., Puc 609.04 and 609.14, the Settling Parties agree and recommend the Commission approve the following additional reports to be provided by PWW with that filing:

a. **Reconciliation of Net Income/Loss with Calculated Revenue Surplus/Deficit**: An annual reconciliation of PWW's actual Net Income/Loss as reported on Schedule F-2 of its Annual Report with its recognized Revenue Surplus/Deficit as calculated based on the ratemaking structure approved in DW 16-806 and modified in the instant rate proceeding.

b. **Reconciliation of Cash and Regulatory RSF Account Balances**: A reconciliation of the year-end cash balances of the CBFRR-RSF, MOERR-RSF, and DSRR-1.0-RSF accounts with the respective year-end regulatory balances of the CBFRR-RSF, MOERR-RSF, and DSRR-1.0-RSF. (Regulatory Balance is defined as that relating to the revenue and expenditure general ledger activity relative to the respective RSF accounts. This is not the same as the GAAP basis cash balances of the respective RSF accounts.)

F. **Resolution of Repeat Audit Issues**

During the Commission Audit Staff's review of PWW's financial information relative to this rate proceeding, it made several audit findings contained in its Final Audit Report dated November 6, 2019 to which the Company expressed disagreement. Certain of these findings have been cited by the Audit Staff in previous examinations of the Company, but because there was no specific resolution for such within the context of an approved rate case settlement, these issues continue to be areas of dispute between the Audit Staff and PWW. Therefore, in an effort to resolve both existing or potential long-standing audit disputes between the Company and Staff, and for purposes of achieving administrative efficiency in future rate proceedings, the Settling Parties present for the Commission's approval the following proposed resolutions of certain outstanding audit issues cited by the Audit Staff in its report.

1. Audit Issue # 2: Allocation of Return of Common Assets

The Audit Staff included a finding that PWW's calculation for Return on Common Assets allocated to its affiliates included five deferred accounts relating to post-retirement benefits, and that these same five deferred accounts were included in the same calculation relating to PWW's determination of "Unfunded FAS 106 and FAS 158 Costs" relative to the income tax effect of certain post-retirement costs. The overall calculation resulted in the determination of a return on certain common assets held by PWW and its affiliates, which was to be allocated amongst the affiliates. The Audit Staff concluded that, with regard to the post-retirement accounts, the costs related to which were being double-counted, thus resulting in a potential over-allocation of expense.

Staff made further inquiries of PWW through discovery with regard to this Audit Issue. Based on the Company's responses, Staff concluded that the inclusion of the five deferred post-retirement accounts in the first instance was to ensure that the return on the full pre-tax value of these accounts was properly allocated to the Company's affiliates. With regard to the second instance relative to the calculation of "Unfunded FAS 106 & FAS 158 Costs", Staff concluded that the purpose of this calculation was to ensure that the tax effect associated with these post-retirement accounts was also properly incorporated within the return allocated to PWW's affiliates. Therefore, the Settling Parties agree and recommend the Commission find that

PWW's computation of Return on Common Assets allocated to its affiliates as it specifically pertains to the Company's post-retirement accounts is just and reasonable.

2. Audit Issue # 4: Accounting for Principal Forgiveness on DWSRF Loans

With regard to certain DWSRF loans held by the Company that contain principal forgiveness provisions, the Audit Staff concluded that PWW's accounting of the principal forgiveness on these loans ultimately results in an understatement of the Company's Contributions in Aid of Construction (CIAC) and an overstatement of its recognized Gains on Disposition of Assets. PWW, however, argued that, given the fact that the principal forgiveness associated with these loans is not necessarily guaranteed, it has no choice but to account for such in the manner that it does. It is Staff's conclusion that, since under PWW's approved ratemaking structure neither the balance of the Company's CIAC account nor its Gain on Disposition of Assets account impacts the calculation of its revenue requirement, the present methodology employed by PWW to account for principal forgiveness on its DWSRF loans is acceptable. As such, the Settling Parties agree and recommend the Commission find that PWW's current methodology for accounting for principal forgiveness on its DWSRF loans is appropriate.

3. Audit Issues # 7, # 9, and # 10: Inclusion of Net Non-Operating Revenues in Company's Revenue Requirement Calculation

The Company currently records its jobbing revenues and associated jobbing expenses in the accounts specified by the Uniform System of Accounts (USoA) for Water Utilities. However, also according to the USoA, jobbing revenues and expenses are classified as non-operating, or "below-the-line" accounts. During the 2018 test year PWW recorded jobbing revenues of $337,556 and jobbing expenses of $145,582. The net of which, or $191,974, the Company included in its Other Operating Revenues for purposes of calculating its revenue requirement in the instant rate proceeding. The Audit Staff concluded that such classification was inappropriate based on the definition of these revenues and expenses as contained in the USoA (Audit Issue # 7). The Audit Staff further concluded that PWW's lack of compliance in this regard also contributed to its findings with regard to the balance of PWW's Allowance for Doubtful Accounts (Audit Issue # 9) as well as the Company's overall lack of compliance with aspects of the USoA (Audit Issue # 10). The Company argued that net jobbing revenues have been included in its other operating revenues in all of its previous rate cases dating back to 1996. PWW further argued that the inclusion of its net jobbing revenues in other operating revenues actually results in a benefit to ratepayers by reducing its calculated revenue requirement. As such, the Settling Parties agree and recommend the Commission find that PWW's inclusion of its net jobbing revenues in other operating revenues for purposes of calculating its overall revenue requirement is appropriate.

4. Audit Issue # 8: Allocation of Revenues to Pennichuck Water Service Company

The Audit Staff found that PWW receives monthly revenues from the City related to the purchase of water consumption data for purposes of the City's sewer billings. Of the revenues received from the City, 90% is allocated to PWW and 10% is allocated to its affiliate, Pennichuck Water Services Company (PWSC). During the test year, approximately $118,000 was received from the City for PWW's water consumption data, with approximately $106,000 allocated to PWW and approximately $12,000 allocated to PWSC. However, even though this allocation of revenues had been the Company's standard practice dating back to the mid-1990s, and accepted by the Commission, there is no longer an apparent reason for the apportionment of any of these revenues to PWSC. However, given 1) the *di minimis* amount of revenues allocated to PWSC during the test year, and 2) the Commission's past acceptance of this revenue allocation, the Settling Parties agree and recommend the Commission approve this allocation of revenues relative to the 2018 test year for purposes of calculating PWW's revenue requirement in the instant rate proceeding. The Settling Parties further agree and recommend that, commencing with the Company's 2020 operating year and following, any revenues received from the City for the Company's consumption data should be fully attributed to PWW, only.

G. <u>Frequency of Rate Cases</u>

In light of PWW's unique ratemaking structure that the Settling Parties have proposed be further modified in this rate proceeding including the establishment of a MOEF, and in light of the fact that PWW is a debt-only financed entity that is acutely sensitive to changes in in cash flow relative to factors such as weather changes, as well as the negative effects of regulatory lag, the Settling Parties believe that PWW should submit filings for general rate increases with the Commission on a frequent basis.

Therefore, the Settling Parties agree and recommend the Commission approve that PWW shall maintain a three-year full rate case cycle, such that PWW will file a general rate case, pursuant to RSA 378:3 and PART Puc 1604, every three years.

This settlement term is not intended to remove or otherwise modify the settlement term approved in the DW 16-806 settlement agreement, at section III, C, 3, d., requiring PWW to file a full rate case when the average of the amounts of cash held in the combined rate stabilization funds (CBFRR-RSF, DSRR-1.0-RSF, and MOERR-RSF) as of the last day of each month for the 13-month period ending December 31st of each year is greater than 150% of the combined target amount for such funds, as most recently established by the Commission. This settlement term is also not intended to limit PWW's ability to file for rate changes, pursuant to State law including

RSA Chapter 378, in the event PWW believes circumstances warrant filing for emergency rates or other rate relief.

The Settling Parties agree and recommend that the Commission require PWW to file its subsequent rate cases in accordance with the procedures and methodologies described in this Agreement, unless otherwise modified by the Commission, and consistent with the computations set forth in the exhibits and attachments to this Agreement.

H. Rate Case Expense Surcharge

The Settling Parties agree and recommend the Commission approve PWW's recovery of its reasonable rate case expenses for this proceeding through a surcharge. PWW's rate case expenses may include, but are not limited to, legal and consultant expenses, incremental administrative expenses such as copying and delivery charges, and other expenses allowed under Puc 1906.01. PWW agrees to file its final rate case expense request, pursuant to Puc 1905.02, no later than thirty (30) days from the date of the Commission's subsequent order in this proceeding approving PWW's finalized revenue requirement and resulting customer rates, anticipated during the Fall of 2020. The Settling Parties agree that they will have an opportunity to review the rate case expenses and provide recommendations to the Commission for approval.

I. Phased-In Effective Dates to Mitigate Impact on Customer Bills

In light of the recent financial strain experienced by New Hampshire residents and PWW's customers as a result of the COVID-19 Emergency, but also in recognition of the importance of timely rate relief for PWW as previously discussed, the Settling Parties propose to sequence implementation of certain rate increases and surcharges in order to balance the interest of customers in mitigating bill impacts and PWW's interest in timely rate relief. As illustrated in Appendix 2, Attachment E, and assuming issuance of the Commission's subsequent order in this proceeding approving a finalized revenue requirement for October 2020 and resulting in the issuance of affected customer bills also in October 2020, the Settling Parties recommend that PWW:

1. Commence implementation of its 2020 QCPAC surcharge one month following the implementation of new base rates (currently estimated to commence with November 2020 customer bills payable in December 2020);

2. Commence implementation of its 2020 QCPAC recoupment one month following the implementation of new base rates and extend the recovery period for such over four months (currently estimated to commence with November 2020 customer bills payable in December 2020 and continuing through February 2021 customer bills payable in March 2021);

3. Commence implementation of its rate case expense recovery surcharge five months following the implementation of new base rates, at the earliest, but no sooner than one month following the billing of the last monthly 2020 QCPAC surcharge, and extend the recovery period for such over twelve months (currently estimated to commence with March 2021 customer bills payable in April 2021, and continuing through February 2022 customer bills payable in March 2022); and

4. Commence implementation of the temporary - permanent rate surcharge three months following the implementation of new base rates, at the earliest, but no sooner than two months following the initial implementation of the 2020 QCPAC surcharge and recoupment, and extend the recovery period for such over eighteen months (currently estimated to commence with January 2021 customer bills payable in February 2021, and continuing through June 2022 customer bills payable in July 2022).

The above implementation months are illustrative, only, and will be affected by the timing of the Commission's orders approving rate changes. The Settling Parties request that if the Commission's subsequent order approving a revenue requirement and resulting customer rates is issued after October 2020, that the Settling Parties be allowed to revise their recommended sequencing of rate changes to balance PWW's and customers' interests.

J. PWW's Motion for Confidential Treatment

With its original rate filing, PWW filed a Motion for Protective Order and Confidential Treatment of Confidential and Payroll Information (Motion) in accordance with N.H. Admin. R. Puc 203.08 and RSA 91-A:5. Specifically, PWW requested confidential treatment of certain officer and director compensation not included in PWW's Annual Report, but provided at Tab 28 of its rate filing with respect to Puc 1604.01(a)(14). The Company stated that this information falls within the RSA 91-A:5, IV exemption because the information relates to internal personnel practices and is confidential financial information. Additionally, disclosure of this information would result in an unwarranted invasion of personal privacy for the officers and directors involved. PWW also requested confidential treatment concerning the disclosure of certain salary information and job titles provided at Tab 11, Schedule 1, Attachment F, Pages 3 and 4 of its rate filing with respect to Puc 1604.07(a)(5) and Puc 1604.07(j). PWW stated that this information also falls within the RSA 91-A:5, IV exemption because the information relates to internal personnel practices, is confidential financial information, and that its employees have a privacy interest in their pay data. Further, the Company stated that disclosure of this information would also cause PWW competitive harm because it would make it more difficult to attract or retain qualified employees. Salary data was also subject to discovery in this proceeding as Staff 1-28, Staff 1-37, Staff 2-30, and Staff 2-32 or attachments thereto. As such, the Settling Parties agree and recommend the Commission approve PWW's motion and protect from public disclosure the confidential payroll information.

IV. CONDITIONS

A. The Settling Parties expressly condition their support of this Agreement upon the Commission's acceptance of all its provisions, without change or condition. If the Commission does not accept the provisions in their entirety, without change or condition, any party hereto, at its sole option exercised within 15 days of such Commission order, may withdraw from this Agreement, in which event it shall be deemed to be null and void and without effect and shall not be relied upon by any Settling Party to this proceeding or by the Commission for any purpose.

B. The Commission's acceptance of this Agreement does not constitute continuing approval of, or precedent regarding, any particular principle or issue in this proceeding, but such acceptance does constitute a determination that the adjustments and provisions set forth herein in their totality are just and reasonable and consistent with the public interest. In its order addressing the approvals recommended in this Agreement, the Commission should expressly find that the approvals recommended herein are unique to this case and should not be viewed as having precedential impact with respect to any particular principle or issue in this proceeding for any other case or situation for reasons.

C. The discussions that produced this Agreement have been conducted on the explicit understanding that all offers of settlement relating thereto are and shall be confidential, shall be without prejudice to the position of any party or participant representing any such offer or participating in any such discussion, and are not to be used in connection with any future proceeding or otherwise.

D. This Agreement may be executed in counterparts.

IN WITNESS WHEREOF, the Settling Parties have caused this Agreement to be duly signed by their respective fully-authorized representatives.

Pennichuck Water Works, Inc.

Date: June 24, 2020

By its Attorney, Marcia A. Brown
For Docket No. DW 19-084

Date: June 24, 2020

By its Attorney, Richard W. Head
For Docket Nos. DW 19-084 and DW 20-055

Staff of the New Hampshire Public Utilities Commission

Dated: June ___, 2020

By its Attorney, Christopher Tuomala

Office of the Consumer Advocate

Dated: June 24, 2020

By its Attorney, Christa Shute

City of Nashua

Dated: June 24, 2020

By its Attorney, Steven A. Bolton

IN WITNESS WHEREOF, the Settling Parties have caused this Agreement to be duly signed by their respective fully-authorized representatives.

Pennichuck Water Works, Inc.

Date: June 24, 2020

Marcia A Brown

By its Attorney, Marcia A. Brown
For Docket No. DW 19-084

Date: June 24, 2020

By its Attorney, Richard W. Head
For Docket Nos. DW 19-084 and DW 20-055

Staff of the New Hampshire Public Utilities Commission

Dated: June ___, 2020

By its Attorney, Christopher Tuomala

Office of the Consumer Advocate

Dated: June ___, 2020

____
By its Attorney, Christa Shute

City of Nashua

Dated: June ___, 2020

____
By its Attorney, Steven A. Bolton

Pennichuck Water Works
2020 Refunding Analysis

LDG-3

Appendix 1 - Attachment A Pro Forma Financial Net Debt Service Cash Flow

1) Taxable Bonds with Level Debt Service

Bond Year	Current Annual Debt Service						(A)							(B)	
Ending Dec. 31	2014A Total	2014B Total	2015A Total	2015B Total	2018A Total	2018B Total	Total Aggregate Debt Service Total	Total Debt Service: 2020 Refunding	Total Savings: 2020 Refunding	2020 New Money Debt Service (2)	AULI Savings	2020 New Money + Refunding DS	Total Refunding Savings	Estimated New Aggregate DS	(A)-(B) Cash Flow Savings
2021	2,789,469	320,150	1,459,238	193,375	204,375	190,000	5,156,606	3,224,420	1,217,661	279,616	32,328	3,504,036	1,249,990	4,186,232	970,374
2022	2,793,344	320,088	1,462,363	192,500	204,375	200,000	5,172,669	3,219,023	1,229,183	277,418	34,088	3,496,441	1,263,271	4,186,816	985,853
2023	2,793,969	319,800	1,463,738	191,375	204,375	210,000	5,183,256	3,218,001	1,231,080	280,153	30,412	3,498,154	1,261,492	4,201,917	981,340
2024	2,786,469	324,175	1,458,488	190,000	204,375	220,000	5,183,506	3,220,999	1,213,957	277,799	31,714	3,498,799	1,245,671	4,215,635	967,871
2025	2,790,594	323,213	1,461,488	193,250	204,375	230,000	5,202,919	3,222,425	1,222,906	280,311	32,988	3,502,737	1,255,894	4,227,336	975,582
2026	2,786,094	322,025	1,462,488	191,125	204,375	240,000	5,206,106	3,222,340	1,217,366	277,695	34,219	3,500,035	1,251,585	4,232,216	973,890
2027	2,787,844	320,613	1,466,363	193,625	204,375	250,000	5,222,819	3,221,234	1,226,598	279,993	35,344	3,501,227	1,261,941	4,240,871	981,948
2028	2,790,469	323,863	1,458,238	190,750	204,375	260,000	5,227,694	3,218,470	1,220,986	277,151	31,488	3,495,621	1,252,475	4,252,370	975,324
2029	2,783,969	321,775	1,462,988	192,500	336,000		5,097,231	3,218,951	1,220,505	279,164	32,648	3,498,116	1,253,153	4,123,243	973,989
2030	2,788,094	324,350	1,460,363	193,750	339,000		5,105,556	3,223,135	1,219,071	276,086	33,692	3,499,221	1,252,763	4,128,880	976,676
2031	2,787,469	321,588	1,465,238	189,625	336,625		5,100,544	3,221,701	1,220,630	277,553	30,640	3,499,254	1,251,270	4,126,826	973,718
2032	2,782,969	323,488	1,461,644		338,875		4,906,975	3,219,559	1,025,054	278,487	33,438	3,498,046	1,058,492	4,126,970	780,005
2033	2,790,169	320,050	1,460,000		335,750		4,905,969	3,220,773	1,029,396	279,249	31,122	3,500,021	1,060,518	4,124,699	781,270
2034	2,788,869	321,275	1,461,338		337,250		4,908,731	3,220,257	1,029,950	279,837	33,692	3,500,094	1,063,642	4,124,927	783,805
2035	2,779,269	322,050	1,460,550		338,250		4,900,119	3,218,011	1,021,808	280,253	31,148	3,498,263	1,052,956	4,127,415	772,704
2036	2,781,169	322,375	1,457,638		338,750		4,899,931	3,218,948	1,019,858	280,495	33,490	3,499,443	1,053,348	4,127,078	772,853
2037	1,156,859	322,250	444,125		333,875		2,257,109	3,222,896	(1,621,912)	275,651	30,718	3,498,547	(1,591,194)	4,123,954	(1,866,845)
2038	1,157,519	321,675	445,738		338,500		2,263,431	3,224,768	(1,621,512)	275,721	32,832	3,500,489	(1,588,680)	4,127,832	(1,864,400)
2039	1,156,734	320,650	441,788		338,344		2,257,516	3,214,737	(1,616,215)	275,617	34,718	3,490,354	(1,581,497)	4,114,630	(1,857,114)
2040	1,154,506	324,063	442,275		338,569		2,259,413	3,222,630	(1,625,849)	280,254	31,490	3,502,884	(1,594,359)	4,134,025	(1,874,613)
2041	1,155,731	321,913	442,088		338,369		2,258,100	3,221,293	(1,623,474)	279,467	33,148	3,500,759	(1,590,326)	4,127,892	(1,869,792)
2042	1,155,306	324,200	441,225		337,744		2,258,475	3,225,563	(1,629,032)	278,336	34,578	3,503,899	(1,594,454)	4,131,265	(1,872,790)
2043	1,158,128	320,925	444,575		336,694		2,260,322	3,217,272	(1,614,568)	277,023	30,894	3,494,294	(1,583,674)	4,121,019	(1,860,697)
2044	1,154,197	322,088	442,138		335,047		2,253,469	3,216,418	(1,620,084)	275,526	32,096	3,491,944	(1,587,988)	4,116,982	(1,863,514)
2045	1,158,409		443,913		337,688		1,940,009	3,222,637	(1,620,315)	278,755	33,070	3,501,392	(1,587,245)	3,806,009	(1,866,000)
2046			444,788		334,781		779,569	3,220,836	(2,776,048)	276,710		3,497,545	(2,776,048)	3,832,326	(3,052,758)
2047					336,328		336,328	3,225,924	(3,225,924)	279,390		3,505,313	(3,225,924)	3,841,641	(3,505,313)
2048					337,219		337,219	3,217,901	(3,217,901)	276,795		3,494,696	(3,217,901)	3,831,914	(3,494,696)
2049								3,221,675	(3,221,675)	278,926		3,500,601	(3,221,675)	3,500,601	(3,500,601)
2050								3,221,973	(3,221,973)	275,783		3,497,755	(3,221,973)	3,497,755	(3,497,755)
2051								3,218,793	(3,218,793)	277,365		3,496,158	(3,218,793)	3,496,158	(3,496,158)
2052								3,221,954	(3,221,954)	278,581		3,500,534	(3,221,954)	3,500,534	(3,500,534)
2053								3,221,271	(3,221,271)	279,431		3,500,702	(3,221,271)	3,500,702	(3,500,702)
2054								3,221,654	(3,221,654)	279,915		3,501,569	(3,221,654)	3,501,569	(3,501,569)
2055								3,222,920	(3,222,920)	280,033		3,502,952	(3,222,920)	3,502,952	(3,502,952)

