

	DW17-128 Approved Step Revenue Requirements		Projected QCPAC Revenues For 2018 Capital Additions pro formas		Projected QCPAC Surcharge for 2018 Capital Additions		Projected QCPAC For 2019 Capital Additions pro formas		Projected QCPAC Surcharge for 2019 Capital Additions		Projected QCPAC For 2020 Capital Additions pro formas		Projected QCPAC Surcharge for 2020 Capital Additions
City Bond Fixed Revenue Requirement (CBFRR)	\$926,309			\$	926,309	\$	-	\$	926,309	\$	-	\$	926,309
Operating Expense Revenue Requirement	\$ 5,851,582	(1)	\$ (31,628)	(4)(8)	\$ 5,819,955	\$	13,346	(4)	\$ 5,833,301	\$	169,068	\$	6,002,369
Annual Principal and Interest Payments	\$1,362,154	(2)	\$287,053	(5)(6)	\$ 1,649,207	\$	\$34,740	(6)	\$ 1,683,947	\$	\$301,037	\$	1,984,984
Principal and Interest Coverage Requirement	1,10	(3)			1,10				1,10				1,10
Principal and Interest Revenue Requirement	\$ 1,498,370				\$ 1,814,128	\$			\$ 1,852,342	\$			\$ 2,183,483
Proposed Revenue Requirement excluding NCCRS	\$ 8,276,261				\$ 8,560,392	\$			\$ 8,611,952	\$			\$ 9,112,161
Current Water Revenues excluding CBFRR and NCCRS	\$ 5,947,707				\$ 7,349,952	\$			\$ 7,634,083	\$			\$ 7,685,643
Add: City Bond Fixed Revenue Requirement	\$ 926,309				\$ 926,309	\$			\$ 926,309	\$			\$ 926,309
Current Water Revenues with CBFRR less NCCRS	\$ 6,874,016				\$ 8,276,261	\$			\$ 8,560,392	\$			\$ 8,611,952
Proposed Percent Revenue Increase	20.40%												
ADD: NC Capital Surcharge Revenue	\$ 178,915												
Proposed New Revenue Requirement	\$ 8,455,176												
Projected QCPAC Increase ⁷					3.43%				0.60%				5.81%
Cumulative QCPAC increase					3.43%				4.04%				9.84%
Cumulative QCPAC monthly increase in average single family residential bill					\$ 2.59	\$			\$ 3.04	\$			\$ 7.43
Average monthly single family residential bill with QCPAC					\$ 78.04	\$			\$ 78.49	\$			\$ 82.87

Notes:

- (1) Operating Expense Revenue requirement is the sum of the Total Operating Expenses, Property Tax Expense and Amortization Expense approved in DW17-128
- (2) Annual Principal and interest payments for PEU debt associated with all plant in service as approved in DW17-128
- (3) Principal and interest coverage of 1.10 is as approved in DW17-128
- (4) QCPAC operating expense proformas are based on the property taxes for plant added during the year.
- (5) See Calculation of annual principal and interest payments on spreadsheet titled "2018 QCPAC PEU Additions"
- (6) Portion of Annual Principal and interest payments paid to CoBank for debt associated with plant placed in service between 1/1/2018 and 12/31/2018 based on a 25 year term loan with an actual total all in interest rate of 5.5% that was not recovered in DW17-128
- (7) QCPAC percent revenue surcharges based on increase in revenues from the previous year, inclusive of QCPAC surcharges.
- (8) 2018 Proforma Operating Expenses include a reduction in purchased water expenses associated with the completion of the PWW-PEU Interconnection in the amount of \$ 180,500

Impact on Single Family Residential Home:

Monthly meter charge granted in DW17-128, inclusive of Step increase -	\$ 20.70
Average Single Family Consumption (CCF) -	7.29
Consumption Charge granted in DW17-128, inclusive of Step increase -	\$ 7.51
Average Single Family monthly bill with rates granted in DW17-128, inclusive of step -	\$ 75.45

