

STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

Docket No. DW 16-806

Pennichuck Water Works, Inc.
Request for Change in Rates

2016 RATE CASE
SETTLEMENT AGREEMENT

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Petition for Change in Rates

SETTLEMENT AGREEMENT

This Settlement Agreement is entered into this 19th day of July, 2017 (the “Agreement”), by and among Pennichuck Water Works, Inc. (“PWW”) (a subsidiary of Pennichuck Corporation (“Penn Corp”), the Staff of the New Hampshire Public Utilities Commission (“Staff”), and the Office of Consumer Advocate (“OCA”), with the intent of resolving all of the issues in the above-captioned docket. (The parties are referred to collectively in this Agreement as the “Settling Parties.”)

I. PROCEDURAL HISTORY

- A. On August 7, 2016, PWW filed a Notice of Intent to file rate schedules.
- B. On September 23, 2016, the OCA filed notification with the Commission of its participation in this docket.
- C. On September 26, 2016, PWW filed with the Commission formal petitions for permanent and temporary rates, along with testimony and supporting schedules. PWW also sought approval for certain modifications to the ratemaking protocols established and approved in the *Joint Petition of City of Nashua, Pennichuck Corporation et al, for Approval to Acquire*

Stock in Pennichuck Corporation, Order No. 25,292 (November 23, 2011) (the “Acquisition Order”) in docket DW 11-026.

D. PWW’s Permanent Rate Petition proposed a permanent increase in its water revenues (exclusive of Water Infrastructure and Conservation Adjustment (WICA) surcharge revenues)¹ of \$4,907,916, or 17.21%, resulting in an overall permanent revenue requirement of \$33,432,344. The proposed revenue increase was comprised of a calculated revenue deficiency of \$2,242,509, based on a pro forma 2015 test year, as well as an additional \$2,665,407 in revenues from a proposed step adjustment, based on capital improvements that were anticipated to be completed and used and useful by December 31, 2016. PWW’s Temporary Rate Petition requested approval for a proposed temporary rate increase of \$1,771,116, or 6.21%.

E. On October 25, 2016, the Commission issued an Order of Notice suspending PWW’s proposed revised tariff pages and scheduling a prehearing conference and technical session for November 21, 2016.

F. Subsequent to the November 21 prehearing conference, the parties conducted technical sessions during which PWW’s request for temporary rates and a proposed procedural schedule were discussed.

G. On December 5, 2016, the Staff, on behalf of the other parties, filed a proposed procedural schedule with the Commission. On December 13, 2016, the Commission issued a Secretarial Letter approving the proposed procedural schedule.

¹ During the test year, PWW earned a total of \$29,298,819 in revenues from water sales. This amount is comprised of \$28,920,120 in permanent rate / special contract revenues, \$367,548 in WICA surcharge revenues, and \$11,151 in water resale revenues. Because the WICA revenue is earned via a billing surcharge and is not included in the permanent rates charged to customers, WICA revenues have been excluded for purposes of establishing individual customer rates. However, pro forma test year WICA surcharge revenues were taken into account relative to the establishment of PWW’s overall revenue requirement.

H. PWW, the Staff, and the OCA (the Settling Parties) reached an agreement on the issue of temporary rates, which was filed with the Commission on December 8, 2016 (the “Temporary Rate Settlement Agreement”). In that agreement, the Settling Parties proposed that PWW should be authorized to implement temporary rates at the same level as current rates during the pendency of the rate proceeding. Additionally, the Settling Parties proposed that temporary rates be made effective on a bills-rendered basis on and after December 7, 2016.

I. At a hearing held on January 17, 2017, the merits of the Temporary Rate Settlement Agreement were presented before the Commission by the Settling Parties. On February 17, 2017, the Commission issued Order No. 25,990 granting approval of the proposed Temporary Rate Settlement Agreement.

J. During the course of the proceeding, the Staff and the OCA served numerous data requests on PWW, to which PWW provided responses. The parties to the proceeding also held a number of technical sessions in order to supplement the written discovery that was conducted.

K. On April 26, 2017, on behalf of the parties in the proceeding, Staff filed an Assented to Motion to Suspend the Procedural Schedule so as to enable the parties to continue the discussions necessary to reach a joint settlement on all issues relevant to this case. On April 27, 2017, the Commission issued a Secretarial Letter approving Staff’s Motion to Suspend the Procedural Schedule.

II. RELEVANT BACKGROUND

A. Acquisition and Ownership by the City of Nashua.

1. PWW is a regulated public utility that is wholly-owned by Penn Corp, which is, in turn, a corporation that is wholly-owned by the City of Nashua, New Hampshire (the “City”). The City acquired its ownership of Penn Corp on January 25, 2012, pursuant to the

Acquisition Order. In addition to PWW, Penn Corp also owns two other water utilities: Pennichuck East Utility, Inc. (PEU) and Pittsfield Aqueduct Company, Inc. (PAC).

2. The Acquisition Order approved a settlement agreement among the parties to DW 11-026 (the “DW 11-026 Settlement Agreement”), subject to certain conditions. Among other things, the settling parties to the DW 11-026 Settlement Agreement recommended that the Commission approve the City’s acquisition of Penn Corp, approve a modified ratemaking structure for Penn Corp’s three water utilities (including PWW), approve the establishment of a \$5,000,000 Rate Stabilization Fund (“RSF”) to be maintained by PWW, and approve certain accounting matters and limitations on dividends and distributions from the three utilities to Penn Corp. These special provisions were instituted in order to allow the three utilities to have “rates at levels that are sufficient to enable each utility to meet their operating requirements and to satisfy each utility’s apportioned share of responsibility to pay the debt service arising from the City Acquisition Bonds.”² (See DW 11-026 Settlement Agreement at 8.)³

B. Post-Acquisition Financings and Experience.

1. Subsequent to the City’s acquisition, Penn Corp’s management has pursued several debt financings for its utilities. These financings have included the issuances of up to \$54,500,000 in debt by PWW which is described in Commission Order No. 25,734 (November 7, 2014) in docket DW 14-130 and of up to \$25,500,000 in debt by PWW described in Commission Order No. 25,808 (September 2, 2015) in docket DW 15-196. The negotiation and completion of these financings has provided Penn Corp’s management with actual

² The rate component representing PWW’s acquisition bond repayment obligation is described as the “City Bond Fixed Revenue Requirement” (CBFRR). During the test year, PWW’s CBFRR was \$7,465,139.

³ An example of the rate-making methodology described in the DW 11-026 Settlement Agreement is shown on Settlement Attachment JPL-1, Schedule 1 – Original Rate Structure.

experience as well as direct input and insights from the capital markets (i.e., lenders) regarding the response to the ownership of Penn Corp by the City, in addition to the operation of the utilities and the ratemaking methodology approved in the Acquisition Order within the new ownership structure.

2. The change in the ultimate ownership of Penn Corp, from a publicly-traded investor-owned utility to ownership by the City has had many important consequences, including the fact that Penn Corp and its three utilities no longer have access to equity financing markets as a means of financing its capital and operating needs. Accordingly, Penn Corp and its utilities are now required to finance their on-going capital needs entirely through the issuance of debt.

3. Based on the experience of Penn Corp's management since the City's acquisition, as described in PWW's testimony in this as well as the prior two financing dockets identified above, PWW is now seeking modifications to the ratemaking structure approved in the Acquisition Order as well as an increase in its permanent rates as determined pursuant to the proposed modified ratemaking structure. The Settling Parties agree that, for the reasons described in PWW's testimony as supplemented through discovery, modifications to PWW's ratemaking structure will not only increase PWW's required access to the credit markets, but also will more than likely result in an enhanced credit rating. Thus, PWW will be able to access lower cost debt, which will ultimately be to the benefit of ratepayers.

III. TERMS OF THIS SETTLEMENT AGREEMENT

The Settling Parties agree and recommend action by the Commission in the form of approving the following:

A. Revenue Requirement, Permanent Rates, and Step Increase.

1. The Settling Parties agree to a total revenue requirement for PWW in the amount of \$31,496,789 as calculated based on the proposed modified rate structure. (See “C. Modifications to Ratemaking Structure” below.) In deriving this revenue requirement, the Settling Parties agree to a permanent rate increase of \$887,591, or 3.12%, based on pro forma test year 2015, as well as a step increase of \$2,186,127, or 7.69%, based on 2016 and certain 2017 plant additions which will be fully in service and used and useful at the time such rates are implemented.⁴ The components of PWW’s total proposed revenue requirement are summarized on Exhibit 1.⁵ The proposed rate increases for each of PWW’s rate classes are shown in Exhibit 2.

2. The Settling Parties agree that the underlying costs of the 2016 and 2017 plant additions upon which the proposed step adjustment is based shall be audited by the Commission Audit Staff prior to the implementation of customer rates. The Settling Parties agree that certain 2016 WICA related plant additions have previously been reviewed by the Commission Audit Staff relative to PWW’s WICA filing in docket DW 17-017 and that the Commission Audit Staff issued a report of its examination on such dated March 24, 2017. A copy of that Audit Report is included in this Settlement Agreement as Exhibit 3. The Settling Parties agree that the Audit Staff shall issue a Final Audit Report based on its examination of the remaining 2016 and 2017 plant additions, and that if such report reveals a material difference between the actual underlying costs of those assets and the asset costs upon which the proposed

⁴ Settlement Attachment JPL-1, Schedule 9 indicates that PWW invested a total of \$20,124,921 in used and useful plant additions during 2016. These plant additions were financed by various loans which appear on Schedule 1C-Step of Attachment JPL-1. The debt service associated with these loans is included in the total revenue requirement being proposed for PWW. However, as of 12/31/16, a total of \$2,795,188 in loan proceeds were unexpended relative to PWW’s BNY Mellon-2014 Series A Bond issuance, but have since been expended in order to finance various projects which were completed and became used and useful during 2017.

⁵The calculations of the permanent rate increase and the step increase are fully detailed in Settlement Attachment JPL-1 and summarized on Schedule 1 – Modified Rate Structure of that attachment.

step adjustment is based, an appropriate adjustment in the proposed step adjustment shall be recommended to the Commission for approval.

3. The Settling Parties agree that this represents a reasonable compromise of all issues relating to the revenue requirement pending before the Commission for the purposes of permanent rates and the step adjustment, including, but not limited to, debt service, pro forma adjustments, capital additions, and operating expenses. As the sums expressed above are the result of compromise and settlement, they are liquidations of all revenue requirement issues and do not constitute precedent regarding any particular principle or issue. The Settling Parties agree that the revenue requirement recommended to the Commission results in rates for PWW's customers that are just and reasonable.

