

Pittsfield Aqueduct Company, Inc.

Report on
Cost of Service Allocations
and Rate Design

AUS Consultants

By

John R. Palko
Principal

155 Gaither Drive, Suite A
Mount Laurel, NJ 08054

April 2010

Pittsfield Aqueduct Company, Inc.
Report on
Cost of Service Allocations
and Rate Design

Introduction

This report sets forth the procedures, findings, and results of a cost of service allocation and rate design study for the Pittsfield Aqueduct Company, Inc. (PAC or the Company). As of the end of calendar year 2009, the Company provided water service to a total of 648 customers via its water system located in Pittsfield, New Hampshire.

This cost of service allocation and rate design study is based on the total pro forma revenue requirement for the twelve months ending December 31, 2009 as will be requested by the Company in its planned rate filing before the New Hampshire Public Utilities Commission.

Revenue Requirement

Every public utility must receive total revenues sufficient to ensure proper operation and maintenance, development and perpetuation of its system and facilities, and preservation of its financial integrity. Without adequate revenues, the public utility would not be able to provide safe and adequate service to its customers. The total revenue requirement of a public utility is synonymous with its total cost of service and represents the amount of monies which must be recovered from its customer base through a system of periodic rates and charges for utility service.

Cost of service allocation and rate design studies for investor-owned water utilities reporting to a regulatory authority are often conducted in conjunction with the processing of a rate relief application at which time it is usually necessary to develop a pro forma revenue requirement. Such is the case in the present study which is based on

the pro forma operations for the test year ended December 31, 2009, as developed by the management of the Company.

For the purpose of this study, the total pro forma revenue requirement, as developed by the Company for the test year ended December 31, 2009, may be summarized as follows:

<u>Item</u>	<u>Amount</u>
Operation and Maintenance Expense	\$380,118
Depreciation and Amortization	66,398
Taxes Other Than Income Tax	81,437
Net Operating Income	149,023
Income Taxes	<u>56,915</u>
Total Revenue Requirement	<u>\$733,891</u>

As subsequently discussed herein, this study results in the allocation of the \$733,891 revenue requirement to functional costs and rate elements. It is noted that some \$5,430 of the revenue requirement is projected to be obtained from other revenue or miscellaneous service revenue leaving a net revenue requirement of \$728,461 to be recovered from a schedule of rates and charges for water service. This is the revenue amount the Company is requesting in permanent rates to relieve its net operating losses.

Plant Investment

The Company maintains its plant investment accounts in accordance with the fixed capital reporting requirements of the New Hampshire Public Utilities Commission. Under this system, the original cost and the depreciation expense for utility plant in service as of December 31, 2009 may be summarized as follows:

<u>Plant in Service</u>	<u>Original Cost</u>	<u>Depreciation Expense</u>
Source of Supply and Pumping	\$533,032	\$7,556
Water Treatment	982,160	23,502
Transmission and Distribution	2,152,341	47,712
General	101,027	3,538
Intangible	<u>75,551</u>	<u>3,778</u>
Total Utility Plant in Service	<u>\$3,844,111</u>	<u>\$86,086</u>

As subsequently discussed herein, the above original cost elements and depreciation expense elements are allocated to a group of functional costs. The results of these allocations then become an input into the allocation of the pro forma revenue requirement.

Cost of Service Allocation

The pro forma revenue requirement (or equivalently, the total cost of service) was allocated to three broad functional cost categories, namely Volume Cost, Customer Cost, and Direct Fire Cost. These allocations are set forth in detail on the accompanying Schedules P1 through P6.

The Volume Cost Component, in the study developed herein, encompasses all the volume related elements of the cost of service. That is, the Volume Cost Component includes both costs associated with serving customers under average load conditions and costs associated with meeting rate-of-use requirements in excess of average. Stated in another manner, volume costs comprise all costs other than customer costs or direct fire costs.

The Customer Cost Component includes those costs associated with connecting and serving customers irrespective of the volume of water used or the demand requirements imposed on the system. Customer costs generally comprise capital and

operating costs related to services, meters, and customer installations and meter reading, billing, and collecting expenses. In the present study, a portion of the costs and expenses related to transmission and distribution mains and distribution reservoirs were also allocated to the Customer Cost Component.

The Direct Fire Cost Component includes those costs associated with the installation, operation, and maintenance of fire hydrants together with a portion of the costs and expenses related to transmission and distribution mains, distribution reservoirs, and the treatment plant clearwell.

The accompanying Schedule P1 sets forth the allocation of utility plant in service at December 31, 2009. The results of the utility plant allocation are used to allocate property insurance and property taxes.

The results of the utility plant allocation are also an input into the rate base allocation. The accompanying Schedule P2 sets forth the allocation of the rate base at December 31, 2009. The results of the rate base allocation are used to allocate capital related elements of the revenue requirement such as net operating income and income taxes.

The accompanying Schedule P3 sets forth the allocation of the depreciation expense at December 31, 2009. The results of this allocation are used to allocate the pro forma depreciation and amortization expense.

The accompanying Schedule P4 sets forth in detail the allocation of the pro forma operation and maintenance expense. The results of this allocation become part of the revenue requirement allocation.

The accompanying Schedule P5 sets forth the allocation of the pro forma operating expense and other revenue requirements. Other revenue has been deducted from the revenue requirement allocations resulting in a net revenue requirement allocation. As shown on Schedule P5, the Volume Cost component accounts for 49.98% of the net revenue requirement while the Customer Cost Component accounts for 28.74% and the Direct Fire Cost Component accounts for 21.28%.

The right-most columns of Schedules P1 through P5 are headed "Allocation Code" and set forth the codes for the specific allocation factors used in this study. The allocation codes are simply reference numbers which designate groups of percentages which are used to allocate the total amount of any given cost element to the several cost functions. The accompanying Schedule P6 lists the allocation codes and percentage factors and contains a brief written description of the allocation bases.

Allocation of Mains and Distribution Reservoirs

As noted previously herein, portions of the costs and expenses related to transmission and distribution mains and distribution reservoirs were allocated to both the Customer Cost Component and the Direct Fire Cost Component in addition to being allocated to the Volume Cost Component. Further, a portion of the costs and expenses related to the treatment plant clearwell was allocated to the Direct Fire Cost Component. As shown by Allocation Code 04 on Schedule P6, 25% of the main costs and expenses were allocated to volume with 30% allocated to customer and 45% allocated to direct fire. These percentages were determined through an analysis of the inch-feet of mains in service at December 31, 2009.

The accompanying Schedule P7 sets forth the lengths of transmission and distribution mains in service as of December 31, 2009. As shown on Page 1 of Schedule P7, there were a total of 74,448 feet of transmission and distribution mains in service as of December 31, 2009. Page 1 of Schedule P7 illustrates both the reduction of all larger size mains to a 2" diameter and the calculation of inch-feet of mains. An inch-foot is simply the length of main in feet multiplied by the size of the diameter in inches. As shown on Page 1 of Schedule P7, there was an actual total of 560,824 inch-feet as of December 31, 2009. Under the reduction in size, there are only 148,432 inch-feet or about 30% of the actual number. This 30% is the customer cost portion of the mains. In essence, reducing the mains to 2" in diameter is similar to developing a minimum size system. This is also similar to the minimum size distribution system concept used in electric cost of service analyses.

Page 2 of Schedule P7 sets forth the methodology used to determine the direct fire cost portion of mains. All mains larger than 4" were reduced to a 4" size, except for 12" mains which were reduced to 6". This size reduction is based on an analysis of the fire flow and domestic flow requirements as developed by Pittsfield's engineering staff. As shown on Page 2 of Schedule P7, this reduction results in 309,450 inch-feet which is 44.82% less than the actual number. That is, approximately 45% (44.82% rounded up) of the main size is directly related to fire protection. This 45% is the direct fire cost portion of the mains.

Private Fire Protection/Municipal Fire Protection

The Direct Fire Cost Component contains costs related to the provision of both private fire protection and municipal fire protection. The accompanying Schedule P8 sets

forth the allocation of direct fire costs to private and municipal fire protection. The allocations are primarily based on the relative numbers of hydrants and the weighted fire protection units.

The accompanying Schedule P9 illustrates the development of the percentage factors used in the allocation of direct fire costs to private fire and municipal fire.

The accompanying Schedule P10 sets forth the calculation of the weighted fire protection units. As noted thereon, the weighting factors are based on the ratio of the cross-sectional area of a given service size to the cross-sectional area of a 6" service, with hydrants assumed to have 6" branches.

In addition to the direct fire costs, certain elements of both the volume cost and the customer cost are related to the provision of both private fire protection service and municipal fire protection service. The accompanying Schedule P11 illustrates the allocation of volume costs and customer costs to private fire and municipal fire.

