



PENNICHUCK
WATER

DW 10-091

PENNICHUCK WATER WORKS, INC.

BEFORE THE

N. H. PUBLIC UTILITIES COMMISSION

1604.01

May 2010



PENNICHUCK WATER

DW 10-091

INDEX

Documents Filed Under NHPUC Rule 1604-01

1. Internal Financial Reports – these have either been filed previously with the Commission or will be filed as a part of the Company's rate case filing.
2. Annual Reports to Stockholders – not applicable because Pennichuck Water Works, Inc. is a subsidiary of Pennichuck Corporation and has no other shareholders. Pennichuck Corporation's Annual report to Shareholders contained in this binder.
3. Federal Income Tax Reconciliation – contained in this binder.
4. Detailed Tax Factor Computation – contained in this binder.
5. Charitable Contributions – contained in this binder.
6. Advertising Charges Charged Above the Line – none.
7. Cost of Service Study – contained in this binder.
8. 2010 Construction Budget – contained in this binder.
9. Chart of Accounts – no difference.
10. Forms 10-K and 10-Q – 2009 and 2008 10-K incorporated in the Annual Reports contained in section 25. 2009 and 2008 10-Q contained in this section.
11. Membership Fees and Dues – contained in this binder.
Meetings and Conventions Dues – contained in this binder.
12. Recent Management and Depreciation Studies – latest depreciation study submitted in DW 06-073. No recent management study has been undertaken by the Company.

13. Audits or Studies which Utility has not submitted to Commission – None
14. Information Concerning Officers and Directors – contained in this binder.
15. Lists of the Amount of Voting Stock – contained in this binder.
16. Payments in Excess of \$50,000 – contained in this binder.
17. Asset and Cost Allocations – we anticipate that no non-utility assets or operations will be included in the Company's financial statements for the test year.
18. Balance Sheet and Income Statements – the statements have either been filed previously with the Commission or will be filed as a part of the Company's rate filing.
19. Quarterly Income Statements – contained in this binder.
20. Quarterly Sales Volume – contained in this binder.
21. Needs for External Capital – contained in this binder.
22. Sources and Uses of Funds – contained in this binder.
23. Sinking Fund Provisions – contained in this binder.
24. Short Term Debt Outstanding – contained in this binder.
25. Parent Company Information – 2009, 2008, 2007, 2006 and 2005 Annual Reports to Shareholders contained in this binder. 2009 and 2008 Form 10-K and Form 10-Q contained in this binder under section 10.
26. Management Fee Information – contained in this binder.
27. Uniform Statistical Report – not applicable.
28. Summary Work Papers – to be submitted with testimony and supporting schedules in 1604-06.

WAIVER OF CERTAIN PROVISIONS OF
PUC 1600 FILING RULES

- (1) Internal Financial Reports – These have either been filed previously with the Commission or will be filed as a part of the Company's rate case filing.

WAIVER OF CERTAIN PROVISIONS OF
PUC 1600 FILING RULES

- (2) Annual Reports to Stockholders – Not applicable because Pennichuck Water Works, Inc. is a subsidiary of Pennichuck Corporation and has no other shareholders. Pennichuck Corporation's Annual Report to Shareholders is contained in this binder.

Federal Income Tax Reconciliation
Pennichuck Water Works, Inc.
December 31, 2009

Provided pursuant to NHPUC Rule 1604.01(3)

Net income per books for the test year	\$ 2,177,574
Addback provision for Federal and State income taxes	1,374,683
Pretax Book Income	<u>3,552,257</u>
Estimated Schedule M-1 Items:	
Accelerated depreciation/Amortization of CIAC	(6,508,056)
Book/Tax Difference on disposal of assets	(600,034)
Excess FAS 106 and FAS 87 Costs	476,896
Prior Year's Charitable Contributions	47,912
Vacation & bonus accruals	(8,291)
Prepaid Expenses	84,550
A/R Reserve	8,868
Sarbanes-Oxley costs	147,568
AFUDC	<u>(48,719)</u>
Total Permanent & Temporary Differences	<u>(6,399,305)</u>
Taxable Income	<u>(2,847,048)</u>
Pre Tax Income	<u>3,552,257</u>
NHBPT @ 8.50%	369,455
Federal Income Tax @ 34%	1,038,264
Amortization of Investment Tax Credit	(33,036)
Total Income Taxes	<u>\$ 1,374,683</u>

Computation of Detailed Tax Factor
Pennichuck Water Works, Inc.
December 31, 2009

Provided pursuant to NHPUC Rule 1604.01(4)

New Hampshire Business Profits Tax in effect during test year	<u>8.50%</u>
After-tax cost of NHBPT based on an applicable Federal tax rate of 34 percent computed as follows: 1.00 minus .34 = .66 times 8.5%	5.61%
Applicable Federal tax rate in effect during test year	<u>34.00%</u>
Effective combined income tax factor	<u>39.61%</u>

Pennichuck Water Works, Inc.
Charitable Contributions
For the Twelve Months Ended December 31, 2009

Donee	Amount
United Way of Greater Nashua	\$ 7,090.00
Adult Learning Center	3,500.00
American Red Cross	300.00
Bishop Guertin	100.00
Boys & Girls Club of Nashua	3,000.00
The Care Center	2,000.00
Charolette Ave School	350.00
City of Nashua	250.00
Community Hospice	900.00
Daniel Webster College	250.00
Girls Inc. of New Hampshire	1,000.00
Greater Nashua Chamber	200.00
Home Health & Hospice Care	1,000.00
Mary A Sweeney Home	100.00
Merrimack Lions Club	250.00
Merrimack Police	225.00
Merrimack Professional Firefighters	195.00
Milford Rotary	100.00
Nashua Senior Center	250.00
Marguerite's Place	200.00
Nashua Children's Home	43.00
Nashua Humane Society	733.56
Nashua Police Relief Association	300.00
Nashua School District #42	600.00
Boys & Girls Club of Nashua	20,000.00
Northeast Passage	100.00
Spartans Drum & Bugle Corp	250.00
Rotary Club of Nashua West	750.00
Salvation Army	500.00
Senior Activity Center	250.00
Special Olympics	100.00
Souhegan Valley Chamber of Commerce	250.00
St. Joseph's Community Services	1,000.00
The Youth Council	50.00
TV13/Nashua	500.00
VFW	225.00
YMCA of Greater Nashua	1,000.00
Total 2009 Charitable Contributions	<u>\$ 47,911.56</u>

WAIVER OF CERTAIN PROVISIONS OF
PUC 1600 FILING RULES

(6) Advertising Charges Charged Above the Line – None.

PENNICHUCK WATER WORKS, INC.
MERRIMACK, NEW HAMPSHIRE

REPORT ON
COST OF SERVICE ALLOCATIONS
AND WATER RATE DESIGN

by

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April 2010

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

INTRODUCTION

This report sets forth the procedures, findings, and results of a cost of service allocation study for Pennichuck Water Works, Inc. The cost of service allocation study developed herein is based on the financial and operating parameters developed by the Company for use in a rate filing scheduled to be made before the New Hampshire Public Utilities Commission in May 2010.

A discussion of the rationale employed for cost of service allocation studies, including a description of the allocations, together with illustrative tables and a general discussion of water rate design follows.

GENERAL

The total cost of service is a utility's revenue requirement. This amount is determined by establishing the revenues needed (that is, required) from all customers, in total, to permit the utility to recover its expenses and taxes, and to produce a fair return on its rate base. The determination of the Company's revenue requirement involves the issues pertaining to revenues, expenses, taxes, and rate base that are typically raised in a rate proceeding.

A water system furnishes service to a number of different customer classifications, each of which has different needs and conditions of service. A water utility incurs costs in relation to its operating requirements and its investment in system facilities necessary to meet the needs of its customers. As these needs vary among the different classes of customers, so also does the utility's cost of providing service to the respective customer classes. A cost of service allocation study allocates the total cost of service (that is, the revenue requirement) among classes of

customers in accordance with recognized principles and generally accepted procedures in order to obtain an indication of the relative cost responsibilities of each such class of customers. Additionally, a cost of service allocation study provides the cost information necessary to develop appropriate customer, volumetric, and fire protection charges. A cost of service allocation study is one of a number of factors that may be considered in developing a schedule of rates and charges which produce the required revenues.

Several bases or methods have evolved for use in the allocation of water utility costs. In most methods, the costs are allocated or assigned in two major steps: first to functional categories, and second to customer classifications. In this particular study, the cost allocation process is based upon the "Base-Extra Capacity Method" as recognized by the American Water Works Association as set forth in its Water Rates Manual. Costs are identified and allocated to functional cost categories of base and extra capacity cost, customer cost, and fire hydrant cost. Once the cost of service has been determined by functional cost category, the next step is the allocation of such costs to the customer classifications.

FUNCTIONAL COSTS

Base costs include those costs which would generally be incurred if the water system were operated at a uniform rate throughout the year and customers received water on the same basis. That is, base costs are generally associated with the provision of service under average or base load conditions without meeting peak demand requirements or water use variations. Base costs include the operating costs of supply, treatment, pumping, and transmission and distribution facilities, as well as the capital costs for water plant investment associated with serving customers at a constant, average, rate of use.