B. Effective Date for Permanent Rate and Step Adjustment.

1. The Settling Parties agree that the permanent rate increase of \$887,591, or 3.12%, shall be effective on a bills-rendered basis on and after December 7, 2017 in accordance with the Temporary Rate Settlement Agreement approved by Commission Order No. 25,990. In order to reconcile the difference between temporary rates and permanent rates, the Settling Parties agree that PWW should be authorized to either refund or charge customers an amount equal to the difference between the revenues PWW would have collected had the agreed upon level of permanent rates been in effect for bills rendered on and after December 7, 2016, and the actual revenues collected during the temporary rate period, inclusive of the WICA surcharge. Specifically, with regard to PWW's "Core Water System" customers, who have been assessed the WICA surcharge, PWW will either charge or refund the calculated difference within a one billing-month period. However, with regard to PWW's "Community Water System" customers,

who have not been assessed the WICA surcharge, PWW will either charge or refund the calculated difference over a twelve billing-month period.

2. Upon the issuance of a Commission order approving this Agreement, PWW agrees to file, within 30 days of such, a calculation of the temporary-permanent rate recoupment and surcharge recommendation for Commission review. PWW shall also provide a copy of its calculation and recommendation to the OCA. The refunds or surcharges shall be calculated based on each customer's actual usage and reflected as a separate item on all customer bills. Upon receipt of the Commission's order on PWW's proposed temporary-permanent rate recoupment, PWW agrees to file, within 15 days of such, a compliance tariff supplement including the approved refund or surcharge relating to the total recoupment of the difference between the level of temporary rates and permanent rates, as well as the average monthly refund or surcharge for each customer class based on customers' individual usage.

3. The Settling Parties agree that the step increase described in Section III(A)(1) and (2) shall be effective as of the date of the Commission order approving this Agreement.

4. The results of the revenue increases by customer class are set forth in Exhibit 2 to this Agreement. The monthly bill of an average residential customer using 8.58 hundred cubic feet (ccf) of water per month will increase from \$50.12 (inclusive of the WICA surcharge) to \$54.00, or \$3.88. This translates into an annual increase of \$46.56.

5. The Settling Parties agree that PWW should file tariff pages implementing the terms contained in this Agreement by no later than 15 days from the date of the Commission order approving this Agreement.

C. Modifications to Ratemaking Structure.

1. Reasons for Modifications to PWW's Ratemaking Structure.

a. In the Acquisition Order, the Commission approved a unique ratemaking structure as set forth in the DW 11-026 Settlement Agreement which was to be applied with respect to the future rate cases of each of the three regulated utilities owned by Penn Corp. In a subsequent order, the Commission approved clarifications to this ratemaking structure (See Commission Order No. 25,693 (July 5, 2014) at 3 in DW 13-130). The instant Agreement refers to this ratemaking structure, including the Commission's subsequent approved clarifications, as the "Original Rate Structure".

b. The Commission's approval of the Original Rate Structure provides guidance to interested stakeholders – such as the City, its lenders, the utilities and their management, their regulators, current and potential lenders to the utilities, and credit rating agencies – concerning how the Penn Corp utilities shall file for rate relief in subsequent rate cases, as well as the parameters under which the Commission shall review and set rates for those utilities in the future. While the Commission always retains all jurisdiction and authority to set just and reasonable rates in accordance with the Federal and State Constitutions and applicable statutes, the Settling Parties agree and reaffirm that the Commission's provision of guidance regarding rate-setting with respect to the Penn Corp utilities, within the context where they are ultimately owned by the City, is in the public interest. Further, given the fact that the City does not seek a traditional equity-based rate of return, in that it has no equity investment in the Penn Corp utilities, necessitates that modifications be made to the traditional rate-setting method in order to ensure that those utilities will have rates at levels that are sufficient to enable each to meet their respective operating requirements, to satisfy their respective apportioned share of

responsibility to pay the debt service arising from the City Acquisition Bonds, as well as to pay their respective debt service obligations arising from borrowings accomplished to finance their capital needs.

2. Specific Ratemaking Modifications.⁶

The Settling Parties agree and recommend that, in addition to approving the rates as set forth above, the Commission also approve, pursuant to RSA 378:7 and RSA 378:28, the specific modifications to the Original Rate Structure applicable to PWW as set forth in the following paragraphs of this Agreement and as reflected in the proposed rates.

a. 5-Year Average Test Period. PWW has proposed to substitute a five-year historical test period in place of the current single historical test year. The purpose for this proposal is to develop pro forma test year data regarding revenues and expenses which is less likely to reflect unusual or abnormal events, such as a uniquely dry or wet summer. The Settling Parties agree that PWW shall compute “test year” revenues using the trailing five-year average consumption at the most recently approved volumetric rates and fixed charges. The Settling Parties also agree that the five-year trailing average consumption determination shall be based on the four calendar years immediately preceding the designated test year for which the rate case is filed as well as the test year itself. Additionally, all direct test year expenses which are effected by differences in consumption, including but not limited to purchased water expense, electricity expense, and chemical treatment expense, shall also include pro forma adjustments to reflect the pro forma difference in consumption between the five-year average and the test year. PWW shall also include pertinent pro forma adjustments with respect to the financial data of each year that is included in the determination of the five-year average in

⁶ Exhibit 4 more fully describes the ratemaking modifications proposed in this section.

accordance with current principles. Further, the Settling Parties agree that PWW's use of a five-year average test period in computing its revenue deficiency in no way precludes either the Staff or the OCA from making an alternative recommendation in place of such with respect to the determination of PWW's revenue deficiency.

b. Revenue Requirement Components. The Settling Parties agree that PWW's overall revenue requirement shall consist of the following three components:

1. **City Bond Fixed Revenue Requirement (CBFRR)** as described in the Original Rate Structure.
2. **Operating Expense Revenue Requirement (OERR)** which is further composed of the following:
 - a. **Material Operating Expense Revenue Requirement (MOERR).**
 - b. **Non-Material Operating Expense Revenue Requirement (NOERR).**
3. **Debt Service Revenue Requirement (DSRR)** which is further composed of the following:
 - a. **Debt Service Revenue Requirement - 1.0 (DSRR-1.0)**
 - b. **Debt Service Revenue Requirement - 0.1 (DSRR-0.1)**

b1. City Bond Fixed Revenue Requirement (CBFRR). The Settling Parties agree that the purpose of the CBFRR shall remain unchanged from that originally defined within the Original Rate Structure; that is, to include within PWW's overall revenue requirement a fixed rate level that is sufficient to enable PWW to contribute its apportioned share towards the repayment of the debt service arising from the City Acquisition Bonds. (See DW 11-026 Settlement Agreement at 8.) The Settling Parties further agree that PWW's CBFRR component should be increased from an annual amount of \$7,465,139 as reflected in the test year to an annual amount of \$7,729,032 as reflected in the proposed revenue requirement above. The reason for this increase is because under the Original Rate Structure, the revenue necessary to

repay the City for the \$5,000,000 portion of the Acquisition Bonds used to fund the RSF was derived as part of PWW's return on its rate base investment. However, the proposed Modified Rate Structure does not include a return on rate base component. Therefore, a ratable share (based on PWW's approved revenue requirement in its last full rate proceeding, DW 13-130) of the \$5,000,000 RSF has been added to its previously apportioned share of the City Acquisition Bonds in order to derive the new annual CBFRR amount. The detailed calculation of the revised CBFRR is contained on Exhibit 5 to this Settlement Agreement.

b2. Operating Expense Revenue Requirement (OERR). The Settling Parties agree that PWW shall include in its overall revenue requirement an "Operating Expense Revenue Requirement" amount ("OERR"), which shall be equal to the sum of PWW's pro forma test year Operation and Maintenance Expenses, Property Tax Expense, Payroll Tax Expense, and Amortization Expense. The Settling Parties agree that the overall OERR revenue component shall be further segregated between a "Material Operating Expense Revenue Requirement" ("MOERR") component and a "Non-Material Operating Expense Revenue Requirement" ("NOERR") component. The Settling Parties agree that the MOERR shall include all expense items included in the OERR with the exception of those expense items which are specifically included in the NOERR (identified below). The Settling Parties agree that certain operating expenses should be designated as "Non-Material Operating Expense Revenue Requirement" (NOERR) items due to the potential susceptibility of such to be found to be completely or partially imprudently incurred within the context of a rate proceeding. However, the Settling Parties further agree that 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. Rather, those expenses which are designated

as NOERR items shall not be included in any use of or replenishment from the “Material Operating Expense Revenue Requirement Rate Stabilization Fund” (MOERR RSF) described below. The Settling Parties agree that the following operating expenses are identified as NOERR expense items:

<u>PWW Account</u>	<u>Description</u>
921002-001-2109	Senior Management Vehicles
921003-001-2109	Senior Management – Fuel Purchased
921004-001-2109	Senior Management – Vehicle Registration
923000-001-2109	Outside Services
926001-001-2109	Officer’s Life Insurance
926500-001-2109	Miscellaneous Employee Benefits
926501-001-2109	Miscellaneous Employee Benefits – Wellness
926502-001-2109	Miscellaneous Employee Benefits – Activities
926505-001-2109	Employee Relations
926600-001-2109	Tuition Reimbursements
926610-001-2109	Training Educational Seminars
930100-001-2109	Meetings & Conventions
930101-001-2109	Memberships
930200-001-2109	Public Relations
930300-001-2109	Meals
930410-001-2109	Charitable Contributions

b3. Debt Service Revenue Requirement (DSRR). The Settling Parties agree that PWW shall include in its overall revenue requirement a “Debt Service Revenue Requirement” amount (“DSRR”), the total of which shall generally be equal to 1.1 times the pro forma annual principal and interest payments on PWW’s outstanding long-term debt as of the end of the pro forma test year. The Settling Parties agree that the proposed DSRR essentially replaces both return on rate base as well as depreciation expense which are traditionally key components of utility rate-making before this Commission. However, the Settling Parties are in agreement that, given PWW’s current complete reliance on debt capital, as stated above, a rate structure based on debt service (i.e. total annual principal and interest) is critical to enabling PWW to access the lowest cost debt financing it can obtain, in order to provide safe and reliable

service to its customers at the lowest possible rates. The Settling Parties agree that the DSRR shall be segregated into two revenue components. The first shall be equal to 100% of the pro forma debt service payments for the test year, and shall be referred to as “DSRR-1.0.” The second component shall be equal to 10% of the pro forma debt service payments for the test year, and shall be referred to as the “DSRR-0.1”. The establishment of the DSRR-1.0 relates to the use and replenishment of the DSRR-1.0 RSF which is explained below. 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 Penn Corp’s covenant requirements for its line of credit, which is used by Penn Corp 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. The Settling Parties agree that any accumulated DSRR-0.1 revenues at the end of a given fiscal year will be utilized as the first funding source for capital expenditures incurred during the first months of the succeeding fiscal year, leading up to an annual bonding or financing event in support of capital expenditures for that succeeding year. The Settling Parties further agree that once approved by the Commission within the context of a rate proceeding, PWW’s DSRR-1.0 and DSRR-0.1 amounts shall remain in effect until a subsequent rate proceeding, at which time new DSRR values shall be computed.