(1) 2020 Refunding Bonds assumed to be dated and delivered on Sept. 1, 2020. Last prior bond interest payment is due on July 1, 2020.
Proposed refinancing assumes that the 2020 Refunding includes accrued interest from Sept. 1, 2020 until April 1, 2021 principal payment.
(2) $5.5 million Rate Stabilization Fund.

+ 100 basis point increases to the Taxable Bond Refunding Scenarios

Appendix 1 - Attachment A Pro Forma Financial Net Debt Service Cash Flow

1) Taxable Bonds with Level Debt Service

Bond Year	Current Annual Debt Service						(A)							(B)	
Ending Dec. 31	2014A Total	2014B Total	2015A Total	2015B Total	2018A Total	2018B Total	Total Aggregate Debt Service Total	Total Debt Service: 2020 Refunding	Total Savings: 2020 Refunding	2020 New Money Debt Service (2)	AULI Savings	2020 New Money + Refunding DS	Total Refunding Savings	Estimated New Aggregate DS	(A)-(B) Cash Flow Savings
2021	2,789,469	320,150	1,459,238	193,375	204,375	190,000	5,156,606	3,947,222	779,505	317,017	28,096	4,264,239	807,601	4,666,022	490,585
2022	2,793,344	320,088	1,462,363	192,500	204,375	200,000	5,172,669	3,923,147	787,802	319,521	26,097	4,242,668	813,899	4,678,291	494,378
2023	2,793,969	319,800	1,463,738	191,375	204,375	210,000	5,183,256	3,913,397	791,323	316,935	28,563	4,230,331	819,886	4,680,305	502,951
2024	2,786,469	324,175	1,458,488	190,000	204,375	220,000	5,183,506	3,907,407	776,084	319,239	25,979	4,226,647	802,062	4,700,683	482,823
2025	2,790,594	323,213	1,461,488	193,250	204,375	230,000	5,202,919	3,904,496	782,266	321,309	28,400	4,225,805	810,666	4,713,561	489,357
2026	2,786,094	322,025	1,462,488	191,125	204,375	240,000	5,206,106	3,894,718	779,315	318,235	25,816	4,212,954	805,131	4,719,211	486,895
2027	2,787,844	320,613	1,466,363	193,625	204,375	250,000	5,222,819	3,888,539	786,515	320,054	28,166	4,208,592	814,681	4,728,191	494,627
2028	2,790,469	323,863	1,458,238	190,750	204,375	260,000	5,227,694	3,880,249	779,326	316,717	25,510	4,196,966	804,836	4,739,575	488,119
2029	2,783,969	321,775	1,462,988	192,500	336,000		5,097,231	3,874,722	777,749	318,222	27,845	4,192,944	805,594	4,609,860	487,372
2030	2,788,094	324,350	1,460,363	193,750	339,000		5,105,556	3,872,340	775,777	319,519	25,109	4,191,859	800,886	4,624,189	481,367
2031	2,787,469	321,588	1,465,238	189,625	336,625		5,100,544	3,858,891	782,247	320,274	27,703	4,179,165	809,949	4,610,868	489,676
2032	2,782,969	323,488	1,461,644		338,875		4,906,975	3,854,129	582,187	320,479	25,615	4,174,608	607,801	4,619,653	287,322
2033	2,790,169	320,050	1,460,000		335,750		4,905,969	3,846,916	587,852	320,462	28,413	4,167,377	616,264	4,610,166	295,803
2034	2,788,869	321,275	1,461,338		337,250		4,908,731	3,837,252	590,449	320,221	26,097	4,157,473	616,545	4,612,407	296,324
2035	2,779,269	322,050	1,460,550		338,250		4,900,119	3,834,913	575,297	319,758	23,781	4,154,670	599,077	4,620,799	279,320
2036	2,781,169	322,375	1,457,638		338,750		4,899,931	3,824,788	577,305	319,071	26,351	4,143,859	603,655	4,615,347	284,584
2037	1,156,859	322,250	444,125		333,875		2,257,109	3,811,993	(2,054,826)	318,162	28,693	4,130,154	(2,026,133)	4,601,404	(2,344,294)
2038	1,157,519	321,675	445,738		338,500		2,263,431	3,811,189	(2,058,854)	317,029	25,921	4,128,218	(2,032,934)	4,613,394	(2,349,963)
2039	1,156,734	320,650	441,788		338,344		2,257,516	3,802,155	(2,061,658)	320,562	28,035	4,122,717	(2,033,623)	4,611,701	(2,354,185)
2040	1,154,506	324,063	442,275		338,569		2,259,413	3,799,778	(2,068,126)	318,761	25,035	4,118,538	(2,043,091)	4,621,264	(2,361,852)
2041	1,155,731	321,913	442,088		338,369		2,258,100	3,787,072	(2,061,486)	316,576	26,921	4,103,648	(2,034,566)	4,609,242	(2,351,142)
2042	1,155,306	324,200	441,225		337,744		2,258,475	3,778,838	(2,061,644)	318,887	28,579	4,097,725	(2,033,065)	4,610,427	(2,351,952)
2043	1,158,128	320,925	444,575		336,694		2,260,322	3,776,407	(2,060,145)	320,732	25,123	4,097,139	(2,035,023)	4,616,077	(2,355,755)
2044	1,154,197	322,088	442,138		335,047		2,253,469	3,769,547	(2,066,758)	317,228	26,553	4,086,775	(2,040,205)	4,610,902	(2,357,433)
2045	1,158,409		443,913		337,688		1,940,009	3,758,255	(2,056,583)	318,374	27,755	4,076,629	(2,028,828)	4,287,211	(2,347,201)
2046			444,788		334,781		779,569	3,688,780	(3,244,194)	319,054		4,007,834	(3,244,194)	4,342,816	(3,563,247)
2047					336,328		336,328	3,690,659	(3,690,860)	319,268		4,009,926	(3,690,860)	4,346,456	(4,010,127)
2048					337,219		337,219	3,687,178	(3,687,379)	319,016		4,006,194	(3,687,379)	4,343,614	(4,006,395)
2049								3,688,106	(3,688,307)	318,298		4,006,403	(3,688,307)	4,006,604	(4,006,604)
2050								3,688,092	(3,688,293)	317,114		4,005,205	(3,688,293)	4,005,406	(4,005,406)
2051								3,682,020	(3,682,221)	320,347		4,002,367	(3,682,221)	4,002,568	(4,002,568)
2052								3,689,424	(3,689,625)	317,998		4,007,422	(3,689,625)	4,007,623	(4,007,623)
2053								3,689,838	(3,690,039)	320,067		4,009,904	(3,690,039)	4,010,105	(4,010,105)
2054								3,688,145	(3,688,346)	321,436		4,009,581	(3,688,346)	4,009,782	(4,009,782)
2055								3,688,997	(3,689,198)	317,223		4,006,220	(3,689,198)	4,006,421	(4,006,421)

(1) 2020 Refunding Bonds assumed to be dated and delivered on Sept. 1, 2020. Last prior bond interest payment is due on July 1, 2020.
Proposed refinancing assumes that the 2020 Refunding includes accrued interest from Sept. 1, 2020 until April 1, 2021 principal payment.
(2) $5.5 million Rate Stabilization Fund.

PENNICHUCK®

CORPORATE SECRETARY'S CERTIFICATE

PENNICHUCK WATER WORKS, INC.

I, Suzanne L. Ansara, do hereby certify that I am the duly elected Corporate Secretary of Pennichuck Water Works, Inc. (the "Company"), a New Hampshire corporation, and that I am authorized to execute and deliver this Certificate on behalf of the Company. In that capacity, I do hereby further certify that:

1. The following resolution was adopted by the Board of Directors of the Company on February 28, 2020; and such resolution has not been altered, amended or repealed, and is in full force and effect, as of the date hereof:

   Resolved: that management is hereby authorized to proceed with the following process and approvals required to complete the refinance of the 2014 Series A and 2015 Series A&B bonded debt, the refill of the rate stabilization fund, and the refinance of the AULI Note Payable:

   (1) obtain New Hampshire Business Finance Authority (NHBFA) approval to issue taxable or tax-exempt bonds sufficient to fund the debt restructuring;

   (2) file a financing petition with the New Hampshire Public Utilities Commission to seek approval to complete the financing activity;

   (3) file a shareholder approval request with the City of Nashua to seek approval to complete the financing activity;

   (4) file a joint approval request with the NHBFA to the State of New Hampshire Governor and Council, approving the funding of the taxable or tax-exempt bonds through the NHBFA; and

   (5) complete the entire bond issuance and documentation process with the investment bankers and respective counsels.

In Witness Whereof, I have hereunto set my hand this 21st day of April, 2020.

Suzanne L. Ansara
Corporate Secretary

PENNICHUCK®

PENNICHUCK CORPORATION

CORPORATE SECRETARY'S CERTIFICATE

I, Suzanne L. Ansara, do hereby certify that I am the duly elected Corporate Secretary of Pennichuck Corporation (the "Company"), a New Hampshire corporation, and that I am authorized to execute and deliver this Certificate on behalf of the Company. In that capacity, I do hereby further certify that:

1. The following is a true and correct excerpt from the minutes of the Pennichuck Corporation Board of Directors meeting held on February 28, 2020:

   "Pennichuck Water Works, Inc. - Debt Restructuring Plan

   L. Goodhue reported that management is recommending that Pennichuck Water Works issue taxable or tax-exempt bonds of up to $75 million to fund: (a) the refinancing of the currently outstanding balances of the 2014 Series A and 2015 Series A&B bonds; (b) the refinancing of the $2.4 million note payable to American United Life Insurance which has a current interest rate of 7.4%; (c) the financing of $5.5 million to refill the Rate Stabilization Fund; and (d) the cost of issuance for the bonds. This financing would eliminate the current bullet maturity obligation of the AULI note and replace with a lower interest rate; refill the Rate Stabilization Fund to its impress level; and provide necessary cash flow savings to establish the proposed Material Operating Expense Supplement (MOES) in the current rate case. L. Goodhue answered several questions regarding the debt restructuring plan from the Board members. After discussion, the Board gave their approval to proceed. It was agreed by the Board that this matter will be voted on by the Pennichuck Water Works Board of Directors at their meeting later today."

In Witness Whereof, I have hereunto set my hand this 21st day of April, 2020.

Suzanne L. Ansara
Corporate Secretary

From: James Key-Wallace <jameskw@nhbfa.com>
Sent: Tuesday, June 23, 2020 12:58 PM
To: Goodhue, Larry <larry.goodhue@PENNICHUCK.com>
Subject: [EXTERNAL] Confirmation of BFA Board Approval

Good afternoon Larry,

This email is to confirm that on May 18th, 2020 the BFA board of directors unanimously approved the issuance of up to $75,000,000 in bonds for Pennichuck. As always, final issuance is contingent on approval by the NH Governor and Council (G&C).

The G&C meeting to provide final approval for this bond issuance is on June 24th, 2020 at 10am, and we anticipate an approval. The G&C has always been supportive of the BFA's bond issuances, especially for Pennichuck.

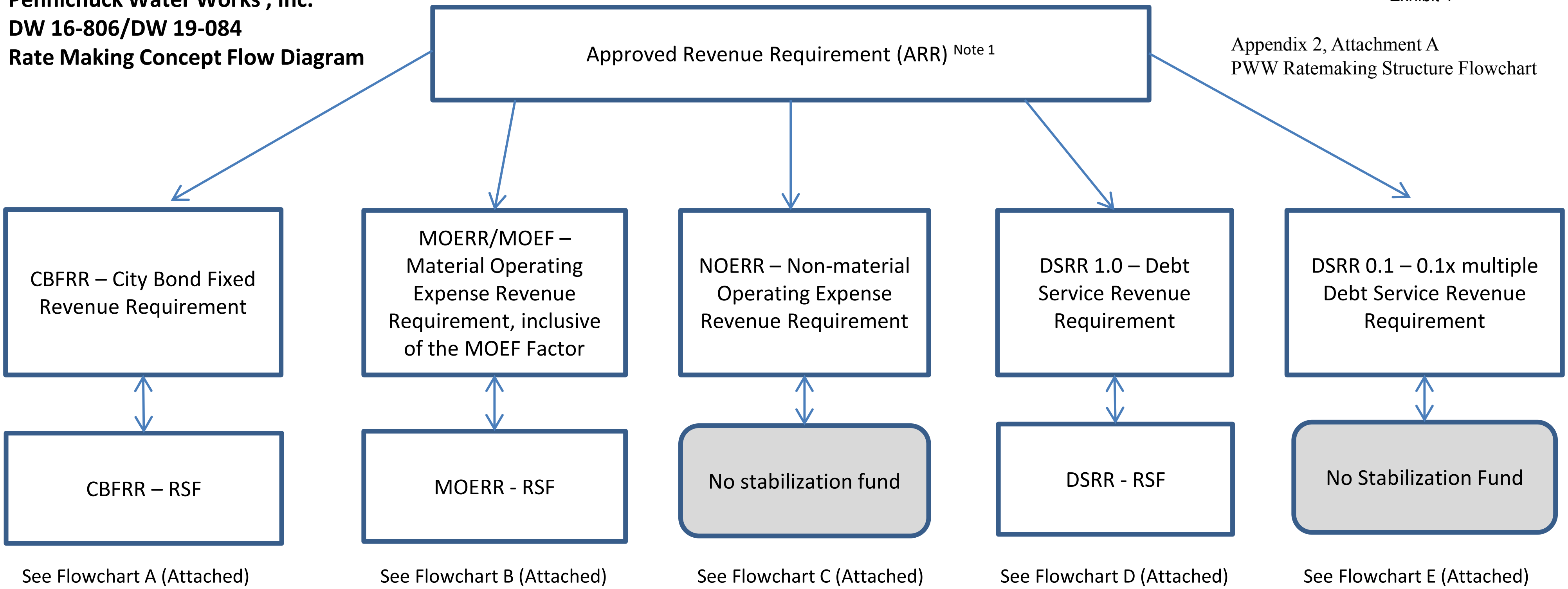
Feel free to reach out if you need any additional information and I'd be happy to provide it.