Customer costs were allocated to fire based on the relative numbers of bills and the weighted number of services. The accompanying Schedule P12 shows the numbers of bills and the calculation of weighted services. Weighted services are based on the ratio of service diameters.

In order to allocate volume costs to fire, reference was made to the AWWA Water Rates Manual M1, Fourth Edition. Chapter 5 therein, "Rate Design for Small Water Utilities", indicates that it is appropriate and reasonable for a water utility with 648 customers to obtain approximately 30% of its revenues from fire protection charges. This recommendation was used as a guideline to allocate some of the volume costs to fire. As noted at the bottom of Schedule P11, a conservative approach was taken by setting fire

protection revenue to 25% of the total revenue requirement; this resulted in \$24,011 of volume costs being allocated to fire.

After allocating direct fire to private and municipal fire and allocating volume and customer costs to fire, the resulting allocation, as shown at the bottom of Schedule P11, indicates that 46.69% of the revenue requirement is attributable to volume costs, 28.31% is attributable to customer costs, 3.36% is attributable to private fire, and 21.65% is attributable to municipal fire. This information allows for the development of a rate design to generate the revenue requirement.

Revenues From Present Rates

Before designing a schedule of developed rates based on the allocations set forth herein, revenues under present rates were calculated. This calculation was based on the reported numbers of meters and fire protection units in service at December 31, 2009 together with the reported billable volumetric water usage during calendar year 2009.

The accompanying Schedule P13 sets forth the calculation of revenues under present rates. As shown on Page 3 of Schedule P13, 47.84% of present rate revenue is obtained from general water service volumetric charges, 28.27% is obtained from general water service customer (or minimum) charges, 3.55% is obtained from private fire protection charges, and 20.34% is obtained from municipal fire protection charges.

The Existing Pittsfield Rate Schedule

The present rate schedule used by the Company for general water service comprises a monthly minimum customer charge which varies by meter size together with a uniform volumetric usage charge applied to all water used.

With respect to private fire protection service, there is a monthly charge which varies by connection or service size.

With respect to municipal fire protection service, there are two parts to the total charge for service. At present, there is a \$66.63 monthly charge per hydrant combined with an effective annual inch-foot charge of \$0.14040 applied to mains 6" and larger in diameter.

The rates and charges presently set forth in the PAC tariff were used in the calculation of present rate revenues on Schedule P13 and may be found thereon.

Rate Design

The design of rates, based on the allocations set forth and discussed herein, is presented on the accompanying Schedule P14.

Page 1 of Schedule P14 addresses both municipal and private fire protection. As noted thereon, the present revenues from both municipal fire protection and private fire protection are less than their respective cost of service indications. Therefore, both municipal fire protection and private fire protection rates were increased to meet their cost of service indications.

Page 2 of Schedule P14 sets forth the rate design for the customer or minimum charges. In order to enhance revenue and financial stability and improve cash flow, 50% of the administrative and general Volume Cost Component and 50% of the management fee Volume Cost Component were allocated to the Customer Cost Component on Page 2 of Schedule P14. (This is similar to the rate design approach used for Pennichuck Water Works.) As shown thereon, an increase of about 55.3% is indicated. The monthly rates for all meter sizes have been increased by this percentage.

Page 3 of Schedule P14 sets forth the design of the volumetric usage rate. The volumetric rate is the “balance wheel” in the rate design. It provides the remaining amount of the pro forma net revenue requirement after deducting the developed revenues from municipal fire protection, private fire protection, and customer charges. The developed volumetric rate is \$0.01 or about 0.20% less than the existing volumetric rate.

Revenues from Developed Rates

The accompanying Schedule P15 sets forth the calculation of revenues under the developed rates. As shown on Page 3 of Schedule P15, 39.08% of developed rate revenue is obtained from general water service volumetric charges, 35.92% is obtained from general water service customer (or minimum) charges, 3.35% is obtained from private fire protection charges, and 21.65% is obtained from municipal fire protection charges. The developed rates, when applied to the billing parameters, generate \$728,456 in revenue. This revenue amount is about \$5 less than the net revenue requirement of \$728,461. This difference is only 0.001% and is considered negligible.

Closure

The results of the studies set forth and discussed herein can provide guidelines to be utilized in restructuring the Company’s rates and charges for service. However, it must be remembered that cost of service allocations are the products of analyses based in part on judgment and experience and as such, while their results are a substantial aid in the design of rates, they are not meant to be literal, exact “gospel truth” type answers. Seldom, if ever, are rates exactly in line with the costs of service at any given time nor is it usually possible to design rate structures which are in complete exact agreement with all aspects of a cost of service allocation study. Generally, minor differences will exist

just as a matter of normal circumstances. In addition, attempts to exactly meet the cost of service indications in one rate adjustment can impose extremely large and undue burdens on individual customers or customer groups. Most rate consultants favor a process of gradually bringing deficiency in revenue generation in line with cost of service indications so as to avoid or ameliorate undue or abrupt changes in rate structure. Actual rate and tariff design, in addition to relying on the results of cost of service allocation analyses, should also include consideration of policy matters, impact and extent of rate changes, past historical practice, future planning, special customer characteristics and regulatory and contract requirements.

Pittsfield Aqueduct Company, Inc.

Schedules P1 through P15

to Accompany

Report on
Cost of Service Allocations
and Rate Design

AUS Consultants

By

John R. Palko
Principal

155 Gaither Drive, Suite A
Mount Laurel, NJ 08054

April 2010

Pittsfield Aqueduct Company, Inc.

Allocation of Utility Plant in Service at December 31, 2009

<u>Acc't Description</u>	<u>Total Cost</u>	<u>Volume</u>	<u>Customer</u>	<u>Direct Fire</u>	<u>Allocation Code</u>
<u>Source of Supply and Pumping Plant</u>					
303 Land and Land Rights	60,333	60,333	0	0	01
304 Structures and Improvements	71,250	71,250	0	0	01
305 Collecting and Impounding Reservoirs	48,493	48,493	0	0	01
306 Lake, River and Other Intakes	38,271	38,271	0	0	01
307 Wells and Springs	0	0	0	0	01
309 Supply Mains	309,353	309,353	0	0	01
310 Power Generation Equipment	845	845	0	0	01
311 Pumping Equipment	4,487	4,487	0	0	01
Total Supply and Pumping Plant	533,032	533,032	0	0	
<u>Water Treatment Plant</u>					
304 Structures and Improvements	730,413	730,413	0	0	01
304.2 Clearwell Req'd For Fire Protection	201,719	0	0	201,719	03
320 Water Treatment Equipment	50,028	50,028	0	0	01
Total Water Treatment Plant	982,160	780,441	0	201,719	
<u>Transmission and Distribution Plant</u>					
330 Distribution Reservoirs	0	0	0	0	04
331 Transmission and Distribution Mains	1,771,740	442,935	531,522	797,283	04
333 Services	153,161	0	153,161	0	02
334 Meters and Meter Installations	142,885	0	142,885	0	02
335 Hydrants	83,060	0	0	83,060	03
Subtotal Transmission and Distribution Plant	2,150,846	442,935	827,568	880,343	
Percents Code 05	100.00%	20.59%	38.48%	40.93%	
339 Other Plant and Miscellaneous Equipment	1,495	308	575	612	05
Total Transmission and Distribution Plant	2,152,341	443,243	828,143	880,955	
Subtotal Above Plant	3,667,533	1,756,716	828,143	1,082,674	
Percents Code 06	100.00%	47.90%	22.58%	29.52%	
<u>General Plant</u>					
340 Office Furniture and Equipment	0	0	0	0	06
343 Tools Shop and Garage Equipment	9,688	4,641	2,188	2,859	06
344 Laboratory Equipment	23,773	11,387	5,368	7,018	06
346 Communication Equipment	28,612	13,705	6,461	8,446	06
347 Computer Equipment	25,899	12,406	5,848	7,645	06
348 Miscellaneous Equipment	13,055	6,253	2,948	3,854	06
Total General Plant	101,027	48,392	22,813	29,822	
<u>Intangible Plant</u>					
301 Organization	75,551	36,189	17,059	22,303	06
302 Franchise	0	0	0	0	06
Total Intangible Plant	75,551	36,189	17,059	22,303	
Total Utility Plant in Service	3,844,111	1,841,297	868,015	1,134,799	
Percents Code 06	100.00%	47.90%	22.58%	29.52%	