c. Allocation of the \$5,000,000 RSF amongst the Penn Corp

Utilities. The Settling Parties agree that the current \$5,000,000 Rate Stabilization Fund (RSF) maintained by PWW, which was established under the Original Rate Structure, should be re-allocated amongst the three Penn Corp utilities such that PWW’s allocated share of the RSF shall

now be \$3,920,000, with the remaining balance of \$1,080,000 to be allocated between PEU and PAC. The allocation to PWW is based on the respective three utilities' last Commission approved revenue requirements as detailed on Exhibit 6 of this Settlement Agreement. The Settling Parties agree that the \$1,080,000 portion of the RSF that is proposed to be allocated between PEU and PAC shall remain in PWW's RSF cash account until such time that rate case filings are made for PEU and PAC.⁷ At that time, the modified rate structure for PWW that is proposed in this settlement agreement will also be requested as the proposed rate structures for both PEU and PAC. If the respective rate structures for PEU and PAC are approved by the Commission, the \$1,080,000 will then be transferred from PWW's RSF funds to the respective RSF funds to be established in PEU and PAC.

d. Allocation of the \$3,920,000 PWW RSE. In order to better ensure that customer rates remain stable, even under adverse conditions, as well as to enable PWW to meet all of its cash obligations under such conditions, the Settling Parties agree that PWW's apportioned share of the RSF in the amount of \$3,920,000 should be allocated among three reserve funds as follows:

1. CBFRR RSF - \$ 680,000
2. MOERR RSF - \$2,850,000
3. DSRR-1.0 RSF - \$ 390,000

d1. City Bond Fixed Revenue Requirement Rate Stabilization Fund (CBFRR RSF). The Settling Parties agree that the purpose of this reserve fund will remain unchanged from its original establishment under the Original Rate Structure; that is, to

⁷ It is anticipated that PEU will make a rate filing later in 2017.

enable PWW to maintain stable water rates, even under adverse conditions, by providing a mechanism to ensure that PWW will meet its obligations relative to the City Acquisition Bond. (See DW 11-026 Settlement Agreement at 13ff.) However, the Settling Parties also agree that the amount of the CBFRR RSF should be reduced from \$3,920,000 to \$680,000 as calculated on Exhibit 6 of this Settlement Agreement. The difference of \$3,240,000 will be used to initially fund the MOERR RSF (\$2,850,000) as well as the DSRR-1.0 RSF (\$390,000). The CBFRR RSF shall continue to be established and maintained at a level of \$680,000 in accordance with the existing guidelines for the RSF approved in the DW 11-026 Acquisition Order.

d2. Material Operating Expense Revenue Requirement Rate

Stabilization Fund (MOERR RSF). The Settling Parties agree that, similar to the CBFRR RSF established under the Original Rate Structure, this fund will be used to ensure stable rates by enabling PWW to meet its material operating expense obligations in the event of adverse revenue developments such as lower than expected consumption patterns due to wet weather and/or increases in material operating expenses above anticipated levels that occur between test years. The establishment of the MOERR RSF is intended to provide lenders to PWW with reasonable assurances that PWW will have the necessary cash available to pay its material operating expenses while, at the same time, having sufficient cash reserves to ensure payment of its debt service obligations on its issued long-term debt. The existence of cash reserves by PWW will accordingly facilitate PWW's ability to borrow funds at reasonable interest rates and on reasonable terms, which will directly benefit customers in the form of a reduced debt service requirement. The MOERR RSF will be established and maintained in accordance with the procedures set forth in Exhibit 4 to this Agreement. The Settling Parties agree that the MOERR

RSF should be initially established at an imprest level of \$2,850,000 via a transfer of funds in such amount from the CBFRR RSF.

d3. Debt Service Revenue Requirement-1.0 Rate Stabilization

Fund (DSRR-1.0 RSF). The Settling Parties agree that, similar to the CBFRR RSF established under the Original Rate Structure, this fund will be used to ensure that, even in adverse revenue conditions such as wet weather, there will be a sufficient cash reserve available to enable PWV to pay the debt service obligations on its long-term debt. The Settling Parties agree that the intended purpose for the establishment of the DSRR-1.0 RSF is to provide PWV's lenders with reasonable assurances that PWV will have sufficient cash available to pay its debt service obligations. This will better facilitate PWV's ability to borrow funds at reasonable interest rates and on reasonable terms, which will directly benefit customers in the form of a lower debt service requirement. The DSRR-1.0 RSF will be established and maintained in accordance with the procedures set forth in Exhibit 4 to this Agreement. The Settling Parties agree that the DSRR-1.0 RSF should be initially established at an imprest level of \$390,000 via a transfer of funds in such amount from the CBFRR RSF.

e. Establishment of a Qualified Capital Project Annual

Adjustment Charge (QCPAC). In Order No. 25,230 (June 9, 2011) in docket DW 10-091, the Commission approved a pilot Water Infrastructure and Conservation Adjustment ("WICA") mechanism. The Commission extended the pilot program in Order No. 25,693 in DW 13-130. The Settling Parties agree that the concept of an on-going annual surcharge between rate cases, based on essentially all of the capital projects undertaken and completed by PWV each year, is appropriate and helps to maintain adequate cash flows. Such adjustment surcharge is to be implemented pursuant to a capital budget that has been previously reviewed and approved by the

Commission. Similar to the WICA, this approach offers an effective and balanced interim mechanism to allow PWW to collect revenues in order to service the debt obligations that will be incurred to finance the capital projects which have been placed in service and are used and useful between full rate case filings. Such a mechanism also serves to mitigate rate shock for customers. Specifically, the Settling Parties agree to replace the WICA program with an annual “Qualified Capital Project Adjustment Charge” (“QCPAC”) in accordance with the following provisions:⁸

- (i) QCPAC eligible projects must meet the following criteria: 1) the capital project proposed by PWW must be completed, in service, and used and useful within the previous fiscal year for which the QCPAC filing is made; 2) the capital project must have been financed by debt that has been approved by the Commission in accordance with RSA 369; and, 3) the capital project must specifically correspond with a capital budget which has been previously submitted by PWW and approved by the Commission.
- (ii) PWW shall make a filing with the Commission detailing the eligible projects and the amounts expended to acquire and/or construct such assets by no later than March 15 immediately following the fiscal year subject to the QCPAC. This filing will be the basis for the surcharge being requested in the current year relative to those eligible capital projects which meet the criteria stated in subparagraph (i).

⁸ QCPAC Process Flow Diagrams that illustrate how the QCPAC mechanism will be applied are attached as Exhibit 7.

- (iii) PWW shall also file a capital budget for all capital project expenditures for the current fiscal year in which a QCPAC filing is made for the purpose of receiving preliminary approval of such from the Commission. PWW shall also submit a forecast of capital project expenditures for the following two fiscal years for informational purposes only. These submissions will be made as part of each QCPAC filing described in subparagraph (ii).
- (iv) Commission review of the respective filings will be initiated upon the filings described in subparagraphs (ii) and (iii), with a ruling upon such requests anticipated in approximately September of each year.⁹ Such review shall also consist of an audit, as well as an accompanying report thereon, by the NHPUC Audit Staff.
- (v) The Settling Parties agree that, due to the nature of the QCPAC program whereby filings will occur on an annual basis, PWW's submissions to the Commission should accurately reflect actual project costs and be substantially free of material errors. If, after review of PWW's filings, including an examination by the NHPUC Audit Staff of the underlying documentation in support thereof, either the Staff or the OCA deems those filings to be materially deficient in any respect, either may make a recommendation to the Commission to immediately reject the filings.

⁹ Because PWW's first interest payment on bonded debt is due six months after issuance (anticipated for September 1 each year), if the Commission has not ruled on the QCPAC step increase request, PWW will fund such interest payments from the DSRR-1.0 RSF or the working capital line of credit until such time as the QCPAC is approved by the Commission.

- (vi) Upon approval of a QCPAC by the Commission, the QCPAC shall become eligible for annual recoupment for bills rendered after the date for which bonded debt or other financing that is incurred with respect to the specific eligible projects is issued or consummated. It is anticipated that this date will be approximately March 1 of each year.
- (vii) The QCPAC surcharge shall consist of: (1) the annual principal and interest payments with respect to the applicable capital project debt, multiplied by 1.1; and (2) incremental property taxes associated with the specific capital projects, as determined in the year of the granting of the QCPAC for such projects.
- (viii) Notice to customers shall be made each year in conjunction with the annual filing described in subparagraph (ii) above, within 30 days of the date of such filing.
- (ix) Customer bills will include the annual QCPAC upon the issuance of an order approving such surcharge, in the month following the effective date of the order.
- (x) After PWW's submission of the current year annual capital budget, PWW shall also file quarterly updates with the Commission for the purpose of keeping the Commission apprised of its progress with regard to its proposed current year capital projects. PWW shall file these quarterly updates with the Commission on July 15, October 15, and January 15.

f. Withdrawal of PWW's Pending WICA Filing and

Replacement by an Interim QCPAC Filing. The Settling Parties agree that the QCPAC mechanism should replace the WICA pilot program. On January 31, 2017, in accordance with the WICA pilot program, PWW submitted a filing in request of approval of an increase in its WICA surcharge based on the completion of certain WICA eligible projects during 2016.

PWW's filing also requested Commission approval of PWW's proposed 2017 WICA eligible projects as well as preliminary approval of its anticipated 2018 WICA eligible projects. PWW's submission was assigned Docket No. DW 17-017. Staff propounded discovery on PWW's submission to which responses have been received. Additionally, as stated above, the NHPUC Audit Staff has performed an examination of the underlying costs related to PWW's 2016 WICA eligible projects and has submitted a report on its findings. (See Exhibit 3) The Settling Parties agree that the 2016 capital projects upon which the proposed step adjustment in this Settlement Agreement is based are inclusive of the 2016 WICA eligible projects upon which the proposed increase in the WICA surcharge in DW 17-017 is based. Therefore, the Settling Parties agree that upon approval of this Settlement Agreement by the Commission, PWW shall withdraw its WICA filing in DW 17-017 and that docket be closed. In place of that WICA filing, the Settling Parties agree that PWW shall file an interim QCPAC submission with the Commission within 15 days of the Commission's order approving this Settlement Agreement. The interim QCPAC submission shall include the anticipated 2017 QCPAC budget and a forecast of capital project expenditures for fiscal years 2018 and 2019. PWW's proposed capital budget for 2017 shall specifically correspond with PWW's anticipated filing for financing approval of its 2017 capital projects.

