

PENNICHUCK WATER WORKS, INC.  
MERRIMACK, NEW HAMPSHIRE

SECOND ADDENDUM TO  
REPORT ON  
COST OF SERVICE ALLOCATIONS  
AND WATER RATE DESIGN

---

ADDITIONAL RATE DESIGN SCENARIOS

by

John R. Palko, Principal  
AUS Consultants  
155 Gaither Drive, Suite A  
Mt. Laurel, NJ 08054

September 2008

SECOND ADDENDUM TO  
REPORT ON  
COST OF SERVICE ALLOCATIONS  
AND WATER RATE DESIGN  
PENNICHUCK WATER WORKS, INC.

The cost of service allocations and related rate design developed in the main body of this report were premised upon a net water revenue requirement of \$24,896,859. This amount has been characterized as the “Permanent Rate Increase” by the management of Pennichuck Water Works, Inc.

In addition to the Permanent Rate Increase, three other revenue requirement levels will be considered in the rate filing before the New Hampshire Public Utilities Commission. These levels and the corresponding revenue requirements are identified as the “Temporary Rate Increase” of \$24,150,046; the “Step 1 Rate Increase” of \$25,992,122; and, the “Step 2 Rate Increase” of \$26,815,958. This \$26,815,958 represents a revision to Pennichuck’s originally filed Step 2 Rate Increase.

This addendum sets forth the design of rates and charges which will generate the revenue requirements under the Revised Step 2 Rate Increase. Attached hereto are a series of schedules similar in format to Schedules 9, 10, 12, and 13 (i.e., the rate design schedules) of the main report. The schedules attached hereto are identified with “.Step 2.Rev” extensions to reflect the revised Step 2 revenue requirement under consideration.

Page 5 of Schedule 13 set forth herein shows that the revised Step 2 rate design is within 0.001% of its revenue requirement. This difference is each considered negligible and is acceptable for rate design purposes.

PENNICHUCK WATER WORKS, INC.  
MERRIMACK, NEW HAMPSHIRE

SCHEDULES TO ACCOMPANY

SECOND ADDENDUM TO

REPORT ON

COST OF SERVICE ALLOCATIONS

AND WATER RATE DESIGN

---

ADDITIONAL RATE DESIGN SCENARIOS

by

John R. Palko, Principal  
AUS Consultants  
155 Gaither Drive, Suite A  
Mt. Laurel, NJ 08054

September 2008

PENNICHUCK WATER WORKS, INC.  
MERRIMACK, NEW HAMPSHIRE

RATE DESIGN FOR  
REVISED STEP 2 RATE INCREASE

September 2008

Pennichuck Water Works, Inc.

Comparison of Present Rate Revenues and Cost of Service Indications  
Step 2 Rate Increase - Revised September 2008

	<u>Present Rates</u>		<u>Cost of Service</u>	
	<u>\$</u>	<u>%</u>	<u>\$</u>	<u>%</u>
Water Service Revenue	19,001,220.57	86.34	23,115,356	86.20
Private Fire Revenue	512,713.68	2.33	986,827	3.68
Municipal Fire Revenue	2,493,950.40	11.33	2,713,775	10.12
Total Revenues	22,007,884.65	100.00	26,815,958	100.00

Note: Above "Cost of Service" amounts result from applying the class percentages developed in the Cost of Service Allocation Study to the revenue being requested for the Step 2 Rate Increase - Revised September 2008.. The following ratios the Step 2 Rate Increase - Revised September 2008 to the Cost of Service Indications for rate design purposes.

	<u>COS Study</u>	<u>Step 2</u>
<u>Municipal Fire:</u>		
Hydrant	476,877	513,376
Inch-Foot	2,043,961	2,200,399
Total	2,520,838	2,713,775
<u>Water Service:</u>		
Customer Charge	6,270,868	6,754,983
Volume Charge	15,082,217	16,246,573
Fixed Fee	113,800	113,800
Total	21,466,885	23,115,356

Pennichuck Water Works, Inc.