Regards,

James Key-Wallace
Executive Director
NH Business Finance Authority
2 Pillsbury Street, Suite 201
Concord, NH 03301
603-415-0191
jameskw@nhbfa.com

Pennichuck Water Works , Inc.
DW 16-806/DW 19-084
Rate Making Concept Flow Diagram

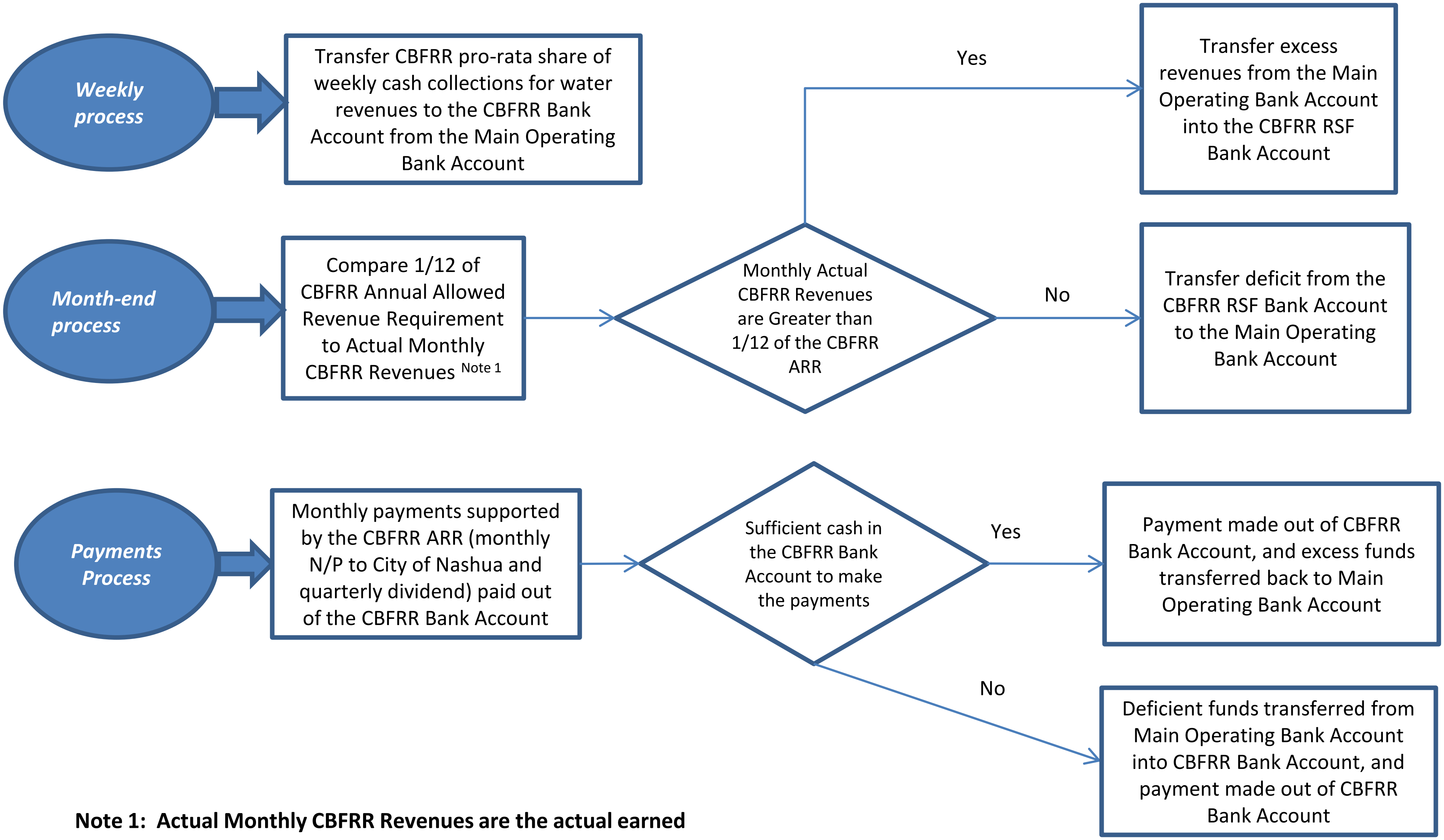
Appendix 2, Attachment A
PWW Ratemaking Structure Flowchart



Note 1 – The Approved Revenue Requirement equals the annual revenue requirement established at the most recent rate case, adjusted annually on or about April 1st (effective date for inclusion/recoupment of the most recently approved annual QCPAC Surcharge), and "trued up" to the actual approved amounts as of the issuance of the QCPAC surcharge increase order. This ARR is divided amongst the component Revenue Requirement items, inclusive of the annual QCPAC increase allocated amounts, into the identified CBFRR, MOERR/MOEF, NOERR, DSRR-1.0 and DSRR 0.1 revenue "buckets."

Pennichuck Water Works , Inc. - DW 16-806/DW 19-084
Rate Making Concept Flow Diagram - Flowchart A

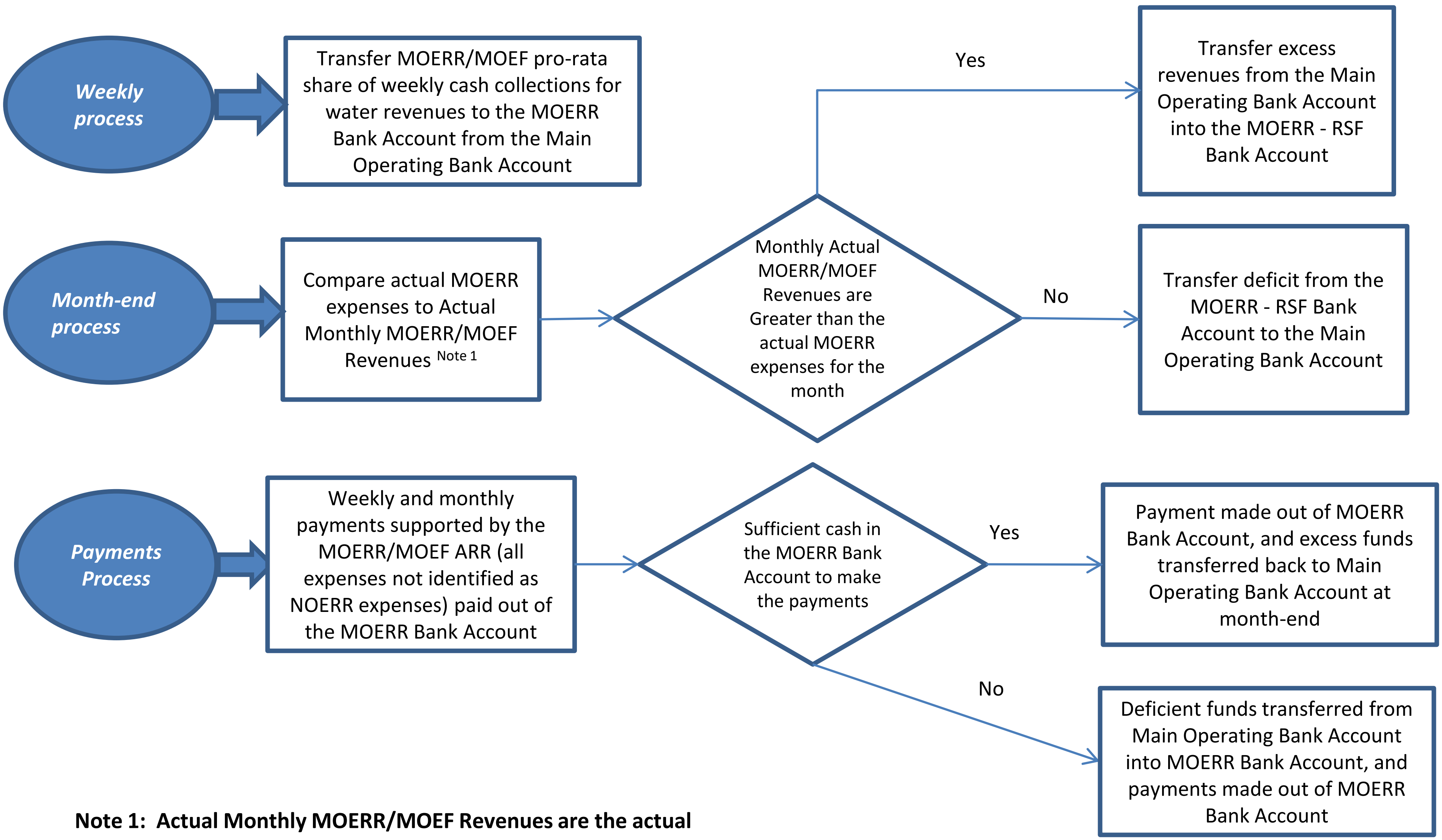
Appendix 2, Attachment A
PWW Ratemaking Structure Flowchart



Note 1: Actual Monthly CBFRR Revenues are the actual earned water revenues in the month multiplied times the pro-rata percentage of revenues allocated to the CBFRR, per the last rate case, inclusive of the annual QCPAC increase.

Pennichuck Water Works , Inc. - DW 16-806/DW 19-084
Rate Making Concept Flow Diagram - Flowchart B

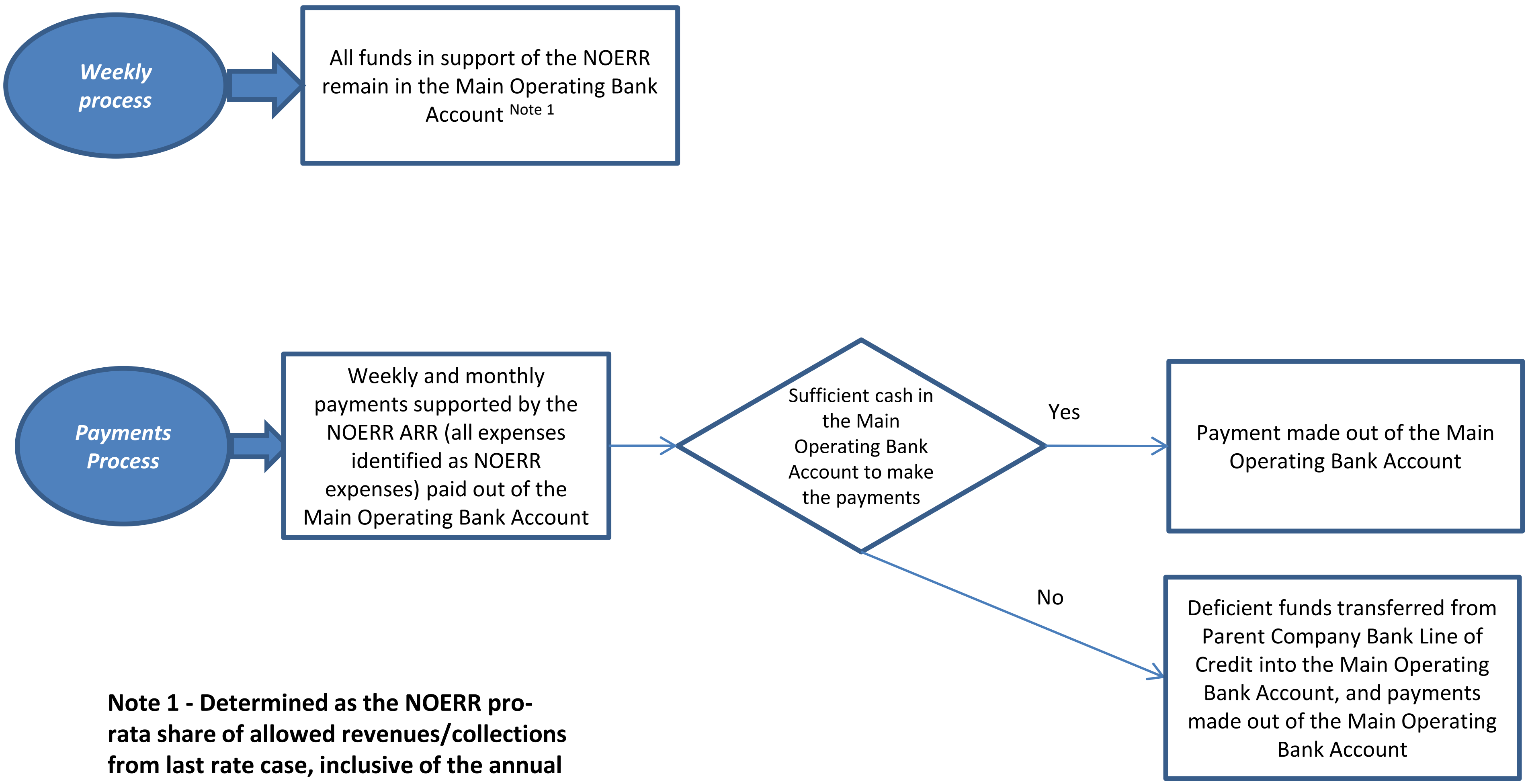
Appendix 2, Attachment A
PWW Ratemaking Structure Flowchart



Note 1: Actual Monthly MOERR/MOEF Revenues are the actual earned water revenues in the month multiplied times the pro-rata percentage of revenues allocated to the MOERR/MOEF, per the last rate case, inclusive of the annual QCPAC increase.

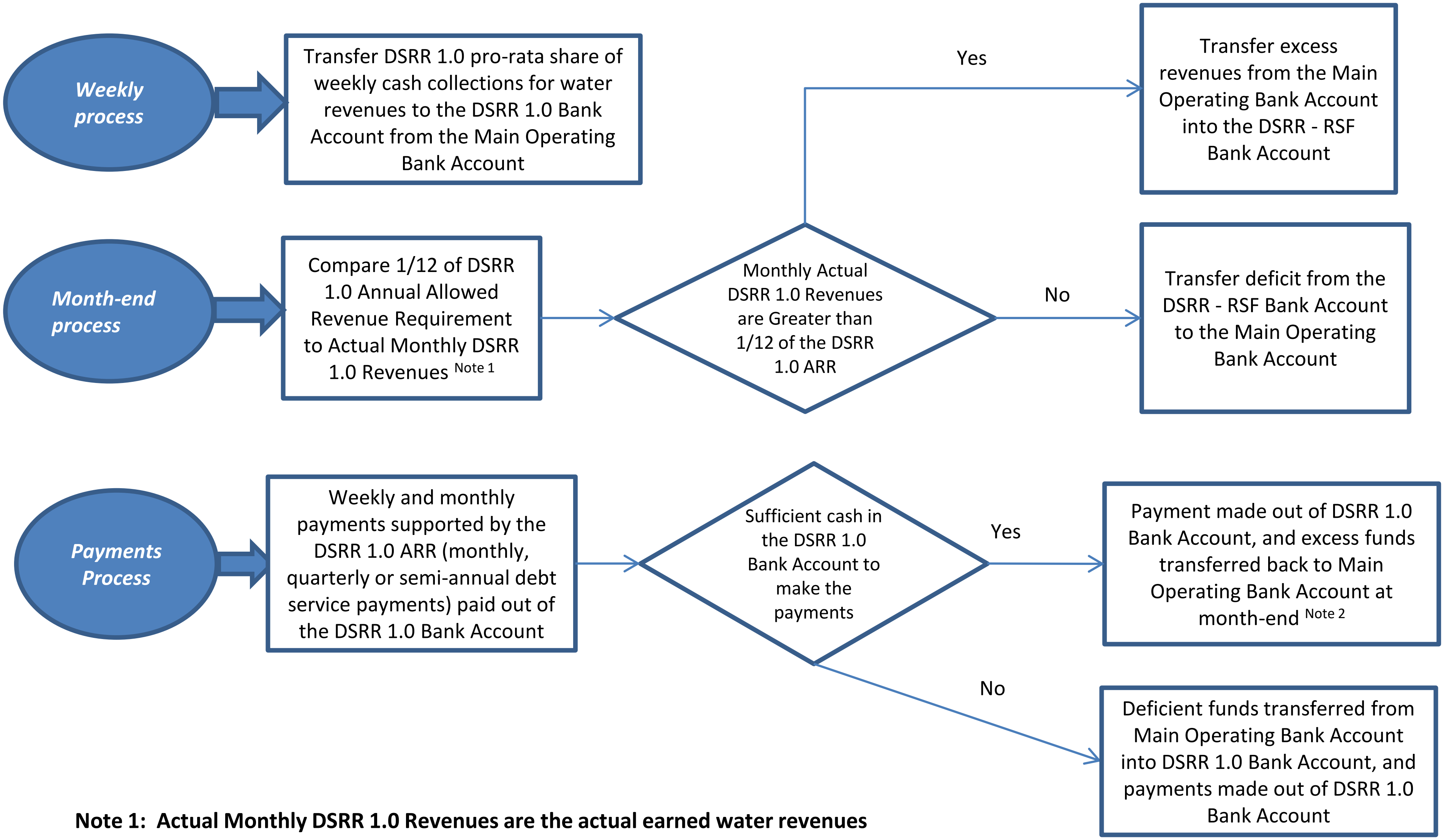
Pennichuck Water Works , Inc. - DW 16-806/DW 19-084
Rate Making Concept Flow Diagram - Flowchart C

Appendix 2, Attachment A
PWW Ratemaking Structure Flowchart



Note 1 - Determined as the NOERR pro-rata share of allowed revenues/collections from last rate case, inclusive of the annual QCPAC increase.

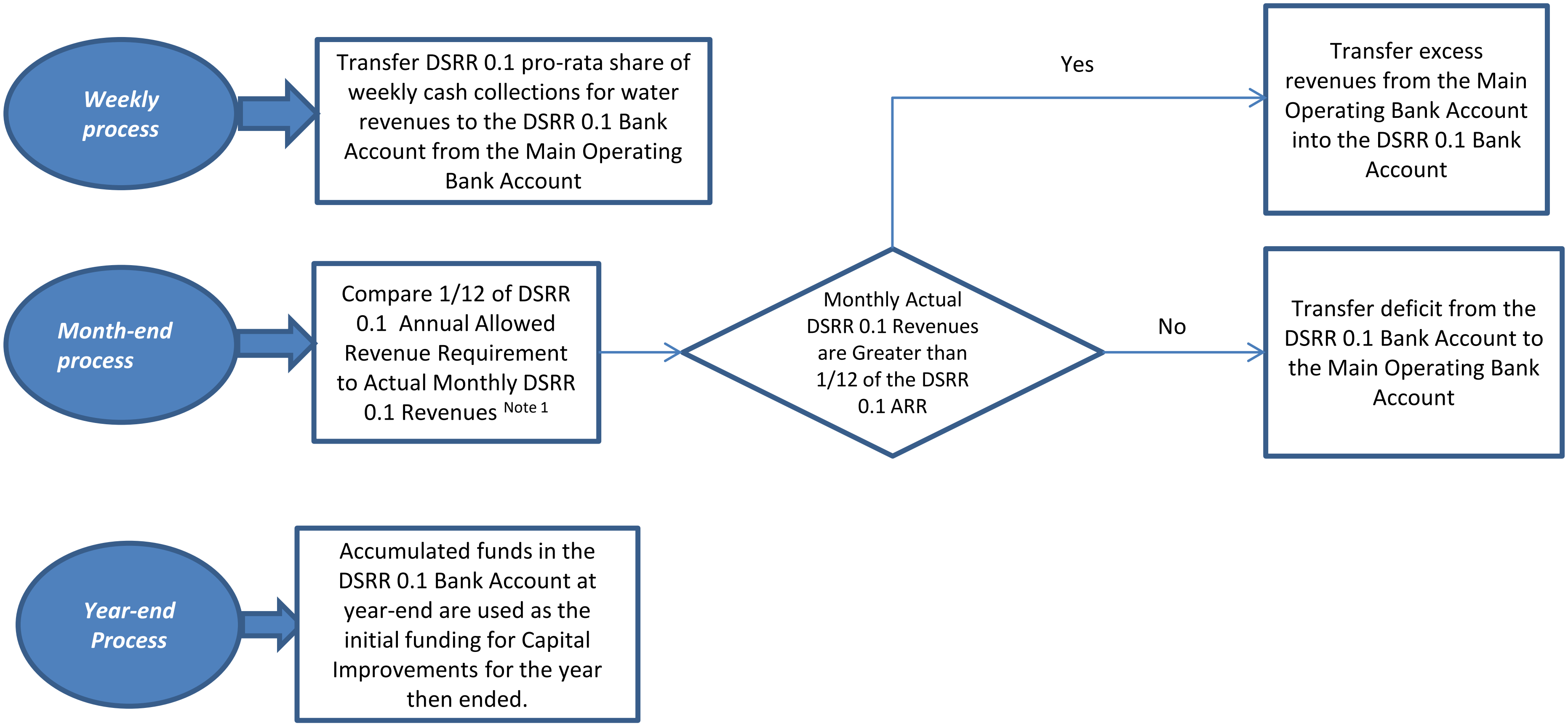
Pennichuck Water Works , Inc. - DW 16-806/DW 19-084
Rate Making Concept Flow Diagram - Flowchart D



Note 1: Actual Monthly DSRR 1.0 Revenues are the actual earned water revenues in the month multiplied times the pro-rata percentage of revenues allocated to the DSRR 1.0, per the last rate case, inclusive of the annual QCPAC increase.