Extra capacity costs include those costs related to peak rates of water use in excess of

average requirements. The amount of system costs related to peak or maximum demands is affected by the customer mix within the area being studied. For example, in an area which is principally residential in nature, the peak demands on the system are relatively high. Alternatively, in an area comprising a mix of industrial, as well as residential and commercial customers, the delivery of water to industrial customers on a year-round basis generally results in an overall system peak load factor that is lower than would be the case for an essentially residential area. Extra capacity costs include capital and operating charges for additional plant and system capacity beyond that required for an average rate of use. This study considers extra capacity costs which are related to maximum day and maximum hour extra demand criteria.

Customer costs include those costs associated with connecting and serving customers irrespective of the volume of water used or demand requirements imposed. Customer costs generally comprise capital and operating costs related to services, meters, and customer installations and meter reading, billing, and collecting expense. In this study, customer costs have been sub-divided into costs related to commercial operations (that is, billing and collecting activities) and costs related to meters and services.

Fire hydrant costs comprise costs related to the capital investment in and the maintenance of fire hydrants.

The costs of the water utility are assigned to the various functional cost categories through the use of allocation factors which are developed for each item of capital investment, operating expense, taxes, and other items. Certain costs, such as chemical costs for water treatment, are assigned entirely to the base cost function. Other costs, such as meter reading and billing, are assigned directly to the customer cost function. Many cost elements, however, are not specifically related to a single cost function and are therefore allocated on the basis of other

relevant factors. For example, the capital investment in and associated costs of facilities required to meet maximum daily demands are allocated to the base cost and extra capacity maximum day functions in accordance with the relationship of the system maximum day consumption to the average annual rate of consumption. That is, if the maximum daily rate of water consumption is equal to 15 million gallons per day, and average use is 10 million gallons per day, facilities required to meet maximum daily demands would be allocated 66.7 percent ($10 \div 15$) to the base cost function and 33.3 percent ($5 \div 15$) to the extra capacity maximum day function. Costs associated with facilities required to meet maximum hourly demands are allocated in a similar manner.

CUSTOMER CLASSIFICATIONS

Customer classifications, or equivalently customer classes, are the groupings of those customers who are generally recognized as having reasonably similar service, consumption, and demand characteristics. Additionally, the practical necessities of utilities' billing systems have also been a factor in the way customer groups have been established. Pennichuck Water Works, Inc. maintains detailed customer group classifications as follows: general metered service, contract sales and service, and municipal and private fire protection service. These classes parallel the rate schedules presently used by Pennichuck Water Works, Inc. For purposes of the allocations made in this study, the general metered service class and the contract sales class have been consolidated into a water service class.

Each customer classification is allocated a portion of the base and extra capacity cost, the customer cost and the fire hydrant cost. This is accomplished by allocating the functional costs to each customer class in the proportion that the respective class responsibility for costs bears to the total cost responsibility of all customers served by the system. The sum of all functional

costs attributable to a customer class is the total cost of service to be recovered from that class.

Each individual functional cost category is allocated to the customer classifications in accordance with the following methodology.

Base costs are costs that would be incurred in supplying water at the annual average rate of usage exclusive of costs incurred in meeting peak demand requirements or water use variations. Base costs are therefore allocated to the customer classes in the same proportion that the total annual volume of water used by each customer class is to the total annual system water use.

Extra capacity costs are costs incurred in meeting peak rates of water usage in excess of average requirements. Extra capacity maximum day costs are allocated to the customer classes in accordance with the maximum day demand of each customer class which is in excess of the average rate of consumption. For fire protection costs, demand estimates are made on the basis of system capacity and fire demand requirements. Extra capacity maximum hour costs are allocated on a similar basis except that the maximum hour demand in excess of the maximum day demand is used as the controlling factor.

Customer costs are allocated to the customer classes on the basis of the billing costs and the numbers of meters and services.

Customer class billing requirements are generally used to allocate the so-called "commercial" customer costs (that is, the costs related to billing and collection and the maintenance of customer records) to the various customer classes. These costs are a function of the total number of bills rendered during the year and are therefore allocated to the customer classes on the basis of the annual number of bills rendered to each class.

Neither the municipal fire protection class nor the private fire protection class has any responsibility for the customer cost-meters or customer cost-services functional components.

Such facilities are not used in the provision of municipal fire protection service and any such facilities used by the private fire protection class were installed by customers in that class. Hence, the water service class has sole responsibility for these facilities.

Fire hydrant functional costs are directly assigned to the public fire protection service customer class.

Finally, the base, the extra capacity, the customer, and the fire hydrant costs, when summarized by customer class, define the total cost of service to be recovered from each customer class. This summation also provides an indication of the responsibility of each customer class for each of the functional costs which together constitute the total cost of service.

REVENUE REQUIREMENT

As previously discussed, the total cost of service is synonymous with a utility's revenue requirement. The total revenue requirement for a water utility should be sufficient to guarantee the provision of adequate water service and to assure the maintenance, development, and perpetuation of the water system. The principal components of the revenue requirement for an investor-owned water utility comprise operation and maintenance expenditures; depreciation and amortization expenses; income and other taxes; and, operating income or return on investment. Cost of service studies for investor-owned water utilities reporting to a regulatory authority are often prepared in conjunction with the processing of a rate relief application and the concurrent development of a pro forma revenue requirement. This particular study is based on a total revenue requirement of \$28,397,565 as developed by Pennichuck Water Works, Inc. for filing in a rate proceeding before the New Hampshire Board of Public Utilities Commission. This revenue requirement provides for the following expense categories:

<u>Item</u>	<u>Amount</u>
Operation and Maintenance	\$10,392,652
Depreciation and Amortization	4,086,040
Taxes Other Than Income Tax	3,194,227
Income Taxes	3,047,413
Utility Operating Income	<u>7,677,233</u>
 Total Revenue Requirement	 <u>\$28,397,565</u>

As subsequently discussed in this report, the \$28,397,565 revenue requirement is allocated to the previously-defined functional costs. This functional cost allocation then becomes an input into both the development of rates and charges and the cost allocations to customer classes.

Additionally, it is noted that a portion of the \$28,397,565 revenue requirement is attained by other revenue not received from water sales or the provision of fire protection service. The management of Pennichuck Water Works, Inc. has projected other revenue to be \$365,964 on a pro forma basis. This other revenue amount is deducted from the total revenue requirement during the development of the functional cost allocations. Thus, the revenue to be attained from water sales and the provision of fire protection service is \$28,031,601.

PLANT INVESTMENT/RATE BASE

Pennichuck Water Works, Inc. 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 related depreciation reserve for utility plant in service as of December 31, 2009 has been set forth in the 2009 Annual report to the New Hampshire Public Utilities Commission as follows:

<u>Functional Plant Account</u>	<u>Original Cost</u>	<u>Depreciation Reserve</u>
Source of Supply and Pumping Plant	\$45,841,547	\$11,156,569
Treatment Plant	18,099,878	1,815,537
Transmission and Distribution Plant	81,499,230	21,349,145
General Plant	8,439,082	4,774,851
Intangible Plant	239,912	117,323
Adjustments	---	(7,168,458)
Totals	<u>\$154,119,649</u>	<u>\$32,044,967</u>

The combination of the original cost and the depreciation reserve results in the net utility plant in service. This is an important input in the development of the net investment rate base which also includes contributions in aid of construction, customer advances for construction, customer deposits, working capital, deferred income taxes, deferred investment tax credits, and other items. The year-end December 31, 2009 rate base used in this study was developed by Pennichuck Water Works, Inc. and may be summarized as follows:

<u>Description</u>	<u>Amount</u>
Original Cost Utility Plant in Service	\$154,119,649
Depreciation Reserve	(32,044,967)
Acquisition Adjustment	(534,870)
Contributions in Aid of Construction	(22,794,159)
Working Capital	1,272,195
Materials and Supplies	716,730
Prepayments	771,666
Other & Deferred Charges	6,383,915
Customer Advances for Construction	(84,000)
Customer Deposits	(118,483)
Deferred Income Tax	(14,769,177)
Deferred Tax Liability	(838,590)
Unamortized ITC	(767,922)
Deferred Rental Credits	<u>(3,244)</u>
Total Rate Base	<u>\$91,308,743</u>

The rate base is allocated to the several functional cost categories in accordance with the

methodology previously described. The results of the rate base allocation are then subsequently used to allocate investment related revenue requirement items such as income taxes and utility operating income.

WATER PRODUCTION/SYSTEM DELIVERY

A necessary step in a water cost of service allocation study is the development of the appropriate allocation factors for the functional cost elements. Hence, it is necessary to determine the system-wide water production and delivery on average day, maximum day, and maximum hour bases. The water production records maintained by Pennichuck Water Works, Inc. are recorded in sufficient detail to enable this determination to be made.

A review of the Pennichuck Water Works, Inc. system delivery statistics for the 2004 through 2009 period indicates the ratio of maximum day to average day delivery ranged from about 1.64 times to about 1.93 times and averaged about 1.74 times. Further, available data indicates that the ratio of maximum hour to peak day delivery is about 1.46 times. Based on this review, a maximum day ratio of 1.75 times and a maximum hour ratio of 2.55 times (i.e., $1.46 \times 1.75 = 2.55$) were used in this study as being representative of system capabilities.