2018 QCPAC PEU Additions

Project Name/Description	Project Description	Work Order #	Financing Docket No.	NHPUC Order No.	Date of NHPUC Order	2018 Board Approved Budgeted Amount	Estimated Project Cost as of 10/31/2018	Community	Eligible for 2018 QCPAC Surcharge?	Taxable	Tax Rate (1)	QCPAC Eligible Property Tax Expense	Explanation for Change/Addition/Deletion since 1/30/2018
Brady Avenue ⁶	Replace 2,400 linear feet of existing 1.5" thin wall HDPE water main with new 8" diameter ductile iron water main	1807069	DW17-055	26,006	4/19/2017	\$ 379,600	\$ 598,000	Derry	Yes	Yes	\$ 35.46	\$ 21,205	
Hillcrest Road	Replace approximately 1,200 linear feet of existing 12" thin wall ductile iron water main with high break history through swamp with 12" HDPE	1707188 & 1807072	DW17-055	26,006	4/19/2017	\$ 242,000	\$ 240,000	Litchfield	Yes	Yes	\$ 26.84	\$ 6,442	
PEU-PWW Interconnection	Interconnect PEU to PWW under Merrimack River	See Below	DW17-055/Pending Dump ⁷	26,006	4/19/2017	\$ 3,300,000	See Below	Litchfield	Yes	Yes	\$ 26.84		
PEU-PWW Interconnection	Interconnecting Water Main - Owned by PEU	1807155				\$ \$ Included above	\$ 3,515,850	Merrimack	Yes	Yes	\$ 28.17	\$ 99,041	
PEU Contribution toward PWW water main upgrade	Interconnecting Water Main - Owned by PWW (50% PEU paid portion)	1807148	See above	See above	See above		\$ 33,925	Merrimack/Litchfield	Yes	No	\$ 27.51	\$ -	
PEU-PWW Interconnection Station Bidding & Construction	Booster Station, including purchase of building and meter from PWW	1813395					\$ 340,000	Merrimack	Yes	Yes	\$ 28.17	\$ 9,578	
Locke Lake Treatment Design	Design treatment for new Source of Supply required by NHDES Corrective Action Plan	1813409	DW18-132			\$ 100,000	\$ -	Barnstead	No	Yes	\$ 33.23	\$ -	Design work for project that is not used and useful is not eligible for QCPAC Surcharge
Atkinson Commerce Park Station Imp.	Rebuild Booster Station, Replace Atmospheric Storage Tanks	Deferred	Pending Filing ⁷			\$ 330,000	\$ -	Atkinson	Yes	Yes	\$ 22.66	\$ -	Project deferred due to Engineering resources being diverted to design Bedford/Litchfield PFOA facilities
Booster/Well/Chem Feed pump replacements	Replace small booster/well/chemical feed pumps as they fail (run rate 21)	760 - 763 workorders	Pending Filing ⁷			\$ 60,000	\$ 100,200	Various	Yes	Yes	\$ 28.64	\$ 2,870	21 Through September, 7 more projected through year end
Install/replace treatment systems in small CWS	Replace failed CWS treatment systems. Install new CWS treatment system if water quality or standards requires it.	n/a	Pending Filing ⁷			\$ 25,000	\$ 5,000	Various	Yes	Yes	\$ 28.64	\$ 143	
Misc. Structural Improvements	Repair/replace aging/failed station structures as needed	n/a	Pending Filing ⁷			\$ 20,000	\$ -	Various	Yes	Yes	\$ 28.64	\$ -	
Miscellaneous Fencing and Security projects	Install fencing/security facilities as needed	n/a	Pending Filing ⁷			\$ 10,000	\$ -	Various	Yes	Yes	\$ 28.64	\$ -	
Miscellaneous SCADA/Electrical	Install/repair/replace SCADA/Electrical equipment as needed		Pending Filing ⁷			\$ 30,000	See Below	Various	Yes	Yes	\$ 28.64	\$ -	2 more VFD failures are projected through year end.
Miscellaneous SCADA/Electrical	Replace Pump #4 VFD at Castle Reach	1819462	Pending Filing ⁷			\$ \$ for these projects from annual run rate budget above	\$ 3,944	Various	Yes	Yes	\$ 28.64	\$ -	