Rate Design  
Step 2 Rate Increase - Revised September 2008

Municipal Fire Protection

Total Hydrant Revenue Requirement	513,376
Number of Hydrants	2,458
Annual Cost per Hydrant	208.86
Monthly Charge per Hydrant	17.40
Quarterly Charge per Hydrant	52.20
Total Inch-Foot Revenue Requirement	2,200,399
Number of Inch-Feet	18,344,114
Annual Charge per Inch-Foot	0.11995

Pennichuck Water Works, Inc.

Rate Design  
Step 2 Rate Increase - Revised September 2008

Private Fire Protection

Total Private Fire Protection Rev Reqmt 986,827

Present Private Fire Protection Revenue 512,714

Increase Required 92.47 %

<u>Size</u>	<u>Present Monthly Charge</u>	<u>Proposed Monthly Charge</u>	<u>Proposed Quarterly Charge</u>	<u>Increase</u>
2"	29.35	56.49	169.47	92.47 %
4"	29.35	56.49	169.47	92.47 %
6"	49.25	94.79	284.37	92.47 %
8"	72.51	139.56	418.68	92.47 %
10"	72.51	139.56	418.68	92.47 %
12"	72.51	139.56	418.68	92.47 %
16"	72.51	139.56	418.68	92.47 %

Pennichuck Water Works, Inc.

Rate Design  
Step 2 Rate Increase - Revised September 2008

Customer Charges

Total for Customer Charge 6,754,983

Present Customer Charge Revenue 5,628,501

Increase Required 20.01 %

<u>Meter Size</u>	<u>Present Monthly Charge</u>	<u>Proposed Monthly Charge</u>	<u>Proposed Quarterly Charge</u>	<u>Increase</u>	
5/8"	15.36	18.43	55.29	19.99	%
3/4"	22.11	26.52	79.56	19.95	%
1"	35.61	42.73	128.19	19.99	%
1 1/2"	69.39	83.26	249.78	19.99	%
2"	113.60	136.32	408.96	20.00	%
3"	208.32	249.99	749.97	20.00	%
4"	343.57	412.31	1,236.93	20.01	%
6"	681.74	818.15	2,454.45	20.01	%
8"	1,087.64	1,305.27	3,915.81	20.01	%
10"	1,561.06	1,873.42	5,620.26	20.01	%

Pennichuck Water Works, Inc.

Rate Design  
Step 2 Rate Increase - Revised September 2008

Volumetric Charges

Net Water Revenue Requirement	26,815,958
Less Proposed Revenues:	
From Municipal Fire Protection	(2,713,607)
From Private Fire Protection	(986,814)
From Customer Charges	(6,753,531)
From Contract Fixed Fees	(113,800)
Net Required From Volume Charges	16,248,206
Present Volume Charge Revenue	13,258,920
Increase Required	22.55 %

	<u>Present Charge</u>	<u>Proposed Charge</u>	<u>Increase</u>
General Water	2.40	2.941	22.54 %
Anheuser-Busch	1.2382	1.5174	22.55 %
Hudson	1.5249	1.8688	22.55 %
Milford	1.5108	1.8515	22.55 %

Pennichuck Water Works, Inc.  
Summary of Proposed Rates  
Step 2 Rate Increase - Revised September 2008

General Service - Metered  
Schedule G-M

<u>Meter Size</u>	<u>Quarterly Proposed Charge</u>	<u>Monthly Proposed Charge</u>
5/8"	\$ 55.29	\$ 18.43
3/4"	79.56	26.52
1"	128.19	42.73
1 1/2"	249.78	83.26
2"	408.96	136.32
3"	749.97	249.99
4"	1,236.93	412.31
6"	2,454.45	818.15
8"	3,915.81	1,305.27
10"	5,620.26	1,873.42
Volumetric Charge per 100 cu. ft.	\$ 2.941	\$ 2.941