Pittsfield Aqueduct Company, Inc.
Allocation of Rate Base at December 31, 2009

<u>Acc't Description</u>	<u>Total Cost</u>	<u>Volume</u>	<u>Customer</u>	<u>Direct Fire</u>	<u>Allocation Code</u>
Total Utility Plant in Service	3,844,111	1,841,297	868,015	1,134,799	
<u>Construction Work in Progress</u>					
105 Internet Connections	844	404	191	249	06
105 Dam Maintenance	36,593	36,593	0	0	01
Total CWIP	37,437	36,997	191	249	
<u>Accumulated Depreciation</u>					
Organization	(26,443)	(12,666)	(5,971)	(7,806)	06
Structures	(285,266)	(285,266)	0	0	01
Pumping and Distribution Equipment	(24,080)	(24,080)	0	0	01
Transmission and Distribution Mains	(559,233)	(139,808)	(167,770)	(251,655)	04
Services	(65,643)	0	(65,643)	0	02
Meters	(34,413)	0	(34,413)	0	02
Hydrants	(19,418)	0	0	(19,418)	03
Other Equipment	(50,969)	(24,414)	(11,509)	(15,046)	06
Accumulated Depreciation - Loss	118,993	56,998	26,869	35,126	06
Accumulated Depreciation - Cost of Removal	411	197	93	121	06
Total Accumulated Depreciation	(946,061)	(429,039)	(258,344)	(258,678)	
<u>Contributions In Aid of Construction</u>					
CIAC - Mains	(750,287)	(187,572)	(225,086)	(337,629)	04
CIAC - Water Filtration	(398,350)	(398,350)	0	0	01
Amortize CIAC - Mains	175,378	43,845	52,613	78,920	04
Amortize CIAC - Water Filtration	93,113	93,113	0	0	01
Total CIAC	(880,146)	(448,964)	(172,473)	(258,709)	
Percents Code 14	100.00%	51.01%	19.60%	29.39%	
Subtotal Above Rate Base Items	2,055,341	1,000,291	437,389	617,661	
<u>Additions to Rate Base</u>					
Working Capital	57,269	31,429	23,165	2,675	09
Materials & Supplies	1,911	915	432	564	06
Prepaid Insurance	27,836	13,333	6,285	8,218	06
Prepaid Property Taxes	2,045	980	462	603	06
Deferred Charges - Main Breaks	13,530	3,383	4,059	6,088	04
Deferred Charges - Other Items	115,840	55,487	26,157	34,196	06
Total Additions	218,431	105,527	60,560	52,344	
<u>Deductions from Rate Base</u>					
Customer Advances	0	0	0	0	04
Customer Deposits	0	0	0	0	02
Deferred Income Tax	(218,320)	(104,575)	(49,297)	(64,448)	06
Total Deductions	(218,320)	(104,575)	(49,297)	(64,448)	
Total Rate Base	2,055,452	1,001,243	448,652	605,557	
Percents Code 13	100.00%	48.71%	21.83%	29.46%	

Pittsfield Aqueduct Company, Inc.

Allocation of Depreciation Expense - Pro Forma at December 31, 2009

<u>Acc't Description</u>	<u>Total Cost</u>	<u>Volume</u>	<u>Customer</u>	<u>Direct Fire</u>	<u>Allocation Code</u>
<u>Source of Supply and Pumping Plant</u>					
303 Land and Land Rights	0	0	0	0	01
304 Structures and Improvements	1,668	1,668	0	0	01
305 Collecting and Impounding Reservoirs	713	713	0	0	01
306 Lake, River and Other Intakes	765	765	0	0	01
307 Wells and Springs	0	0	0	0	01
309 Supply Mains	4,084	4,084	0	0	01
310 Power Generation Equipment	51	51	0	0	01
311 Pumping Equipment	275	275	0	0	01
Total Supply and Pumping Depreciation Exp.	7,556	7,556	0	0	
<u>Water Treatment Plant</u>					
304 Structures and Improvements	17,071	17,071	0	0	01
304.2 Clearwell Req'd For Fire Protection	4,714	0	0	4,714	03
320 Water Treatment Equipment	1,717	1,717	0	0	01
Total Water Treatment Depreciation Exp.	23,502	18,788	0	4,714	
<u>Transmission and Distribution Plant</u>					
330 Distribution Reservoirs	0	0	0	0	04
331 Transmission and Distribution Mains	36,290	9,073	10,887	16,330	04
333 Services	3,091	0	3,091	0	02
334 Meters and Meter Installations	7,142	0	7,142	0	02
335 Hydrants	1,105	0	0	1,105	03
Subtotal Trans.and Dist.Depreciation Exp.	47,628	9,073	21,120	17,435	
339 Other Plant and Miscellaneous Equipment	84	17	32	35	05
Total Trans.and Dist.Depreciation Exp.	47,712	9,090	21,152	17,470	
Subtotal Above Depreciation Exp.	78,770	35,434	21,152	22,184	
<u>General Plant</u>					
340 Office Furniture and Equipment	0	0	0	0	06
343 Tools Shop and Garage Equipment	743	356	168	219	06
344 Laboratory Equipment	1,188	569	268	351	06
346 Communication Equipment	1,431	685	323	423	06
347 Computer Equipment	0	0	0	0	06
348 Miscellaneous Equipment	176	84	40	52	06
Total General Depreciation Exp.	3,538	1,694	799	1,045	
<u>Intangible Plant</u>					
301 Organization	3,778	1,810	853	1,115	06
302 Franchise	0	0	0	0	06
Total Intangible Depreciation Exp.	3,778	1,810	853	1,115	
Subtotal Utility Plant Depreciation Exp.	86,086	38,938	22,804	24,344	
Percents Code 07	100.00%	45.23%	26.49%	28.28%	
Add Depreciation Rate Adjustment	0	0	0	0	07
Total Utility Plant Depreciation Exp. - Pro Forma	86,086	38,938	22,804	24,344	

Pittsfield Aqueduct Company, Inc.

Allocation of Operation and Maintenance Expense - Pro Forma at December 31, 2009

<u>Acc't Description</u>	<u>Total Cost</u>	<u>Volume</u>	<u>Customer</u>	<u>Direct Fire</u>	<u>Allocation Code</u>
<u>Production Expenses</u>					
Total Supply, Pumping, and Water Treatment	86,392	86,392	0	0	01
<u>Transmission and Distribution Expenses</u>					
662 Trans & Dist Lines Expense	37	9	11	17	04
663 Meter Expenses	9,108	0	9,108	0	02
664 Customer Installation Expenses	7	0	7	0	02
665 Miscellaneous Expenses	6,673	0	6,673	0	02
660 Operation Supervision and Engineering	11,896	2,449	4,578	4,869	05
673 Maintenance of Trans & Dist Mains	14,881	3,720	4,464	6,697	04
675 Maintenance of Services	26,605	0	26,605	0	02
676 Maintenance of Meters	3,019	0	3,019	0	02
677 Maintenance of Hydrants	6,702	0	0	6,702	03
678 Maintenance of Miscellaneous Equipment	(26,552)	(5,467)	(10,217)	(10,868)	05
Total Transmission and Distribution O&M	52,376	711	44,248	7,417	
Percents Code 08	100.00%	1.36%	84.48%	14.16%	
<u>Customer Accounts Expenses</u>					
Total Customer Accounts Expenses	19,953	0	19,953	0	02
Subtotal Above O&M Expenses	158,721	87,103	64,201	7,417	
Percents Code 09	100.00%	54.88%	40.45%	4.67%	
<u>Administrative and General Expenses</u>					
924 Property Insurance	48,180	23,078	10,879	14,223	06
All Other A&G Expense	13,191	7,239	5,336	616	09
Total Administrative and General Expenses	61,371	30,317	16,215	14,839	
Subtotal Above O&M Expenses	220,092	117,420	80,416	22,256	
Percents Code 10	100.00%	53.35%	36.54%	10.11%	
<u>Inter Div Management Fee</u>					
Total Management Fee	160,026	81,021	47,288	31,717	11
Total Operation and Maintenance Expenses	380,118	198,441	127,704	53,973	
Percents	100.00%	52.20%	33.60%	14.20%	

Pittsfield Aqueduct Company, Inc.

Allocation of Pro Forma Operating Expense and Other Revenue Requirements

<u>Acc't Description</u>	<u>Total Cost</u>	<u>Volume</u>	<u>Customer</u>	<u>Direct Fire</u>	<u>Allocation Code</u>
<u>Operation and Maintenance Expense</u>					
Total Operating Expense	380,118	198,441	127,704	53,973	
<u>Depreciation and Amortization</u>					
Total Depreciation Expense	86,086	38,938	22,804	24,344	
Amortization of CIAC	(24,146)	(12,317)	(4,733)	(7,096)	14
Other Amortization Expense	4,458	2,447	1,803	208	09
<u>Taxes Other Than Income Taxes</u>					
Total Other Taxes (Property Taxes)	81,437	39,008	18,388	24,041	06
<u>Net Operating Income</u>					
Pro Forma Net Operating Income	149,023	72,589	32,532	43,902	13
<u>Income Taxes</u>					
Pro Forma Income Taxes	56,915	27,723	12,425	16,767	13
Total Pro Forma Revenue Requirement	733,891	366,829	210,923	156,139	
Percents Code 12	100.00%	49.98%	28.74%	21.28%	
Less Other Revenue	(5,430)	(2,714)	(1,561)	(1,155)	12
Net Revenue Requirement	728,461	364,115	209,362	154,984	
Percents Code 12	100.00%	49.98%	28.74%	21.28%	

Pittsfield Aqueduct Company, Inc.