3. Administrative and Rate Case Requirements.

a. As noted above, the Settling Parties agree and recommend that the Commission approve the modifications to the Current Ratemaking Structure described above. The details of the computations and impacts of these proposed modifications are reflected in Attachment JPL-1 to this Settlement Agreement. The Settling Parties further agree and recommend that the Commission require PWW to file its next rate case in accordance with the

procedures and methodologies described in this Settlement Agreement and consistent with the computations set forth in in the exhibits and attachments to this Settlement Agreement.

b. An important objective of the proposed modified rate structure is to increase PWW's access to credit markets at enhanced credit ratings, giving PWW access to lower cost debt, to the benefit of its customers. The Settling Parties agree and recommend that the Commission require PWW to provide written notice to the Commission, the Staff and the OCA of any changes in its credit rating status with any applicable credit rating agency, including a copy of the credit rating agency's notice of such change, if a written notice is in fact provided by the agency as of the time of the change, within 30 days after PWW receives notice of such a change.

c. The Settling Parties agree and recommend that the Commission require PWW to provide monthly reports to the Commission, the Staff and the OCA regarding the status of the CBFRR RSF, the DSRR-1.0 RSF, and the MOERR RSF at the times PWW files its monthly statement of operations with the Commission.

d. The Settling Parties agree PWW should be required to file a full rate case in certain situations when the total amount of funds held in the CBFRR RSF, the DSRR-1.0 RSF, and the MOERR RSF as maintained for the benefit of PWW (the "Combined PWW Rate Stabilization Funds") grow to be materially greater than the target of such funds most recently established by the Commission. As such, the Settling Parties agree and recommend that the Commission require PWW to file a full rate case at any time that the average of the amounts of cash held in the Combined PWW Rate Stabilization Funds as of the last day of each month for the 13-month period ending on December 31 of each year is greater than 150% of the combined target amount for such funds as most recently established by the Commission. When the

monthly reports filed by PWW indicate that this excess amount has occurred, then PWW shall file a full rate case within 6 months following the filing of such monthly report. In the next rate case, the Company understands that the parties may issue data requests seeking a comparison of the revenue requirements under the instant settlement agreement, and those that would have been required under the rate-making structure established in Docket No. DW 11-026. If a party makes such a request, the Company agrees to furnish such data to the best of its ability.

D. Rate Case Expense Surcharge.

The Settling Parties agree and recommend to the Commission that PWW should be allowed to recover its reasonable rate case expenses for this proceeding through a surcharge. PWW's rate case expenses may include, but are not limited to, its legal and consultant expenses, as well as its incremental administrative expenses such as copying and delivery charges. PWW agrees to file its final rate case expense request, pursuant to Puc 1905.02, no later than 30 days from the date of the Commission's order approving this Settlement Agreement. The Staff and the OCA will have an opportunity to review rate case expenses and provide recommendations to the Commission for approval.

E. PWW Request for Distribution for City Eminent Domain Expenses.

The Settling Parties agree and recommend to the Commission that PWW's request to enhance the CBFRR component of the current ratemaking schedule to include an amount for repayment of the City of Nashua's eminent domain expenses should be denied. The Settling Parties agree and recommend that the Commission should clarify and require that neither PWW, PEU or PAC may collect revenues from customers for the purpose of distributing cash to Penn Corp or ultimately as a special dividend or other form of distribution to the City to reimburse eminent domain costs or for any other purpose whatsoever. The Settling Parties further agree

and recommend that the dividend restrictions contained in the DW 11-026 Settlement Agreement remain in full force and effect.

IV. Conditions

1. 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.

2. 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.

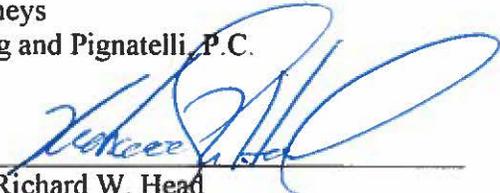
3. The discussions that produced this Agreement have been conducted on the explicit understanding that all offers of settlement relating thereto are and shall be confidential, shall be without prejudice to the position of any party or participant representing any such offer or participating in any such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

4. This Agreement may be executed in counterparts.

IN WITNESS WHEREOF, the Settling Parties have caused this Agreement to be duly executed in their respective names by their fully authorized agents.

PENNICHUCK WATER WORKS, INC.
By its attorneys
Rath, Young and Pignatelli, P.C.

Dated: 7-19-17

By: 
Richard W. Head

STAFF OF NEW HAMPSHIRE PUBLIC
UTILITIES COMMISSION

Dated: 7/19/17

By: 
John Clifford
Staff Attorney

OFFICE OF CONSUMER ADVOCATE

Dated: 7/19/2017

By: 
D. Maurice Kreis
Consumer Advocate

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

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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, would not result in an immediate rate increase. 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. Docket Nos. DW 14-130 and DW 15-196

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 through 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. Docket No. DW 16-806

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 million⁶, 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. Reduction in PWW's Debt Service

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. Improvement in PWW's Capitalization

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. Savings to PWW's Customers

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. Improvement in PWW's Liquidity and Cash Flow

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 \$2,850,000¹¹ 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. Estimated Revenue Requirement

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 \$970,374¹² (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 19-029¹³ 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. Maximum Revenue Requirement

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 \$490,585¹⁴ (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 preceding 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 Charges¹⁷ 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. Frequency of Rate Cases

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 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

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

Date: June 24, 2020

Richard W. Head
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

Christopher Tuomala
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

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

**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

Current Annual Debt Service								(B)							
Bond Year	(A)							(B)							
Ending Dec. 31	2014A	2014B	2015A	2015B	2018A	2018B	Total Aggregate Debt Service	Total Debt Service:	Total Savings:	2020 New Money	AULI	2020 New Money	Total Refunding	Estimated New	(A)-(B)
	Total	Total	Total	Total	Total	Total	Total	2020 Refunding	2020 Refunding	Debt Service (2)	Savings	+ Refunding DS	Savings	Aggregate DS	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) Total Aggregate Debt Service	(B)						
	2014A	2014B	2015A	2015B	2018A	2018B	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
Ending Dec. 31	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	
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	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	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	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	338,875	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	335,750	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	337,250	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	338,250	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	338,750	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	333,875	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	338,500	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	338,344	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	338,569	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	338,369	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	337,744	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	336,694	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	335,047	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	443,913	337,688	337,688	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	444,788	334,781	334,781	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	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	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	(3,688,307)	318,298		4,006,403	(3,688,307)	4,006,604	(4,006,604)
2050							3,688,092	3,688,293	(3,688,293)	317,114		4,005,205	(3,688,293)	4,005,406	(4,005,406)
2051							3,682,020	3,682,221	(3,682,221)	320,347		4,002,367	(3,682,221)	4,002,568	(4,002,568)
2052							3,689,424	3,689,625	(3,689,625)	317,998		4,007,422	(3,689,625)	4,007,623	(4,007,623)
2053							3,689,838	3,690,039	(3,690,039)	320,067		4,009,904	(3,690,039)	4,010,105	(4,010,105)
2054							3,688,145	3,688,346	(3,688,346)	321,436		4,009,581	(3,688,346)	4,009,782	(4,009,782)
2055							3,688,997	3,689,198	(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.



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.

A handwritten signature in blue ink, appearing to read 'Suzanne L. Ansara', written over a horizontal line.

Suzanne L. Ansara
Corporate Secretary



PENNICHUCK CORPORATION

CORPORATE SECRETARY'S CERTIFICATE

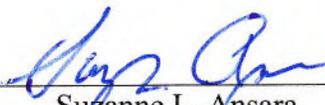
I, Suzanne L. Ansara, do hereby certify that I am the duly elected Corporate Secretary of Pennichuck Corporation (the "Company"), a New Hampshire corporation, and that I am authorized to execute and deliver this Certificate on behalf of the Company. In that capacity, I do hereby further certify that:

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 imprest 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.

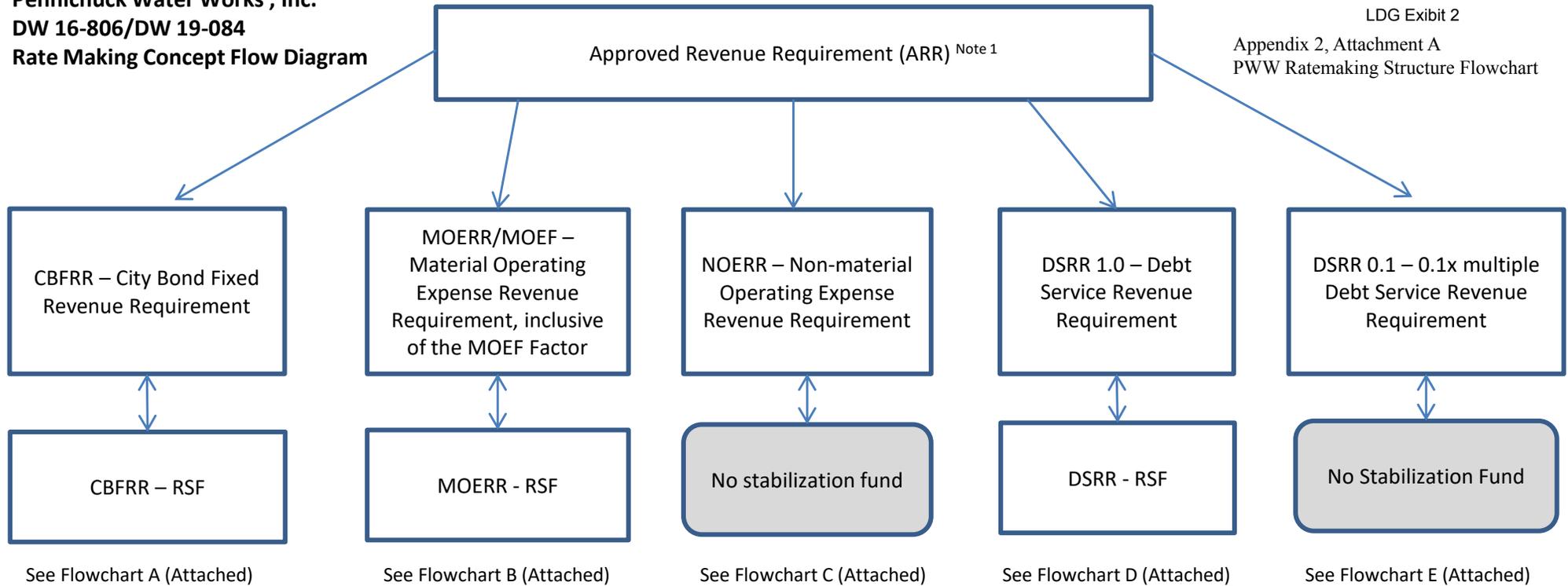
Feel free to reach out if you need any additional information and I'd be happy to provide it.