Municipal Fire Protection Service  
Schedule FP-M

	<u>Quarterly Proposed Charge</u>	<u>Monthly Proposed Charge</u>
Each Hydrant	\$ 52.20	\$ 17.40
Inch-Foot per year	\$0.11995	

Private Fire Protection Service  
Schedule FP-NM

<u>Connection Size</u>	<u>Quarterly Proposed Charge</u>	<u>Monthly Proposed Charge</u>
4" or smaller	\$ 169.47	\$ 56.49
6"	284.37	94.79
8" or larger	418.68	139.56

Special Contract Service

Anheuser-Busch

Volumetric Charge  
per 100 cu. ft. \$ 1.5174

Hudson

Annual Charge \$ 32,800  
Volumetric Charge  
per 100 cu. ft. \$ 1.8688

Milford

Annual Fixed Fee \$ 81,000  
Volumetric Charge  
per 100 cu. ft. \$ 1.8515

Pennichuck Water Works, Inc.  
Calculation of Revenues Under Proposed Rates  
Step 2 Rate Increase - Revised September 2008  
General Service - Metered

Residential

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Proposed Rate</u>	<u>Proposed Revenue</u>
5/8"	22,728	90,912	\$ 55.29	\$ 5,026,524.48
3/4"	311	1,244	79.56	98,972.64
1"	200	800	128.19	102,552.00
1 1/2"	130	520	249.78	129,885.60
2"	45	180	408.96	73,612.80
3"	19	76	749.97	56,997.72
4"	3	12	1,236.93	14,843.16
6"	0	0	2,454.45	0.00
8"	0	0	3,915.81	0.00
10"	0	0	5,620.26	0.00
Subtotal	23,436	93,744		\$ 5,503,388.40
	<u>CCFT</u>			
Volume	3,706,390		\$ 2.941	\$ 10,900,492.99
Total Residential Revenue				\$ 16,403,881.39

Commercial

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Proposed Rate</u>	<u>Proposed Revenue</u>
5/8"	593	2,372	\$ 55.29	\$ 131,147.88
3/4"	171	684	79.56	54,419.04
1"	254	1,016	128.19	130,241.04
1 1/2"	219	876	249.78	218,807.28
2"	153	612	408.96	250,283.52
3"	17	68	749.97	50,997.96
4"	3	12	1,236.93	14,843.16
6"	2	8	2,454.45	19,635.60
8"	0	0	3,915.81	0.00
10"	0	0	5,620.26	0.00
Subtotal	1,412	5,648		\$ 870,375.48
	<u>CCFT</u>			
Volume	862,696		\$ 2.941	\$ 2,537,188.94
Total Commercial Revenue				\$ 3,407,564.42

Pennichuck Water Works, Inc.  
Calculation of Revenues Under Proposed Rates  
Step 2 Rate Increase - Revised September 2008  
General Service - Metered

Industrial

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Proposed Rate</u>	<u>Proposed Revenue</u>
5/8"	30	120	\$ 55.29	\$ 6,634.80
3/4"	17	68	79.56	5,410.08
1"	38	152	128.19	19,484.88
1 1/2"	30	120	249.78	29,973.60
2"	33	132	408.96	53,982.72
3"	15	60	749.97	44,998.20
4"	4	16	1,236.93	19,790.88
6"	2	8	2,454.45	19,635.60
8"	1	4	3,915.81	15,663.24
10"	0	0	5,620.26	0.00
Subtotal	170	680		\$ 215,574.00
	<u>CCFT</u>			
Volume	288,156		\$ 2.941	\$ 847,466.80
Total Industrial Revenue				\$ 1,063,040.80