Miscellaneous SCADA/Electrical	Replace Pump #2 VFD at W&E	1816163	Pending Filing ⁷				\$ 3,013	Various	Yes	Yes	\$ 28.64	\$ -	
Miscellaneous SCADA/Electrical	Replace Pump #5 VFD at Castle Reach	1807058	Pending Filing ⁷				\$ 4,145	Various	Yes	Yes	\$ 28.64	\$ -	
Miscellaneous SCADA/Electrical	Replace Well Pump #13 VFD at Locke Lake	1818296	Pending Filing ⁷				\$ 2,439	Various	Yes	Yes	\$ 28.64	\$ -	
Well Rehabilitation	Rehab wells as necessary to restore efficiency as needed	n/a	Pending Filing ⁷			\$ 60,000	\$ 15,000	Various	Yes	Yes	\$ 28.64	\$ 430	Only one projected well rehab to occur in 2018 vs 4 in budget.
5 New Services	Single Family, Owner Build, New Homes	720 workorders	Pending Filing ⁷			\$ 23,000	\$ 32,800	Various	Yes	Yes	\$ 28.64	\$ 939	3 services added through September, 1 more service projected through year end
10 Renewed Services	Replacement of failed services	721 & 722 workorders	Pending Filing ⁷			\$ 40,000	\$ 17,400	Various	Yes	Yes	\$ 28.64	\$ 498	4 services replaced through September, 2 more service failures projected through year end
2 Hydrants	Replacement of non functional hydrants	730 & 731 workorders	Pending Filing ⁷			\$ 10,000	\$ 10,000	Various	Yes	Yes	\$ 28.64	\$ 284	
10 Valve Replacements	Replacement of Failed Gate Valves	712 workorders	Pending Filing ⁷			\$ 30,000	\$ 12,000	Various	Yes	Yes	\$ 28.64	\$ 344	None repaired YTD. Projecting 2 repairs by year end.
75 New Meters (growth) 5/8"-2"	New meters for new customers	750 workorders	Pending Filing ⁷			\$ 22,500	\$ 14,500	Various	Yes	Yes	\$ 28.64	\$ 415	45 new meters through September, 15 more new meters projected through year end
719 New Meters for Lead Meter exchanges 5/8"-6"	Replace High lead brass meter with new no lead brass meter	750 workorders	Pending Filing ⁷			\$ 144,000	\$ 143,400	Various	Yes	Yes	\$ 28.64	\$ 4,107	119 replacements through September, 400 more replacements projected through year end
Radio Reads	New and replaced radios for meter reading (123)	754 workorders	Pending Filing ⁷			\$ -	\$ 17,100	Various	Yes	Yes	\$ 28.64	\$ 490	Radio replacements were budgeted for in New Meters and Replacement meters.
Investment in Developer Installed Services	One times revenue (staffed amount) (57)	n/a	Pending Filing ⁷			\$ -	\$ 42,500	Various	Yes	Yes	\$ 28.64	\$ 1,217	Required by Tariff. Not in 2018 Board Approved Budget
Insertion Valve Install	Installation of Insertion Valve on 16" Main MWW	1824544	Pending Filing ⁷			\$ -	\$ 25,000		Yes	Yes	\$ 28.64	\$ 716	MWW was going to shut service off for all of Londonderry for a hydrant repair. Insertion valve allowed hydrant replacement without losing service to any of Londonderry
Chlorine Transfer Pump for NC Operations	Purchase new chlorine transfer pump to transfer bleach solution from large drum containers to smaller transportable containers	1817322	Pending Filing ⁷			\$ -	\$ 2,587		Yes	Yes	\$ 28.64	\$ 74	
Well BRW 13 VFD	Purchase/install VFD for new pump at Well BRW 13	1818296	Pending Filing ⁷			\$ -	\$ 2,684		Yes	Yes	\$ 28.64	\$ 77	
Total 2018 Board Approved PEU Capital Expenditures						\$ 4,826,100	\$ 5,181,688	0.00		0.00		\$ 148,872	
						PEU QCPAC	\$ 5,181,688						