Note 2: Adequacy of funds in the DSRR Bank Account each month will be determined as 100% of monthly payment obligations, 33 1/3% of quarterly payment obligations and 1/12 of the annual debt service for semi-annual payment obligations.

Pennichuck Water Works , Inc. - DW 16-806/DW 19-084
Rate Making Concept Flow Diagram - Flowchart E



Note 1: Actual Monthly DSRR 0.1 Revenues are the actual earned water revenues in the month multiplied times the pro-rata percentage of revenues allocated to the DSRR 0.1, per the last rate case, inclusive of the annual QCPAC increase.

Pennichuck Water Works , Inc. - DW 16-806/DW 19-084
Definition of Terms

- **Approved Revenue Requirement**: equals the annual revenue requirement established at the most recent rate case, adjusted annually on or about April 1st and "trued up" to the actual approved amounts as of the issuance of the QCPAC annual surcharge increase order (the QCPAC shall become eligible for annual recoupment from the date for which bonded debt or other financing that is incurred with respect to the specific eligible projects is issued or consummated, anticipated to be approximately April 1 of each year). This ARR is divided amongst the component Revenue Requirement items, inclusive of the annual QCPAC surcharge increase allocated amounts, into the identified CBFRR, OERR and DSRR revenue "buckets."
- **Actual Revenues and Actual Expenses:** In all cases with regards to the flowcharts and processes included on Flowcharts A thru E, Actual Revenues and Actual Expenses are on a GAAP basis, inclusive of accrued amounts.
- **CBFRR RSF**: Same as the former RSF as authorized and described in DW 11-026 and reaffirmed in DW 16-806. Allows for the maintenance of stable water utility rates, while providing a mechanism to ensure the Company's ability to meet its obligations under the promissory note to the City.
- **MOERR RSF**: Funds used to provide cash flow for allowable expenses, defined as PWW's Operation and Maintenance Expenses (less those in the NOERR), Property Tax Expense, Payroll Tax Expense, and Amortization Expense.
- **MOEF and MOERR/MOEF:** The MOEF is a factor embedded in the calculation of overall allowed revenues allocated to the MOERR portion of those revenues from the Company's last rate case. This factor is included in the pro-rata allocation of allowed revenues by multiplying the allowed MOERR portion of the OERR revenues by a factor inclusive of the allowed MOEF. It calculated as:
    - (MOERR allowed revenues) x (1+MOEF) = MOERR/MOEF allowed revenues.
- **NOERR**: Funds expenses that are potentially imprudent expenditures within the context of a rate proceeding. The categorization of an expense item in the NOERR does not preclude PWW's recovery of such in rates, as long as that expense item is found to be prudently incurred within the pro forma test year. They may not, however, be included in any use of or replenishment from the MOERR RSF.
- **DSRR-1.0 RSF**: used to support the payments related to the principal and interest obligations for PWW, in existence as of the most recent rate case test year. The establishment of this DSRR-1.0 RSF bucket is to allow the collection of revenues sufficient to pay the principal and interest of PWW's debt and to satisfy the debt service coverage ratio requirements of PWW's bond financings and Pennichuck Corporation's covenant requirements of its line of credit, which is used by Pennichuck Corporation and its subsidiaries as a "back stop" to short-term working capital needs.
- **DSRR-0.1**: The intended purposes for the establishment of the DSRR-0.1 are 1) to allow for the collection of revenues sufficient to satisfy the debt service coverage ratio requirements of PWW's bond financings and Pennichuck Corporation's covenant requirements for its line of credit, which is used by Pennichuck Corporation and its subsidiaries as a "back stop" for short-term capital needs; and 2) to allow PWW to collect revenues over-and-above its actual debt service in order to comply with cash flow coverage requirements which are typical for such financings as well as to meet obligations on new debt incurred between rate filings as supported by the annual QCPAC surcharge.

Rate Stabilization Fund Calculations
Revised 1/24/2020 per Staff Tech DR2's
Resubmitted 2/7/2020 per Staff 3-1
Adjusted per Staff 4-1 on 2/21/2020
Revised 4/1/2020 to reflect Staff DR 4's
Revised 4/9/2020 to reflect Staff Tech 4's
3.67 TIC
Revised 5/20/2020 to refflect tech session and correction of NOERR expenses; Rev 5/26/20

DLW Exhibit 1

Appendix 2 - Attachment B MOEF Financial Model

PWW Proforma 5 Year Average 2018 Test Year with MOES

Pro forma Revenue Requirement[1] - **$ 35,661,132**
Operating Expense Contingency - **9.50% applies against Material Operating Expenses**

Annual Operating Expense increases @ 3.00%

	CBFRR	Material Operating Expense Revenue Requirement (MOERR)	Operating Expense Revenue Requirment (NOERR)[6]	1.0 Debt Service Revenue Requirement (1.0 DSRR)[1]	0.1 Debt Service Reveue Requirement (0.1 DSRR)	Total RSF Funds Required	Available RSF funds on 12/31/2019	
Revenue Requirement[2] -	$ 7,729,032	$ 20,741,272	$ 555,346	$ 6,032,257	$ 603,226		$ (1,613,608)	
Percentage of Revenues -	21.67%	58.16%	1.56%	16.92%	1.69%			
1 Year coverage -	$ 148,602	$ 1,016,147		$ 115,979				
2 Year coverage -	$ 297,204	$ 2,669,995		$ 231,958				
3 Years coverage -	$ 445,806	$ 4,980,674		$ 347,937	$ -			
Calculated Rate Stabilization Fund by Revenue Category for 1 year[3,4,9] -	$ 160,000	$ 1,120,000		$ 130,000		$ 1,410,000		
Calculated Rate Stabilization Fund by Revenue Category for 2 year[3,4,9] -	$ 330,000	$ 2,940,000		$ 260,000		$ 3,530,000		
Calculated Rate Stabilization Fund by Revenue Category for 3 years[3,4,9] -	$ 490,000	$ 5,480,000	No Stabilization Fund	$ 380,000	No Stabilization Fund	$ 6,350,000		
Requested Rate Stabiliation Fund levels[8] -	$ 680,000	$ 2,850,000		$ 390,000		$ 3,920,000	$ 5,533,608	Required Catch up
Based on largest variance from five year ave of -	3.40%							

As a "one time" borrowed amount
to refill the RSF funds awating implementation of the MOES

Revenue Type	2013 PWW Billed Revenue	2014 PWW Billed Revenue	2015 PWW Billed Revenue	2017 PWW Billed Revenue	2018 PWW Billed Revenue
Total Volumetric Charges, includes Unbilled water sales, Unbilled/and Billed Recoupment and abatements	$ 15,093,982	$ 15,340,557	$ 16,357,423	$ 15,457,194	$ 17,516,995
Total Meter Charge (fixed) includes fixed portion of special contracts	$ 8,162,854	$ 8,243,956	$ 8,429,316	$ 8,766,739	$ 9,437,913
WICA/QCPAC revenues	$ -	$ 109,727	$ 367,548	$ 705,661	$ 362,159
Total Private Fire Protection Charges (fixed)	$ 1,027,245	$ 1,039,276	$ 1,058,281	$ 1,089,205	$ 1,210,960
Total Municipal Fire Proection Charges (fixed)	$ 3,047,037	$ 3,060,346	$ 3,075,100	$ 3,116,640	$ 3,442,774
Total Billed Revenue	$ 27,331,118	$ 27,793,862	$ 29,287,668	$ 29,135,439	$ 31,970,800
% of Revenues that are variable	55.2%	55.4%	56.6%	54.4%	55.4%
% of Revenues that are fixed	44.8%	44.6%	43.4%	45.6%	44.6%

Calculation of MOER RSF

	Increases Over 2019	Revenue Shortfall
2020 -	$ 619,269	$ 396,878
2021 -	$ 1,257,026	$ 396,821
2022 -	$ 1,913,917	$ 396,762
	$ 3,790,212	$ 1,190,462
	Totals -	$ 4,980,674

Maximum percentage of revenues that were variable during the previous 5 years - 56.56%

Expense Type	2013 PWW Actual Variable Expenses	2014 PWW Actual Variable Expenses	2015 PWW Actual Variable Expenses	2017 PWW Actual Variable Expenses	2018 PWW Actual Variable Expenses
Purchased Water	$ 415,331	$ 393,060	$ 462,177	$ 437,664	$ 472,407
Electric	$ 873,619	$ 898,211	$ 1,164,461	$ 1,053,878	$ 1,152,305
Chemicals	$ 659,914	$ 696,650	$ 668,919	$ 765,438	$ 908,982
Sludge Disposal	$ 246,601	$ 303,057	$ 316,654	$ 385,873	$ 378,140
Total Variable Costs	$ 2,195,465	$ 2,290,978	$ 2,612,211	$ 2,642,853	$ 2,911,834
Variable Expenses as a Percent of Total Revenues	8.0%	8.2%	8.9%	9.1%	9.1%

	2013 PWW Actual Operating Expenses[10]	2014 PWW Actual Operating Expenses[10]	2015 PWW Actual Operating Expenses[10]	2017 PWW Actual Operating Expenses[10]	2018 PWW Actual Operating Expenses[10]
Production Expenses	$ 3,866,154	$ 4,099,167	$ 4,515,441	$ 4,571,844	$ 5,074,509
T&D expenses	$ 1,547,952	$ 1,868,516	$ 1,858,477	$ 2,168,076	$ 2,848,339
Engineering Expenses	$ 833,292	$ 964,081	$ 1,065,646	$ 1,169,359	$ 1,287,747
Customer Acct & Collection Expenses	$ 436,393	$ 442,289	$ 463,937	$ 447,889	$ 489,789
Admin and General Expenses	$ 6,677,427	$ 6,000,562	$ 6,364,880	$ 7,303,584	$ 7,580,371
Inter Div Mgt Fee Expense	$ (2,254,305)	$ (2,270,498)	$ (2,378,932)	$ (3,321,124)	$ (3,288,063)
Amortization Expense[11]	$ 48,059	$ 140,811	$ 167,776	$ 145,441	$ 134,666
Property Tax Expense Payroll Tax Expense	$ 4,123,297	$ 4,468,936	$ 4,617,857	$ 5,210,697	$ 4,438,775 $ 698,087
Cash Tax Expense[12]	$ 99,000	$ 100,000	$ 101,000	$ 103,000	$ 103,249
Total Material Operating Expense	$ 15,377,269	$ 15,813,864	$ 16,776,082	$ 17,798,766	$ 19,367,469
Percent increase in operationg expenses over the prior year		2.84%	6.08%	3.05%	8.81%
				Total increase over 5 years -	25.95%
				Ave. increase per year (inclusive of compounding) -	4.72%

	2013 Actual CCF's sold by PWW	2014 Actual CCF's sold by PWW	2015 Actual CCF's sold by PWW	2017 Actual CCF's sold by PWW	2018 Actual CCF's sold by PWW
Annual Metered Sales (CCF)	4,948,775	4,988,184	5,349,169	5,056,592	5,242,264
Percentage Variance between Current and High Consumption Year	-8.09%	-7.24%	0.00%	-5.79%	-2.04%

Appendix 2 - Attachment B MOEF Financial Model

Average Consumption (CCF) over the past five years (replacing 2016 with 2013)	5,116,997				
Variance between current and 5 Yr Ave Consumption	-3.40%	-2.58%	4.34%	-1.19%	2.39%

Largest percentage reduction in volumetric sales at **PWW of** 3.40% over the past five years from the five year average of volumetric sales excluding 2016, including 2013

Results in a Revenue loss of based on 5 year average sales less 2016, including 2013	$	636,621	based on current permanent rate of $ 3.66 per CCF
Results in an Operating Expense reduction of	$	98,981	based on 2018 variable operating expenses
Results in an Operating Income reduction of	$	537,640	

Notes:
1. Based on Debt Service Multiplier of 1.10 per Sch A of 1604.06 schedules
2. Revenue requirements per Sch A Perm-Modified of 1604.06 schedules
3. Requested Rate Stabilization fund for Operating Expense and P & I Coverage each have a contingency of 10% safety factor
4. PWW share of the $5,000,000 RSF for distribution to the RSF, MOERSF and the P&IRSF is[5] 78.33% based on % of PWW revenues (2012 Case) to % of all three regulated utilities revenues (2012 Cases) or $ 3,920,000
5. Calculation of RSF Pecentage based on Revenue requirements from DW13-126, 13-128 and 13-130

PWW Revenue Requirment -	$	27,689,214	per DW13-130 Settlement Agreement
PEU Revenue Requirement -	$	6,913,261	per DW13-126 Settlement Agreement
PAC Revenue Requirement -	$	745,186	per DW13-128 Settlement Agreement
Total Utility Revenue Requirement -	$	35,347,661	

6. For Calculation of Operating Expense Requirement see Exhibit 1.1
7. Inclusive of pro forma to Hudson and Pennichuck East Usage due to the PWW-PEU interconnect - See 1604.06 Schedule 1C
8. Request rate stabilization fund levels based on multiple years of coverage for the MOERR and 1.0 DSRR RSF, and to re-establish all RSF funds to their imprest levels as determined and approved under DW 16-806.
9. WICA/QCPAC revenues are divided between variable and fixed revenues based on the ratio between those revenues without the WICA/QCPAC Revenues per year as follows

Year	Fixed	Variable
2013	44.8%	55.2%
2014	44.6%	55.4%
2015	43.4%	56.6%
2017	45.6%	54.4%
2018	44.6%	55.4%

10. Actual year auditted expenses, including non material operating expenses
11. Amortization expense for 2013, 2014, 2015 and 2017 as provided by NHPUC Staff
12. Cash tax expenses is estimated for 2013, 2014, 2015 and 2017

MOERR RSF Balance Analysis - Increased operating expenses only

Auditted	12/31/2017 MOERR RSF Balance	$	2,620,152		
Auditted	2018 MOERR Revenues	$	16,699,145		
Auditted	2018 MOERR Expenses	$	18,759,594		
Auditted	12/31/2018 MOERR RSF Balance	$	559,703		
Based on unauditted PWW 2019 Year End Revenues	2019 MOERR Revenues	$	16,360,684		
Based on unauditted PWW 2019 Year End Expenses	2019 MOERR Expenses	$	20,293,262		
Based on unauditted PWW 2019 Year End Revenues and Expenses	12/31/2019 MOERR RSF Balance	$	(3,372,875)		
Amount Subject to Current Rate Case Order	Replenish MOERR RSF	$	2,850,000	to desired value	
Based on current Rate Case filing schedules with full year of approved MOERR per Cell F13 above per 1604.04 Sch A. This $$ amount is less the NOERR and multiplied by the proposed MOERR Contingency Factor plus 75% of property taxes associated with taxable 2019 Capex	2020 MOERR Revenues	$	21,050,287	Assumes full year at requested 19-084 rates plus recoupment to 9 months of 2019 QCPAC @	3.83%
MOES requested in DW19-084 plus operating expense increase of 3% in 2020 plus increase in 2020 property taxes associated with 2019 QCP's	2020 Material Operating Expenses	$	20,494,081		
	12/31/2020 MOERR RSF Balance	$	3,406,206		
Based on current Rate Case filing MOERR per Cell F13 above. This $$ amount plus 25% of property taxes associated with taxable 2019 assets plus 75% of property taxes associated with taxable 2019 and 2020 Capex	2021 MOERR Revenues	$	21,332,446	Assumes 3 months of 2019 QCPAC plus 9 months of 2020 QCPAC @	6.46%
MOES requested in DW19-084 plus operating expense increases of 3% per year for 2020 and 2021 plus property taxes on 2019 and 2020 QCP's	2021 Material Operating Expenses	$	21,335,416		
	12/31/2021 MOERR RSF Balance	$	3,403,236		
Based on current Rate Case filing MOERR per Cell F13 above. This $$ amount plus 25% of property taxes associated with taxable 2019 and 2020 assets plus 75% of property taxes associated with taxable 2019, 2020 and 2021 Capex	2022 MOERR Revenues	$	21,602,875	Assumes 3 months of 2020 QCPAC plus 9 months of 2021 QCPAC @	10.13%
MOES requested in DW19-084 plus operating expense increases of 3% per year for 2020, 2021 and 2022 plus property taxes on 2019, 2020 and 2021 QCP's	2022 Material Operating Expenses	$	22,236,898		
	12/31/2022 MOERR RSF Balance	$	2,769,212		
Based on 2022 MOE times allowed MOES factor plus 9 months of 2022 property taxes related 2021 QCP's	2023 MOERR Revenues	$	24,598,183	Assumes full year at requested 22-xxx rates plus recoupment to 9 months of 2022 QCPAC	3%
MOES requested in DW22-xx plus operating expense increase of 3% in 2023 plus increase in 2023 property taxes associated with 2022 QCP's	2023 Material Operating Expenses	$	23,235,712		
	12/31/2023 MOERR RSF Balance	$	4,131,684		