A maximum day ratio of 1.75 times means that for facilities allocated on a maximum day basis, 57.14 percent of the cost is allocated to the base cost function while 42.86 percent of the cost is allocated to the extra capacity cost maximum day function. Similarly, a maximum hour ratio of 2.55 times means that for facilities allocated on maximum hour basis, 39.22 percent of the cost is allocated to the base cost function and 60.78 percent of the cost is allocated to the extra capacity cost-maximum hour function.

FUNCTIONAL COST OF SERVICE ALLOCATION

The allocation of Pennichuck Water Works' cost of service to the previously defined

functional cost components is set forth on a series of four schedules attached hereto. Descriptions of the individual schedules are given below.

Schedule 1 presents the details, in tabular form, of the allocation of the original cost of plant in service and rate base to the previously defined cost functions. The left-most column of Schedule 1 sets forth an account number while the second column from the left gives a description of the item being allocated. The third column from the left sets forth the total cost of the item being allocated. The allocations to the several cost functions are shown in Columns 4 through 10, while the right-most column indicates an allocation code for the specific allocation factor used to assign each cost element to the cost functions. The allocations set forth on Schedule 1 utilize the utility plant in service and depreciation reserve data that were previously summarized in an earlier section of this report. The allocations to the cost functions were made in accordance with the concepts which were previously described.

Schedule 2 is constructed in a format which is similar to that of Schedule 1. Schedule 2, however, sets forth the details of the allocation of the operation and maintenance expense, the annual depreciation and amortization expense, taxes other than income taxes, income taxes, and utility operating income as adjusted by Pennichuck Water Works, Inc. for the twelve months ended December 31, 2009. The data utilized on Schedule 2 were previously summarized in the Revenue Requirement discussion in this report.

Schedule 3 is similar in format to Schedules 1 and 2. Schedule 3 sets forth the development of the labor benefits allocator.

The allocation codes mentioned above 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. Schedule 4 contains a written description of the allocation bases used

to allocate cost elements to the cost functions together with a list of the allocation codes and factors. Additionally, Page 3 of Schedule 4 illustrates the development of several of the factors used in the allocation of cost elements to the cost functions.

CUSTOMER CLASS COST OF SERVICE ALLOCATION

The allocation of Pennichuck Water Works' cost of service to the customer classifications is set forth on a series of three schedules attached hereto. Descriptions of the individual schedules are given below.

Schedule 5 presents the details, in tabular form, of the allocation of the revenue requirement functional costs, as developed on Schedule 2, to the previously identified customer groups. The far left column of Schedule 5 describes the cost elements which were developed on Schedule 2, while the next column shows the total cost of the items being allocated. The allocations to the customer groups are shown in columns 3 through 5, while the right-most column indicates an allocation code for the specific allocation factor used to assign each cost element to the customer classes.

The allocation codes mentioned above are simply reference numbers which designate groups of percentages which are used to allocate the total amount of any given functional cost element to the customer classifications. Schedule 6 contains a written description of the allocation bases used to allocate cost elements to the customer classifications together with a list of the allocation codes and factors.

Schedule 7 sets forth the development of the factors used in the allocations to the customer classes. Page 1 of this schedule illustrates the annual consumption as well as the non-coincident maximum day and maximum hour demands by customer group. The consumption data are based on metered sales or, in the case of fire protection, an estimated usage. Maximum daily and

maximum hourly totals for customer classes are based on the application of customer class demand factors to the average consumption. Page 1 of Schedule 7 also develops the customer class allocation factors related to the number of bills.

Page 2 of Schedule 7 sets forth the development of the private and public fire protection allocation factors based on the number of units in service.

REVENUES FROM PRESENT RATES

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

Schedule 8 attached hereto sets forth the calculation of revenues under present rates.

COST OF SERVICE ALLOCATION RESULTS

The results of the previously described cost of service allocations are set forth on Schedule 9 attached hereto and are compared thereon with the revenues projected to be received under the present rate schedule. In general, Schedule 9 shows that, on a percentage basis, the present rate revenues from water service are slightly less than their cost of service indications. Revenues from both private fire protection and municipal fire protection service are greater than their cost of service indications on a percentage basis.

COST OF SERVICE RATE DESIGN

A rate design based upon the cost of service allocations is set forth on Schedule 10 attached hereto. Design of the individual rate elements will be discussed in the following paragraphs.

The costs of serving municipal fire protection customers are recovered through a two-part

rate, namely a hydrant charge and an inch-foot charge. The hydrant charge is usually developed to recover the functional fire-hydrant costs and municipal fire protection's share of the functional customer costs, while the inch-foot charge is usually developed to recover the capacity costs allocated to municipal fire protection service.

As set forth on Page 1 of Schedule 10, on a cost of service basis, the monthly hydrant charge is \$19.78 while the inch-foot charge is \$0.12831 per year.

The costs of serving private fire protection customers are recovered through periodic charges based on the size of the connection pipe entering the property. Costs to be recovered include the capacity costs allocated to private fire protection service and a share of the customer cost-commercial cost component. Since the present rate private fire protection revenues are greater than the allocated private fire protection costs, no changes are being proposed to the private fire rates. Pennichuck Water Works' existing tariff contains only three private fire service size classifications namely, 4 inch and smaller, 6 inch, and 8 inch or larger. These classifications will remain as set forth on Page 2 of Schedule 10.

Customer costs include meter and service and billing and collecting related costs. These costs are incurred regardless of the amount of water, if any, that is used. These costs are usually recovered through a fixed charge designated as either a service charge or a customer charge. The existing general service-metered tariff of Pennichuck Water Works, Inc. includes a customer charge which varies by meter size. This customer charge is a service charge which provides no water use allowance. This same general type of customer charge will be discussed herein.

As noted above, the existing Pennichuck customer charges vary by meter size. Schedule 11 attached hereto lists the existing monthly customer charges and ratios the charge for each meter size to the charge for a 5/8 inch meter. The resulting ratios are then compared with ratios

developed from the relationship of the AWWA recommended operating capacities by meter size. The AWWA capacity ratios have acceptance as a general guide for the relationship of customer charges for one meter size to another. Given the similarity of the existing customer charge ratios to the AWWA standard, as illustrated on Schedule 11, the existing ratios will be used in the customer charge development.

One issue that is always of concern is revenue instability problems. One method of alleviating such revenue instability problems would be to increase the level of the customer charges so that they recover more than the functional customer costs. The inclusion of other fixed costs in addition to the functional customer costs will tend to enhance revenue and financial stability and would help stabilize cash flow.

The inclusion of other costs in addition to the functional customer costs in customer (service) charges is recognized in the water ratemaking literature. AWWA Water Rates Manual M1 states that “The service charge is designed to recover customer-related costs and possibly some capacity-related costs associated with readiness to serve...” (Fourth Edition, page 34). Additionally, AWWA Water Rates Manual M1 also notes that “a portion of distribution-main costs as well as a portion of demand-related costs are sometimes included in the determination of service charges.” (Fourth Edition, page 39).

In addition to the above examples from the AWWA Water Rates Manual, further support for the inclusion of other items in the customer charge may be obtained from Publication NRRI 93-13 of the National Regulatory Research Institute. That publication, entitled “Meeting Water Utility Revenue Requirements: Financing and Ratemaking Alternatives”, states on page 69 that “common (overhead) costs include those costs (for example, administrative and general) that are generally independent of the number of customers, maximum demand, average demand, and

volume of usage. Common costs can be recovered via a periodic service charge.”

Page 3 of Schedule 10 sets forth the development of the proposed customer charges. As shown thereon, 75% of the non-customer, non-hydrant administrative and general costs were included in the customer charge development as recognition of other costs. It is noted that this concept has been used in the past to design customer charges for Pennichuck Water Works.

Additionally, in order to further stabilize revenues and cash flow, a portion of the expenses related to transmission and distribution mains has also been included in the customer charge development in accordance with the discussion in the AWWA Water Rates Manual. As shown on Page 3 of Schedule 10, 40% of the transmission and distribution expenses were included in the customer charge development. This 40% allocator was determined through an analysis of the inch-feet of mains in service at December 31, 2009.

Schedule 12 attached hereto sets forth the lengths of transmission and distribution mains in service as of December 31, 2009. As shown thereon, there were a total of 2,278,237 feet of transmission and distribution mains in service as of December 31, 2009. Schedule 12 illustrates both the reduction of all larger size mains to a 4” 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 Schedule 12, there was an actual total of 20,253,859.8 inch-feet as of December 31, 2009. Under the reduction in size, there are only 8,801,443.8 inch-feet or about 43% of the actual number. This 43% is rounded down to 40% which is the customer cost portion of the mains. In essence, reducing the mains to 4” 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.

Additionally, a portion of the fixed costs related to depreciation, amortization, and

property taxes has also been included in the customer charge development. As shown on Page 3 of Schedule 10, 75% of the base costs of depreciation, amortization, and property taxes (net of amounts applicable to the Anheuser-Busch carrying charge which is discussed below) were included in recognition of the fact that these costs are incurred irrespective of water production and use.