	Projected Annual P&I Payments
Amount to be funded with 2019 Loan from CoBank ^{2,7}	\$ 1,376,563
Amount to be funded SRF loan for Brady Avenue watermain replacements ²	\$ 570,000
Amount to be funded SRF loan for PWW/PEU Interconnection ²	\$ 2,400,000
Amount to be funded SRF loan for Hillcrest Road watermain replacements ²	\$ 235,125
Amount to be funded with Drinking Water and Groundwater Trust Fund Grant ²	\$ 600,000
Total Projected 2018 QCPAC P&I	\$ 287,053

1. Tax rate is the sum of the local community rate plus the Statewide Utility tax rate of \$6.60/\$1000
 2. Projected CoBank Loan Terms are 25 Years at 5.5%

3. Projected Brady Ave. SRF Terms are 30 Years at 1.96% with 10% Principal forgiveness Year 1 Principal Forgiveness - (\$1,413.87)

Project Name/Description	Project Description	Work Order #	Finaneing Docket No.	NHPUC Order No.	Date of NHPUC Order	2018 Board Approved Budgeted Amount	Estimated Project Cost as of 10/31/2018	Community	Eligible for 2018 QCPAC Surcharge?	Taxable	Tax Rate (%)	QCPAC Eligible Property Tax Expense	Explanation for Change/Addition/Deletion since 1/30/2018
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4. Projected PRW/PEU Interconnection SRF Terms are 20 Years at 1.90%
5. Projected Hillcrest Road SRF Terms are 20 Years at 1.90% Projected final cost is \$ 240,000 of which \$ 4,875 is internal engineering that can not be funded with SRF funds.
6. Body Ave was budgeted in 2 phases by the Board, Phase I was in the 2017 Capital Budget and Phase II was in the 2018 Capital Budget with the total project budget estimated at \$ 570,000 exclusive of internal engineering costs
7. The cash to fund the "pending filing" projects in 2018 was borrowed from Cobank through the short term Fixed Asset Line of Credit (FALOC) approved in DW17-157. PEU will be filing for approval to borrow long term funds from CoBank in the Winter of 2019 to repay the CoBank FALOC.

Project Name/Description	Project Description	Board Approved 2019 Capex Budget	Eligible for 2020 QCPAC Surcharge	Community	Taxable	Tax Rate (1)	QCPAC Eligible Property Tax Expense	
Londonderry Storage Tank	Construct 1.1 MG Storage Tank for Londonderry Core System, 50% of the cost of the tank to be paid for by developer. Tank will not be completed until 2021	\$ 1,346,000	No	Londonderry	Yes	\$ 28.22	\$ -	
Londonderry Storage Tank	Developer Contribution toward Londonderry Storage Tank	\$ (579,000)	No ²	Londonderry	No		\$ -	
Booster/Well/Chem Feed pump replacements	Replace small booster/well/chemical feed pumps as they fail (run rate)	\$ 60,000	Yes	Various	Yes	\$ 28.64	\$ 1,718	
Install/replace treatment systems in small CWS	Replace failed CWS treatment systems. Install new CWS treatment system if water quality or standards requires it (run rate)	\$ 25,000	Yes	Various	Yes	\$ 28.64	\$ 716	
Misc. Structural Improvements	Repair/replace aging/failed station structures as needed (run rate)	\$ 20,000	Yes	Various	Yes	\$ 28.64	\$ 573	
Miscellaneous Fencing and Security projects	Install fencing/security facilities as needed (run rate)	\$ 10,000	Yes	Various	Yes	\$ 28.64	\$ 286	
Miscellaneous SCADA/Electrical	Install/repair/replace SCADA/Electrical equipment as needed (run rate)	\$ 30,000	Yes	Various	Yes	\$ 28.64	\$ 859	
Well Rehabilitation	Rehab wells as necessary to restore efficiency as needed (run rate)	\$ 60,000	Yes	Various	Yes	\$ 28.64	\$ 1,718	
5 New Services	Single Family, Owner Build, New Homes (run rate)	\$ 23,000	Yes	Various	Yes	\$ 28.64	\$ 659	
10 Renewed Services	Replacement of failed services (run rate)	\$ 40,000	Yes	Various	Yes	\$ 28.64	\$ 1,146	
2 Hydrants	Replacement of non functional hydrants (run rate)	\$ 10,000	Yes	Various	Yes	\$ 28.64	\$ 286	
10 Valve Replacements	Replacement of Failed Gate Valves (run rate)	\$ 30,000	Yes	Various	Yes	\$ 28.64	\$ 859	
75 New Meters (growth) 5/8"-2"	New meters for new customers	\$ 23,000	Yes	Various	Yes	\$ 28.64	\$ 659	
296 New Meters for Lead Meter exchanges 5/8"-6"	Replace High lead brass meter with new no lead brass meter	\$ 60,000	Yes	Various	Yes	\$ 28.64	\$ 1,718	
50 New Meters for PT exchanges 5/8"-6"	Replace meters that do not test properly during their periodic test	\$ 5,000	Yes	Various	Yes	\$ 28.64	\$ 143	
Radio Meter Interface (MIU's) Replacements (700)	Begin replacement radio MIU's installed in 2007	\$ 70,000	Yes	Various	Yes	\$ 28.64	\$ 2,005	
Pennichuck East Utilities Projected 2019 Total Capital Expenditure Budget -		\$ 1,233,000		Projected Property Tax Expense associated with QCPAC projects -				\$ 13,346
Pennichuck East Utilities Projected 2019 QCPAC Eligible Capital Investment -		\$ 466,000						