Appendix 2 - Attachment B MOEF Financial Model

Pennichuck Water Works, Inc.
Accounts Excluded From MOERR
DW 19-084
Revised per Staff DR 2-37; Rev 5/26/20

															(1)
															Test Year
															2018 Totals
921002	SENIOR MANAGEMENT VEHICLES	165.33	-	154.01	199.91	1,462.15	563.18	136.13	202.31	-	259.43	231.32	-	**3,373.77**	3,373.77
921003	SENIOR MGMT - FUEL PURCHASED	268.27	290.78	581.48	292.31	-	29.40	460.43	518.38	478.78	401.56	412.62	352.66	**4,086.67**	4,086.67
921004	SENIOR MGMT-VEH REGISTRATION	-	-	-	-	-	-	-	-	990.60	-	-	-	**990.60**	990.60
923000	OUTSIDE SERVICES	26,089.44	52,203.05	18,573.97	35,287.99	39,854.29	44,858.22	23,959.26	20,603.55	22,444.81	47,134.61	24,067.78	30,282.72	**385,359.69**	385,359.69
926001	OFFICER'S LIFE INSURANCE	386.19	386.19	386.19	386.19	386.19	386.19	386.19	386.19	2,055.19	386.19	386.19	386.19	**6,303.28**	6,303.28
926500	MISC EMPLOYEE BENEFITS	4,364.64	1,732.33	1,830.57	1,310.04	365.44	2,627.19	720.54	(7,570.39)	1,452.24	1,883.76	2,924.33	(2,881.77)	**8,758.92**	8,758.92
926501	MISC EMPLOYEE BENEFITS-WELLNESS	-	-	630.70	(1,105.00)	6,715.00	(1,056.52)	(282.08)	(2,770.73)	853.41	(1,109.16)	10.00	1,485.76	**3,371.38**	3,371.38
926502	MISC EMPLOYEE BENEFITS-ACTIVITIES	-	-	-	-	-	-	-	948.43	354.49	3,102.63	2,500.00	4,768.88	**11,674.43**	11,674.43
926505	EMPLOYEE RELATIONS	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
926600	TUITION REIMBURSEMENTS	6,510.00	-	2,972.84	-	4,088.37	976.85	3,801.00	-	99.70	5,642.87	1,476.90	6,677.77	**32,246.30**	32,246.30
926610	TRAINING EDUCATIONAL SEMINARS	1,180.00	1,305.00	-	4,016.34	708.00	2,754.50	2,383.98	280.00	11,188.41	19,877.43	606.45	6,667.33	**50,967.44**	50,967.44
930100	MEETINGS & CONVENTIONS	915.00	5,299.70	5,343.92	5,644.97	526.53	273.33	908.96	33.33	13,381.78	659.00	1,496.66	841.61	**35,324.79**	35,324.79
930101	MEMBERSHIPS	3,833.91	3,698.91	139.98	4,262.29	3,829.66	3,857.62	2,463.42	3,159.92	2,524.71	2,042.72	3,308.76	2,467.63	**35,589.53**	35,589.53
930200	PUBLIC RELATIONS	-	429.65	913.96	2,681.64	5,989.22	13,011.91	887.53	535.24	-	443.57	372.60	359.64	**25,624.96**	25,624.96
930300	MEALS	390.09	610.33	398.83	282.21	411.20	147.01	291.72	396.51	122.94	742.99	382.58	26.93	**4,203.34**	4,203.34
930410	CHARITABLE CONTRIBUTIONS	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
														Total of Non RSF backed O&M Expenses -	607,875.10
														Adjustment to NOERR expenses per Staff DR's 2-12, 2-30 and 3-5 -	52,529.00
														Proforma 2018 NOERR expenses -	555,346.10

Rate Stabilization Fund Calculations
Revised 1/24/2020 per Staff Tech DR2's
Resubmitted 2/7/2020 per Staff 3-1
Adjusted per Staff 4-1 on 2/21/2020
Revised 4/1/2020 to reflect Staff DR 4's
Revised 4/9/2020 to reflect Staff Tech 4's
4.67 TIC
Revised 5/20/2020 to refflect tech session and correction of NOERR expenses; Rev 5/27/20

DLW Exhibit 1

Appendix 2 - Attachment B MOEF Financial Model

PWW Proforma 5 Year Average 2018 Test Year with MOES

Pro forma Revenue Requirement[1] - $ **35,839,462**
Operating Expense Contingency - **7.66%** **applies against Material Operating Expenses**

Annual Operating Expense increases @ 3.00%

	CBFRR	Material Operating Expense Revenue Requirement (MOERR)	Operating Expense Revenue Requirment (NOERR)[6]	1.0 Debt Service Revenue Requirement (1.0 DSRR)[1]	0.1 Debt Service Reveue Requirement (0.1 DSRR)	Total RSF Funds Required	Available RSF funds on 12/31/2019	
Revenue Requirement[2] -	$ 7,729,032	$ 20,391,834	$ 555,346	$ 6,512,046	$ 651,205		$ (964,545)	
Percentage of Revenues -	21.57%	56.90%	1.55%	18.17%	1.82%			
1 Year coverage -	$ 148,602	$ 998,945		$ 125,204				
2 Year coverage -	$ 297,204	$ 2,624,794		$ 250,407				
3 Years coverage -	$ 445,806	$ 4,896,352		$ 375,611	$ -			
Calculated Rate Stabilization Fund by Revenue Category for 1 year[3,4,9] -	$ 160,000	$ 1,100,000		$ 140,000		$ 1,400,000		
Calculated Rate Stabilization Fund by Revenue Category for 2 year[3,4,9] -	$ 330,000	$ 2,890,000		$ 280,000		$ 3,500,000		
Calculated Rate Stabilization Fund by Revenue Category for 3 years[3,4,9] -	$ 490,000	$ 5,390,000	No Stabilization Fund	$ 410,000	No Stabilization Fund	$ 6,290,000		
Requested Rate Stabiliation Fund levels[8] -	$ 680,000	$ 2,850,000		$ 390,000		$ 3,920,000	$ 4,884,545	Required Catch up As a "one time" borrowed amount to refill the RSF funds awating implementation of the MOES
Based on largest variance from five year ave of -	3.40%							

Revenue Type	2013 PWW Billed Revenue	2014 PWW Billed Revenue	2015 PWW Billed Revenue	2017 PWW Billed Revenue	2018 PWW Billed Revenue
Total Volumetric Charges, includes Unbilled water sales, Unbilled/and Billed Recoupment and abatements	$ 15,093,982	$ 15,340,557	$ 16,357,423	$ 15,457,194	$ 17,516,995
Total Meter Charge (fixed) includes fixed portion of special contracts	$ 8,162,854	$ 8,243,956	$ 8,429,316	$ 8,766,739	$ 9,437,913
WICA/QCPAC revenues	$ -	$ 109,727	$ 367,548	$ 705,661	$ 362,159
Total Private Fire Protection Charges (fixed)	$ 1,027,245	$ 1,039,276	$ 1,058,281	$ 1,089,205	$ 1,210,960
Total Municipal Fire Proection Charges (fixed)	$ 3,047,037	$ 3,060,346	$ 3,075,100	$ 3,116,640	$ 3,442,774
Total Billed Revenue	$ 27,331,118	$ 27,793,862	$ 29,287,668	$ 29,135,439	$ 31,970,800
% of Revenues that are variable	55.2%	55.4%	56.6%	54.4%	55.4%
% of Revenues that are fixed	44.8%	44.6%	43.4%	45.6%	44.6%

Calculation of MOER RSF

	Increases Over 2019	Revenue Shortfall
2020 -	$ 608,786	$ 390,160
2021 -	$ 1,235,746	$ 390,103
2022 -	$ 1,881,515	$ 390,044
	$ 3,726,046	$ 1,170,306
	Totals -	$ 4,896,352

Maximum percentage of revenues that were variable during the previous 5 years - 56.56%

Expense Type	2013 PWW Actual Variable Expenses	2014 PWW Actual Variable Expenses	2015 PWW Actual Variable Expenses	2017 PWW Actual Variable Expenses	2018 PWW Actual Variable Expenses
Purchased Water	$ 415,331	$ 393,060	$ 462,177	$ 437,664	$ 472,407
Electric	$ 873,619	$ 898,211	$ 1,164,461	$ 1,053,878	$ 1,152,305
Chemicals	$ 659,914	$ 696,650	$ 668,919	$ 765,438	$ 908,982
Sludge Disposal	$ 246,601	$ 303,057	$ 316,654	$ 385,873	$ 378,140
Total Variable Costs	$ 2,195,465	$ 2,290,978	$ 2,612,211	$ 2,642,853	$ 2,911,834
Variable Expenses as a Percent of Total Revenues	8.0%	8.2%	8.9%	9.1%	9.1%

	2013 PWW Actual Operating Expenses[10]	2014 PWW Actual Operating Expenses[10]	2015 PWW Actual Operating Expenses[10]	2017 PWW Actual Operating Expenses[10]	2018 PWW Actual Operating Expenses[10]
Production Expenses	$ 3,866,154	$ 4,099,167	$ 4,515,441	$ 4,571,844	$ 5,074,509
T&D expenses	$ 1,547,952	$ 1,868,516	$ 1,858,477	$ 2,168,076	$ 2,848,339
Engineering Expenses	$ 833,292	$ 964,081	$ 1,065,646	$ 1,169,359	$ 1,287,747
Customer Acct & Collection Expenses	$ 436,393	$ 442,289	$ 463,937	$ 447,889	$ 489,789
Admin and General Expenses	$ 6,677,427	$ 6,000,562	$ 6,364,880	$ 7,303,584	$ 7,580,371
Inter Div Mgt Fee Expense	$ (2,254,305)	$ (2,270,498)	$ (2,378,932)	$ (3,321,124)	$ (3,288,063)
Amortization Expense[11]	$ 48,059	$ 140,811	$ 167,776	$ 145,441	$ 134,666
Property Tax Expense / Payroll Tax Expense	$ 4,123,297	$ 4,468,936	$ 4,617,857	$ 5,210,697	$ 4,438,775 / $ 698,087
Cash Tax Expense[12]	$ 99,000	$ 100,000	$ 101,000	$ 103,000	$ 103,249
Total Material Operating Expense	$ 15,377,269	$ 15,813,864	$ 16,776,082	$ 17,798,766	$ 19,367,469
Percent increase in operationg expenses over the prior year		2.84%	6.08%	3.05%	8.81%
				Total increase over 5 years -	25.95%
				Ave. increase per year (inclusive of compounding) -	4.72%

	2013 Actual CCF's sold by PWW	2014 Actual CCF's sold by PWW	2015 Actual CCF's sold by PWW	2017 Actual CCF's sold by PWW	2018 Actual CCF's sold by PWW
Annual Metered Sales (CCF)	4,948,775	4,988,184	5,349,169	5,056,592	5,242,264
Percentage Variance between Current and High Consumption Year	-8.09%	-7.24%	0.00%	-5.79%	-2.04%

Appendix 2 - Attachment B MOEF Financial Model

Average Consumption (CCF) over the past five years (replacing 2016 with 2013)	5,116,997				
Variance between current and 5 Yr Ave Consumption	-3.40%	-2.58%	4.34%	-1.19%	2.39%

Largest percentage reduction in volumetric sales at **PWW of** 3.40% over the past five years from the five year average of volumetric sales excluding 2016, including 2013

Results in a Revenue loss of based on 5 year average sales less 2016, including 2013	$ 636,621	based on current permanent rate of	$ 3.66	per CCF
Results in an Operating Expense reduction of	$ 98,981	based on 2018 variable operating expenses		
Results in an Operating Income reduction of	$ 537,640			

Notes:
1. Based on Debt Service Multiplier of 1.10 per Sch A of 1604.06 schedules
2. Revenue requirements per Sch A Perm-Modified of 1604.06 schedules
3. Requested Rate Stabilization fund for Operating Expense and P & I Coverage each have a contingency of 10% safety factor
4. PWW share of the $5,000,000 RSF for distribution to the RSF, MOERSF and the P&IRSF is[5] 78.33% based on % of PWW revenues (2012 Case) to % of all three regulated utilities revenues (2012 Cases) or $ 3,920,000
5. Calculation of RSF Pecentage based on Revenue requirements from DW13-126, 13-128 and 13-130

PWW Revenue Requirment -	$ 27,689,214	per DW13-130 Settlement Agreement
PEU Revenue Requirement -	$ 6,913,261	per DW13-126 Settlement Agreement
PAC Revenue Requirement -	$ 745,186	per DW13-128 Settlement Agreement
Total Utility Revenue Requirement -	$ 35,347,661	

6. For Calculation of Operating Expense Requirement see Exhibit 1.1
7. Inclusive of pro forma to Hudson and Pennichuck East Usage due to the PWW-PEU interconnect - See 1604.06 Schedule 1C
8. Request rate stabilization fund levels based on multiple years of coverage for the MOERR and 1.0 DSRR RSF, and to re-establish all RSF funds to their imprest levels as determined and approved under DW 16-806.
9. WICA/QCPAC revenues are divided between variable and fixed revenues based on the ratio between those revenues without the WICA/QCPAC Revenues per year as follows

Year	Fixed	Variable
2013	44.8%	55.2%
2014	44.6%	55.4%
2015	43.4%	56.6%
2017	45.6%	54.4%
2018	44.6%	55.4%

10. Actual year auditted expenses, including non material operating expenses
11. Amortization expense for 2013, 2014, 2015 and 2017 as provided by NHPUC Staff
12. Cash tax expenses is estimated for 2013, 2014, 2015 and 2017

MOERR RSF Balance Analysis - Increased operating expenses only

Auditted	12/31/2017 MOERR RSF Balance	$ 2,620,152		
Auditted	2018 MOERR Revenues	$ 16,699,145		
Auditted	2018 MOERR Expenses	$ 18,759,594		
Auditted	12/31/2018 MOERR RSF Balance	$ 559,703		
Based on unauditted PWW 2019 Year End Revenues	2019 MOERR Revenues	$ 16,360,684		
Based on unauditted PWW 2019 Year End Expenses	2019 MOERR Expenses	$ 20,293,262		
Based on unauditted PWW 2019 Year End Revenues and Expenses	12/31/2019 MOERR RSF Balance	$ (3,372,875)		
Amount Subject to Current Rate Case Order	Replenish MOERR RSF	$ 2,850,000	to desired value	
Based on current Rate Case filing schedules with full year of approved MOERR per Cell F13 above per 1604.04 Sch A. This $$ amount is less the NOERR and multiplied by the proposed MOERR Continengecy Factor plus 75% of property taxes associated with taxable 2019 Capex	2020 MOERR Revenues	$ 20,700,849	Assumes full year at requested 19-084 rates plus recoupment to 9 months of 2019 QCPAC @	3.83%
MOES requested in DW19-084 plus operating expense increase of 3% in 2020 plus increase in 2020 property taxes associated with 2019 QCP's	2020 Material Operating Expenses	$ 20,494,081		
	12/31/2020 MOERR RSF Balance	$ 3,056,767		
Based on current Rate Case filing MOERR per Cell F13 above. This $$ amount plus 25% of property taxes associated with taxable 2019 assets plus 75% of property taxes associated with taxable 2019 and 2020 Capex	2021 MOERR Revenues	$ 20,983,008	Assumes 3 months of 2019 QCPAC plus 9 months of 2020 QCPAC @	6.46%
MOES requested in DW19-084 plus operating expense increases of 3% per year for 2020 and 2021 plus property taxes on 2019 and 2020 QCP's	2021 Material Operating Expenses	$ 21,335,416		
	12/31/2021 MOERR RSF Balance	$ 2,704,360		
Based on current Rate Case filing MOERR per Cell F13 above. This $$ amount plus 25% of property taxes associated with taxable 2019 and 2020 assets plus 75% of property taxes associated with taxable 2019, 2020 and 2021 Capex	2022 MOERR Revenues	$ 21,253,436	Assumes 3 months of 2020 QCPAC plus 9 months of 2021 QCPAC @	10.13%
MOES requested in DW19-084 plus operating expense increases of 3% per year for 2020, 2021 and 2022plus property taxes on 2019, 2020 and 2021 QCP's	2022 Material Operating Expenses	$ 22,236,898		
	12/31/2022 MOERR RSF Balance	$ 1,720,898		
Based on 2022 MOE times allowed MOES factor plus 9 months of 2022 property taxes related 2021 QCP's	2023 MOERR Revenues	$ 24,187,957	Assumes full year at requested 22-xxx rates plus recoupment to 9 months of 2022 QCPAC	3%
MOES requested in DW22-xx plus operating expense increase of 3% in 2023 plus increase in 2023 property taxes associated with 2022 QCP's	2023 Material Operating Expenses	$ 23,235,712		
	12/31/2023 MOERR RSF Balance	$ 2,673,144		

Pennichuck Water Works, Inc.
Accounts Excluded From MOERR
DW 19-084
Revised per Staff DR 2-37; Rev 5/27/20