As shown on Page 3 of Schedule 10, the proposed customer charges are about 39.2 percent greater than the present customer charges. The increase to the 5/8" customer charge is slightly less, in order to tie to the overall revenue requirement.

A modification to the manner in which Pennichuck Water Works' largest customer, Anheuser-Busch, is billed is being proposed as part of the rate design set forth herein. Anheuser-Busch currently takes service under a contractual arrangement and is billed the monthly customer charge for each of its meters and a volumetric rate which is less than that applicable to general water service customers. Anheuser-Busch's water usage has been noticeably declining in recent years and concern exists that Anheuser-Busch will not be paying its fair share of the embedded fixed costs of water service, particularly with respect to the recent improvements and upgrades made to the treatment and supply facilities. In order to alleviate this concern, it is proposed to implement a carrying charge which would recover the fixed costs of the production facilities needed to serve Anheuser-Busch. The development of this carrying charge is set forth in detail in the Appendix which accompanies this report. Additionally, the customer charge would no longer be applicable to Anheuser-Busch and the volumetric charge would be based on production costs and Anheuser-Busch's share of administrative and general costs.

Schedule 13 attached hereto sets forth the development of the unit production cost and the Anheuser-Busch volumetric rate. As shown on Page 1 of Schedule 13, the unit production cost

is \$0.4647 per CCF. The unit production cost includes source of supply costs net of purchased water; pumping costs at the water treatment plant; and, water treatment costs. Pumping costs at the water treatment plant are set forth on Page 2 of Schedule 13. Anheuser-Busch's share of the administrative and general costs is developed on Page 3 of Schedule 13. The proposed Anheuser-Busch volumetric rate of \$1.1739 developed on Page 3 of Schedule 13 is considerably less than the \$1.4956 per CCF volumetric rate currently charged Anheuser-Busch. The implementation of a monthly carrying charge allows for this reduction.

As developed in the accompanying Appendix, the annual carrying charge is \$742,861. It is proposed to round this to \$742,860 or \$61,905 per month.

The proposed revenues to be obtained from service to Anheuser-Busch are calculated on Page 3 of Schedule 15 attached hereto.

Having developed the municipal fire protection charges, the private fire protection charges, the customer charges, and the charges for Anheuser-Busch, the volumetric rate remains as the "balance wheel" to provide the remainder of the revenue requirement. Page 4 of Schedule 10 illustrates the development of the volumetric rate, showing the deduction of revenue from other rates and charges from the revenue requirement and the comparison with the present volume charge revenue (exclusive of present volume revenue from Anheuser-Busch).

It is noted that in addition to the volumetric rate being proposed for Anheuser-Busch, there are actually three other volumetric rates, one for general service customers and one for each of the other two contract service customers (i.e., Hudson and Milford). The contracts with Hudson and Milford each relate the individual contract volumetric rate to the general service volumetric rate. Hence, as shown on Page 4 of Schedule 10, the proposed volumetric rates for general service, Hudson, and Milford are each approximately 4.0 percent greater than the corresponding

present rate.

The proposed rates and charges, as discussed above in the report section, are summarized on Schedule 14 attached hereto.

The proposed rates and charges are applied to the billing parameters on Schedule 15 attached hereto. As shown on Page 5 of Schedule 15, the proposed rates and charges generate about \$988 more than the net water revenue requirement. This difference is only 0.004% and is considered negligible for rate design purposes.

Finally, Schedule 16 attached hereto compares the class cost of service indications with the proposed rate revenues. As shown thereon, there is excellent agreement between the cost of service indications and the revenues generated by the proposed rates.

CLOSURE

The studies discussed in this report have allocated Pennichuck Water Works' revenue requirement to functional cost classifications and then to customer classifications. A rate design based on these allocations has been developed.

The results of the studies discussed herein can provide reasonable guidelines to be utilized in establishing appropriate rate levels in the planned Pennichuck Water Works, Inc. rate proceeding. It must be noted that seldom, if ever, are rates exactly in line with the cost of service indications at any given time. Generally, minor differences will exist just as a matter of normal circumstances. Cost of service allocations are the products of analyses based in part on judgment and experience and their results provide a substantial aid in the design of rates. However, actual tariff design, in addition to relying on the results of cost of service analyses, should also include consideration of policy matters, impact of rate changes, future planning, special customer characteristics, and judicial, regulatory, and contract requirements.

PENNICHUCK WATER WORKS, INC.
MERRIMACK, NEW HAMPSHIRE

SCHEDULES TO ACCOMPANY
REPORT ON
COST OF SERVICE ALLOCATIONS
AND WATER RATE DESIGN

by

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April 2010

Pennichuck Water Works, Inc.
Test Period Ending December 31, 2009
Allocation of Rate Base

Description	Total Cost	Base Cost	Extra Cap Max Day	Extra Cap Max Hour	Customer Commercial	Customer Meters	Customer Services	Fire Hydrants	Allocation Code
Utility Plant In Service at December 31, 2009									
<u>Source of Supply and Pumping Plant</u>									
303 Land and Land Rights	622,003	355,413	266,590	0	0	0	0	0	21
304 Structures and Improvements	34,802,480	19,886,137	14,916,343	0	0	0	0	0	21
305 Collecting and Impounding Reservoirs	2,434,786	2,434,786	0	0	0	0	0	0	20
306 Lake, River and Other Intakes	8,634	4,933	3,701	0	0	0	0	0	21
307 Wells and Springs	858,785	490,710	368,075	0	0	0	0	0	21
308 Infiltration Galleries and Tunnels	1,543	882	681	0	0	0	0	0	21
309 Supply Mains	491,742	280,981	210,761	0	0	0	0	0	21
310 Power Generation Equipment	686,125	289,089	201,789	215,237	0	0	0	0	41
311 Pumping Equipment	5,935,449	2,327,883	1,745,616	1,861,950	0	0	0	0	41
Total Supply and Pumping Plant	45,841,547	26,050,824	17,713,536	2,077,187	0	0	0	0	
(Percent Code 34)	100.00 %	58.83 %	38.64 %	4.53 %	0.00 %	0.00 %	0.00 %	0.00 %	
<u>Water Treatment Plant</u>									
320 Water Treatment Equipment	18,099,878	10,342,270	7,757,608	0	0	0	0	0	21
Total Water Treatment Plant	18,099,878	10,342,270	7,757,608	0	0	0	0	0	
<u>Transmission and Distribution</u>									
330 Distribution Reservoirs and Standpipes	7,789,627	778,963	1,168,444	5,842,220	0	0	0	0	45
331 Transmission and Distribution Mains	54,256,564	21,279,425	15,956,855	17,020,284	0	0	0	0	44
333 Services	9,859,946	0	0	0	0	0	9,859,946	0	25
334 Meters and Meter Installations	5,925,910	0	0	0	0	5,925,910	0	0	24
335 Hydrants	3,240,423	0	0	0	0	0	0	3,240,423	28
Subtotal Transmission and Distribution	81,072,470	22,058,388	17,125,299	22,862,504	0	5,925,910	9,859,946	3,240,423	
Subtotal % (Percent Code 35)	100.00 %	27.21 %	21.12 %	28.20 %	0.00 %	7.31 %	12.16 %	4.00 %	
339 Other Plant and Miscellaneous Eq.	426,760	116,121	90,132	120,348	0	31,186	51,894	17,071	35
Total Transmission and Distribution	81,499,230	22,174,509	17,215,431	22,982,850	0	5,957,106	9,911,840	3,257,494	
Subtotal Above Utility Plant	145,440,855	58,587,603	42,886,575	25,060,037	0	5,957,106	9,911,840	3,257,494	
Subtotal % (Percent Code 29)	100.00 %	40.27 %	29.35 %	17.23 %	0.00 %	4.10 %	6.81 %	2.24 %	
<u>Intangible Plant</u>									
301 Organization	26,852	10,813	7,881	4,627	0	1,101	1,829	601	29
302 Franchise	213,060	85,799	62,533	36,710	0	8,735	14,509	4,774	29
Total Intangible Plant	239,912	96,612	70,414	41,337	0	9,836	16,338	5,375	

Pennichuck Water Works, Inc.
Test Period Ending December 31, 2009
Allocation of Rate Base