Regards,

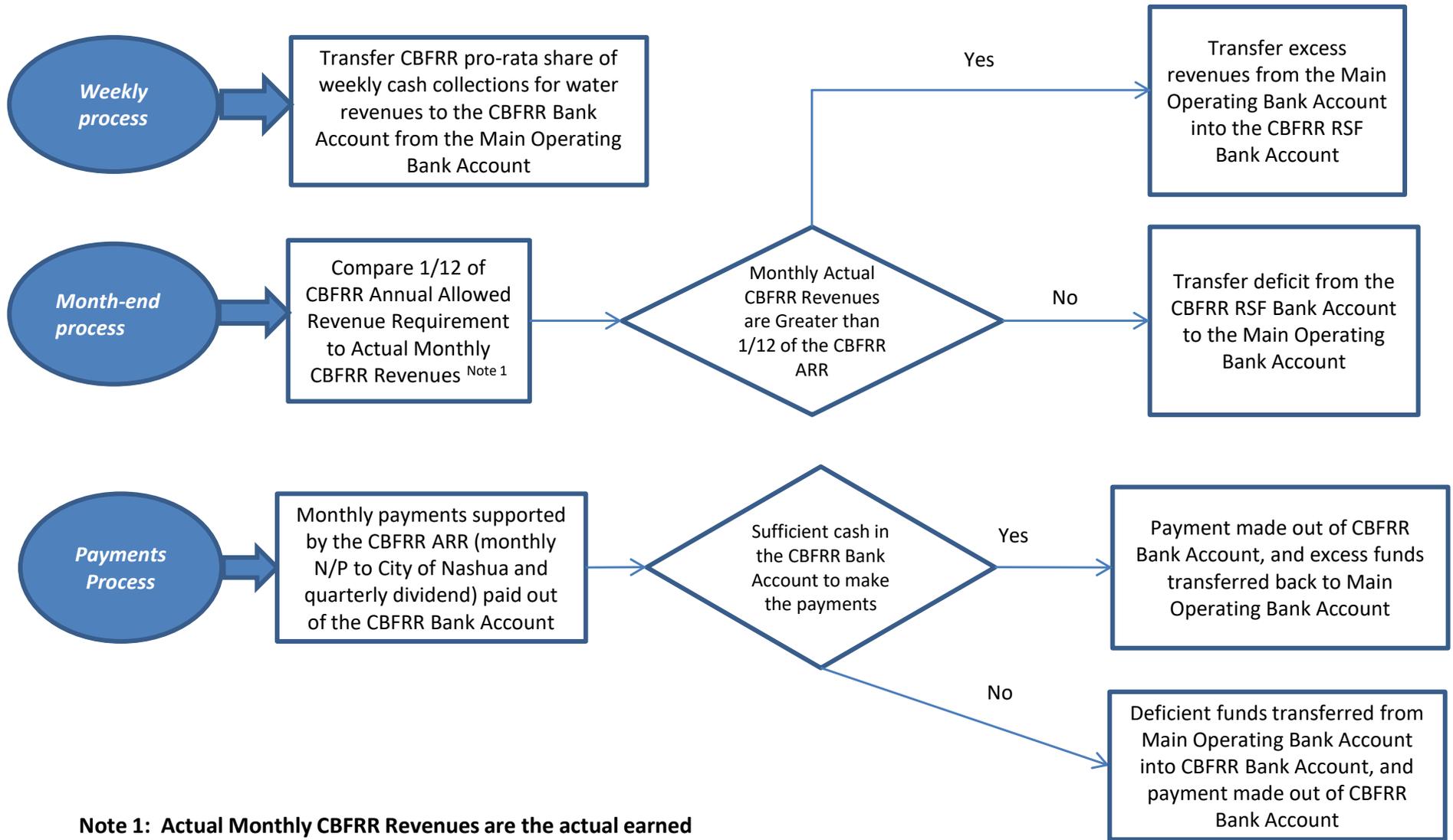
James Key-Wallace
Executive Director
NH Business Finance Authority
2 Pillsbury Street, Suite 201
Concord, NH 03301
603-415-0191
jameskw@nhbfa.com

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

LDG Exhibit 2
Appendix 2, Attachment A
PWW Ratemaking Structure Flowchart

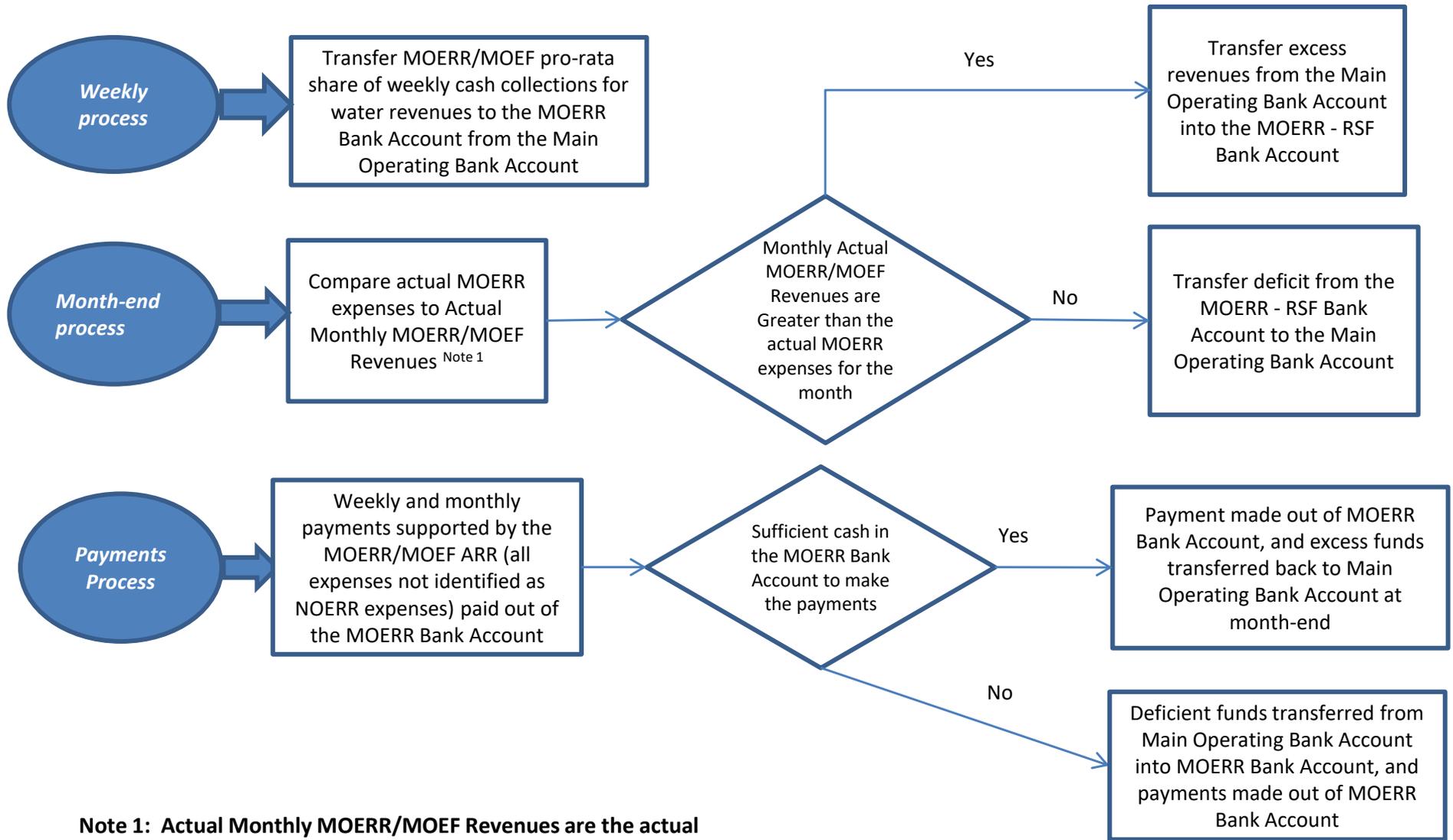


Note 1 – The Approved Revenue Requirement equals the annual revenue requirement established at the most recent rate case, adjusted annually on or about April 1st (effective date for inclusion/recoupment of the most recently approved annual QCPAC Surcharge), and “trued up” to the actual approved amounts 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.”

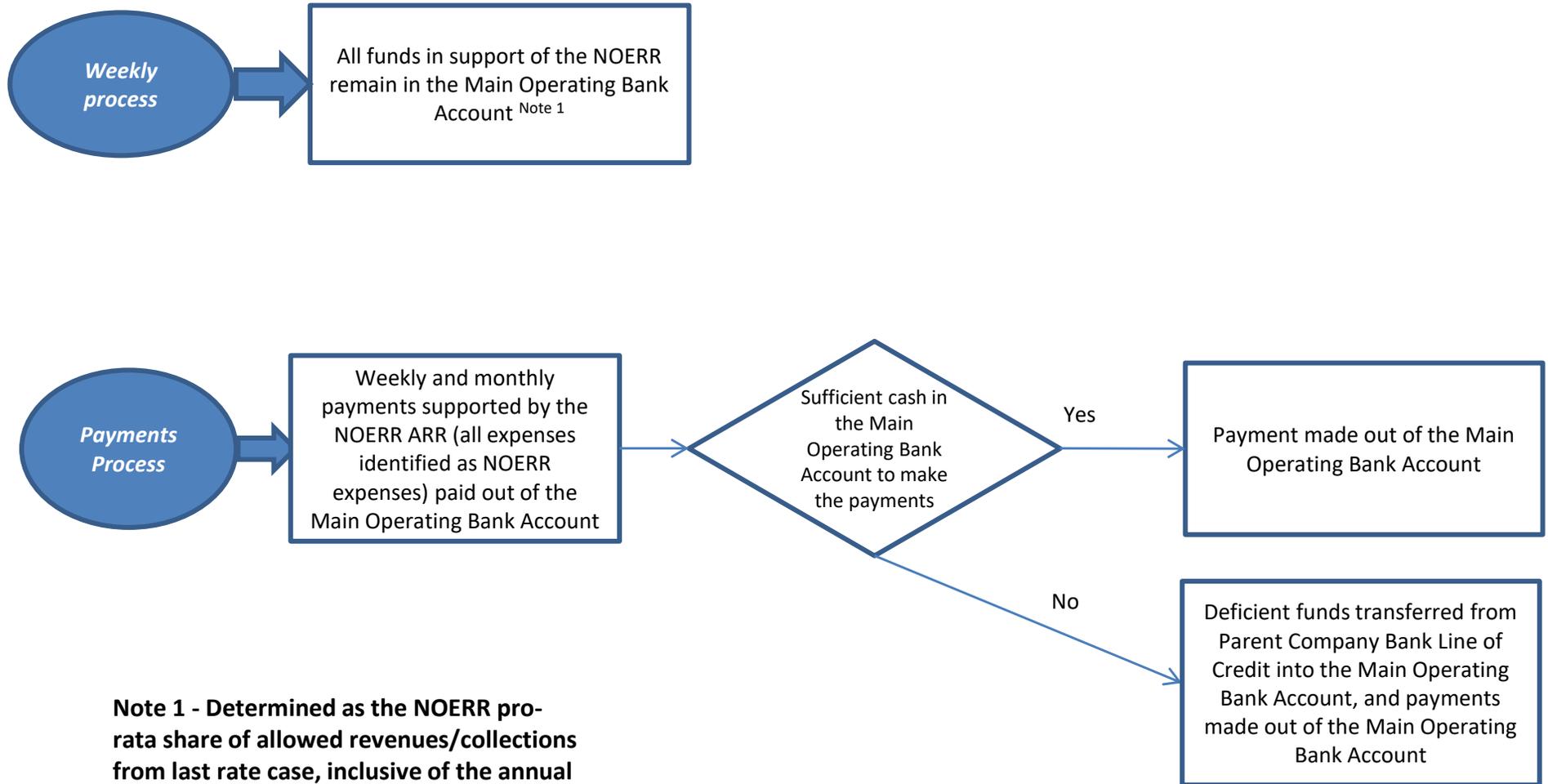


Note 1: Actual Monthly CBFRR Revenues are the actual earned water revenues in the month multiplied times the pro-rata percentage of revenues allocated to the CBFRR, per the last rate case, inclusive of the annual QCPAC increase.