1. Tax rate is the sum of the local community rate plus the Statewide Utility tax rate of \$6.60/\$1000

2. The Londonderry Tank will not be used and useful in 2019 and hence it is not qualified to be included in QCPAC

3. The 2019 PEU Capital Expenditures Budget presented was approved by the Board in December of 2017. An updated budget for 2019 will be approved by the Company's Board in January 2019 will be presented in PEU's February 2019 QCPAC filing.

2019 Board Approved PEU Capex

Project Name/Description	Project Description	Board Approved 2020 Capex Budget	Eligible for 2021 QCPAC Surcharge	\$\$ Eligible for 2021 QCPAC Surcharge	Community	Taxable	Tax Rate (l)
Londonderry Storage Tank ²	Construct 1.1 MG Storage Tank for Londonderry Core System. 50% of the cost of the tank to be paid for by developer. Tank will not be completed until 2021	\$ 1,645,000	Yes	\$ 2,991,000	Londonderry	Yes	\$ 28.22
Londonderry Storage Tank	Developer Contribution toward Londonderry Storage Tank	\$ (707,100)	Yes	\$ (1,286,100)	Londonderry	No	
Locke Lake New Source and Treatment	Develop additional source of supply for Locke Lake in accordance with NHDES Corrective Action Plan	\$ 2,200,000	Yes	\$ 2,200,000	Barnstead	Yes	\$ 33.23
Booster/Well/Chem Feed pump replacements	Replace small booster/well/chemical feed pumps as they fail (run rate)	\$ 60,000	Yes	\$ 60,000	Various	Yes	\$ 28.64
Install/replace treatment systems in small CWS	Replace failed CWS treatment systems. Install new CWS treatment system if water quality or standards requires it. (run rate)	\$ 25,000	Yes	\$ 25,000	Various	Yes	\$ 28.64
Misc. Structural Improvements	Repair/replace aging/failed station structures as needed (run rate)	\$ 20,000	Yes	\$ 20,000	Various	Yes	\$ 28.64
Miscellaneous Fencing and Security projects	Install fencing/security facilities as needed (run rate)	\$ 10,000	Yes	\$ 10,000	Various	Yes	\$ 28.64
Miscellaneous SCADA/Electrical	Install/repair/replace SCADA/Electrical equipment as needed (run rate)	\$ 30,000	Yes	\$ 30,000	Various	Yes	\$ 28.64
Well Rehabilitation	Rehab wells as necessary to restore efficiency as needed (run rate)	\$ 60,000	Yes	\$ 60,000	Various	Yes	\$ 28.64
5 New Services	Single Family, Owner Build, New Homes (run rate)	\$ 23,000	Yes	\$ 23,000	Various	Yes	\$ 28.64
10 Renewed Services	Replacement of failed services (run rate)	\$ 40,000	Yes	\$ 40,000	Various	Yes	\$ 28.64
2 Hydrants	Replacement of non functional hydrants (run rate)	\$ 10,000	Yes	\$ 10,000	Various	Yes	\$ 28.64
10 Valve Replacements	Replacement of Failed Gate Valves (run rate)	\$ 30,000	Yes	\$ 30,000	Various	Yes	\$ 28.64
75 New Meters (growth) 5/8"-2"	New meters for new customers	\$ 22,500	Yes	\$ 22,500	Various	Yes	\$ 28.64
75 New Meters for PT exchanges 5/8"-6"	Replace meters that do not test properly during their periodic test	\$ 3,000	Yes	\$ 3,000	Various	Yes	\$ 28.64
Radio Meter Interface (MIU's) Replacements (700)	Continue replacement radio MIU's installed in 2007	\$ 70,000	Yes	\$ 70,000	Various	Yes	\$ 28.64
Pennichuck East Utilities Projected 2020 Total Capital Expenditure Budget -		\$ 3,541,400			Projected Property Tax Expense associated with QCPAC projects -		
Pennichuck East Utilities Projected 2020 QCPAC Eligible Capital Investment -		\$ 4,308,400					
Funded with CoBank Loan -		\$ 2,108,400					
Funded with SRF Loan -		\$ 2,200,000	with a term of		20 years at a rate of		2.704%