Description	Total Cost	Base Cost	Extra Cap Max Day	Extra Cap Max Hour	Customer Commercial	Customer Meters	Customer Services	Fire Hydrants	Allocation Code
Utility Plant In Service at December 31, 2009 - Continued									
<u>General Plant</u>									
340 Office Furniture and Equipment	494,197	199,013	145,047	85,150	0	20,262	33,655	11,070	29
341 Transportation Equipment	2,573,024	1,036,157	755,183	443,332	0	105,494	175,223	57,635	29
343 Tools, Shop and Garage Equipment	205,346	82,693	60,269	35,381	0	8,419	13,984	4,600	29
344 Laboratory Equipment	104,150	104,150	0	0	0	0	0	0	20
345 Power Operated Equipment	351,417	141,516	103,141	60,549	0	14,408	23,931	7,872	29
346 Communication Equipment	1,026,912	413,537	301,399	176,937	0	42,103	69,933	23,003	29
347 Miscellaneous Equipment	3,193,225	1,285,912	937,212	550,193	0	130,922	217,459	71,527	29
348 Other Tangible Equipment	490,811	197,650	144,053	84,567	0	20,123	33,424	10,994	29
Total General Plant	8,439,082	3,460,628	2,446,304	1,436,109	0	341,731	567,609	186,701	
(Percent Code 39)	100.00 %	41.01 %	28.99 %	17.02 %	0.00 %	4.05 %	6.72 %	2.21 %	
Total Utility Plant In Service	154,119,649	62,124,643	45,203,293	26,537,483	0	6,308,673	10,495,787	3,449,570	
(Percent Code 30)	100.00 %	40.31 %	29.33 %	17.22 %	0.00 %	4.09 %	6.81 %	2.24 %	
Accumulated Depreciation Reserve at December 31, 2009									
Source of Supply and Pumping Plant	11,156,569	6,340,278	4,310,898	505,393	0	0	0	0	34
Water Treatment Plant	1,815,537	1,037,398	778,139	0	0	0	0	0	21
Transmission and Distribution	21,349,145	5,809,102	4,508,939	6,020,459	0	1,560,622	2,596,056	853,967	35
General Plant	4,774,851	1,958,166	1,384,229	812,680	0	193,381	320,870	105,525	39
Intangible Plant	117,323	47,246	34,434	20,215	0	4,810	7,990	2,628	29
Subtotal Accumulated Depreciation Reserve	39,213,425	15,192,190	11,016,639	7,358,747	0	1,758,813	2,924,916	962,120	
Subtotal % (Percent Code 28)	100.00 %	38.74 %	28.09 %	18.77 %	0.00 %	4.49 %	7.46 %	2.45 %	
Accumulated Depreciation - Loss	(4,314,363)	(1,671,384)	(1,211,905)	(809,806)	0	(193,715)	(321,851)	(105,702)	28
Accumulated Depreciation - Cost of Removal	(1,794,616)	(695,234)	(504,108)	(336,849)	0	(80,578)	(133,878)	(43,969)	28
Miscellaneous Adjustments	(1,059,479)	(410,442)	(297,608)	(198,864)	0	(47,571)	(79,037)	(25,957)	28
Total Accumulated Depreciation Reserve	32,044,967	12,415,130	9,003,018	6,013,228	0	1,436,949	2,390,150	788,492	
(Percent Code 28)	100.00 %	38.74 %	28.10 %	18.77 %	0.00 %	4.48 %	7.46 %	2.45 %	
Total Depreciated Utility Plant In Service	122,074,682	49,709,713	36,200,275	20,524,255	0	4,871,724	8,105,637	2,663,078	
(Percent Code 27)	100.00 %	40.72 %	29.66 %	16.81 %	0.00 %	3.99 %	6.64 %	2.18 %	

Pennichuck Water Works, Inc.
Test Period Ending December 31, 2009
Allocation of Rate Base

Description	Total Cost	Base Cost	Extra Cap Max Day	Extra Cap Max Hour	Customer Commercial	Customer Meters	Customer Services	Fire Hydrants	Allocation Code
Acquisition Adjustment									
Acquisition Adjustment at 12/31/09	844,905	340,581	247,811	145,493	0	34,557	57,538	18,925	30
Accum Amort Acq Adj	310,035	124,975	90,833	53,368	0	12,680	21,113	6,946	30
Contributions in Aid of Construction									
CIAC at 12/31/09	27,089,195	10,911,593	7,939,395	4,661,315	0	1,107,130	1,843,412	606,350	30
Amort of CIAC	4,275,036	1,723,267	1,253,869	736,161	0	174,849	291,130	95,781	30
Subtotal Rate Base Elements	98,745,653	40,305,781	29,357,870	16,508,996	0	3,917,566	6,516,930	2,140,510	
Rate Base Additions									
Working Capital	1,272,195	524,399	282,809	148,720	90,326	148,720	51,397	25,824	46
<u>Materials and Supplies</u>									
Transmission and Distribution	441,179	173,030	129,751	138,398	0	0	0	0	44
Meters	110,663	0	0	0	0	110,663	0	0	24
Water Treatment	14,747	8,426	6,321	0	0	0	0	0	21
Chemicals	107,221	107,221	0	0	0	0	0	0	20
Transportation Equipment	3,916	1,577	1,149	675	0	161	267	87	29
Generator Fuel	9,812	3,770	2,827	3,015	0	0	0	0	41
Customer Billing Materials	28,442	0	0	0	28,442	0	0	0	23
General Supplies	950	383	279	164	0	39	65	20	29
Total Materials and Supplies	716,730	294,407	140,327	142,252	28,442	110,863	332	107	
Prepayments - Property Taxes	350,305	141,208	102,744	60,323	0	14,327	23,856	7,847	30
Prepaid Insurance	421,361	169,851	123,585	72,558	0	17,234	28,695	9,438	30
Other and Deferred Charges	6,383,915	2,573,356	1,872,402	1,099,310	0	261,102	434,745	143,000	30
Total Rate Base Additions	9,144,506	3,703,221	2,521,867	1,523,163	118,768	552,246	539,025	186,216	
Rate Base Deductions									
Customer Advances for Construction	84,000	32,945	24,704	26,351	0	0	0	0	44
Customer Deposits	118,483	0	0	0	0	0	118,483	0	25
Deferred Income Tax	14,769,177	5,953,455	4,331,600	2,543,252	0	604,059	1,005,781	330,830	30
Deferred Tax Liability	838,590	338,038	245,658	144,405	0	34,298	57,108	18,785	30
Unamortized ITC	767,922	309,549	225,232	132,236	0	31,408	52,295	17,202	30
Deferred Rental Credits	3,244	1,308	951	559	0	133	221	72	30
Total Rate Base Deductions	16,581,416	6,635,293	4,828,645	2,846,803	0	669,898	1,233,888	366,889	
Total Rate Base	91,308,743	37,373,709	27,051,092	15,183,356	118,768	3,799,914	5,822,067	1,959,837	
(Percent Code 33)	100.00 %	40.93 %	29.62 %	16.63 %	0.13 %	4.16 %	6.38 %	2.15 %	

Pennichuck Water Works, Inc.
 Test Period Ending December 31, 2009
 Allocation of Pro Forma Revenue Requirement

Description	Total Cost	Base Cost	Extra Cap Max Day	Extra Cap Max Hour	Customer Commercial	Customer Meters	Customer Services	Fire Hydrants	Allocation Code
Pro Forma Operation and Maintenance Expenses									
<u>Source of Supply</u>									
601 Operation Labor and Expenses	43,471	24,839	18,632	0	0	0	0	0	21
602 Purchased Water	244,717	139,831	104,886	0	0	0	0	0	21
603 Miscellaneous Expenses	10,737	6,135	4,602	0	0	0	0	0	21
610 Maintenance Super & Eng'g	395,162	225,796	169,366	0	0	0	0	0	21
Total Source of Supply	694,087	396,601	297,486	0	0	0	0	0	
<u>Pumping Expenses</u>									
623 Fuel or Power Purchased	935,016	794,763	93,502	46,751	0	0	0	0	43
624 Pumping Labor and Expenses	229,700	90,088	67,555	72,057	0	0	0	0	41
626 Miscellaneous Expenses	82,521	32,365	24,269	25,887	0	0	0	0	41
631 Maint. of Structures and Imp.	82,794	32,472	24,350	25,972	0	0	0	0	41
633 Maint. of Pumping Equipment	210,533	82,571	61,918	66,044	0	0	0	0	41
Total Pumping Expenses	1,540,564	1,032,259	271,594	238,711	0	0	0	0	
<u>Water Treatment Expenses</u>									
641 Chemicals	538,587	538,587	0	0	0	0	0	0	20
642 Operation Labor and Expenses	426,719	243,827	182,892	0	0	0	0	0	21
643 Miscellaneous Expenses	(31,020)	(17,725)	(13,295)	0	0	0	0	0	21
652 Maint. of Treatment Equipment	82,660	47,232	35,428	0	0	0	0	0	21
Total Water Treatment Expenses	1,016,946	811,921	205,025	0	0	0	0	0	
<u>Transmission and Distribution</u>									
<u>Trans & Dist Operation</u>									
662 Trans & Dist Lines Expenses	40,394	15,842	11,880	12,872	0	0	0	0	44
663 Meter Expenses	120,443	0	0	0	0	120,443	0	0	24
664 Customer Installation Expenses	3,785	0	0	0	0	0	3,785	0	25
Subtotal Trans & Dist Operation	164,622	15,842	11,880	12,872	0	120,443	3,785	0	
Subtotal % (Percent Code 37)	100.00 %	9.62 %	7.22 %	7.70 %	0.00 %	73.16 %	2.30 %	0.00 %	
660 Operation Super & Eng'g	895,084	86,108	64,625	68,921	0	654,843	20,587	0	37
665 Miscellaneous Expenses	(128,358)	(12,348)	(9,287)	(9,884)	0	(93,907)	(2,652)	0	37
Total Trans & Dist Operation	931,348	89,602	67,238	71,709	0	681,379	21,420	0	
<u>Trans & Dist Maintenance</u>									
673 Maint. of Trans & Dist Mains	334,654	131,251	98,422	104,981	0	0	0	0	44
675 Maintenance of Services	152,214	0	0	0	0	0	152,214	0	25
676 Maintenance of Meters	23,149	0	0	0	0	23,149	0	0	24
677 Maintenance of Hydrants	100,545	0	0	0	0	0	0	100,545	28
Subtotal Trans & Dist Maintenance	610,562	131,251	98,422	104,981	0	23,149	152,214	100,545	
Subtotal % (Percent Code 38)	100.00 %	21.50 %	16.12 %	17.19 %	0.00 %	3.79 %	24.93 %	16.47 %	