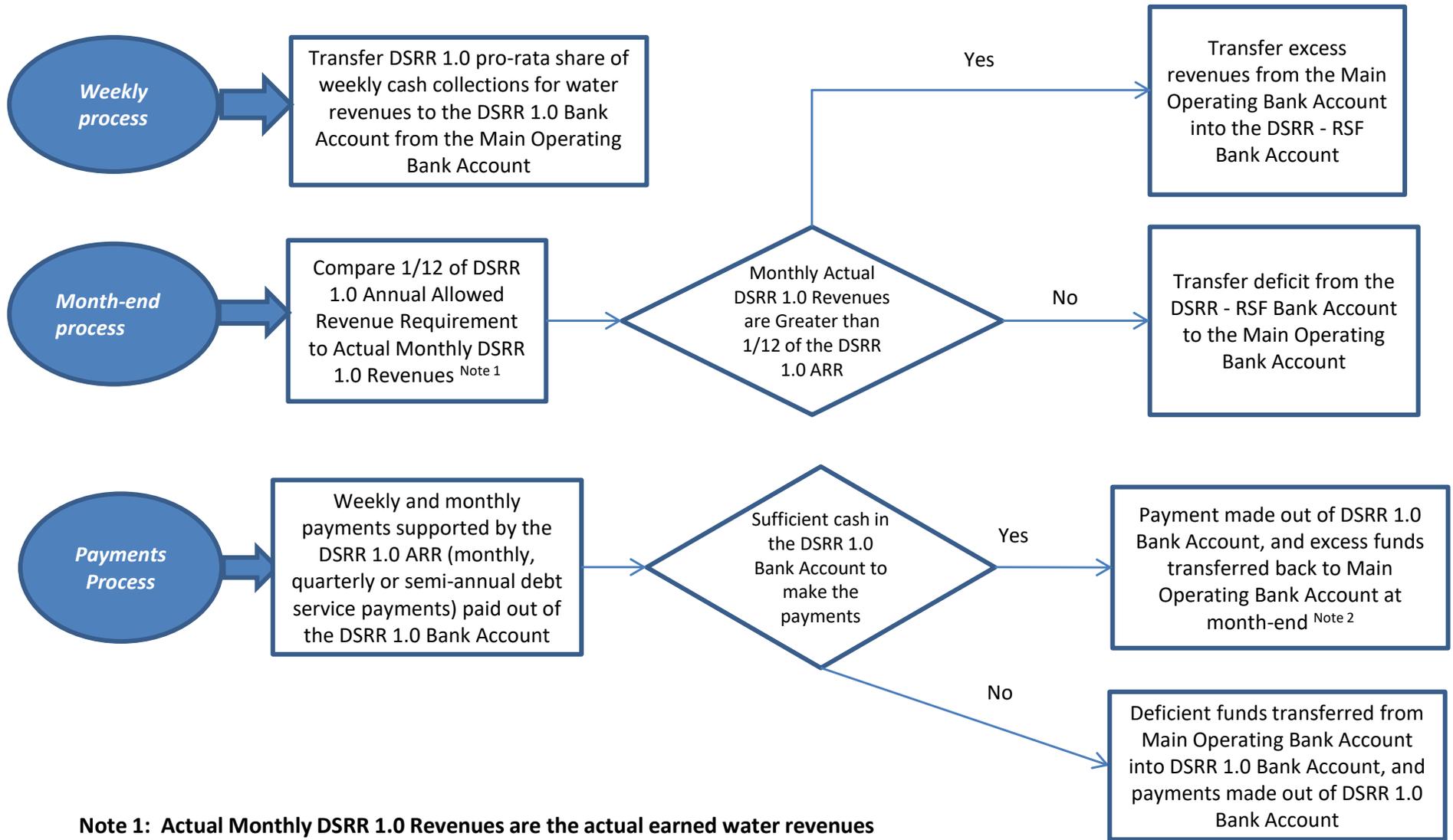
Pennichuck Water Works , Inc. - DW 16-806/DW 19-084
Rate Making Concept Flow Diagram - Flowchart B



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.



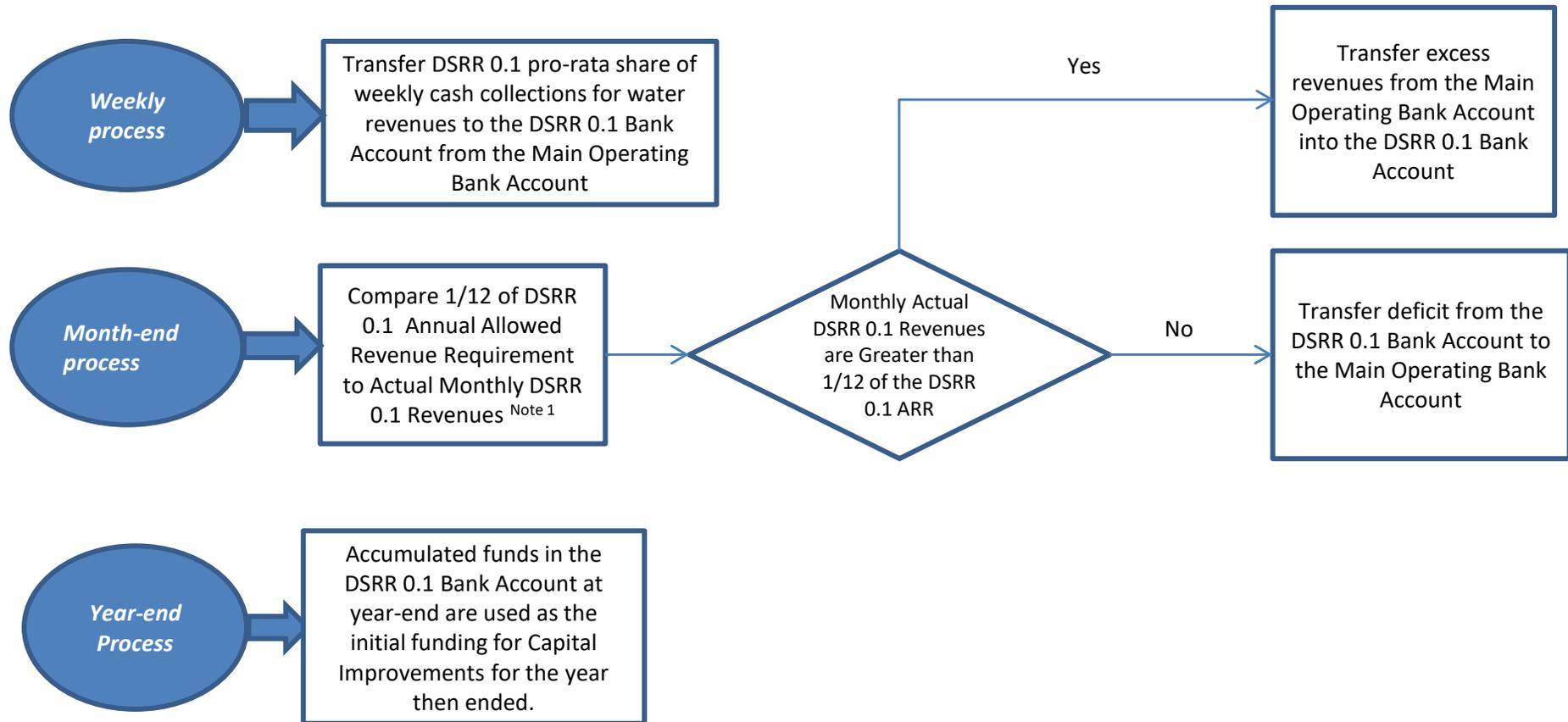
Note 1 - Determined as the NOERR pro-rata share of allowed revenues/collections from last rate case, inclusive of the annual QCPAC increase.



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

Appendix 2, Attachment A
PWW Ratemaking Structure Flowchart

- **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:
 - $(\text{MOERR allowed revenues}) \times (1 + \text{MOEF}) = \text{MOERR/MOEF allowed revenues.}$
- **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 reflect tech session and correction of
 NOERR expenses; Rev 5/26/20

DLW Exhibit 1

LDG Exhibit 2

Appendix 2 - Attachment B MOEF Financial Model

PWV 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				
	CBFRR	Material Operating Expense Revenue Requirement (MOERR)	Operating Expense Revenue Requirement (NOERR) ⁶	1.0 Debt Service Revenue Requirement (1.0 DSRR) ¹	0.1 Debt Service Revenue Requirement (0.1 DSRR)	
Revenue Requirement ² -	\$ 7,729,032	\$ 20,741,272	\$ 555,346	\$ 6,032,257	\$ 603,226	
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 Year 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 Stabilization Fund levels ⁵ -	\$ 680,000	\$ 2,850,000	\$ -	\$ 390,000	\$ -	\$ 3,920,000
Based on largest variance from five year ave of -	3.40%					

Annual Operating Expense increases @ 3.00%

Total RSF Funds Required	Available RSF funds on 12/31/2019
\$ -	\$ (1,613,608)
\$ 1,410,000	
\$ 3,530,000	
\$ 6,350,000	
\$ 3,920,000	\$ 5,533,608

Required Catch up
 As a "one time" borrowed amount
 to refill the RSF funds awaiting implementation of the MOES

Revenue Type	2013 PWV Billed Revenue	2014 PWV Billed Revenue	2015 PWV Billed Revenue	2017 PWV Billed Revenue	2018 PWV 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 Protection 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	\$ 29,133,439	\$ 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
Totals -	\$ 3,790,212	\$ 1,190,462
	\$ 4,980,674	