Appendix 2 - Attachment B MOEF Financial Model

																(1) Test Year **2018 Totals**
921002	SENIOR MANAGEMENT VEHICLES	165.33	-	154.01	199.91	1,462.15	563.18	136.13	202.31	-	259.43	231.32	-	**3,373.77**		3,373.77
921003	SENIOR MGMT - FUEL PURCHASED	268.27	290.78	581.48	292.31	-	29.40	460.43	518.38	478.78	401.56	412.62	352.66	**4,086.67**		4,086.67
921004	SENIOR MGMT-VEH REGISTRATION	-	-	-	-	-	-	-	-	990.60	-	-	-	**990.60**		990.60
923000	OUTSIDE SERVICES	26,089.44	52,203.05	18,573.97	35,287.99	39,854.29	44,858.22	23,959.26	20,603.55	22,444.81	47,134.61	24,067.78	30,282.72	**385,359.69**		385,359.69
926001	OFFICER'S LIFE INSURANCE	386.19	386.19	386.19	386.19	386.19	386.19	386.19	386.19	2,055.19	386.19	386.19	386.19	**6,303.28**		6,303.28
926500	MISC EMPLOYEE BENEFITS	4,364.64	1,732.33	1,830.57	1,310.04	365.44	2,627.19	720.54	(7,570.39)	1,452.24	1,883.76	2,924.33	(2,881.77)	**8,758.92**		8,758.92
926501	MISC EMPLOYEE BENEFITS-WELLNESS	-	-	630.70	(1,105.00)	6,715.00	(1,056.52)	(282.08)	(2,770.73)	853.41	(1,109.16)	10.00	1,485.76	**3,371.38**		3,371.38
926502	MISC EMPLOYEE BENEFITS-ACTIVITIES	-	-	-	-	-	-	-	948.43	354.49	3,102.63	2,500.00	4,768.88	**11,674.43**		11,674.43
926505	EMPLOYEE RELATIONS	-	-	-	-	-	-	-	-	-	-	-	-	**-**		-
926600	TUITION REIMBURSEMENTS	6,510.00	-	2,972.84	-	4,088.37	976.85	3,801.00	-	99.70	5,642.87	1,476.90	6,677.77	**32,246.30**		32,246.30
926610	TRAINING EDUCATIONAL SEMINARS	1,180.00	1,305.00	-	4,016.34	708.00	2,754.50	2,383.98	280.00	11,188.41	19,877.43	606.45	6,667.33	**50,967.44**		50,967.44
930100	MEETINGS & CONVENTIONS	915.00	5,299.70	5,343.92	5,644.97	526.53	273.33	908.96	33.33	13,381.78	659.00	1,496.66	841.61	**35,324.79**		35,324.79
930101	MEMBERSHIPS	3,833.91	3,698.91	139.98	4,262.29	3,829.66	3,857.62	2,463.42	3,159.92	2,524.71	2,042.72	3,308.76	2,467.63	**35,589.53**		35,589.53
930200	PUBLIC RELATIONS	-	429.65	913.96	2,681.64	5,989.22	13,011.91	887.53	535.24	-	443.57	372.60	359.64	**25,624.96**		25,624.96
930300	MEALS	390.09	610.33	398.83	282.21	411.20	147.01	291.72	396.51	122.94	742.99	382.58	26.93	**4,203.34**		4,203.34
930410	CHARITABLE CONTRIBUTIONS	-	-	-	-	-	-	-	-	-	-	-	-	**-**		-
													Total of Non RSF backed O&M Expenses -			607,875.10
													Adjustment to NOERR expenses per Staff DR's 2-12, 2-30 and 3-5 -			52,529.00
													Proforma 2018 NOERR expenses -			555,346.10

DW 19-084
PENNICHUCK WATER WORKS, INC.
SUMMARY - CALCULATION OF REVENUE REQUIREMENT

Appendix 2, Attachment C

	REVENUE REQUIREMENT PER COMPANY'S ORIGINAL FILING		REVENUE REQUIRMENT PER SETTLEMENT ESTIMATED[1] (DW 20-055 Financing @ 3.67% Total Interest Cost)		MAXIMUM[2] (DW 20-055 Financing @ 4.67% Total Interest Cost)	
CITY BOND FIXED REVENUE REQUIREMENT (CBFRR)						
1) City Bond Fixed Revenue Requirement (CBFRR) (Schedule 1)	**$ 7,729,032**		**$ 7,729,032**		**$ 7,729,032**	
OPERATING EXPENSE REVENUE REQUIREMENT (OERR) (Schedules 2.1/2.2)						
2) Total Pro Forma Operation & Maintenance Expenses	$ 14,739,018		$ 14,581,494		$ 14,581,494	
3) Pro Forma Property Tax Expense	4,547,936		3,968,596		3,968,596	
4) Pro Forma Payroll Tax Expense	698,087		698,087		698,087	
5) Pro Forma Amortization Expense	415,268		145,720		145,720	
6) Pro Forma Income Tax Expense	103,249		103,249		103,249	
7) Total Operating Expenses [(2) + (3) + (4) + (5) + (6)]	**20,503,558**		**19,497,146**		**19,497,146**	
MATERIAL OPERATING EXPENSE SUPPLEMENT (MOES)						
8) Less: Non-Material Operating Expenses (Schedule 2b)			(555,346)		(555,346)	
9) Material Operating Expenses [(7) - (8)]			18,941,800		18,941,800	
10) Material Operating Expense Factor (MOEF) per Settlement			x 9.50%		x 7.66%	
11) MOEF Calculated Result [(9) x (10)]			**1,799,471**		**1,450,033**	
12) Operating Expense Revenue Requirement (OERR) [(7) + (11)]	**$ 20,503,558**		**$ 21,296,617**		**$ 20,947,179**	
DEBT SERVICE REVENUE REQUIREMENT (DSRR) (Schedule 3)						
13) Pro Forma Test Year Annual Debt Service	$ 6,999,023		$ 7,002,631		$ 7,002,631	
14) Debt Service Coverage Requirement	x 1.1		x 1.1		x 1.1	
15) Debt Service Revenue Requirement (DSRR) [(13) x (14)]	**7,698,925**		**7,702,894**		**7,702,894**	
16) **REVENUE REQUIREMENT BEFORE APPLICATION OF DEBT SERVICE SAVINGS RESULTING FROM DW 20-055 FINANCING [(1) + (12) + (15)]**	**$ 35,931,515**		**$ 36,728,543**		**$ 36,379,105**	
REDUCTION IN REVENUE REQUIREMENT RESULTING FROM DW 20-055 FINANCING						
17) Less: Estimated Debt Service Savings from DW 20-055 Financing (Schedule 3)			(970,374)		(490,585)	
18) Debt Service Coverage Requirement			x 1.1		x 1.1	
19) Estimated Reduction in Revenue Requirement [(17) x (18)]			**(1,067,411)**		**(539,644)**	
20) **TOTAL PROPOSED REVENUE REQUIREMENT** [(16) - (19)]	**$ 35,931,515**		**$ 35,661,131**		**$ 35,839,461**	
CALCULATION OF PERCENT INCREASE (DECREASE) IN ANNUAL WATER REVENUES						
21) Total Proposed Revenue Requirement [(20)]	$ 35,931,515		$ 35,661,131		$ 35,839,461	
22) Less: Pro Forma Test Year Other Operating Revenues (Schedules 2.1/2.2)	(420,712)		(420,712)		(420,712)	
23) Total Proposed Water Revenues from Base Rates [(21) - (22)]	**$ 35,510,803**		**$ 35,240,419**		**$ 35,418,749**	
24) Less: Pro Forma Test Year Water Revenues from Base Rates (Schedules 2.1/2.2)	(31,732,664)		(31,649,316)		(31,649,316)	
25) **Proposed Increase / (Decrease) in Annual Water Revenues from Base Rates [(23) - (24)]**	**$ 3,778,139**	**11.91%**	**$ 3,591,103**	**11.35%**	**$ 3,769,433**	**11.91%**
26) Less: Pro Forma Test Year Water Revenues from QCPAC (Schedules 2.1/2.2)	(1,169,488)		(1,248,097)		(1,248,097)	
27) **Proposed Increase / (Decrease) in Total Annual Water Revenues [(25) - (26)]**	**$ 2,608,651**	**8.22%**	**$ 2,343,006**	**7.40%**	**$ 2,521,336**	**7.97%**

Notes:
(1) Presented under the scenario whereby the Co's proposed DW 20-055 Financing is issued at the currently estimated 3.67% Total Interest Cost resulting in net annual debt service savings of $970,374 (Sch 3), thereby enabling the Co to include a MOEF of 9.50% in the MOERR component of its overall revenue requirement, resulting in a revenue increase of 11.35%.

(2) Presented under the scenario whereby the Co's proposed DW 20-055 Financing is issued at an estimated 4.67% Total Interest Cost resulting in net annual debt service savings of $490,585 (Sch 3), thereby only enabling the Co to include a MOEF of 7.66% in the MOERR component of its overall revenue requirement so as not exceed PWW's originally proposed increase in its revenue requirement of 11.91%.

Appendix 2, Attachment C

DW 19-084
PENNICHUCK WATER WORKS, INC.
SCHEDULE 1 - CALCULATION OF PWW'S SHARE OF CITY BOND FIXED REVENUE REQUIREMENT (CBFRR)

Total City Bond	$	150,570,000	
Bond Interest Rate		4.09%	
Bond Period		30	yrs.
Total City Bond	$	150,570,000	
Less Rate Stabilization fund	$	5,000,000	
Amount of City Bond to be prorated between Utilities CBFRR	$	145,570,000	
PWW Share of CBFRR		88.12%	
PWW Prorate share	$	128,282,230	
Add back PWW Pro Rata Share of Rate Stabilization Reserve	$	3,920,000	
Total PWW Pro Rata Share for CBFRR/MARA	$	132,202,230	
Bond Interest Rate		4.09%	
Bond Period		30	yrs.
PWW CBFRR Requirement	**$**	**7,729,032**	

Notes:

Pro Rata Calculation as follows:[1]

PWW & Southwood Equity (12/31/2011) [2]	$	56,442,675	88.12%
PEU Equity (12/31/2011)	$	6,540,063	10.21%
PAC Equity (12/31/2011)	$	1,066,353	1.66%
	$	64,049,091	100.00%

Calculation of RSF Pecentage based on Revenue requirements from DW13-126, 13-128 and 13-130

RSF amount funded by City Bond -	$	5,000,000	
PWW Revenue Requirment -	$	27,689,214	per DW13-130 Settlement Agreement
PEU Revenue Requirement -	$	6,913,261	per DW13-126 Settlement Agreement
PAC Revenue Requirement -	$	745,186	per DW13-128 Settlement Agreement
PWW Share of RSF as a percentage -		78.33%	
PWW Share of RSF in $$ -	$	3,920,000	

Distribution of RSF funds to Revenue Requirement RSF's [3]

CBFRR RSF	$	680,000
MOERR RSF	$	2,850,000
1.0 DSRR RSF	$	390,000
	$	3,920,000

(1) Calculations are from DW11-026
(2) Consists of Equity as of 12/31/2011 as follows:

PWW	$	54,395,626
Southwood	$	2,047,049
Total	$	56,442,675

(3) PWW RSF fund levels as established in DW16-806

Appendix 2, Attachment C

DW 19-084
PENNICHUCK WATER WORKS, INC.
SCHEDULE 2.1 - OPERATING INCOME STATEMENT AND DETAILED CALCULATION OF ESTIMATED REVENUE REQUIREMENT

	Company Proposal per Original Filing			Settlement Proposal			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Test Year Operating Income	Pro Forma Adj's Per Co's Filing	Pro Forma Operating Income Per Co' Filing (Co's Sch 1)	Adj's per Co Responses to Staff DR's (Sch 2a)	Pro Forma Operating Income Per Settlement	Revenue Increase per Settlement	Revenue Requirement per Settlement
OPERATING REVENUES							
Revenues from Water Sales:							
Water Revenues from Base Rates	$ 31,608,641	$ 124,023	$ 31,732,664	$ (83,348)	$ 31,649,316	**$ 3,591,103**	**$ 35,240,419**
Water Revenues from QCPAC	362,158	807,330	1,169,488	78,609	1,248,097	(1,248,097)	-
Total Water Revenues from Water Sales	31,970,799	931,353	32,902,152	(4,739)	32,897,413	2,343,006	35,240,419
Water Sales for Resale	3,321		3,321		3,321		3,321
Other Operating Revenues	416,551	840	417,391		417,391		417,391
Total Operating Revenues	32,390,671	932,193	33,322,864	(4,739)	33,318,125	**2,343,006**	**35,661,131**
OPERATING EXPENSES							
Operation and Maintenance Expenses:							
Production Expense	5,074,509	223,378	5,297,887	8,300	5,306,187		5,306,187
Transmission and Distribution Expense	2,848,339	98,367	2,946,706	(25,258)	2,921,448		2,921,448
Engineering Expense	1,287,747	11,317	1,299,064		1,299,064		1,299,064
Customer Account and Collection Expense	489,789	9,700	499,489		499,489		499,489
Administrative and General Expense	7,580,371	551,328	8,131,699	(231,028)	7,900,671		7,900,671
Inter-Division Management Fee	(3,288,063)	(147,764)	(3,435,827)	90,462	(3,345,365)		(3,345,365)
Total Operation and Maintenance Expenses	13,992,692	746,326	14,739,018	(157,524)	14,581,494	-	14,581,494
Other Operating Expenses:							
Property Tax Expense	4,438,775	109,161	4,547,936	(579,340)	3,968,596		3,968,596
Payroll Tax Expense	698,087		698,087		698,087		698,087
Gain from Forgiveness of SRF Debt	(59,384)	59,384	-		-		-
Depreciation Expense	5,839,694	(5,839,694)	-		-		-
Amortization of Acquisition Adjustment	(27,026)	27,026	-		-		-
Amortization - CIAC	(740,182)	740,182	-		-		-
Amortization Expense	1,965,332	(1,550,064)	415,268	(269,548)	145,720		145,720
Total Other Operating Expenses	12,115,296	(6,454,005)	5,661,291	(848,888)	4,812,403	-	4,812,403
Income Tax Expense:							
State Income Tax Expense	794,209	(690,960)	103,249		103,249		103,249
Federal Income Tax Expense	1,592,022	(1,592,022)	-		-		-
Total Income Tax Expense	2,386,231	(2,282,982)	103,249	-	103,249	-	103,249
Total Operating Expenses	28,494,219	(7,990,661)	20,503,558	(1,006,412)	19,497,146	-	19,497,146
NET OPERATING INCOME	**$ 3,896,452**	**$ 8,922,854**	**$ 12,819,306**	**$ 1,001,673**	**$ 13,820,979**	**$ 2,343,006**	**$ 16,163,985**

DW 19-084
PENNICHUCK WATER WORKS, INC.
SCHEDULE 2.1 - OPERATING INCOME STATEMENT AND DETAILED CALCULATION OF ESTIMATED REVENUE REQUIREMENT

Appendix 2, Attachment C

CALCULATION OF REVENUE DEFICIENCY AND REQUIRED INCREASE @ AN ESTIMATED DW 20-055 FINANCING TOTAL INTEREST COST OF 3.67%:	**PER COMPANY**		**SETTLEMENT ADJUSTMENTS**		**PER SETTLEMENT**		**REVENUE INCREASE**		**PRO FORMA**
NET OPERATING INCOME	**$ 12,819,306**		**$ 1,001,673**		**$ 13,820,979**		**$ 2,343,006**		**$ 16,163,985**
LESS: MATERIAL OPERATING EXPENSE FACTOR (MOEF) CALCULATION									
TOTAL OPERATING EXPENSES	(20,503,558)		1,006,412		(19,497,146)		-		(19,497,146)
LESS: NON-MATERIAL OPERATING EXPENSES	607,875		(52,529)		555,346		-		555,346
MATERIAL OPERATING EXPENSES	(19,895,683)		953,883		(18,941,800)		-		(18,941,800)
x MATERIAL OPERATING EXPENSE FACTOR (MOEF)	9.50%	x	9.50%	x	9.50%	x	9.50%	x	9.5%
MOEF CALCULATED RESULT	**(1,890,090)**		**90,619**		**(1,799,471)**		**-**		**(1,799,471)**
LESS: CITY BOND FIXED REVENUE REQUIREMENT (CBFRR)	**(7,729,032)**		**-**		**(7,729,032)**		**-**		**(7,729,032)**
LESS: DEBT SERVICE REVENUE REQUIREMENT (DSRR)									
PRO FORMA DEBT SERVICE	(6,999,023)		(3,608)		(7,002,631)		-		(7,002,631)
x DEBT COVERAGE REQUIREMENT	1.1	x	1.1	x	1.1	x	1.1	x	1.1
DEBT SERVICE REVENUE REQUIREMENT (DSRR)	**(7,698,925)**		**(3,969)**		**(7,702,894)**		**-**		**(7,702,894)**
ADD: ESTIMATED CASH FLOW SAVINGS FROM DW 20-055 FINANCING									
ESTIMATED DEBT SERVICE SAVINGS @ 3.67 TOTAL INTEREST COST	970,374		-		970,374		-		970,374
x DEBT COVERAGE REQUIREMENT	1.1	x	1.1	x	1.1	x	1.1	x	1.1
TOTAL ESTIMATED CASH FLOW SAVINGS FROM DW 20-055 FINANCING	**1,067,411**		**-**		**1,067,411**		**-**		**1,067,411**
CALCULATED ESTIMATED REVENUE (DEFICIENCY) / INCREASE	**$ (3,431,330)**		**$ 1,088,323**		**$ (2,343,006)**		**$ 2,343,006**		**$ -**

Revenue Requirement Component Summary:

City Bond Fixed Revenue Requirement (CBFRR):			**$ 7,729,032**
Operating Expense Revenue Requirement (OERR):			
Total O & M Expenses		$ 14,581,494	
Property Tax Expense		3,968,596	
Payroll Tax Expense		698,087	
Amortization Expense		145,720	
Income Tax Expense		103,249	
Totoal Operating Expenses		**19,497,146**	
Less: Non-Material Operating Expenses		(555,346)	
Material Operating Expenses		18,941,800	
Material Operating Expense Factor (MOEF)	x	9.50%	
MOEF Calculated Result		**1,799,471**	**21,296,617**
Debt Service Revenue Requirement (DSRR):			
Pro Forma Debt Service		$ 7,002,631	
Debt Service Coverage Requirement	x	1.1	**7,702,894**
Estimated Cash Flow Savings from DW 20-055 Financing:			
Estimated Debt Service Savings @ 3.67% Total Interest Cost		$ (970,374)	
Debt Service Coverage Requirement	x	1.1	**(1,067,411)**
Total Estimated Revenue Requirement			**$ 35,661,131**

Appendix 2, Attachment C

DW 19-084
PENNICHUCK WATER WORKS, INC.
SCHEDULE 2.2 - OPERATING INCOME STATEMENT AND DETAILED CALCULATION OF MAXIMUM REVENUE REQUIREMENT