Pennichuck Water Works, Inc.
 Test Period Ending December 31, 2009
 Allocation of Pro Forma Revenue Requirement

Description	Total Cost	Base Cost	Extra Cap Max Day	Extra Cap Max Hour	Customer Commercial	Customer Meters	Customer Services	Fire Hydrants	Allocation Code
Pro Forma Operation and Maintenance Expenses - Continued									
<u>Trans & Dist Maintenance - Continued</u>									
678 Maintenance of Misc. Equip.	95,530	20,539	15,399	16,422	0	3,621	23,816	15,733	38
Total Trans & Dist Maintenance	706,092	151,790	113,821	121,403	0	26,770	176,030	116,278	
Total Transmission and Distribution	1,637,440	241,392	181,059	193,112	0	708,149	197,450	116,278	
<u>Customer Accounts Expenses</u>									
902 Meter Reading Expenses	92,650	0	0	0	0	92,650	0	0	24
903 Customer Records Expenses	287,649	0	0	0	287,649	0	0	0	23
904 Uncollectible Accounts	74,675	0	0	0	74,675	0	0	0	23
Total Customer Accounts	434,974	0	0	0	342,324	92,650	0	0	
Subtotal Above O&M Expenses									
Less Purchased Water, Power, & Chemicals	3,605,891	1,008,992	756,776	383,072	342,324	800,799	197,450	116,278	
Subtotal % (Percent Code 47)	100.00 %	27.98 %	20.99 %	10.62 %	9.49 %	22.21 %	5.48 %	3.23 %	
<u>Administrative and General Expenses</u>									
920 Admin. and Gen'l Salaries	2,830,355	791,933	594,092	300,584	268,601	628,622	155,103	91,420	47
921 Office Supplies and Other Exp.	403,855	112,999	84,769	42,689	38,326	89,696	22,131	13,045	47
922 Admin. Expenses Transferred	(1,025,956)	(287,062)	(215,348)	(108,957)	(97,363)	(227,865)	(56,222)	(33,139)	47
923 Outside Services Employed	142,869	39,975	29,988	15,173	13,558	31,731	7,829	4,615	47
924 Property Insurance	359,715	145,001	105,504	61,943	0	14,712	24,497	8,058	30
926 Employee Pensions and Benefits	3,228,408	1,242,291	938,498	565,617	255,690	70,379	117,191	38,742	48
928 Regulatory Commission Exp.	70,344	19,682	14,765	7,471	6,676	15,623	3,855	2,272	47
930 Misc. General Expense	(1,303,118)	(364,612)	(273,524)	(136,391)	(123,666)	(289,423)	(71,411)	(42,091)	47
950 Maintenance of General Plant	382,169	101,335	76,019	38,462	34,370	80,438	18,847	11,698	47
Total Admin. and Gen'l Expenses	5,068,641	1,801,542	1,354,763	784,791	398,192	413,913	222,620	94,620	
Total O&M Expense	10,392,652	4,283,715	2,309,927	1,214,614	738,516	1,214,712	420,270	210,898	
(Percent Code 46)	100.00 %	41.22 %	22.23 %	11.69 %	7.10 %	11.69 %	4.04 %	2.03 %	

Pennlchuck Water Works, Inc.
Test Period Ending December 31, 2009
Allocation of Pro Forma Revenue Requirement

Description	Total Cost	Base Cost	Extra Cap Max Day	Extra Cap Max Hour	Customer Commercial	Customer Meters	Customer Services	Fire Hydrants	Allocation Code
Pro Forma Depreciation Expense									
301 Organization	1,343	541	394	231	0	55	91	31	29
302 Franchise	10,653	4,290	3,127	1,836	0	437	725	238	29
303 Land and Land Rights	0	0	0	0	0	0	0	0	21
304 Structures and Improvements	889,321	508,158	381,163	0	0	0	0	0	21
305 Collecting and Impounding Reservoirs	43,608	43,608	0	0	0	0	0	0	20
306 Lake, River and Other Intakes	285	163	122	0	0	0	0	0	21
307 Wells and Springs	28,175	16,099	12,076	0	0	0	0	0	21
308 Infiltration Galleries and Tunnels	38	22	16	0	0	0	0	16	21
309 Supply Mains	7,407	4,232	3,175	0	0	0	0	0	21
310 Power Generation Equipment	41,805	16,396	12,265	13,114	0	0	0	0	41
311 Pumping Equipment	232,679	91,257	68,431	72,991	0	0	0	0	41
320 Water Treatment Equipment	734,941	419,945	314,966	0	0	0	0	0	21
330 Distribution Reservoirs and Standpipes	168,009	16,801	25,201	126,007	0	0	0	0	45
331 Transmission and Distribution Mains	808,858	316,450	237,297	253,111	0	0	0	0	44
333 Services	209,658	0	0	0	0	0	209,658	0	25
334 Meters and Meter Installations	252,122	0	0	0	0	252,122	0	0	24
335 Hydrants	72,244	0	0	0	0	0	0	72,244	26
339 Other Plant and Miscellaneous Eq.	10,669	2,903	2,253	3,009	0	780	1,297	427	35
340 Office Furniture and Equipment	39,127	15,756	11,484	6,742	0	1,604	2,665	876	29
341 Transportation Equipment	217,969	87,776	63,974	37,558	0	8,937	14,844	4,882	29
343 Tools, Shop and Garage Equipment	12,085	4,867	3,547	2,082	0	495	823	271	29
344 Laboratory Equipment	4,900	4,900	0	0	0	0	0	0	20
345 Power Operated Equipment	17,009	6,850	4,992	2,931	0	697	1,158	381	29
346 Communication Equipment	51,525	20,749	15,123	8,878	0	2,113	3,509	1,153	29
347 Miscellaneous General Equipment	298,805	119,523	87,112	51,140	0	12,169	20,212	6,649	29
348 Other Tangible Equipment	18,032	7,261	5,292	3,107	0	739	1,228	405	29
114 Acquisition Adjustment	(27,026)	(10,894)	(7,927)	(4,654)	0	(1,105)	(1,840)	(606)	30
Cost of Removal Adjustment	(69,701)	(28,086)	(20,443)	(12,003)	0	(2,851)	(4,747)	(1,561)	30
Total Depreciation Expense	4,070,540	1,669,557	1,223,700	566,078	0	276,192	249,623	85,360	
Amortization Expense									
Amortization of CIAC	(480,385)	(193,643)	(140,897)	(82,722)	0	(19,648)	(32,714)	(10,761)	30
Other Amortization	495,865	199,891	145,443	85,391	0	20,282	33,770	11,108	30
Total Amortization Expense	15,500	6,248	4,546	2,669	0	634	1,056	347	
Pro Forma Taxes Other Than Income Taxes									
Payroll Taxes	520,118	200,141	151,198	91,125	41,193	11,339	18,880	6,242	48
Property Taxes	2,674,109	1,077,933	784,316	460,482	0	109,371	182,107	59,800	30
Total Taxes Other Than Income Taxes	3,194,227	1,278,074	935,514	551,607	41,193	120,710	200,987	66,142	

Pennichuck Water Works, Inc.
 Test Period Ending December 31, 2009
 Allocation of Pro Forma Revenue Requirement

Description	Total Cost	Base Cost	Extra Cap Max Day	Extra Cap Max Hour	Customer Commercial	Customer Meters	Customer Services	Fire Hydrants	Allocation Code
Net Operating Income and Income Taxes									
Net Operating Income	7,677,233	3,142,291	2,273,996	1,276,724	9,980	319,373	489,807	165,062	33
Income Taxes	3,047,413	1,247,308	902,644	506,785	3,982	126,772	194,425	65,519	33
Total	10,724,646	4,389,597	3,176,640	1,783,509	13,962	446,145	684,232	230,581	
Total Revenue Requirement	28,397,565	11,627,191	7,650,327	4,118,477	793,651	2,058,393	1,556,168	593,358	
Percents	100.00 %	40.94 %	26.94 %	14.50 %	2.80 %	7.25 %	5.48 %	2.09 %	
Less Other Revenue	(365,964)	(149,826)	(98,591)	(53,065)	(10,247)	(26,532)	(20,055)	(7,648)	
Net Water Revenues	28,031,801	11,477,365	7,551,736	4,065,412	783,404	2,031,861	1,536,113	585,710	
Percents	100.00 %	40.94 %	26.94 %	14.50 %	2.80 %	7.25 %	5.48 %	2.09 %	

Pennichuck Water Works, Inc.
 Test Period Ending December 31, 2009
 Allocation of Year 2009 Salaries and Wages - Development of Allocation Code 48