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

Expense Type	2013 PWV Actual Variable Expenses	2014 PWV Actual Variable Expenses	2015 PWV Actual Variable Expenses	2017 PWV Actual Variable Expenses	2018 PWV 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 PWV Actual Operating Expenses ¹⁰	2014 PWV Actual Operating Expenses ¹⁰	2015 PWV Actual Operating Expenses ¹⁰	2017 PWV Actual Operating Expenses ¹⁰	2018 PWV 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	\$ 4,123,297	\$ 4,468,936	\$ 4,617,857	\$ 5,210,697	\$ 4,438,775
Payroll Tax Expense	\$ -	\$ -	\$ -	\$ -	\$ 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 operating 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 PWV	2014 Actual CCF's sold by PWV	2015 Actual CCF's sold by PWV	2017 Actual CCF's sold by PWV	2018 Actual CCF's sold by PWV
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:

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

PWW Revenue Requirement -	\$ 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	

- For Calculation of Operating Expense Requirement see Exhibit 1.1
- Inclusive of pro forma to Hudson and Pennichuck East Usage due to the PWW-PEU interconnect - See 1604.06 Schedule 1C
- Request rate stabilization fund levels based on multiple years of coverage for the MOERR and 1.0 DSRF RSF, and to re-establish all RSF funds to their imprest levels as determined and approved under DW 16-806.
- 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%

- Actual year audited expenses, including non material operating expenses
- Amortization expense for 2013, 2014, 2015 and 2017 as provided by NHPUC Staff
- 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 \$5 amount is less the MOERR 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 \$5 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 \$5 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	
														<u>2018 Totals</u>	
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 reflect tech session and correction of
 NOERR expenses; Rev 5/27/20

DLW Exhibit 1

Appendix 2 - Attachment B MOEF Financial Model

PWV 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				
	CBFRR	Material Operating Expense Revenue Requirement (MOERR)	Operating Expense Revenue Requirement (NOERR) ⁶	1.0 Debt Service Revenue Requirement (1.0 DSRR) ⁷	0.1 Debt Service Revenue Requirement (0.1 DSRR)	
Revenue Requirement ² -	\$ 7,729,032	\$ 20,391,834	\$ 555,346	\$ 6,512,046	\$ 651,205	
Percentage of Revenues -	21.57%	56.90%	1.55%	18.17%		
1 Year coverage -	\$ 148,602	\$ 998,945	\$ -	\$ 125,204		
2 Year coverage -	\$ 297,204	\$ 2,624,794	\$ -	\$ 250,407		
3 Year coverage -	\$ 445,806	\$ 4,896,352	\$ -	\$ 375,611		
Annual Operating Expense increases @	3.00%					
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 Stabilization Fund levels ⁵ -	\$ 680,000	\$ 2,850,000		\$ 390,000		\$ 3,920,000
Based on largest variance from five year ave of -	3.40%					

Total RSF Funds Required	Available RSF funds on 12/31/2019
\$ -	\$ (964,545)
\$ 4,884,545	Required Catch up

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

Revenue Type	2013 PWV Billed Revenue	2014 PWV Billed Revenue	2015 PWV Billed Revenue	2017 PWV Billed Revenue	2018 PWV 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 Protection 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	\$ 29,133,439	\$ 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
Totals -	\$ 3,726,046	\$ 1,170,306
		\$ 4,896,352

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

Expense Type	2013 PWV Actual Variable Expenses	2014 PWV Actual Variable Expenses	2015 PWV Actual Variable Expenses	2017 PWV Actual Variable Expenses	2018 PWV 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 PWV Actual Operating Expenses ¹⁰	2014 PWV Actual Operating Expenses ¹⁰	2015 PWV Actual Operating Expenses ¹⁰	2017 PWV Actual Operating Expenses ¹⁰	2018 PWV 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	\$ 4,123,297	\$ 4,468,936	\$ 4,617,857	\$ 5,210,697	\$ 4,438,775
Payroll Tax Expense	\$ -	\$ -	\$ -	\$ -	\$ 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 operating 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 PWV	2014 Actual CCF's sold by PWV	2015 Actual CCF's sold by PWV	2017 Actual CCF's sold by PWV	2018 Actual CCF's sold by PWV
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:

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

PWW Revenue Requirement -	\$ 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	

- For Calculation of Operating Expense Requirement see Exhibit 1.1
- Inclusive of pro forma to Hudson and Pennichuck East Usage due to the PWW-PEU interconnect - See 1604.06 Schedule 1C
- Request rate stabilization fund levels based on multiple years of coverage for the MOERR and 1.0 DSRF RSF, and to re-establish all RSF funds to their impest levels as determined and approved under DW 16-806.
- 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%

- Actual year auditted expenses, including non material operating expenses
- Amortization expense for 2013, 2014, 2015 and 2017 as provided by NHPUC Staff
- 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 MOERR and multiplied by the proposed MOERR Contingency 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 2022 plus 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	
														<u>2018 Totals</u>	
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

LDG Exhibit 2

Appendix 2, Attachment C

REVENUE REQUIREMENT PER COMPANY'S ORIGINAL FILING	REVENUE REQUIREMENT PER SETTLEMENT			
	ESTIMATED ¹ (DW 20-055 Financing @ 3.67% Total Interest Cost)	MAXIMUM ² (DW 20-055 Financing @ 4.67% Total Interest Cost)		
<u>CITY BOND FIXED REVENUE REQUIREMENT (CBFRR)</u>				
1) City Bond Fixed Revenue Requirement (CBFRR) (Schedule 1)	\$ 7,729,032	\$ 7,729,032	\$ 7,729,032	
<u>OPERATING EXPENSE REVENUE REQUIREMENT (OERR) (Schedules 2.1/2.2)</u>				
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)]	<u>20,503,558</u>	<u>19,497,146</u>	<u>19,497,146</u>	
<u>MATERIAL OPERATING EXPENSE SUPPLEMENT (MOES)</u>				
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)]		<u>1,799,471</u>	<u>1,450,033</u>	
12) Operating Expense Revenue Requirement (OERR) [(7) + (11)]	<u>\$ 20,503,558</u>	<u>\$ 21,296,617</u>	<u>\$ 20,947,179</u>	
<u>DEBT SERVICE REVENUE REQUIREMENT (DSRR) (Schedule 3)</u>				
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
15) Debt Service Revenue Requirement (DSRR) [(13) x (14)]	<u>7,698,925</u>	<u>7,702,894</u>	<u>7,702,894</u>	
16) REVENUE REQUIREMENT BEFORE APPLICATION OF DEBT SERVICE SAVINGS RESULTING FROM DW 20-055 FINANCING [(1) + (12) + (15)]	<u>\$ 35,931,515</u>	<u>\$ 36,728,543</u>	<u>\$ 36,379,105</u>	
<u>REDUCTION IN REVENUE REQUIREMENT RESULTING FROM DW 20-055 FINANCING</u>				
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)]		<u>(1,067,411)</u>	<u>(539,644)</u>	
20) TOTAL PROPOSED REVENUE REQUIREMENT [(16) - (19)]	<u>\$ 35,931,515</u>	<u>\$ 35,661,131</u>	<u>\$ 35,839,461</u>	
<u>CALCULATION OF PERCENT INCREASE (DECREASE) IN ANNUAL WATER REVENUES</u>				
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)]	<u>\$ 35,510,803</u>	<u>\$ 35,240,419</u>	<u>\$ 35,418,749</u>	
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)]	<u>\$ 3,778,139</u> 11.91%	<u>\$ 3,591,103</u> 11.35%	<u>\$ 3,769,433</u> 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)]	<u>\$ 2,608,651</u> 8.22%	<u>\$ 2,343,006</u> 7.40%	<u>\$ 2,521,336</u> 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 PWV's originally proposed increase in its revenue requirement of 11.91%.

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

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%
	\$	<u>64,049,091</u>	100.00%

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

RSF amount funded by City Bond -	\$	5,000,000
PWW Revenue Requirement -	\$	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	\$	<u>390,000</u>
	\$	<u>3,920,000</u>

(1) Calculations are from DW11-026

(2) Consists of Equity as of 12/31/2011 as follows:

PWW	\$	54,395,626
Southwood	\$	<u>2,047,049</u>
Total	\$	<u>56,442,675</u>

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

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

Appendix 2, Attachment C

	Company Proposal per Original Filing			Settlement Proposal			
	(1) Test Year Operating Income	(2) Pro Forma Adj's Per Co's Filing	(3) Pro Forma Operating Income Per Co' Filing (Co's Sch 1)	(4) Adj's per Co Responses to Staff DR's (Sch 2a)	(5) Pro Forma Operating Income Per Settlement	(6) Revenue Increase per Settlement	(7) 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	<u>31,970,799</u>	<u>931,353</u>	<u>32,902,152</u>	<u>(4,739)</u>	<u>32,897,413</u>	<u>2,343,006</u>	<u>35,240,419</u>
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	<u>32,390,671</u>	<u>932,193</u>	<u>33,322,864</u>	<u>(4,739)</u>	<u>33,318,125</u>	<u>2,343,006</u>	<u>35,661,131</u>
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	<u>13,992,692</u>	<u>746,326</u>	<u>14,739,018</u>	<u>(157,524)</u>	<u>14,581,494</u>	<u>-</u>	<u>14,581,494</u>
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	<u>12,115,296</u>	<u>(6,454,005)</u>	<u>5,661,291</u>	<u>(848,888)</u>	<u>4,812,403</u>	<u>-</u>	<u>4,812,403</u>
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	<u>2,386,231</u>	<u>(2,282,982)</u>	<u>103,249</u>	<u>-</u>	<u>103,249</u>	<u>-</u>	<u>103,249</u>
Total Operating Expenses	<u>28,494,219</u>	<u>(7,990,661)</u>	<u>20,503,558</u>	<u>(1,006,412)</u>	<u>19,497,146</u>	<u>-</u>	<u>19,497,146</u>
NET OPERATING INCOME	<u>\$ 3,896,452</u>	<u>\$ 8,922,854</u>	<u>\$ 12,819,306</u>	<u>\$ 1,001,673</u>	<u>\$ 13,820,979</u>	<u>\$ 2,343,006</u>	<u>\$ 16,163,985</u>

DW 19-084
PENNICHUCK WATER WORKS, INC.

LDG Exhibit 2

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**

DW 19-084

PENNICHUCK WATER WORKS, INC.

Appendix 2, Attachment C

SCHEDULE 2.2 - OPERATING INCOME STATEMENT AND DETAILED CALCULATION OF MAXIMUM REVENUE REQUIREMENT

	Company Proposal per Original Filing			Settlement Proposal			
	(1) Test Year Operating Income	(2) Pro Forma Adj's Per Co's Filing	(3) Pro Forma Operating Income Per Co' Filing (Co's Sch 1)	(4) Adj's per Co Responses to Staff DR's (Sch 2a)	(5) Pro Forma Operating Income Per Settlement	(6) Revenue Increase per Settlement	(7) 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.