1. Tax rate is the sum of the local community rate plus the Statewide Utility tax rate of \$6.60/\$1000
 2. The Londonderry Tank will be constructed in 2019 and 2020. The tank will be used and useful in 2020 with the total 2 year project cost being qualified to be included in the 2020 QCPAC
 3. The 2019 PEU Capital Expenditures Budget presented was approved by the Board in December of 2017. An updated budget for 2019 will be approved by the Company's Board in January 2019 will be presented in PEU's February 2019 QCPAC filing.

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 resolution was adopted by the Board of Directors of the Company on January 26, 2018; and such resolution has not been altered, amended or repealed, and is in full force and effect, as of the date hereof:

Resolved: that the revised 2018 Capital Budget and 2019/2020 Capital Expenditure Plans, as presented at this meeting, are hereby approved.

2. Attachment A to this Corporate Secretary's Certificate is a true copy of the Pennichuck East Utility, Inc. 2018 Capital Budget and 2019/2020 Capital Expenditure Plans presented to the Board of Directors of the Company on January 26, 2018 and approved by said Board.

In Witness Whereof, I have hereunto set my hand this 2nd day of November, 2018.


Suzanne L. Ansara
Corporate Secretary

2018 Capital Budget and 2019/2020 Capex Plans – Pennichuck East Utility

	<u>Total Budgeted for 2017</u>	<u>Total Budgeted in 2018 for Carryover/Multi- year Projects</u>	<u>Total Budgeted in 2018 for New Projects</u>	<u>Total Budgeted for 2018</u>	<u>Total Planned in 2019 for Carryover & New Projects</u>	<u>Total Planned in 2020 for Carryover & New Projects</u>
Main Replacements and Main Replacements	\$ 3,287	\$ 622	\$ -	\$ 622	\$ -	\$ -
Booster Stations, Tanks, Generators and Pumps	80	-	60	60	827	60
Water Treatment Media and Miscellaneous Water Supply Upgrades	1,285	-	535	535	105	2,305
Service, Hydrants and Meters	198	-	270	270	261	199
North Country Operations Facility	320	-	-	-	-	-
All Other	80	-	40	40	40	978
Subtotals	<u>5,250</u>	<u>622</u>	<u>905</u>	<u>1,526</u>	<u>1,233</u>	<u>3,542</u>
Merrimack River Interconnection with PWW	-	-	3,300	3,300	-	-
Total Capex Budgeted 2018-2020	<u>\$ 5,250</u>	<u>\$ 622</u>	<u>\$ 4,205</u>	<u>\$ 4,826</u>	<u>\$ 1,233</u>	<u>\$ 3,542</u>