Summary of Allocation Factors

Allocation Code	Description	% Volume	% Customer	% Direct Fire	Check Total %
01	Volume Cost	100.00	0.00	0.00	100.00
02	Customer Cost	0.00	100.00	0.00	100.00
03	Direct Fire Cost	0.00	0.00	100.00	100.00
04	Trans. And Dist. Mains	25.00	30.00	45.00	100.00
05	Trans. And Dist. Plant	20.59	38.48	40.93	100.00
06	Total Plant	47.90	22.58	29.52	100.00
07	Depreciation Expense	45.23	26.49	28.28	100.00
08	Trans. And Dist. O&M Expense	1.36	84.48	14.16	100.00
09	O&M Before A&G and Management Fee	54.88	40.45	4.67	100.00
10	O&M Before Management Fee	53.35	36.54	10.11	100.00
11	Management Fee	50.63	29.55	19.82	100.00
12	Revenue Requirement	49.98	28.74	21.28	100.00
13	Rate Base	48.71	21.83	29.46	100.00
14	CIAC	51.01	19.60	29.39	100.00

Explanation of Factors Used in the Allocations

- 01 This Code allocates items 100 percent to Volume Cost.
- 02 This Code allocates items 100 percent to Customer Cost.
- 03 This Code allocates items 100 percent to Direct Fire Cost.
- 04 This Code allocates items to the cost components based on analyses of transmission and distribution inch-feet.
- 05 This Code allocates items to the cost components based on the composite allocation of transmission and distribution plant.
- 06 This Code allocates items to the cost components based on the composite allocation of total utility plant.
- 07 This Code allocates items to the cost components based on the composite allocation of depreciation expense.
- 08 This Code allocates items to the cost components based on the composite allocation of transmission and distribution operation and maintenance expense.
- 09 This Code is based on the composite allocation of O&M expense without A&G expense and the management fee.
- 10 This Code is based on the composite allocation of O&M expense without the management fee.
- 11 This Code is based on equal weightings of Codes 06 and 11. It is used to allocate the management fee.
- 12 This Code allocates items to the cost components based on the composite allocation of the revenue requirement.
- 13 This Code allocates items to the cost components based on the composite allocation of the rate base.
- 14 This Code allocates items to the cost components based on the composite allocation of CIAC.

Pittsfield Aqueduct Company, Inc.
Transmission and Distribution Inch-Feet
Inch-Feet of Mains in Service at December 31, 2009
Reduce Larger Mains to 2" Size

<u>Actual Mains in Service</u>			<u>Reduce Larger Mains to 2" Size</u>		
<u>Size</u>	<u>Length</u>	<u>In-Ft</u>	<u>Size</u>	<u>Length</u>	<u>In-Ft</u>
1"	85	85.0	1"	85	85.0
1 1/4"	0	0.0	1 1/4"	0	0.0
1 1/2"	758	1,137.0	1 1/2"	758	1,137.0
2"	484	968.0	2"	484	968.0
3"	0	0.0	2"	0	0.0
4"	982	3,928.0	2"	982	1,964.0
6"	28,946	173,676.0	2"	28,946	57,892.0
8"	32,838	262,704.0	2"	32,838	65,676.0
10"	2,967	29,670.0	2"	2,967	5,934.0
12"	7,388	88,656.0	2"	7,388	14,776.0
Total	74,448	560,824.0	Total	74,448	148,432.0

Inch-Feet Based on Actual Size of Mains	560,824.0
Inch-Feet Based on Reduced Size of Mains	148,432.0
Difference	412,392.0
	73.53%

Pittsfield Aqueduct Company, Inc.
Transmission and Distribution Inch-Feet
Inch-Feet of Mains in Service at December 31, 2009
Reduce Larger Mains to 4" or 6" Size

<u>Actual Mains in Service</u>			<u>Reduced One Size</u>		
<u>Size</u>	<u>Length</u>	<u>In-Ft</u>	<u>Size</u>	<u>Length</u>	<u>In-Ft</u>
1"	85	85.0	1"	85	85.0
1 1/4"	0	0.0	1 1/4"	0	0.0
1 1/2"	758	1,137.0	1 1/2"	758	1,137.0
2"	484	968.0	2"	484	968.0
3"	0	0.0	3"	0	0.0
4"	982	3,928.0	4"	982	3,928.0
6"	28,946	173,676.0	4"	28,946	115,784.0
8"	32,838	262,704.0	4"	32,838	131,352.0
10"	2,967	29,670.0	4"	2,967	11,868.0
12"	7,388	88,656.0	6"	7,388	44,328.0
Total	74,448	560,824.0	Total	74,448	309,450.0

Inch-Feet Based on Actual Size of Mains	560,824.0
Inch-Feet Based on Reduced Size of Mains	309,450.0
Difference	251,374.0
	44.82%

Pittsfield Aqueduct Company, Inc.

Allocation of Direct Fire Costs to Private and Municipal Fire

<u>Item</u>	<u>Total Direct Fire</u>	<u>Private Fire Protection</u>	<u>Municipal Fire Protection</u>
Total Operating Expense - C	53,973	3,972	50,001
Total Depreciation and Amort - B	17,456	2,442	15,014
Total Other Taxes - A	24,041	3,267	20,774
Pro Forma Net Oper Income - A	43,902	5,966	37,936
Pro Forma Income Taxes - A	16,767	2,279	14,488
Total Pro Forma Revenue Req'm't	156,139	17,926	138,213
Percents	100.00%	11.48%	88.52%
Less Other Revenue	(1,155)	(133)	(1,022)
Net Revenue Requirement	154,984	17,793	137,191
Percents	100.00%	11.48%	88.52%

Pittsfield Aqueduct Company, Inc.

Development of Factors for Private/Municipal Fire Allocation

<u>Item</u>	<u>Total Direct Fire</u>	<u>Private Fire Protection</u>	<u>Municipal Fire Protection</u>
<u>Plant in Service</u>			
Hydrants	83,060	0	83,060
Allocated Based on Number of Hydrants	65	0	65
Dist. Reservoirs	0		
Trans. And Dist. Mains	797,283		
Clearwell Req'd For Fire Protection	201,719		
Total	999,002	147,053	851,949
Allocated Based on Weighted Number of Units	100.00%	14.72%	85.28%
Total Above Plant	1,082,062	147,053	935,009
Plant Percents - A	100.00%	13.59%	86.41%
<u>Depreciation Expense</u>			
Hydrants	1,105	0	1,105
Allocated Based on Number of Hydrants	65	0	65
Dist. Reservoirs	0		
Trans. And Dist. Mains	16,330		
Clearwell Req'd For Fire Protection	4,714		
Total	21,044	3,098	17,946
Allocated Based on Weighted Number of Units	100.00%	14.72%	85.28%
Total Above Depr. Exp.	22,149	3,098	19,051
Depr. Exp. Percents - B	100.00%	13.99%	86.01%
<u>O&M Expense</u>			
Hydrants	6,702	0	6,702
Allocated Based on Number of Hydrants	65	0	65
Dist. Reservoirs	0		
Trans. And Dist. Mains	6,714		
Total	6,714	988	5,726
Allocated Based on Weighted Number of Units	100.00%	14.72%	85.28%
Total Above O&M Exp.	13,416	988	12,428
O&M Exp. Percents - C	100.00%	7.36%	92.64%

Pittsfield Aqueduct Company, Inc.

Calculation of Weighted Fire Protection Units

Private Fire Protection

<u>Size</u>	<u>Number</u>	<u>Factor</u>	<u>Weighted Number</u>	<u>%</u>
4"	1	0.44	0.44	
6"	9	1.00	9.00	
8"	1	1.78	1.78	
Total	11		11.22	14.72%

Municipal Fire Protection

Actual Number of Hydrants:

Total	65	1.00	65.00	85.28%
Grand Total			76.22	100.00%

Notes: Weighting factors are based on the ratio of the cross-sectional area of a given size to the cross-sectional area of a 6" service. Hydrants are assumed to have a 6" branch.

Pittsfield Aqueduct Company, Inc.