	Company Proposal per Original Filing			Settlement Proposal			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Test Year Operating Income	Pro Forma Adj's Per Co's Filing	Pro Forma Operating Income Per Co' Filing (Co's Sch 1)	Adj's per Co Responses to Staff DR's (Sch 2a)	Pro Forma Operating Income Per Settlement	Revenue Increase per Settlement	Revenue Requirement per Settlement
OPERATING REVENUES							
Revenues from Water Sales:							
Water Revenues from Base Rates	$ 31,608,641	$ 124,023	$ 31,732,664	$ (83,348)	$ 31,649,316	**$ 3,769,433**	**$ 35,418,749**
Water Revenues from QCPAC	362,158	807,330	1,169,488	78,609	1,248,097	(1,248,097)	-
Total Water Revenues from Water Sales	31,970,799	931,353	32,902,152	(4,739)	32,897,413	2,521,336	35,418,749
Water Sales for Resale	3,321		3,321		3,321		3,321
Other Operating Revenues	416,551	840	417,391		417,391		417,391
Total Operating Revenues	32,390,671	932,193	33,322,864	(4,739)	33,318,125	**2,521,336**	**35,839,461**
OPERATING EXPENSES							
Operation and Maintenance Expenses:							
Production Expense	5,074,509	223,378	5,297,887	8,300	5,306,187		5,306,187
Transmission and Distribution Expense	2,848,339	98,367	2,946,706	(25,258)	2,921,448		2,921,448
Engineering Expense	1,287,747	11,317	1,299,064		1,299,064		1,299,064
Customer Account and Collection Expense	489,789	9,700	499,489		499,489		499,489
Administrative and General Expense	7,580,371	551,328	8,131,699	(231,028)	7,900,671		7,900,671
Inter-Division Management Fee	(3,288,063)	(147,764)	(3,435,827)	90,462	(3,345,365)		(3,345,365)
Total Operation and Maintenance Expenses	13,992,692	746,326	14,739,018	(157,524)	14,581,494	-	14,581,494
Other Operating Expenses:							
Property Tax Expense	4,438,775	109,161	4,547,936	(579,340)	3,968,596		3,968,596
Payroll Tax Expense	698,087		698,087		698,087		698,087
Gain from Forgiveness of SRF Debt	(59,384)	59,384	-		-		-
Depreciation Expense	5,839,694	(5,839,694)	-		-		-
Amortization of Acquisition Adjustment	(27,026)	27,026	-		-		-
Amortization - CIAC	(740,182)	740,182	-		-		-
Amortization Expense	1,965,332	(1,550,064)	415,268	(269,548)	145,720		145,720
Total Other Operating Expenses	12,115,296	(6,454,005)	5,661,291	(848,888)	4,812,403	-	4,812,403
Income Tax Expense:							
State Income Tax Expense	794,209	(690,960)	103,249		103,249		103,249
Federal Income Tax Expense	1,592,022	(1,592,022)	-		-		-
Total Income Tax Expense	2,386,231	(2,282,982)	103,249	-	103,249	-	103,249
Total Operating Expenses	28,494,219	(7,990,661)	20,503,558	(1,006,412)	19,497,146	-	19,497,146
NET OPERATING INCOME	**$ 3,896,452**	**$ 8,922,854**	**$ 12,819,306**	**$ 1,001,673**	**$ 13,820,979**	**$ 2,521,336**	**$ 16,342,315**

DW 19-084
PENNICHUCK WATER WORKS, INC.
SCHEDULE 2.2 - OPERATING INCOME STATEMENT AND DETAILED CALCULATION OF MAXIMUM REVENUE REQUIREMENT

Appendix 2, Attachment C

CALCULATION OF REVENUE DEFICIENCY AND REQUIRED INCREASE @ AN ESTIMATED DW 20-055 FINANCING TOTAL INTEREST COST OF 4.67%:	**PER COMPANY**	**SETTLEMENT ADJUSTMENTS**	**PER SETTLEMENT**	**REVENUE INCREASE**	**PRO FORMA**
NET OPERATING INCOME	**$ 12,819,306**	**$ 1,001,673**	**$ 13,820,979**	**$ 2,521,336**	**$ 16,342,315**
LESS: MATERIAL OPERATING EXPENSE SUPPLEMENT (MOES)					
TOTAL OPERATING EXPENSES	(20,503,558)	1,006,412	(19,497,146)	-	(19,497,146)
LESS: NON-MATERIAL OPERATING EXPENSES	607,875	(52,529)	555,346	-	555,346
MATERIAL OPERATING EXPENSES	(19,895,683)	953,883	(18,941,800)	-	(18,941,800)
x MATERIAL OPERATING EXPENSE FACTOR (MOEF)	7.66% x	7.66% x	7.66% x	7.66% x	7.7%
MOEF CALCULATED RESULT	**(1,523,054)**	**73,022**	**(1,450,033)**	**-**	**(1,450,033)**
LESS: CITY BOND FIXED REVENUE REQUIREMENT (CBFRR)	**(7,729,032)**	**-**	**(7,729,032)**	**-**	**(7,729,032)**
LESS: DEBT SERVICE REVENUE REQUIREMENT (DSRR)					
PRO FORMA DEBT SERVICE	(6,999,023)	(3,608)	(7,002,631)	-	(7,002,631)
x DEBT COVERAGE REQUIREMENT	1.1 x	1.1 x	1.1 x	1.1 x	1.1
DEBT SERVICE REVENUE REQUIREMENT (DSRR)	**(7,698,925)**	**(3,969)**	**(7,702,894)**	**-**	**(7,702,894)**
ADD: ESTIMATED CASH FLOW SAVINGS FROM DW 20-055 FINANCING					
ESTIMATED DEBT SERVICE SAVINGS @ 4.67 TOTAL INTEREST COST	490,585	-	490,585	-	490,585
x DEBT COVERAGE REQUIREMENT	1.1 x	1.1 x	1.1 x	1.1 x	1.1
TOTAL ESTIMATED CASH FLOW SAVINGS FROM DW 20-055 FINANCING	**539,644**	**-**	**539,644**	**-**	**539,644**
CALCULATED MAXIMUM REVENUE (DEFICIENCY) / INCREASE	**$ (3,592,062)**	**$ 1,070,726**	**$ (2,521,336)**	**$ 2,521,336**	**$ -**

Revenue Requirement Component Summary:

City Bond Fixed Revenue Requirement (CBFRR):			**$ 7,729,032**
Operating Expense Revenue Requirement (OERR):			
Total O & M Expenses		$ 14,581,494	
Property Tax Expense		3,968,596	
Payroll Tax Expense		698,087	
Amortization Expense		145,720	
Income Tax Expense		103,249	
Totoal Operating Expenses		**19,497,146**	
Less: Non-Material Operating Expenses		(555,346)	
Material Operating Expenses		18,941,800	
Material Operating Expense Factor (MOEF)	x	7.66%	
MOEF Calculated Result		**1,450,033**	**20,947,179**
Debt Service Revenue Requirement (DSRR):			
Pro Forma Debt Service		$ 7,002,631	
Debt Service Coverage Requirement	x	1.1	**7,702,894**
Estimated Cash Flow Savings from DW 20-055 Financing:			
Estimated Debt Service Savings @ 4.67% Total Interest Cost		(490,585)	
Debt Service Coverage Requirement	x	1.1	**(539,644)**
Total Maximum Revenue Requirement			**$ 35,839,461**

DW 19-084
PENNICHUCK WATER WORKS, INC.
SCHEDULE 2a - OPERATING INCOME ADUSTMENTS PER COMPANY RESPONSES TO STAFF DATA REQUESTS

OPERATING REVENUES

REVENUES FROM WATER SALES

Water Revenues from Base Rates:

Town of Hudson Sales:	Staff Tech 2-24	$ 309,436	
	Staff 3-16	(339,391)	$ (29,955)
Calculation of 5-Year Average:	Staff Tech 2-16		(53,393)
Total Adjustments - Water Revenues from Base Rates			(83,348)

Water Revenues from QCPAC:

Pro-forma Annual QCPAC Revenues:	Staff Tech 2-3		86,989
Calculation of 5-Year Average:	Staff Tech 2-16	26,761	
	Staff 3-16	(35,141)	(8,380)
Total Adjustments - Water Revenues from QCPAC			78,609

TOTAL ADJUSTMENTS - OPERATING REVENUES			**$ (4,739)**

OPERATING EXPENSES

OPERATION AND MAINTENANCE EXPENSES

Production Expense:

Purchased Power:	Staff 2-10	$ 19,640	
	Staff Tech 2-16	(733)	
	Staff 3-13	(2,218)	$ 16,689
Purchased Water:	Staff 2-39	17,671	
	Staff Tech 2-16	(24,156)	(6,485)
Chemicals:	Staff Tech 2-16		(1,904)
Total Adjustments - Production Expense			8,300

Transmission and Distribution Expense:

Miscellaneous:	Staff 2-28	(1,769)	
	Staff Tech 3-5	(15,151)	(16,920)
Maintenance of Mains:	Staff Tech 3-5		(4,952)
Mainenance of Services:	Staff Tech 3-5		(3,386)
Total Adjustments - Transmission and Distribution Expense			(25,258)

DW 19-084
PENNICHUCK WATER WORKS, INC.
SCHEDULE 2a - OPERATING INCOME ADUSTMENTS PER COMPANY RESPONSES TO STAFF DATA REQUESTS

Administrative and General Expense:			
Salaries and Wages:	Staff 2-13		44,407
Employee Benefits:	Staff 2-13		21,640
Regulatory Commission Expense:	Staff 2-12		(10,085)
Group Health Insurance:	Staff 2-41		(80,200)
Group Dental Insurance:	Staff 2-42		(2,846)
Office Supplies:	Staff 2-50	(12,175)	
	Staff Tech 3-5	(5,750)	(17,925)
Miscellaneous:	Staff 2-50		(25,534)
Outside Services:	Staff 2-30	(5,520)	
	Staff 2-50	(26,626)	
	Staff Tech 3-5	(27,383)	(59,529)
Maintenance - Computer Equipment:	Staff Tech 2-9		(100,956)
Total Adjustments - Administrative and General Expense			(231,028)
Inter-Division Management Fee:			
Wages and Salaries:	Staff 2-13		(17,609)
Group Health Insurance:	Staff 4-3		21,382
Group Dental Insurance:	Staff 4-3		759
Office Lease:	Staff Tech 2-4		(4,277)
Maintenance - Computer Equipment:	Staff 4-2	(26,917)	
	Staff Tech 3-2	53,834	26,917
ROI Allocation to Affiliates:	Staff 2-25	62,862	
	Staff Tech 2-7	428	63,290
Total Adjustments - Inter-Division Management Fee			90,462
Total Adjustments - Operation and Maintenance Expenses			**(157,524)**

DW 19-084
PENNICHUCK WATER WORKS, INC.
SCHEDULE 2a - OPERATING INCOME ADUSTMENTS PER COMPANY RESPONSES TO STAFF DATA REQUESTS

OTHER OPERATING EXPENSES

Property Tax Expense:	Staff Tech 3-3		(579,340)
Amortization Expense:			
Deferred Assets (Pre-existing):	Staff 2-16	(14,341)	
	Staff Tech 2-5	6,594	(7,747)
Transmission and Distribution Expenses:	Staff Tech 3-5		7,830
Office Supplies:	Staff Tech 3-5		1,917
Maintenance - Computer Equipment:	Staff Tech 2-9	11,218	
	Staff Tech 3-4	(2,991)	8,227
Outside Services:	Staff Tech 3-5		7,000
Rate Stabilization Fund - Shortfall:	Staff Tech 2-23		(286,775)
Total Adjustments - Amortization Expense			(269,548)
Total Adjustments - Other Operating Expenses			**(848,888)**
TOTAL ADJUSTMENTS - OPERATING EXPENSES			**$ (1,006,412)**
NET OPERATING INCOME ADJUSTMENTS			**$ 1,001,673**

Appendix 2, Attachment C

DW 19-084
PENNICHUCK WATER WORKS, INC.
SCHEDULE 2b - NON-MATERIAL OPERATING EXPENSES

Acct No.	Description	Per Co's 2018 Gen'l Ledger	Adj Per Co Resp's to Staff Data Requests	Adjusted Test Year Balances
921002	SENIOR MANAGEMENT VEHICLES	$ 3,374	$ -	$ 3,374
921003	SENIOR MANAGEMENT - FUEL PURCHASED	4,087	-	4,087
921004	SENIOR MANAGEMENTT - VEHICLE REGISTRATION	991	-	991
923000	OUTSIDE SERVICES	385,360	(52,529)	332,831
926001	OFFICER'S LIFE INSURANCE	6,303	-	6,303
926500	MISCELLANEOUS EMPLOYEE BENEFITS	8,759	-	8,759
926501	MISCELLANEOUS EMPLOYEE BENEFITS - WELLNESS	3,371	-	3,371
926502	MISCELLANEOUS EMPLOYEE BENEFITS - ACTIVITIES	11,674	-	11,674
926505	EMPLOYEE RELATIONS	-	-	-
926600	TUITION REIMBURSEMENT	32,246	-	32,246
926610	TRAINING EDUCATIONAL SEMINARS	50,967	-	50,967
930100	MEETINGS & CONVENTIONS	35,325	-	35,325
930101	MEMBERSHIPS	35,590	-	35,590
930200	PUBLIC RELATIONS	25,625	-	25,625
930300	MEALS	4,203	-	4,203
930410	CHARITABLE CONTRIBUTIONS	-	-	-
	TOTAL NON-MATERIAL OPERATING EXPENSES	**$ 607,875**	**$ (52,529)**	**$ 555,346**

Notes:

	Outside Service Expense		Net
Adj. Per Sch. 2a - Based on Co Responses to Staff Discovery:	**Admin & Gen'l**	**Amortization**	**Adjustment**
Co Response to Staff 2-30	$ (5,520)	$ -	$ (5,520)
Co Response to Staff 2-50	(26,626)	-	(26,626)
Co Response to Staff Tech 3-5	(27,383)	7,000	(20,383)
Net Adjustment - Outside Services	**$ (59,529)**	**$ 7,000**	**$ (52,529)**

DW 19-084
PENNICHUCK WATER WORKS, INC.
SCHEDULE 3 - PRO FORMA TEST YEAR DEBT SERVICE
AND ESTIMATED IMPACT OF DW 20-055 FINANCING

Appendix 2, Attachment C

Holder	Term	Maturity	Int Rate	OUTSTANDING DEBT	PRO FORMA PRINCIPAL PAYMENTS: 2018 Principal Payments	Pro Forma Adj's per Co Filing	Pro Forma Princ Pmts per Co Filing	Adj's per Co Resp's to Staff DR's	Pro Forma Princ Pmts per Settl'mnt
PRO FORMA TEST YEAR DEBT:									
Outstanding Debt at 12/31/2018:									
American United Life Insurance (AULI)	25	03/01/21	7.400%	$ 3,200,000	$ 400,000		$ 400,000		$ 400,000
SRF Loan - Hubbard Hill	20	04/01/22	3.800%	72,312	22,250		22,250		22,250
SRF Loan - Contract # 4 (Water Treatment Plant)	20	10/01/29	4.488%	1,916,605	144,459		144,459	5,120 (a)	149,579
ARRA Loan - Ashley Commons	20	05/01/31	2.952%	325,583	7,988		7,988	981 (a)	8,969
ARRA Loan - French Hill	20	07/01/32	2.864%	1,001,421	20,261		20,261	2,680 (a)	22,941
ARRA Loan - Glenn Ridge	20	09/01/32	2.864%	76,168	1,494		1,494	202 (a)	1,696
ARRA Loan - Armory (S Nashua Booster Station)	20	01/01/32	2.864%	224,762	4,984		4,984	624 (a)	5,608
SRF Loan - Drew Woods	20	06/01/32	2.952%	617,773	36,989		36,989	1,107 (a)	38,096
SRF Loan - Nashua Core	20	07/01/36	2.464%	1,978,000	89,323		89,323	2,227 (a)	91,550
SRF Loan - Timberline Booster Station	20	07/01/36	2.616%	297,546	13,237		13,237	350 (a)	13,587
SRF Loan - Raw Water Transmission	20	11/01/36	3.168%	3,019,510	107,304		107,304	23,793 (a)	131,097
SRF Loan - Amherst Street - 2016	30	05/01/47	2.420%	1,383,522	11,019		11,019	8,671 (a)	19,690
BNY Mellon - 2014 A Series Bonds	30	01/01/45	Various	38,905,000	1,030,000		1,030,000	45,000 (b)	1,075,000
BNY Mellon - 2014 B Series Bonds	30	01/01/45	4.500%	5,030,000	95,000		95,000	5,000 (b)	100,000
BNY Mellon - 2015 A Series Bonds	30	01/01/46	Various	19,490,000	545,000		545,000	20,000 (b)	565,000
BNY Mellon - 2015 B Series Bonds	30	01/01/46	Various	1,840,000	100,000		100,000	5,000 (b)	105,000
BNY Mellon - 2018 A Series Bonds	30	01/01/48	4.900%	4,460,000	-		-		-
BNY Mellon - 2018 B Series Bonds	30	01/01/48	4.900%	1,075,000	-	85,000	85,000		85,000
Sub-total: 2018 Outstanding Debt				84,913,202	2,629,308	85,000	2,714,308	120,755	2,835,063
New Debt Acquired during 2019:									
BNY Mellon - 2019 A Series Bonds	30	01/01/49	4.220%	8,080,000	-	141,368	141,368	(49,701) (a)	91,667
BNY Mellon - 2019 B Series Bonds	30	01/01/48	4.220%	170,000	-		-	56,667 (a)	56,667
Sub-total: 2019 New Debt				8,250,000	-	141,368	141,368	6,966	148,334
PRO FORMA TEST YEAR TOTALS				**$ 93,163,202**	**$ 2,629,308**	**$ 226,368**	**$ 2,855,676**	**$ 127,721**	**$ 2,983,397**