Description	Total Cost	Base Cost	Extra Cap Max Day	Extra Cap Max Hour	Customer Commercial	Customer Meters	Customer Services	Fire Hydrants	Allocation Code
Salaries and Wages									
Source of Supply	308,606	176,337	132,269	0	0	0	0	0	21
Pumping	721,507	282,975	212,195	226,337	0	0	0	0	41
Water Treatment	517,662	295,792	221,870	0	0	0	0	0	21
Transmission and Distribution	743,323	202,258	156,990	209,617	0	54,337	90,388	29,733	35
Customer Accounts	198,981	0	0	0	198,981	0	0	0	23
Subtotal Salaries and Wages	2,488,059	957,362	723,324	435,954	198,981	54,337	90,388	29,733	
Subtotal % (Percent Code 48)	100.00 %	38.48 %	29.07 %	17.52 %	7.92 %	2.18 %	3.63 %	1.20 %	
Administrative and General	887,334	341,448	257,948	155,481	70,277	19,344	32,210	10,648	48
Total Salaries and Wages	3,375,393	1,298,808	981,272	591,415	267,238	73,681	122,598	40,381	
(Percent Code 48)	100.00 %	38.48 %	29.07 %	17.52 %	7.92 %	2.18 %	3.63 %	1.20 %	

PENNICHUCK WATER WORKS, INC.
Explanation of Factors Used in the Allocation to Cost Functions

<u>Allocation Code</u>	<u>Description</u>
20	This code allocates items 100 percent to Base Cost. Base Costs are costs which tend to vary with the quantity of water used and do not contain elements necessary to meet variations in demand.
21	This code allocates items to Base Cost and Extra Capacity Cost - Maximum Day in accordance with the ratio of the average annual system production per day to the maximum daily system production. Extra capacity costs are those costs associated with meeting rate of use requirements in excess of the average.
22	This code allocates items to Base Cost and Extra Capacity Cost - Maximum Hour in accordance with the ratio of the average annual system delivery per day to the maximum hourly system delivery.
23	This code allocates items 100 percent to Customer Cost - Commercial. Costs allocated by this code are commercial costs associated with serving customers irrespective of the amount of water used or the demand imposed on the system. They include billing, customer accounting, and collection expenses.
24	This code allocates items 100 percent to Customer Cost - Meters. Items allocated by this code are associated with the maintenance and capital charges for customer meters.
25	This code allocates items 100 percent to Customer Cost - Services. Items allocated by this code are associated with the maintenance and capital charges for customer water services.
26	This code allocates items 100 percent to Fire Hydrant Cost.
27	This code allocates items to the Cost Functions in accordance with the composite allocation of the depreciated cost of plant in service.
28	This code allocates items to the Cost Functions in accordance with the composite allocation of the accumulated depreciation reserve.
29	This code allocates items to the Cost Functions in accordance with the composite allocation of the original cost of non-general utility plant. It is used to allocate general plant items.
30	This code allocates items to the Cost Functions in accordance with the composite allocation of the total utility plant in service.
33	This code allocates items to the Cost Functions in accordance with the composite allocation of all rate base items.

PENNICHUCK WATER WORKS, INC.
Explanation of Factors Used in the Allocation to Cost Functions

<u>Allocation Code</u>	<u>Description</u>
34	This code allocates items to the Cost Functions in accordance with the composite allocation of the original cost of supply and pumping plant.
35	This code allocates items to the Cost Functions in accordance with the composite allocation of the original cost of transmission and distribution plant.
37	This code allocates items to the Cost Functions in accordance with the composite allocation of transmission and distribution operation expenses.
38	This code allocates items to the Cost Functions in accordance with the composite allocation of transmission and distribution maintenance expenses.
39	This code allocates items to the Cost Functions in accordance with the composite allocation of the original cost of general plant.
41	This code allocates items to Base Cost, Extra Capacity Cost - Maximum Day, and Extra Capacity Cost - Maximum Hour to recognize the pumping requirements of the system.
43	This code is used to allocate purchased power expenses to Base Cost, Extra-Capacity Cost - Maximum Day, and Extra Capacity Cost - Maximum Hour. It gives recognition to the demand element in purchased power costs.
44	This code allocates transmission and distribution mains costs to Base Cost, Extra Capacity Cost - Maximum Day, and Extra Capacity Cost - Maximum Hour functions.
45	This code allocates distribution storage costs to Base Cost, Extra Capacity Cost - Maximum Day, and Extra Capacity Cost - Maximum Hour.
46	This code allocates items to the Cost Functions in accordance with the composite allocation of the total pro forma operation and maintenance expenses.
47	This code allocates certain administrative and general expenses based on the composite allocation of previously allocated functional expenses.
48	This code allocates items to the Cost Functions in accordance with the composite allocation of the total labor expenses.

Pennichuck Water Works, Inc.
Summary of Functional Cost Allocation Factors

Allocation Code	Description	Base Cost	Extra Cap Max Day	Extra Cap Max Hour	Customer Commercial	Customer Meters	Customer Services	Fire Hydrants	Check Total
20	Base Cost	100.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00 %
21	Base/Ex Cap - Max Day	57.14	42.86	0.00	0.00	0.00	0.00	0.00	100.00 %
22	Base/Ex Cap - Max Hour	39.22	0.00	60.78	0.00	0.00	0.00	0.00	100.00 %
23	Commercial	0.00	0.00	0.00	100.00	0.00	0.00	0.00	100.00 %
24	Meters	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00 %
25	Services	0.00	0.00	0.00	0.00	0.00	100.00	0.00	100.00 %
26	Fire Hydrants	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00 %
27	Depreciated Plant	40.72	29.68	16.81	0.00	3.99	6.64	2.18	100.00 %
28	Depreciation Reserve	38.74	28.09	18.77	0.00	4.49	7.48	2.45	100.00 %
29	Subtotal Plant In Service	40.27	29.35	17.23	0.00	4.10	6.81	2.24	100.00 %
30	Total Utility Plant In Service	40.31	29.33	17.22	0.00	4.09	6.81	2.24	100.00 %
33	Total Rate Base	40.93	29.62	16.63	0.13	4.16	6.38	2.15	100.00 %
34	Supply and Pumping Plant	56.83	38.64	4.53	0.00	0.00	0.00	0.00	100.00 %
35	T&D Plant	27.21	21.12	28.20	0.00	7.31	12.16	4.00	100.00 %
37	T&D Operation	9.62	7.22	7.70	0.00	73.16	2.30	0.00	100.00 %
38	T&D Maintenance	21.50	16.12	17.19	0.00	3.79	24.93	16.47	100.00 %
39	General Plant	41.01	28.99	17.02	0.00	4.05	6.72	2.21	100.00 %
41	Pumping	39.22	29.41	31.37	0.00	0.00	0.00	0.00	100.00 %
43	Purchased Power	85.00	10.00	5.00	0.00	0.00	0.00	0.00	100.00 %
44	T&D Mains	39.22	29.41	31.37	0.00	0.00	0.00	0.00	100.00 %
45	Distribution Storage	10.00	15.00	75.00	0.00	0.00	0.00	0.00	100.00 %
46	Total O&M Expense	41.22	22.23	11.69	7.10	11.69	4.04	2.03	100.00 %
47	Admin & Gen'l Expense	27.98	20.99	10.62	9.49	22.21	5.48	3.23	100.00 %
48	Labor Benefits	38.48	29.07	17.52	7.92	2.18	3.63	1.20	100.00 %
<u>System Factors:</u>			<u>Base</u>	<u>Max Day</u>	<u>Max Hour</u>				
	Max Day - Average Day	175 %	57.14 %	42.86 %					
	Max Hour - Average Day	255 %	39.22 %		60.78 %				
	Pumping and T&D Mains	255 %	39.22 %	29.41 %	31.37 %				

Pennichuck Water Works, *nc.*

Allocation of Functional Costs to Classes

<u>Functional Cost Component</u>	<u>Amount</u>	<u>Water Service</u>	<u>Municipal Fire</u>	<u>Private Fire</u>	<u>Allocation Code</u>
Base Cost	11,477,365	11,362,592	81,489	33,284	60
Extra Capacity - Max Day	7,551,736	5,793,692	1,251,323	506,721	61
Extra Capacity - Max Hour	4,065,412	2,612,027	1,034,241	419,144	62
Customer - Commercial	783,404	759,353	157	23,894	63
Customer - Meters	2,031,861	2,031,861	0	0	64
Customer - Services	1,536,113	1,536,113	0	0	65
Fire Hydrants	585,710	0	585,710	0	70
Net Revenue Requirement	28,031,601	24,095,638	2,952,920	983,043	

PENNICHUCK WATER WORKS, INC.
Explanation of Factors Used in the Allocation to Customer Groups

<u>Allocation Code</u>	<u>Description</u>
60	This code allocates Base Cost to the customer groups in accordance with the percentage of water used by each individual customer group.
61	This code allocates Extra Capacity Cost - Maximum Day to the customer groups in accordance with the ratio of the excess maximum day demand of each individual customer group to the total non-coincident excess daily demand for all customer groups.
62	This code allocates Extra Capacity Cost - Maximum Hour to the customer groups in accordance with the ratio of the excess maximum hour demand of each individual customer group to the total non-coincident excess hourly demand for all customer groups.
63	This code allocates Customer Cost - Commercial to the customer groups in accordance with the percentage of bills issued to each individual customer group.
64	This code allocates Customer Cost - Meters to the customer groups in accordance with the ratio of the number of equivalent meters in each individual customer group to the total number of equivalent meters for all customer groups.
65	This code allocates Customer Cost - Services to the customer groups on a basis similar to that for the allocation of Customer Cost - Meters.
70	This code allocates items entirely to the public fire service class.