Calculation of Weighted Number of Services

GWS				
Meter Size	Number of Meters	Service Factor	Weighted Number	%
5/8"	599	1.0	599.0	
3/4"	1	1.3	1.3	
1"	15	2.0	30.0	
1 1/2"	11	2.7	29.7	
2"	11	4.0	44.0	
3"	1	4.0	4.0	
4"	0	5.3	0.0	
Total	638		708.0	88.94%
Private Fire				
Fire Size	Number	Service Factor	Weighted Number	%
4"	1	5.3	5.3	
6"	9	8.0	72.0	
8"	1	10.7	10.7	
Total	11		88.0	11.06%
Grand Total			796.0	100.00%

Notes: Weighting factors are based on the ratio of service diameters.

Percentage Distribution of Bills

Class	Number of Bills	%
GWS	7,656	98.16 %
Private Fire	132	1.69 %
Muni. Fire	12	0.15 %
Total	7,800	100.00 %

Pittsfield Aqueduct Company, Inc.

Calculation of Revenues Under Present Rates

General Water Service

Residential:

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Present Rate</u>	<u>Present Revenue</u>
5/8"	539	6,468	\$ 18.67	\$ 120,757.56
3/4"	1	12	26.56	318.72
1"	8	96	40.10	3,849.60
1 1/2"	6	72	72.37	5,210.64
2"	1	12	111.95	1,343.40
3"	0	0	207.99	0.00
4"	0	0	340.84	0.00
Total	555	6,660		\$ 131,479.92

<u>CCFT</u>	<u>Volume:</u>	<u>Rate</u>	<u>Revenue</u>
46,619		\$ 4.88	\$ 227,500.72

Commercial

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Present Rate</u>	<u>Present Revenue</u>
5/8"	54	648	\$ 18.67	\$ 12,098.16
3/4"	0	0	26.56	0.00
1"	6	72	40.10	2,887.20
1 1/2"	5	60	72.37	4,342.20
2"	6	72	111.95	8,060.40
3"	0	0	207.99	0.00
4"	0	0	340.84	0.00
Total	71	852		\$ 27,387.96

<u>CCFT</u>	<u>Volume:</u>	<u>Rate</u>	<u>Revenue</u>
10,185		\$ 4.88	\$ 49,702.80

Industrial

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Present Rate</u>	<u>Present Revenue</u>
5/8"	3	36	\$ 18.67	\$ 672.12
3/4"	0	0	26.56	0.00
1"	0	0	40.10	0.00
1 1/2"	0	0	72.37	0.00
2"	3	36	111.95	4,030.20
3"	0	0	207.99	0.00
4"	0	0	340.84	0.00
Total	6	72		\$ 4,702.32

<u>CCFT</u>	<u>Volume:</u>	<u>Rate</u>	<u>Revenue</u>
501		\$ 4.88	\$ 2,444.88

Pittsfield Aqueduct Company, Inc.
Pittsfield Division
Calculation of Revenues Under Present Rates

General Water Service - Continued

<u>Municipal</u>				
<u>Meter</u>	<u>Number</u>	<u>Number</u>	<u>Present</u>	<u>Present</u>
<u>Size</u>	<u>of Meters</u>	<u>of Bills</u>	<u>Rate</u>	<u>Revenue</u>
5/8"	3	36	\$ 18.67	\$ 672.12
3/4"	0	0	26.56	0.00
1"	1	12	40.10	481.20
1 1/2"	0	0	72.37	0.00
2"	1	12	111.95	1,343.40
3"	1	12	207.99	2,495.88
4"	0	0	340.84	0.00
Total	6	72		\$ 4,992.60
	<u>CCFT</u>			
Volume:	1,145		\$ 4.88	\$ 5,587.60
Grand Total GWS Revenue				\$ 453,798.80

Fire Protection Service

<u>Private Fire Protection</u>				
<u>Size</u>	<u>Number</u>	<u>Number</u>	<u>Present</u>	<u>Present</u>
		<u>of Bills</u>	<u>Rate</u>	<u>Revenue</u>
4"	1	12	\$ 53.63	643.56
6"	9	108	153.91	16,622.28
8"	1	12	326.87	3,922.44
Total	11	132		\$ 21,188.28

Municipal Fire Protection

<u>Size</u>	<u>Number</u>	<u>of Bills</u>	<u>Rate</u>	<u>Revenue</u>
Hydrant	65	780	\$ 66.63	\$ 51,971.40
Inch-Feet	493,754		0.14040	69,323.06
Grand Total Municipal Fire Revenue				\$ 121,294.46

Pittsfield Aqueduct Company, Inc.

Summary of Revenues Under Present Rates

<u>Description</u>	<u>Amount</u>	<u>%</u>
GWS Volume Revenue	\$ 285,236.00	47.84%
GWS Customer Charge Revenue	\$ 168,562.80	28.27%
Grand Total GWS Revenue	\$ 453,798.80	76.11%
Grand Total Private Fire Revenue	\$ 21,188.28	3.55%
Grand Total Municipal Fire Revenue	\$ 121,294.46	20.34%
Grand Total Revenue	\$ 596,281.54	100.00%

Pittsfield Aqueduct Company, Inc.

Rate Design

Municipal Fire Protection

Allocated Costs	\$ 157,682
Present Revenue	\$ 121,294.46

Present revenue is less than the cost of service indications.
An increase of about 30% will be developed for municipal fire protection.

<u>Rate Element</u>	<u>Present Monthly Rate</u>	<u>Developed Monthly Rate</u>	<u>% Increase</u>
Hydrant	\$ 66.63	\$ 86.62	30.00 %
Inch-Foot	0.14040	0.18252	30.00 %

Private Fire Protection

Allocated Costs	\$ 24,433
Present Revenue	\$ 21,188.28

Present revenue is less than the cost of service indications.
An increase of about 15% will be developed for private fire protection.

<u>Size</u>	<u>Present Monthly Rate</u>	<u>Developed Monthly Rate</u>	<u>% Increase</u>
4"	\$ 53.63	\$ 61.84	15.31 %
6"	153.91	177.48	15.31 %
8"	326.87	376.93	15.31 %

Pittsfield Aqueduct Company, Inc.

Rate Design

GWS Customer Charges (Minimum Charges)

Allocated Customer Costs	\$	206,242
Add 50% of A&G O&M Volume Cost		15,159
Add 50% of Management Fee Volume Cost		40,511
Trotal for Customer Charge	\$	261,912
Present Revenue - Cust Chgs	\$	168,562.80
Increase Required	\$	93,349.20

55.38 %

<u>Rate Element</u>	<u>Present Monthly Rate</u>	<u>Developed Monthly Rate</u>	<u>% Increase</u>
5/8"	\$ 18.67	\$ 28.98	55.22 %
3/4"	26.56	41.24	55.27 %
1"	40.10	62.28	55.31 %
1 1/2"	72.37	112.42	55.34 %
2"	111.95	173.92	55.36 %
3"	207.99	323.14	55.36 %
4"	340.84	529.57	55.37 %
6"	679.86	1,056.34	55.38 %
8"	1,130.75	1,756.93	55.38 %

Pittsfield Aqueduct Company, Inc.

Rate Design

GWS Volumetric Rate

Pro Forma Net Revenue Requirement	\$ 728,461.00
Revenue from Developed Rates	
Municipal Fire Protection	157,683.58
Private Fire Protection	24,433.08
Customer Charges (Minimum Charges)	261,917.76
Remaining from Volumetric Rate	\$ 284,426.58
Annual Volume in 100 cu. ft.	58,450
Designed Rate per 100 cu. ft.	\$ 4.87

<u>Rate Element</u>	<u>Present Rate</u>	<u>Developed Rate</u>	<u>% Increase</u>
Per 100 cu. ft.	\$ 4.88	\$ 4.87	(0.20) %

Pittsfield Aqueduct Company, Inc.

Calculation of Revenues Under Developed Rates

General Water Service

Residential:

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Developed Rate</u>	<u>Developed Revenue</u>
5/8"	539	6,468	\$ 28.98	\$ 187,442.64
3/4"	1	12	41.24	494.88
1"	8	96	62.28	5,978.88
1 1/2"	6	72	112.42	8,094.24
2"	1	12	173.92	2,087.04
3"	0	0	323.14	0.00
4"	0	0	529.57	0.00
Total	555	6,660		\$ 204,097.68

<u>Volume:</u>	<u>CCFT</u>	<u>Rate</u>	<u>Revenue</u>
	46,619	\$ 4.87	\$ 227,034.53

Commercial

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Developed Rate</u>	<u>Developed Revenue</u>
5/8"	54	648	\$ 28.98	\$ 18,779.04
3/4"	0	0	41.24	0.00
1"	6	72	62.28	4,484.16
1 1/2"	5	60	112.42	6,745.20
2"	6	72	173.92	12,522.24
3"	0	0	323.14	0.00
4"	0	0	529.57	0.00
Total	71	852		\$ 42,530.64

<u>Volume:</u>	<u>CCFT</u>	<u>Rate</u>	<u>Revenue</u>
	10,185	\$ 4.87	\$ 49,600.95

Industrial

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Developed Rate</u>	<u>Developed Revenue</u>
5/8"	3	36	\$ 28.98	\$ 1,043.28
3/4"	0	0	41.24	0.00
1"	0	0	62.28	0.00
1 1/2"	0	0	112.42	0.00
2"	3	36	173.92	6,261.12
3"	0	0	323.14	0.00
4"	0	0	529.57	0.00
Total	6	72		\$ 7,304.40

<u>Volume:</u>	<u>CCFT</u>	<u>Rate</u>	<u>Revenue</u>
	501	\$ 4.87	\$ 2,439.87

Pittsfield Aqueduct Company, Inc.