Holder	PRO FORMA INTEREST PAYMENTS: 2018 Interest Payments	Pro Forma Adj's per Co Filing	Pro Forma Int Pmts per Co Filing	Adj's per Co Resp's to Staff DR's	Pro Forma Int Pmts per Settl'mnt	PRO FORMA AMORTIZED DEBT COSTS: 2018 Amortized Debt Costs	Adj's per Co Resp's to Staff DR's	Pro Forma Amort Costs per Settl'mnt	PRO FORMA DEBT SERVICE PER CO FILING	PRO FORMA DEBT SERVICE PER SETTL'MNT
PRO FORMA TEST YEAR DEBT:										
Outstanding Debt at 12/31/2018:										
American United Life Insurance (AULI)	$ 241,733		$ 241,733	$ (19,733) (a)	$ 222,000	$ 8,711	$ (8,711) (c)	$ -	$ 650,444	$ 622,000
SRF Loan - Hubbard Hill	3,206		3,206	(846) (a)	2,360	-		-	25,456	24,610
SRF Loan - Contract # 4 (Water Treatment Plant)	69,595		69,595	(5,120) (a)	64,475	234	(234) (c)	-	214,288	214,054
ARRA Loan - Ashley Commons	9,922		9,922	(583) (a)	9,339	131	(131) (c)	-	18,041	18,308
ARRA Loan - French Hill	29,508		29,508	(1,549) (a)	27,959	370	(370) (c)	-	50,139	50,900
ARRA Loan - Glenn Ridge	2,243		2,243	(116) (a)	2,127	-		-	3,737	3,823
ARRA Loan - Armory (S Nashua Booster Station)	6,633		6,633	(367) (a)	6,266	87	(87) (c)	-	11,704	11,874
SRF Loan - Drew Woods	18,831		18,831	(1,107) (a)	17,724	442	(442) (c)	-	56,262	55,820
SRF Loan - Nashua Core	49,935		49,935	(2,226) (a)	47,709	698	(698) (c)	-	139,956	139,259
SRF Loan - Timberline Booster Station	7,972		7,972	(350) (a)	7,622	105	(105) (c)	-	21,314	21,209
SRF Loan - Raw Water Transmission	60,499		60,499	(2,490) (a)	58,009	509	(509) (c)	-	168,312	189,106
SRF Loan - Amherst Street - 2016	33,837		33,837	(621) (a)	33,216	311	(311) (c)	-	45,167	52,906
BNY Mellon - 2014 A Series Bonds	1,760,318		1,760,318	(47,475) (a)	1,712,843	-		-	2,790,318	2,787,843
BNY Mellon - 2014 B Series Bonds	228,488		228,488	(4,488) (a)	224,000	-		-	323,488	324,000
BNY Mellon - 2015 A Series Bonds	917,987		917,987	(22,200) (a)	895,787	-		-	1,462,987	1,460,787
BNY Mellon - 2015 B Series Bonds	94,500		94,500	(5,125) (a)	89,375	-		-	194,500	194,375
BNY Mellon - 2018 A Series Bonds	100,484	103,891	204,375		204,375	-		-	204,375	204,375
BNY Mellon - 2018 B Series Bonds	22,886	21,821	44,707		44,707	-		-	129,707	129,707
Sub-total: 2018 Outstanding Debt	3,658,577	125,712	3,784,289	(114,396)	3,669,893	11,598	(11,598)	-	6,510,195	6,504,956
New Debt Acquired during 2019:										
BNY Mellon - 2019 A Series Bonds	-	347,460	347,460	923 (a)	348,383	-		-	488,828	440,050
BNY Mellon - 2019 B Series Bonds	-		-	958 (a)	958	-		-	-	57,625
Sub-total: 2019 New Debt	-	347,460	347,460	1,881	349,341	-	-	-	488,828	497,675
PRO FORMA TEST YEAR TOTALS	**$ 3,658,577**	**$ 473,172**	**$ 4,131,749**	**$ (112,515)**	**$ 4,019,234**	**$ 11,598**	**$ (11,598)**	**$ -**	**$ 6,999,023**	**$ 7,002,631**

DW 20-055 FINANCING - NET ESTIMATED DEBT SERVICE SAVINGS:

@ 3.67% Total Interest Cost	
Estimated Annual Debt Service: RSF Replenishment Financing	$ 279,616
Less: Estimated Annual Debt Service Savings: AULI Loan Refinancing	(32,328)
2014A & 2015A/B Bond Refinancing	(1,217,662)
Net Estimated Debt Service Savings @ 3.67% Total Interest Cost	**(970,374)**
ESTIMATED ADJUSTED PRO FORMA TEST YEAR DEBT SERVICE	**$ 6,032,257**
@ 4.67% Total Interest Cost	
Estimated Annual Debt Service: RSF Replenishment Financing	$ 317,017
Less: Estimated Annual Debt Service Savings: AULI Loan Refinancing	(28,096)
2014A & 2015A/B Bond Refinancing	(779,506)
Net Estimated Debt Service Savings @ 4.67% Total Interest Cost	**(490,585)**
ESTIMATED ADJUSTED PRO FORMA TEST YEAR DEBT SERVICE	**$ 6,512,046**

Notes:
(a) Per Co's response to Staff 3-6
(b) Per Co's response to Staff 2-46
(c) Per Co's responses to Staff 2-51 and Staff Tech 2-13

DW 19-084
PENNICHUCK WATER WORKS, INC.
REPORT OF PROPOSED RATE CHANGES - MAXIMUM

Appendix 2 - Attachment D Customer Class and COSS Impact

			Maximum Change in Annual Revenues from Base Rates						Maximum Change in Total Annual Water Revenues			
							Maximum Change in Annual Revenues from Base Rates				Maximum Change in Total Annual Water Revenues	
Rate or Class of Service	**Effect of Proposed Change**	**Average Number Customers**	**Pro Forma Test Year Water Revenues**	**Less: Pro Forma Test Year QCPAC Revenues**	**Pro Forma Test Year Revenues from Base Rates**	**Maximum Revenue Requirement from Base Rates**	**Amount**	**% Increase**	**Maximum Change in Annual Revenues from Base Rates**	**Less: Pro Forma Test Year QCPAC Revenues**	**Amount**	**% Increase**
G-M Residential Fixed Charges	Increase	27,954	$ 7,594,339	$ (289,742)	$ 7,304,597	$ 7,878,194	$ 573,597	7.85%	$ 573,597	$ (289,742)	$ 283,855	3.89%
All Other G-M Charges	Increase		18,716,095	(714,065)	18,002,030	19,848,111	1,846,081	10.25%	1,846,081	(714,065)	1,132,016	6.29%
Total G-M Charges		27,954	26,310,434	(1,003,807)	25,306,627	27,726,305	2,419,678	9.20%	2,419,678	(1,003,807)	1,415,871	5.59%
Private FP	Increase	911	1,260,049	(48,631)	1,211,418	2,084,730	873,312	72.09%	873,312	$ (48,631)	824,681	68.08%
FP - Hydrants	Increase	5	3,582,340	(138,262)	3,444,078	3,797,263	353,185	10.25%	353,185	$ (138,262)	214,923	6.24%
Anheuser-Busch Contract												
Contract Charges	No Increase	2	371,430	-	371,430	371,430	-	0.00%	-	$ -	-	0.00%
Volumetric & Meter Charges	Increase	-	475,941	(19,220)	456,721	503,557	46,836	10.25%	46,836	$ (19,220)	27,616	6.05%
Milford Contract												
Contract Charges	No Increase	1	81,000	-	81,000	81,000	-	0.00%	-	$ -	-	0.00%
Volumetric Charges	Increase	-	87,652	(6,631)	81,021	89,329	8,308	10.25%	8,308	$ (6,631)	1,677	2.07%
Hudson Contract												
Contract Charges	No Increase	1	32,800	-	32,800	32,800	-	0.00%	-	$ -	-	0.00%
Volumetric Charges	Increase	-	63,390	(18,002)	45,388	50,042	4,654	10.25%	4,654	$ (18,002)	(13,348)	-29.41%
Tyngsborough Contract												
Volumetric & Meter Charge	Increase	1	325,735	(13,544)	312,191	344,205	32,014	10.25%	32,014	$ (13,544)	18,470	5.92%
Pennichuck East Utility Contract												
Volumetric & Meter Charge	Increase	1	306,642	-	306,642	338,088	31,446	10.25%	31,446	$ -	31,446	10.25%
		28,876	$ 32,897,413	$ (1,248,097)	$ 31,649,316	$ 35,418,749	**$ 3,769,433**	**11.91%**	$ 3,769,433	$ (1,248,097)	**$ 2,521,336**	**7.97%**

Appendix 2 - Attachment D Customer Class and COSS Impact

DW 19-084
PENNICHUCK WATER WORKS, INC.
REPORT OF PROPOSED RATE CHANGES - ESTIMATED

Rate or Class of Service	Effect of Proposed Change	Average Number Customers	Estimated Change in Annual Revenues from Base Rates: Pro Forma Test Year Water Revenues	Less: Pro Forma Test Year QCPAC Revenues	Pro Forma Test Year Revenues from Base Rates	Estimated Revenue Requirement from Base Rates	Estimated Change in Annual Revenues from Base Rates: Amount	Estimated Change in Annual Revenues from Base Rates: % Increase	Estimated Change in Total Annual Water Revenues: Estimated Change in Annual Revenues from Base Rates	Less: Pro Forma Test Year QCPAC Revenues	Estimated Change in Total Annual Water Revenues: Amount	Estimated Change in Total Annual Water Revenues: % Increase
G-M Residential Fixed Charges	Increase	27,954	$ 7,594,339	$ (289,742)	$ 7,304,597	$ 7,851,057	$ 546,460	7.48%	$ 546,460	$ (289,742)	$ 256,718	3.51%
All Other G-M Charges	Increase		18,716,095	(714,065)	18,002,030	19,761,680	1,759,650	9.77%	1,759,650	(714,065)	1,045,585	5.81%
Total G-M Charges		27,954	26,310,434	(1,003,807)	25,306,627	27,612,737	2,306,110	8.77%	2,306,110	(1,003,807)	1,302,303	5.15%
Private FP	Increase	911	1,260,049	(48,631)	1,211,418	2,042,273	830,855	68.59%	830,855	$ (48,631)	782,224	64.57%
FP - Hydrants	Increase	5	3,582,340	(138,262)	3,444,078	3,780,728	336,650	9.77%	336,650	$ (138,262)	198,388	5.76%
Anheuser-Busch Contract												
Contract Charges	No Increase	2	371,430	-	371,430	371,430	-	0.00%	-	$ -	-	0.00%
Volumetric & Meter Charges	Increase	-	475,941	(19,220)	456,721	501,365	44,644	9.77%	44,644	$ (19,220)	25,424	5.57%
Milford Contract												
Contract Charges	No Increase	1	81,000	-	81,000	81,000	-	0.00%	-	$ -	-	0.00%
Volumetric Charges	Increase	-	87,652	(6,631)	81,021	88,940	7,919	9.77%	7,919	$ (6,631)	1,288	1.59%
Hudson Contract												
Contract Charges	No Increase	1	32,800	-	32,800	32,800	-	0.00%	-	$ -	-	0.00%
Volumetric Charges	Increase	-	63,390	(18,002)	45,388	49,824	4,436	9.77%	4,436	$ (18,002)	(13,566)	-29.89%
Tyngsborough Contract												
Volumetric & Meter Charge	Increase	1	325,735	(13,544)	312,191	342,706	30,515	9.77%	30,515	$ (13,544)	16,971	5.44%
Pennichuck East Utility Contract												
Volumetric & Meter Charge	Increase	1	306,642	-	306,642	336,616	29,974	9.77%	29,974	$ -	29,974	9.77%
		28,876	$ 32,897,413	$ (1,248,097)	$ 31,649,316	$ 35,240,419	**$ 3,591,103**	**11.35%**	$ 3,591,103	$ (1,248,097)	**$ 2,343,006**	**7.40%**

Customer Class Rate Impact at Maximum Revenue Requirement

Based on 5/8 meter fixed charge @ 7.85%. Private Fire @ 72.09%, MuniFire, all other meter sizes but 5/8" GM fixed, all GM volumetric at same rate in yr 1. 3% increase yr over yr to munifire

6/19/20

4.67% TIC Overall rate increase of 11.91% with MOES @ 7.66%

Customer Class	COSS[1] Recommended Percentage Increase in Revenues	Recommended Increase % by Customer class per settlement	Rate increase at 3% to Munifire at end of Yr. One	Rate increase at 3% to Munifire at end of Yr. Two
G-M 5/8" Fixed -	7.85%	7.85%	0.00%	0.00%
G-M , Fixed, All other meter sizes -	7.85%	10.25%	-0.53%	-0.55%
G-M Residential Volumetric -	7.85%	10.25%	-0.53%	-0.55%
G-M Commercial Volumetric -	7.85%	10.25%	-0.53%	-0.55%
G-M Industrial Volumetric -	7.85%	10.25%	-0.53%	-0.55%
G-M Municipal Volumetric -	7.85%	10.25%	-0.53%	-0.55%
Municipal Fire -	24.20%	10.25%	3.00%	3.00%
Private Fire -	72.09%	72.09%	0.00%	0.00%
A-B Annual Fixed Fee -	0.00%	0.00%	0.00%	0.00%
A-B Volumetric -	7.85%	10.25%	-0.53%	-0.55%
A-B Fixed meter -	24.20%	10.25%	-0.53%	-0.55%
Milford Annual Fixed Fee -	0.00%	0.00%	0.00%	0.00%
Milford Volumetric -	7.85%	10.25%	-0.53%	-0.55%
Hudson Annual Fixed Fee -	0.00%	0.00%	0.00%	0.00%
Hudson Volumetric -	7.85%	10.25%	-0.53%	-0.55%
Tyngsborough Volumetric -	7.85%	10.25%	-0.53%	-0.55%
Tyngsborough Fixed Meter -	7.85%	10.25%	-0.53%	-0.55%
Pennichuck East Minimum Volumetric Fee -	7.85%	10.25%	-0.53%	-0.55%
Pennichuck East Volumetric -	7.85%	10.25%	-0.53%	-0.55%
Pennichuck East Fixed Meter -	7.85%	10.25%	-0.53%	-0.55%

1. Cost of Service Study

Customer Class Rate Impact at Estimated Revenue Requirement

Based on 5/8 meter fixed charge @ 7.85%. Private Fire @ 72.09%, MuniFire, all other meter sizes but 5/8" GM fixed, all GM volumetric at same rate in yr 1. 3% increase yr over yr to munifire

6/19/20

3.67% TIC Overall rate increase of 11.35% with MOES @ 9.50%

Customer Class	COSS[1] Recommended Percentage Increase in Revenues	Recommended Increase % by Customer class per settlement	Rate increase at 3% to Munifire at end of Yr. One	Rate increase at 3% to Munifire at end of Yr. Two
G-M 5/8" Fixed -	7.48%	7.48%	0.00%	0.00%
G-M , Fixed, All other meter sizes -	7.48%	9.77%	-0.53%	-0.55%
G-M Residential Volumetric -	7.48%	9.77%	-0.53%	-0.55%
G-M Commercial Volumetric -	7.48%	9.77%	-0.53%	-0.55%
G-M Industrial Volumetric -	7.48%	9.77%	-0.53%	-0.55%
G-M Municipal Volumetric -	7.48%	9.77%	-0.53%	-0.55%
Municipal Fire -	23.06%	9.77%	3.00%	3.00%
Private Fire -	68.70%	68.59%	0.00%	0.00%
A-B Annual Fixed Fee -	0.00%	0.00%	0.00%	0.00%
A-B Volumetric -	7.48%	9.77%	-0.53%	-0.55%
A-B Fixed meter -	7.48%	9.77%	-0.53%	-0.55%
Milford Annual Fixed Fee -	0.00%	0.00%	0.00%	0.00%
Milford Volumetric -	7.48%	9.77%	-0.53%	-0.55%
Hudson Annual Fixed Fee -	0.00%	0.00%	0.00%	0.00%
Hudson Volumetric -	7.48%	9.77%	-0.53%	-0.55%
Tyngsborough Volumetric -	7.48%	9.77%	-0.53%	-0.55%
Tyngsborough Fixed Meter -	7.48%	9.77%	-0.53%	-0.55%
Pennichuck East Minimum Volumetric Fee -	7.48%	9.77%	-0.53%	-0.55%
Pennichuck East Volumetric -	7.48%	9.77%	-0.53%	-0.55%
Pennichuck East Fixed Meter -	7.48%	9.77%	-0.53%	-0.55%

1. Cost of Service Study

	Monthly Bill Charges													
Charge Description	September	October	November	December	January	February	March	April	May	June	July	August	September	October
5/8 inch Meter Customer Charge (1) -	$ 22.58	$ 24.27	$ 24.27	$ 24.27	$ 24.27	$ 24.27	$ 24.27	$ 24.27	$ 24.27	$ 24.27	$ 24.27	$ 24.27	$ 24.27	$ 24.27
Volumetric Charge based on Usage (2) -	$ 28.44	$ 31.24	$ 31.24	$ 31.24	$ 31.24	$ 31.24	$ 31.24	$ 31.24	$ 31.24	$ 31.24	$ 31.24	$ 31.24	$ 31.24	$ 31.24
QCPAC Surcharge (3) -	$ 2.07	$ -	$ 2.17	$ 2.17	$ 2.17	$ 2.17	$ 2.17	$ 2.17	$ 2.17	$ 2.17	$ 2.17	$ 2.17	$ 2.17	$ 2.17
Rate Expense Recoupment (4) -	$ -						$ 0.38	$ 0.38	$ 0.38	$ 0.38	$ 0.38	$ 0.38	$ 0.38	$ 0.38
Temporary to Permanent Rate Recoupment (5) -	$ -	$ -	$ -	$ -	$ 0.94	$ 0.94	$ 0.94	$ 0.94	$ 0.94	$ 0.94	$ 0.94	$ 0.94	$ 0.94	$ 0.94
QCPAC Recoupment (6) -	$ -	$ -	$ 3.26	$ 3.26	$ 3.26	$ 3.26	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Bill for month -	$ 53.09	$ 55.51	$ 60.95	$ 60.95	$ 61.89	$ 61.89	$ 59.00	$ 59.00	$ 59.00	$ 59.00	$ 59.00	$ 59.00	$ 59.00	$ 59.00

Notes:

(1) Current tariffed 5/8" meter charge - $ 22.58

(2) The Volumetric Charge is based on the following data:

Average Monthly usage for Single Family Residence per month in 2018 - 7.77 CCF

Current tariffed Rate per CCF - $ 3.66

Projected rate increase percentage to GM Residential volumetric charge - 7.48% based on attached Customer Impact tab from the set of 1600 schedules filed in response to Staff Tech 5 DR's

Projected rate increase percentage to GM Residential 5/8" meter fixed charge - 9.85%

(3) QCPAC Surcharge in effect (granted in DW19-029) - 4.06%

QCPAC Surcharge requested in DW20-020 - 3.92% based on revenue requirment established in last set of 1600 schedules filed in response to Staff Tech 5 DR's

(4) Projected rate case expense of - $ 130,000 to be recouped over 12 months from 28,876 customer accounts

(5) Temporary to Permanent Rate Recoupment based on increase of - 3.42% and recoupment amount earned between March 2020 and September 2020. This number is net of QCPAC reovered during this time frame

recovered over 18 months, beginning in January 2021

(6) QCPAC recoupment from DW20-020 will be recouped over 4 months after issuance of order and authorization of recoupment