Appendix 2, Attachment C

SCHEDULE 2.2 - OPERATING INCOME STATEMENT AND DETAILED CALCULATION OF MAXIMUM REVENUE REQUIREMENT

**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 ADJUSTMENTS 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	<u>(339,391)</u>	\$ (29,955)
Calculation of 5-Year Average:	Staff Tech 2-16		<u>(53,393)</u>
Total Adjustments - Water Revenues from Base Rates			<u>(83,348)</u>

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	<u>(35,141)</u>	<u>(8,380)</u>
Total Adjustments - Water Revenues from QCPAC			<u>78,609</u>

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	<u>(2,218)</u>	\$ 16,689
Purchased Water:	Staff 2-39	17,671	
	Staff Tech 2-16	<u>(24,156)</u>	(6,485)
Chemicals:	Staff Tech 2-16		<u>(1,904)</u>
Total Adjustments - Production Expense			<u>8,300</u>

Transmission and Distribution Expense:

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

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

Appendix 2, Attachment C

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	<u>(5,750)</u>	(17,925)
Miscellaneous:	Staff 2-50		(25,534)
Outside Services:	Staff 2-30	(5,520)	
	Staff 2-50	(26,626)	
	Staff Tech 3-5	<u>(27,383)</u>	(59,529)
Maintenance - Computer Equipment:	Staff Tech 2-9		<u>(100,956)</u>
Total Adjustments - Administrative and General Expense			<u>(231,028)</u>

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	<u>53,834</u>	26,917
ROI Allocation to Affiliates:	Staff 2-25	62,862	
	Staff Tech 2-7	<u>428</u>	<u>63,290</u>
Total Adjustments - Inter-Division Management Fee			<u>90,462</u>
Total Adjustments - Operation and Maintenance Expenses			<u>(157,524)</u>

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

OTHER OPERATING EXPENSES

<u>Property Tax Expense:</u>	Staff Tech 3-3		<u>(579,340)</u>
<u>Amortization Expense:</u>			
Deferred Assets (Pre-existing):	Staff 2-16	(14,341)	
	Staff Tech 2-5	<u>6,594</u>	(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	<u>(2,991)</u>	8,227
Outside Services:	Staff Tech 3-5		7,000
Rate Stabilization Fund - Shortfall:	Staff Tech 2-23		<u>(286,775)</u>
Total Adjustments - Amortization Expense			<u>(269,548)</u>
Total Adjustments - Other Operating Expenses			<u>(848,888)</u>
TOTAL ADJUSTMENTS - OPERATING EXPENSES			<u>\$ (1,006,412)</u>
NET OPERATING INCOME ADJUSTMENTS			<u><u>\$ 1,001,673</u></u>

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
	Admin & Gen'l	Amortization	Adjustment
Adj. Per Sch. 2a - Based on Co Responses to Staff Discovery:			
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	PRO FORMA PRINCIPAL PAYMENTS					PRO FORMA INTEREST PAYMENTS					PRO FORMA AMORTIZED DEBT COSTS			PRO FORMA DEBT SERVICE PER CO FILING	PRO FORMA DEBT SERVICE PER SETTLMNT	
				OUTSTANDING DEBT	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 Sett'mnt	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 Sett'mnt	2018 Amortized Debt Costs	Adj's per Co Resp's to Staff DR's			Pro Forma Amort Costs per Sett'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	\$ 241,733		\$ 241,733	\$ (19,733) (a)	\$ 222,000	\$ 8,711	\$ (8,711) (c)	\$ -	\$ 650,444	\$ 622,000
SRF Loan - Hubbard Hill	20	04/01/22	3.800%	72,312	22,250		22,250		22,250	3,206		3,206	(846) (a)	2,360	-		-	25,456	24,610
SRF Loan - Conract # 4 (Water Treatment Plant)	20	10/01/29	4.488%	1,916,605	144,459		144,459	5,120 (a)	149,579	69,595		69,595	(5,120) (a)	64,475	234	(234) (c)	-	214,288	214,054
ARRA Loan - Ashley Commons	20	05/01/31	2.952%	325,533	7,988		7,988	981 (a)	8,969	9,922		9,922	(583) (a)	9,339	131	(131) (c)	-	18,041	18,308
ARRA Loan - French Hill	20	07/01/32	2.864%	1,001,421	20,261		20,261	2,680 (a)	22,941	29,508		29,508	(1,549) (a)	27,959	370	(370) (c)	-	50,139	50,900
ARRA Loan - Glenn Ridge	20	09/01/32	2.864%	76,168	1,494		1,494	202 (a)	1,696	2,243		2,243	(116) (a)	2,127	-		-	3,737	3,823
ARRA Loan - Army (S Nashua Booster Station)	20	01/01/32	2.864%	224,762	4,984		4,984	624 (a)	5,608	6,633		6,633	(367) (a)	6,266	87	(87) (c)	-	11,704	11,874
SRF Loan - Drew Woods	20	06/01/32	2.952%	617,773	36,989		36,989	1,107 (a)	38,096	18,831		18,831	(1,107) (a)	17,724	442	(442) (c)	-	56,262	55,820
SRF Loan - Nashua Core	20	07/01/36	2.464%	1,978,000	89,323		89,323	2,227 (a)	91,550	49,935		49,935	(2,226) (a)	47,709	698	(698) (c)	-	139,956	139,259
SRF Loan - Timberline Booster Station	20	07/01/36	2.616%	297,546	13,237		13,237	350 (a)	13,587	7,972		7,972	(350) (a)	7,622	105	(105) (c)	-	21,314	21,209
SRF Loan - Raw Water Transmission	20	11/01/36	3.168%	3,019,510	107,304		107,304	23,793 (a)	131,097	60,499		60,499	(2,490) (a)	58,009	509	(509) (c)	-	168,312	189,106
SRF Loan - Amherst Street - 2016	30	05/01/47	2.420%	1,383,522	11,019		11,019	8,671 (a)	19,690	33,837		33,837	(621) (a)	33,216	311	(311) (c)	-	45,167	52,906
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	1,760,318		1,760,318	(47,475) (a)	1,712,843	-		-	2,790,318	2,787,843
BNY Mellon - 2014 B Series Bonds	30	01/01/45	4.500%	5,030,000	95,000		95,000	5,000 (b)	100,000	228,488		228,488	(4,488) (a)	224,000	-		-	323,488	324,000
BNY Mellon - 2015 A Series Bonds	30	01/01/46	Various	19,490,000	545,000		545,000	20,000 (b)	565,000	917,987		917,987	(22,200) (a)	895,787	-		-	1,462,987	1,460,787
BNY Mellon - 2015 B Series Bonds	30	01/01/46	Various	1,840,000	100,000		100,000	5,000 (b)	105,000	94,500		94,500	(5,125) (a)	89,375	-		-	194,500	194,375
BNY Mellon - 2018 A Series Bonds	30	01/01/48	4.900%	4,460,000	-		-	-	-	100,484	103,891		204,375	204,375	-		-	204,375	204,375
BNY Mellon - 2018 B Series Bonds	30	01/01/48	4.900%	1,075,000	-	85,000	85,000	-	85,000	22,886	21,821		44,707	44,707	-		-	129,707	129,707
Sub-total: 2018 Outstanding Debt				84,913,202	2,629,308	85,000	2,714,308	120,755	2,835,063	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	30	01/01/49	4.220%	8,080,000	-	141,368	141,368	(49,701) (a)	91,667	-	347,460	347,460	923 (a)	348,383	-		-	488,828	440,050
BNY Mellon - 2019 B Series Bonds	30	01/01/48	4.220%	170,000	-	-	-	56,667 (a)	56,667	-	-	-	958 (a)	958	-		-	-	57,625
Sub-total: 2019 New Debt				8,250,000	-	141,368	141,368	6,966	148,334	-	347,460	347,460	1,881	349,341	-		-	488,828	497,675
PRO FORMA TEST YEAR TOTALS				\$ 93,163,202	\$ 2,629,308	\$ 226,368	\$ 2,855,676	\$ 127,721	\$ 2,983,397	\$ 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																			
Less: Estimated Annual Debt Service Savings: AULI Loan Refinancing																			
2014A & 2015A/B Bond Refinancing																			
Net Estimated Debt Service Savings @ 3.67% Total Interest Cost																			
ESTIMATED ADJUSTED PRO FORMA TEST YEAR DEBT SERVICE																			
@ 4.67% Total Interest Cost																			
Estimated Annual Debt Service: RSF Replenishment Financing																			
Less: Estimated Annual Debt Service Savings: AULI Loan Refinancing																			
2014A & 2015A/B Bond Refinancing																			
Net Estimated Debt Service Savings @ 4.67% Total Interest Cost																			
ESTIMATED ADJUSTED PRO FORMA TEST YEAR DEBT SERVICE																			

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

Rate or Class of Service	Effect of Proposed Change	Average Number Customers	Maximum Change in Annual Revenues from Base Rates					Maximum Change in Total Annual Water Revenues					
			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	Maximum Change in Annual Revenues from Base Rates		Maximum Change in Annual Revenues from Base Rates	Less: Pro Forma Test Year QCPAC Revenues	Maximum Change in Total Annual Water Revenues		
							Amount	% Increase			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%	
<u>Anheuser-Busch Contract</u>													
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%	
<u>Milford Contract</u>													
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%	
<u>Hudson Contract</u>													
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%	
<u>Tynnsborough Contract</u>													
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%	
<u>Pennichuck East Utility Contract</u>													
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%	

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

Appendix 2 - Attachment D Customer Class and COSS Impact

Rate or Class of Service	Effect of Proposed Change	Average Number Customers	Estimated Change in Annual Revenues from Base Rates					Estimated Change in Total Annual Water Revenues					
			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		Estimated Change in Annual Revenues from Base Rates	Less: Pro Forma Test Year QCPAC Revenues	Estimated Change in Total Annual Water Revenues		
							Amount	% Increase			Amount	% 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%	
<u>Anheuser-Busch Contract</u>													
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%	
<u>Milford Contract</u>													
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%	
<u>Hudson Contract</u>													
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%	
<u>Tynnsborough Contract</u>													
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%	
<u>Pennichuck East Utility Contract</u>													
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%	

Appendix 2 - Attachment D Customer Class and COSS Impact

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

Appendix 2 - Attachment D Customer Class and COSS Impact

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

Charge Description	Monthly Bill Charges														
	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) -	\$ -	\$ -	\$ -	\$ -	\$ 0.94	\$ 0.94	\$ 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								

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
- (3) Projected rate increase percentage to GM Residential 5/8" meter fixed charge - 9.85%
 QCPAC Surcharge in effect (granted in DW19-029) - 4.06%
 QCPAC Surcharge requested in DW20-020 - 3.92% based on revenue requirement 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 recovered 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