Calculation of Revenues Under Developed Rates

General Water Service - Continued

Municipal

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Developed Rate</u>	<u>Developed Revenue</u>
5/8"	3	36	\$ 26.98	\$ 1,043.28
3/4"	0	0	41.24	0.00
1"	1	12	62.28	747.36
1 1/2"	0	0	112.42	0.00
2"	1	12	173.92	2,087.04
3"	1	12	323.14	3,877.68
4"	0	0	529.57	0.00
Total	6	72		\$ 7,755.36

<u>CCFT</u>	<u>Volume:</u>	<u>Rate</u>	<u>Revenue</u>
1,145		\$ 4.87	\$ 5,576.15

Grand Total GWS Revenue \$ 546,339.58

Fire Protection Service

Private Fire Protection

<u>Size</u>	<u>Number</u>	<u>Number of Bills</u>	<u>Developed Rate</u>	<u>Developed Revenue</u>
4"	1	12	\$ 61.84	742.08
6"	9	108	177.48	19,167.84
8"	1	12	376.93	4,523.16
Total	11	132		\$ 24,433.08

Municipal Fire Protection

<u>Size</u>	<u>Number</u>	<u>of Bills</u>	<u>Developed Rate</u>	<u>Developed Revenue</u>
Hydrant	65	780	\$ 86.62	\$ 67,563.60
Inch-Feet	493,754		0.18252	90,119.98
Grand Total Municipal Fire Revenue				\$ 157,683.58

Pittsfield Aqueduct Company, Inc.

Summary of Revenues Under Developed Rates

<u>Description</u>	<u>Amount</u>	<u>%</u>
GWS Volume Revenue	\$ 284,651.50	39.08%
GWS Customer Charge Revenue	\$ 261,688.08	35.92%
Grand Total GWS Revenue	\$ 546,339.58	75.00%
Grand Total Private Fire Revenue	\$ 24,433.08	3.35%
Grand Total Municipal Fire Revenue	\$ 157,683.58	21.65%
Grand Total Revenue under Developed Rates	\$ 728,456.24	100.00%
Net Revenue Requirement	728,461.00	
Difference	\$ (4.76)	
	-0.001%	
	Negligible	

Pittsfield Aqueduct Company, Inc.

Addendum to

Report on
Cost of Service Allocations
and Rate Design

AUS Consultants

By

John R. Palko
Principal

155 Gaither Drive, Suite A
Mount Laurel, NJ 08054

April 2010

Addendum To
Report on
Cost of Service Allocations
and Water Rate Design
Pittsfield Aqueduct Company, 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 \$728,461. This amount has been characterized as the "Permanent Rate Increase" by the management of Pittsfield Aqueduct Company, Inc.

In addition to the Permanent Rate Increase, two 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 \$722,489 and the "Step Rate Increase" of \$760,691.

This addendum sets forth the design of rates and charges which will generate the revenue requirements under the Temporary Rate Increase and the Step Rate Increase. Attached hereto are a series of schedules similar in format to Schedules P14 and P15 (i.e., the rate design schedules) of the main report. The schedules attached hereto are identified with ".Temp" and ".Step" extensions according to the individual revenue requirement under consideration.

Additionally, Schedule A.Temp and Schedule A.Step attached hereto set forth respectively the allocation of the revenue requirement to the customer classes for the Temporary Rate Increase and the Step Rate Increase. Each revenue requirement is ratioed to the revenues from the Permanent Rate Increase on these schedules.

Page 3 of Schedule P15 of each of the rate designs set forth herein shows that the temporary rate design is within 0.009% of its revenue requirement and that the Step 1 rate design is within 0.007% of its revenue requirement. These differences are each considered negligible and are acceptable for rate design purposes.

Finally, a series of schedules illustrating the effect of the step increase is attached hereto. Schedule SE.1 sets forth the difference between the combined rate elements (that is, those designed to generate the step revenue requirement) and the permanent rate elements. This difference is then applied to the billing parameters on Schedule SE.2. As shown on Page 3 of Schedule SE.2, the movement from the permanent rate increase to the step rate increase generates an additional \$32,286 of revenue.

Pittsfield Aqueduct Company, Inc.

Schedules to Accompany

Addendum to

Report on
Cost of Service Allocations
and Rate Design

AUS Consultants

By

John R. Palko
Principal

155 Gaither Drive, Suite A
Mount Laurel, NJ 08054

April 2010

Pittsfield Aqueduct Company, Inc.

Rate Design for

Temporary Rate Increase

Pittsfield Aqueduct Company, Inc.
Allocation of Temporary Rate Revenue

<u>Description</u>	<u>Developed Permanent Rates</u>		<u>Temporary Revenue Requirement</u>
	<u>Amount</u>	<u>%</u>	
GWS Volume Revenue	\$ 284,651.50	39.08%	\$ 282,349
GWS Customer Charge Revenue	261,688.08	35.92%	259,518
Grand Total GWS Revenue	546,339.58	75.00%	541,867
Grand Total Private Fire Revenue	24,433.08	3.35%	24,203
Grand Total Municipal Fire Revenue	157,683.58	21.65%	156,419
Grand Total Revenue under Developed Rates	\$ 728,456.24	100.00%	\$ 722,489
Net Revenue Requirement	\$ 728,461.00		
Difference	\$ (4.76)		
		-0.001%	
		Negligible	

Pittsfield Aqueduct Company, Inc.
Rate Design for Temporary Rate Increase

Municipal Fire Protection

Allocated Costs	\$ 156,419
Present Revenue	\$ 121,294.46

Present revenue is less than the cost of service indications.
An increase of about 29% will be developed for municipal fire protection.

<u>Rate Element</u>	<u>Present Monthly Rate</u>	<u>Developed Monthly Rate</u>	<u>% Increase</u>
Hydrant	\$ 66.63	\$ 85.92	28.95 %
Inch-Foot	0.14040	0.18106	28.96 %

Private Fire Protection

Allocated Costs	\$ 24,203
Present Revenue	\$ 21,188.28

Present revenue is less than the cost of service indications.
An increase of about 14% will be developed for private fire protection.

<u>Size</u>	<u>Present Monthly Rate</u>	<u>Developed Monthly Rate</u>	<u>% Increase</u>
4"	\$ 53.63	\$ 61.26	14.23 %
6"	153.91	175.81	14.23 %
8"	326.87	373.38	14.23 %

Pittsfield Aqueduct Company, Inc.
Rate Design for Temporary Rate Increase

GWS Customer Charges (Minimum Charges)

Allocated Customer Costs	\$ 259,518
Present Revenue - Cust Chgs	\$ 168,562.80

Present revenue is less than the cost of service indications.
An increase of about 54% will be developed for the customer charges

<u>Rate Element</u>	<u>Present Monthly Rate</u>	<u>Developed Monthly Rate</u>	<u>% Increase</u>
5/8"	\$ 18.67	\$ 28.74	53.94 %
3/4"	26.56	40.89	53.95 %
1"	40.10	61.74	53.97 %
1 1/2"	72.37	111.42	53.96 %
2"	111.95	172.36	53.96 %
3"	207.99	320.22	53.96 %
4"	340.84	524.75	53.96 %
6"	679.86	1,046.71	53.96 %
8"	1,130.75	1,740.89	53.96 %

Pittsfield Aqueduct Company, Inc.
Rate Design for Temporary Rate Increase

GWS Volumetric Rate

Pro Forma Net Revenue Requirement	\$ 722,489.00
Revenue from Developed Rates	
Municipal Fire Protection	156,416.70
Private Fire Protection	24,203.16
Customer Charges (Minimum Charges)	259,488.60
Remaining from Volumetric Rate	\$ 282,380.54
Annual Volume in 100 cu. ft.	58,450
Designed Rate per 100 cu. ft.	\$ 4.83

<u>Rate Element</u>	<u>Present Rate</u>	<u>Developed Rate</u>	<u>% Increase</u>
Per 100 cu. ft.	\$ 4.88	\$ 4.83	(1.02) %