Municipal

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Proposed Rate</u>	<u>Proposed Revenue</u>
5/8"	17	68	\$ 55.29	\$ 3,759.72
3/4"	9	36	79.56	2,864.16
1"	17	68	128.19	8,716.92
1 1/2"	25	100	249.78	24,978.00
2"	37	148	408.96	60,526.08
3"	8	32	749.97	23,999.04
4"	2	8	1,236.93	9,895.44
6"	1	4	2,454.45	9,817.80
8"		0	3,915.81	0.00
10"		0	5,620.26	0.00
Subtotal	116	464		\$ 144,557.16
	<u>CCFT</u>			
Volume	80,329		\$ 2.941	\$ 236,247.59
Total Municipal Revenue				\$ 380,804.75
Grand Total GWS Revenue				\$ 21,255,291.35

Pennichuck Water Works, Inc.  
Calculation of Revenues Under Proposed Rates  
Step 2 Rate Increase - Revised September 2008  
Service to Contract Customers

Town of Milford

		<u>Proposed Rate</u>	<u>Proposed Revenue</u>
Annual Fixed Fee		\$ 81,000.00	\$ 81,000.00
Volume	<u>CCFT</u> 42,400	\$ 1.8515	\$ 78,503.60
Total Milford Revenue			\$ 159,503.60

Town of Hudson

		<u>Proposed Rate</u>	<u>Proposed Revenue</u>
Annual Demand Charge		\$ 32,800.00	\$ 32,800.00
Volume	<u>CCFT</u> 182,214	\$ 1.8688	\$ 340,521.52
Total Hudson Revenue			\$ 373,321.52

Anheuser-Busch

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Proposed Rate</u>	<u>Proposed Revenue</u>
6"	2	24	\$ 818.15	\$ 19,635.60
Volume	<u>CCFT</u> 861,600		1.5174	\$ 1,307,391.84
Total Anheuser-Busch Revenue				\$ 1,327,027.44
Grand Total Contract Revenue				\$ 1,859,852.56

Pennichuck Water Works, Inc.  
Calculation of Revenues Under Proposed Rates  
Step 2 Rate Increase - Revised September 2008  
Fire Protection Service

Private Fire Protection

<u>Size</u>	<u>Number</u>	<u>Number of Bills</u>	<u>Proposed Rate</u>	<u>Proposed Revenue</u>
2"	25	300	\$ 56.49	\$ 16,947.00
4"	102	1,224	56.49	69,143.76
6"	359	4,308	94.79	408,355.32
8"	274	3,288	139.56	458,873.28
10"	6	72	139.56	10,048.32
12"	13	156	139.56	21,771.36
16"	1	12	139.56	1,674.72
<b>Total</b>	<b>780</b>	<b>9,360</b>		<b>\$ 986,813.76</b>

Municipal Fire Protection

<u>Size</u>	<u>Number</u>	<u>of Bills</u>	<u>Proposed Rate</u>	<u>Proposed Revenue</u>
Hydrant	2,458	60	\$ 17.40	\$ 513,230.40
Inch-Feet	18,344,114		0.11995	2,200,376.47
<b>Total Municipal Fire Revenue</b>				<b>\$ 2,713,606.87</b>

Pennichuck Water Works, Inc.  
Calculation of Revenues Under Proposed Rates  
Step 2 Rate Increase - Revised September 2008  
Total Proposed Rate Revenue

Grand Total GWS Revenue	\$ 21,255,291.35
Grand Total Contract Revenue	\$ 1,859,852.56
Grand Total Private Fire Revenue	\$ 986,813.76
Grand Total Municipal Fire Revenue	\$ 2,713,606.87
 Grand Total Proposed Revenue	 \$ 26,815,564.54
 Total Customer Charge Revenue	 \$ 6,753,530.64
Total Volume Charge Revenue	\$ 16,247,813.27
Total Contract Fixed Fee Revenue	\$ 113,800.00
Total Private Fire Revenue	\$ 986,813.76
Total Municipal Fire Revenue	\$ 2,713,606.87
 Grand Total Proposed Revenue	 \$ 26,815,564.54
Net Water Revenue Requirement	\$ 26,815,958.00
Difference	\$ (393.46) -0.001%

Note: For purposes of this calculation, all general service customer charges are treated as quarterly bills and all fire service charges are treated as monthly bills.