Pittsfield Aqueduct Company, Inc.
Calculation of Revenues Under Developed Rates - Temporary Rates

General Water Service

Residential:

Meter Size	Number of Meters	Number of Bills	Developed Rate	Developed Revenue
5/8"	539	6,468	\$ 28.74	\$ 185,890.32
3/4"	1	12	40.89	490.68
1"	8	96	61.74	5,927.04
1 1/2"	6	72	111.42	8,022.24
2"	1	12	172.36	2,068.32
3"	0	0	320.22	0.00
4"	0	0	524.75	0.00
Total	555	6,660		\$ 202,398.60

	<u>CCFT</u>			
Volume:	46,619	\$	4.83	\$ 225,169.77

Commercial

Meter Size	Number of Meters	Number of Bills	Developed Rate	Developed Revenue
5/8"	54	648	\$ 28.74	\$ 18,623.52
3/4"	0	0	40.89	0.00
1"	6	72	61.74	4,445.28
1 1/2"	5	60	111.42	6,685.20
2"	6	72	172.36	12,409.92
3"	0	0	320.22	0.00
4"	0	0	524.75	0.00
Total	71	852		\$ 42,163.92

	<u>CCFT</u>			
Volume:	10,185	\$	4.83	\$ 49,193.55

Industrial

Meter Size	Number of Meters	Number of Bills	Developed Rate	Developed Revenue
5/8"	3	36	\$ 28.74	\$ 1,034.64
3/4"	0	0	40.89	0.00
1"	0	0	61.74	0.00
1 1/2"	0	0	111.42	0.00
2"	3	36	172.36	6,204.96
3"	0	0	320.22	0.00
4"	0	0	524.75	0.00
Total	6	72		\$ 7,239.60

	<u>CCFT</u>			
Volume:	501	\$	4.83	\$ 2,419.83

Pittsfield Aqueduct Company, Inc.
 Calculation of Revenues Under Developed Rates - Temporary Rates

General Water Service - Continued

<u>Municipal</u>				
<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Developed Rate</u>	<u>Developed Revenue</u>
5/8"	3	36	\$ 28.74	\$ 1,034.64
3/4"	0	0	40.89	0.00
1"	1	12	61.74	740.88
1 1/2"	0	0	111.42	0.00
2"	1	12	172.36	2,068.32
3"	1	12	320.22	3,842.64
4"	0	0	524.75	0.00
Total	6	72		\$ 7,686.48
	<u>CCFT</u>			
Volume:	1,145		\$ 4.83	\$ 5,530.35
Grand Total GWS Revenue				\$ 541,802.10

Fire Protection Service

<u>Private Fire Protection</u>				
<u>Size</u>	<u>Number</u>	<u>Number of Bills</u>	<u>Developed Rate</u>	<u>Developed Revenue</u>
4"	1	12	\$ 61.26	735.12
6"	9	108	175.81	18,987.48
8"	1	12	373.38	4,480.56
Total	11	132		\$ 24,203.16
<u>Municipal Fire Protection</u>				
<u>Size</u>	<u>Number</u>	<u>of Bills</u>	<u>Developed Rate</u>	<u>Developed Revenue</u>
Hydrant	65	780	\$ 85.92	\$ 67,017.60
Inch-Feet	493,754		0.18106	89,399.10
Grand Total Municipal Fire Revenue				\$ 156,416.70

Pittsfield Aqueduct Company, Inc.
Summary of Revenues Under Developed Rates - Temporary Rates

<u>Description</u>	<u>Amount</u>	<u>%</u>
GWS Volume Revenue	\$ 282,313.50	39.08%
GWS Customer Charge Revenue	\$ 259,488.60	35.92%
Grand Total GWS Revenue	\$ 541,802.10	75.00%
Grand Total Private Fire Revenue	\$ 24,203.16	3.35%
Grand Total Municipal Fire Revenue	\$ 156,416.70	21.65%
Grand Total Revenue under Developed Rates	\$ 722,421.96	100.00%
Net Revenue Requirement	722,489.00	
Difference	\$ (67.04)	
	-0.009%	
	Negligible	

Pittsfield Aqueduct Company, Inc.

Rate Design for

Step Rate Increase

Pittsfield Aqueduct Company, Inc.
Allocation of Combined Rate Revenue
Combined Permanent and Step Increase

<u>Description</u>	<u>Developed Permanent Rates</u>		<u>Combined Revenue Requirement</u>
	<u>Amount</u>	<u>%</u>	
GWS Volume Revenue	\$ 284,651.50	39.08%	\$ 297,278
GWS Customer Charge Revenue	261,688.08	35.92%	273,240
Grand Total GWS Revenue	546,339.58	75.00%	570,518
Grand Total Private Fire Revenue	24,433.08	3.35%	25,483
Grand Total Municipal Fire Revenue	157,683.58	21.65%	164,690
Grand Total Revenue under Developed Rates	\$ 728,456.24	100.00%	\$ 760,691
Net Revenue Requirement	\$ 728,461.00		
Difference	\$ (4.76)		
	-0.001%		
	Negligible		

Pittsfield Aqueduct Company, Inc.
Rate Design for Combined Rate Increase
Combined Permanent and Step Increase

Municipal Fire Protection

Allocated Costs	\$ 164,690
Present Revenue	\$ 121,294.46

Present revenue is less than the cost of service indications.
An increase of about 36% will be developed for municipal fire protection.

<u>Rate Element</u>	<u>Present Monthly Rate</u>	<u>Developed Monthly Rate</u>	<u>% Increase</u>
Hydrant	\$ 66.63	\$ 90.47	35.78 %
Inch-Foot	0.14040	0.19063	35.78 %

Private Fire Protection

Allocated Costs	\$ 25,483
Present Revenue	\$ 21,188.28

Present revenue is less than the cost of service indications.
An increase of about 20% will be developed for private fire protection.

<u>Size</u>	<u>Present Monthly Rate</u>	<u>Developed Monthly Rate</u>	<u>% Increase</u>
4"	\$ 53.63	\$ 64.50	20.27 %
6"	153.91	185.11	20.27 %
8"	326.87	393.12	20.27 %

Pittsfield Aqueduct Company, Inc.
Rate Design for Combined Rate Increase
Combined Permanent and Step Increase

GWS Customer Charges (Minimum Charges)

Allocated Customer Costs \$ 273,240

Present Revenue - Cust Chgs \$ 168,562.80

Present revenue is less than the cost of service indications.
An increase of about 62% will be developed for the customer charges

<u>Rate Element</u>	<u>Present Monthly Rate</u>	<u>Developed Monthly Rate</u>	<u>% Increase</u>
5/8"	\$ 18.67	\$ 30.24	61.97 %
3/4"	26.56	43.03	62.01 %
1"	40.10	64.98	62.04 %
1 1/2"	72.37	117.29	62.07 %
2"	111.95	181.45	62.08 %
3"	207.99	337.13	62.09 %
4"	340.84	552.48	62.09 %
6"	679.86	1,102.03	62.10 %
8"	1,130.75	1,832.92	62.10 %

Pittsfield Aqueduct Company, Inc.
Rate Design for Combined Rate Increase
Combined Permanent and Step Increase

GWS Volumetric Rate

Pro Forma Net Revenue Requirement	\$ 760,691.00
Revenue from Developed Rates	
Municipal Fire Protection	164,690.93
Private Fire Protection	25,483.32
Customer Charges (Minimum Charges)	273,057.12
Remaining from Volumetric Rate	\$ 297,459.63
Annual Volume in 100 cu. ft.	58,450
Designed Rate per 100 cu. ft.	\$ 5.09

<u>Rate Element</u>	<u>Present Rate</u>	<u>Developed Rate</u>	<u>% Increase</u>
Per 100 cu. ft.	\$ 4.88	\$ 5.09	4.30 %

Pittsfield Aqueduct Company, Inc.
Calculation of Revenues Under Developed Rates - Combined Rates
Combined Permanent and Step Increase

General Water Service

Residential:

Meter Size	Number of Meters	Number of Bills	Developed Rate	Developed Revenue
5/8"	539	6,468	\$ 30.24	\$ 195,592.32
3/4"	1	12	43.03	516.36
1"	8	96	64.98	6,238.08
1 1/2"	6	72	117.29	8,444.88
2"	1	12	181.45	2,177.40
3"	0	0	337.13	0.00
4"	0	0	552.48	0.00
Total	555	6,660		\$ 212,969.04

	CCFT			
Volume:	46,619	\$	5.09	\$ 237,290.71

Commercial

Meter Size	Number of Meters	Number of Bills	Developed Rate	Developed Revenue
5/8"	54	648	\$ 30.24	\$ 19,595.52
3/4"	0	0	43.03	0.00
1"	6	72	64.98	4,678.56
1 1/2"	5	60	117.29	7,037.40
2"	6	72	181.45	13,064.40
3"	0	0	337.13	0.00
4"	0	0	552.48	0.00
Total	71	852		\$ 44,375.88

	CCFT			
Volume:	10,185	\$	5.09	\$ 51,841.65

Industrial

Meter Size	Number of Meters	Number of Bills	Developed Rate	Developed Revenue
5/8"	3	36	\$ 30.24	\$ 1,088.64
3/4"	0	0	43.03	0.00
1"	0	0	64.98	0.00
1 1/2"	0	0	117.29	0.00
2"	3	36	181.45	6,532.20
3"	0	0	337.13	0.00
4"	0	0	552.48	0.00
Total	6	72		\$ 7,620.84

	CCFT			
Volume:	501	\$	5.09	\$ 2,550.09

Pittsfield Aqueduct Company, Inc.
Calculation of Revenues Under Developed Rates - Combined Rates
Combined Permanent and Step Increase

General Water Service - Continued

<u>Municipal</u>					
<u>Meter</u>	<u>Number</u>	<u>Number</u>	<u>Developed</u>	<u>Developed</u>	
<u>Size</u>	<u>of Meters</u>	<u>of Bills</u>	<u>Rate</u>	<u>Revenue</u>	
5/8"	3	36	\$ 30.24	\$	1,088.64
3/4"	0	0	43.03		0.00
1"	1	12	64.98		779.76
1 1/2"	0	0	117.29		0.00
2"	1	12	181.45		2,177.40
3"	1	12	337.13		4,045.56
4"	0	0	552.48		0.00
Total	6	72		\$	8,091.36
	<u>CCFT</u>				
Volume:	1,145		\$ 5.09	\$	5,828.05
Grand Total GWS Revenue				\$	570,567.62

Fire Protection Service

Private Fire Protection

<u>Size</u>	<u>Number</u>	<u>Number</u>	<u>Developed</u>	<u>Developed</u>	
		<u>of Bills</u>	<u>Rate</u>	<u>Revenue</u>	
4"	1	12	\$ 64.50		774.00
6"	9	108	185.11		19,991.88
8"	1	12	393.12		4,717.44
Total	11	132		\$	25,483.32

Municipal Fire Protection

<u>Size</u>	<u>Number</u>	<u>of Bills</u>	<u>Developed</u>	<u>Developed</u>	
			<u>Rate</u>	<u>Revenue</u>	
Hydrant	65	780	\$ 90.47	\$	70,566.60
Inch-Feet	493,754		0.19063		94,124.33
Grand Total Municipal Fire Revenue				\$	164,690.93

Pittsfield Aqueduct Company, Inc.
Summary of Revenues Under Developed Rates - Combined Rates
Combined Permanent and Step Increase

<u>Description</u>	<u>Amount</u>	<u>%</u>
GWS Volume Revenue	\$ 297,510.50	39.11%
GWS Customer Charge Revenue	\$ 273,057.12	35.89%
Grand Total GWS Revenue	\$ 570,567.62	75.00%
Grand Total Private Fire Revenue	\$ 25,483.32	3.35%
Grand Total Municipal Fire Revenue	\$ 164,690.93	21.65%
Grand Total Revenue under Developed Rates	\$ 760,741.87	100.00%
Net Revenue Requirement	760,691.00	
Difference	\$ 50.87	
	0.007%	
	Negligible	

Pittsfield Aqueduct Company, Inc.

Schedules Illustrating

Effect of Step Increase

Pittsfield Aqueduct Company, Inc.
Effect of Step Rate Increase

General Water Service

<u>Customer Charge Meter Size</u>	<u>Permanent Monthly Rate</u>	<u>Combined Monthly Rate</u>	<u>Effect of Step Increase</u>
5/8"	\$ 28.98	\$ 30.24	\$ 1.26
3/4"	41.24	43.03	1.79
1"	62.28	64.98	2.70
1 1/2"	112.42	117.29	4.87
2"	173.92	181.45	7.53
3"	323.14	337.13	13.99
4"	529.57	552.48	22.91
6"	1,056.34	1,102.03	45.69
8"	1,756.93	1,832.92	75.99
Volumetric Rate	\$ 4.87	\$ 5.09	\$ 0.22

Municipal Fire Protection

<u>Rate Element</u>	<u>Permanent Monthly Rate</u>	<u>Combined Monthly Rate</u>	<u>Effect of Step Increase</u>
Hydrant	\$ 86.62	\$ 90.47	\$ 3.85
Inch-Foot	0.18252	0.19063	0.00811

Private Fire Protection

<u>Size</u>	<u>Permanent Monthly Rate</u>	<u>Combined Monthly Rate</u>	<u>Effect of Step Increase</u>
4"	\$ 61.84	\$ 64.50	\$ 2.66
6"	177.48	185.11	7.63
8"	376.93	393.12	16.19

Pittsfield Aqueduct Company, Inc.
Calculation of Revenue Effect from Step Increase

General Water Service

Residential:

Meter Size	Number of Meters	Number of Bills	Developed Rate	Developed Revenue
5/8"	539	6,468	\$ 1.26	\$ 8,149.68
3/4"	1	12	1.79	21.48
1"	8	96	2.70	259.20
1 1/2"	6	72	4.87	350.64
2"	1	12	7.53	90.36
3"	0	0	13.99	0.00
4"	0	0	22.91	0.00
Total	555	6,660		\$ 8,871.36

	CCFT			
Volume:	46,619	\$	0.22	\$ 10,256.18

Commercial

Meter Size	Number of Meters	Number of Bills	Developed Rate	Developed Revenue
5/8"	54	648	\$ 1.26	\$ 816.48
3/4"	0	0	1.79	0.00
1"	6	72	2.70	194.40
1 1/2"	5	60	4.87	292.20
2"	6	72	7.53	542.16
3"	0	0	13.99	0.00
4"	0	0	22.91	0.00
Total	71	852		\$ 1,845.24

	CCFT			
Volume:	10,185	\$	0.22	\$ 2,240.70

Industrial

Meter Size	Number of Meters	Number of Bills	Developed Rate	Developed Revenue
5/8"	3	36	\$ 1.26	\$ 45.36
3/4"	0	0	1.79	0.00
1"	0	0	2.70	0.00
1 1/2"	0	0	4.87	0.00
2"	3	36	7.53	271.08
3"	0	0	13.99	0.00
4"	0	0	22.91	0.00
Total	6	72		\$ 316.44

	CCFT			
Volume:	501	\$	0.22	\$ 110.22

Pittsfield Aqueduct Company, Inc.
Calculation of Revenue Effect from Step Increase

General Water Service - Continued

<u>Municipal</u> <u>Meter</u> <u>Size</u>	<u>Number</u> <u>of Meters</u>	<u>Number</u> <u>of Bills</u>	<u>Developed</u> <u>Rate</u>	<u>Developed</u> <u>Revenue</u>
5/8"	3	36	\$ 1.26	\$ 45.36
3/4"	0	0	1.79	0.00
1"	1	12	2.70	32.40
1 1/2"	0	0	4.87	0.00
2"	1	12	7.53	90.36
3"	1	12	13.99	167.88
4"	0	0	22.91	0.00
Total	6	72		\$ 336.00

	<u>CCFT</u>			
Volume:	1,145	\$	0.22	\$ 251.90

Grand Total GWS Revenue \$ 24,228.04

Fire Protection Service

Private Fire Protection

<u>Size</u>	<u>Number</u>	<u>Number</u> <u>of Bills</u>	<u>Developed</u> <u>Rate</u>	<u>Developed</u> <u>Revenue</u>
4"	1	12	\$ 2.66	31.92
6"	9	108	7.63	824.04
8"	1	12	16.19	194.28
Total	11	132		\$ 1,050.24

Municipal Fire Protection

<u>Size</u>	<u>Number</u>	<u>of Bills</u>	<u>Developed</u> <u>Rate</u>	<u>Developed</u> <u>Revenue</u>
Hydrant	65	780	\$ 3.85	\$ 3,003.00
Inch-Feet	493,754		0.00811	4,004.34

Grand Total Municipal Fire Revenue \$ 7,007.34

Pittsfield Aqueduct Company, Inc.
Summary of Revenue Effect from Step Increase

<u>Description</u>	<u>Amount</u>	<u>%</u>
GWS Volume Revenue	\$ 12,859.00	39.83%
GWS Customer Charge Revenue	\$ 11,369.04	35.21%
Grand Total GWS Revenue	\$ 24,228.04	75.04%
Grand Total Private Fire Revenue	\$ 1,050.24	3.25%
Grand Total Municipal Fire Revenue	\$ 7,007.34	21.71%
Grand Total Revenue under Developed Rates	\$ 32,285.62	100.00%