Pennichuck Water Works, Inc.
Summary of Class Allocation Factors

<u>Allocation Code</u>	<u>Functional Cost Component</u>	<u>Water Service</u>	<u>Municipal Fire</u>	<u>Private Fire</u>	<u>Check Total</u>
60	Base Cost	99.00	0.71	0.29	100.00 %
61	Extra Capacity - Max Day	76.72	16.57	6.71	100.00 %
62	Extra Capacity - Max Hour	64.25	25.44	10.31	100.00 %
63	Customer - Commercial	96.93	0.02	3.05	100.00 %
64	Customer - Meters	100.00	0.00	0.00	100.00 %
65	Customer - Services	100.00	0.00	0.00	100.00 %
70	Fire Hydrants	0.00	100.00	0.00	100.00 %

Pennlchuck Water Works, Inc.

Customer Class Allocation Factors

Customer Class	Annual Consumption			Maximum Day			Maximum Hour			Customer Costs			
	(1) CCFT	(2) MGD	(3) %	(4) % of AvDay	(5) Amount MGD	(6) Excess (5)-(2)	(7) %	(8) % of AvDay	(9) Amount MGD	(10) Excess (9)-(5)	(11) %	(12) Bills	(13) %
General Water	4,258,586	8.727	84.34	190	16.581	7.854	48.93	325	28.363	11.782	54.84	307,680	96.92
Anheuser-Busch	551,400	1.130	10.92	CA	3.000	1.870	11.65	CA	4.000	1.000	4.65	24	0.01
Hudson	143,376	0.294	2.84	CA	1.578	1.284	8.00	CA	2.000	0.422	1.96	12	0.00
Milford	45,237	0.093	0.90	CA	1.399	1.306	8.14	CA	2.000	0.601	2.80	12	0.00
Total Water Service	4,998,599	10.244	99.00		22.558	12.314	76.72		36.363	13.805	64.25	307,728	96.93
Municipal Fire	35,934	0.074	0.71		2.733	2.659	16.57		8.199	5.466	25.44	60	0.02
Private Fire	14,557	0.030	0.29		1.107	1.077	6.71		3.321	2.214	10.31	9,684	3.05
Total Fire Service	50,491	0.104	1.00		3.840	3.736	23.28		11.520	7.680	35.75	9,744	3.07
Grand Total	5,049,090	10.348	100.00		26.398	16.050	100.00		47.883	21.485	100.00	317,472	100.00
Allocation Code			60				61				62		63

Fire Requirements: 1.0% of total water consumption
 Fire Demand 8,000 gpm for 8 hours
 Fire Req'm'nts split 71.17% Municipal and 28.83% Private

CA: Max Day and Max Hour Contract Amounts for Anheuser-Busch, Hudson, and Milford

Pennichuck Water Works, Inc.

Fire Service Capacity Units

	<u>Number</u>	<u>Capacity Ratio</u>	<u>Capacity Units</u>	<u>%</u>
Municipal Hydrants	2,468	1.00	2,468.00	71.17
Private Fire Services				
2"	29	0.11	3.19	
4"	105	0.44	46.20	
6"	369	1.00	369.00	
8"	284	1.78	505.52	
10"	6	2.78	16.68	
12"	13	4.00	52.00	
16"	1	7.11	7.11	
Total Private	807		999.70	28.83
Grand Total	3,275		3,467.70	100.00

Note:

Capacity ratios are based on the cross-sectional area of municipal hydrant branches and private fire service connections. The cross-sectional area of a 6" branch is taken as unity. All hydrant branches are considered as 6".

Capacity costs include the following functional costs:

Base Costs, Extra Capacity Costs - Maximum Day, and
Extra Capacity Costs - Maximum Hour.

Pennichuck Water Works, Inc.
Calculation of Revenues Under Present Rates

General Service - Metered

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"	23,188	278,256	\$ 18.18	\$ 5,058,694.08
3/4"	325	3,900	26.16	102,024.00
1"	205	2,460	42.13	103,639.80
1 1/2"	131	1,572	82.10	129,061.20
2"	45	540	134.41	72,581.40
3"	19	228	246.48	56,197.44
4"	3	36	406.51	14,634.36
6"	0	0	806.63	0.00
8"	0	0	1,286.90	0.00
10"	0	0	1,847.05	0.00
Subtotal	23,916	286,992		\$ 5,536,832.28
	<u>CCFT</u>			
Volume	3,190,170		\$ 2.90	\$ 9,251,493.00
Total Residential Revenue				\$ 14,788,325.28

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"	605	7,260	\$ 18.18	\$ 131,986.80
3/4"	175	2,100	26.16	54,936.00
1"	255	3,060	42.13	128,917.80
1 1/2"	233	2,796	82.10	229,551.60
2"	150	1,800	134.41	241,938.00
3"	17	204	246.48	50,281.92
4"	2	24	406.51	9,756.24
6"	1	12	806.63	9,679.56
8"	0	0	1,286.90	0.00
10"	0	0	1,847.05	0.00
Subtotal	1,438	17,256		\$ 857,047.92
	<u>CCFT</u>			
Volume	766,150		\$ 2.90	\$ 2,221,835.00
Total Commercial Revenue				\$ 3,078,882.92

Pennichuck Water Works, Inc.
Calculation of Revenues Under Present Rates

General Service - Metered

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"	30	360	\$ 18.18	\$ 6,544.80
3/4"	17	204	26.16	5,336.64
1"	39	468	42.13	19,716.84
1 1/2"	29	348	82.10	28,570.80
2"	35	420	134.41	56,452.20
3"	13	156	246.48	38,450.88
4"	2	24	406.51	9,756.24
6"	2	24	806.63	19,359.12
8"	0	0	1,286.90	0.00
10"	0	0	1,847.05	0.00
Subtotal	167	2,004		\$ 184,187.52
	<u>CCFT</u>			
Volume	222,313		\$ 2.90	\$ 644,707.70
Total Industrial Revenue				\$ 828,895.22

Municipal

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Present Rate</u>	<u>Present Revenue</u>
5/8"	17	204	\$ 18.18	\$ 3,708.72
3/4"	10	120	26.16	3,139.20
1"	16	192	42.13	8,088.96
1 1/2"	27	324	82.10	26,600.40
2"	37	444	134.41	59,678.04
3"	8	96	246.48	23,662.08
4"	2	24	406.51	9,756.24
6"	2	24	806.63	19,359.12
8"	0	0	1,286.90	0.00
10"	0	0	1,847.05	0.00
Subtotal	119	1,428		\$ 153,992.76
	<u>CCFT</u>			
Volume	79,953		\$ 2.90	\$ 231,863.70
Total Municipal Revenue				\$ 385,856.46
Grand Total GWS Revenue				\$ 19,081,959.88

Pennichuck Water Works, Inc.
Calculation of Revenues Under Present Rates

Service to Contract Customers

Town of Milford

		<u>Present Rate</u>	<u>Present Revenue</u>
Annual Fixed Fee		\$ 81,000.00	\$ 81,000.00
Volume	<u>CCFT</u> 45,237	\$ 1.8249	\$ 82,553.00
Total Milford Revenue			\$ 163,553.00

Town of Hudson

		<u>Present Rate</u>	<u>Present Revenue</u>
Annual Demand Charge		\$ 32,800.00	\$ 32,800.00
Volume	<u>CCFT</u> 143,376	\$ 1.8419	\$ 264,084.25
Total Hudson Revenue			\$ 296,884.25

Anheuser-Busch

<u>Meter Size</u>	<u>Number of Meters</u>	<u>Number of Bills</u>	<u>Present Rate</u>	<u>Present Revenue</u>
6"	2	24	\$ 806.63	\$ 19,359.12
Volume	<u>CCFT</u> 551,400		\$ 1.4956	\$ 824,673.84
Total Anheuser-Busch Revenue				\$ 844,032.96
Grand Total Contract Revenue				\$ 1,304,470.22

Pennichuck Water Works, Inc.
Calculation of Revenues Under Present Rates

Fire Protection Service

Private Fire Protection

<u>Size</u>	<u>Number</u>	<u>Number of Bills</u>	<u>Present Rate</u>	<u>Present Revenue</u>
2"	29	348	\$ 55.70	\$ 19,383.60
4"	105	1,260	55.70	70,182.00
6"	369	4,428	93.46	413,840.88
8"	284	3,408	137.60	468,940.80
10"	6	72	137.60	9,907.20
12"	13	156	137.60	21,465.60
16"	1	12	137.60	1,651.20
Total	807	9,684		\$ 1,005,371.28

Municipal Fire Protection

<u>Size</u>	<u>Number</u>	<u>of Bills</u>	<u>Rate</u>	<u>Revenue</u>
Hydrant	2,468	60	\$ 17.16	\$ 508,210.56
Inch-Feet	18,448,150		0.11828	2,182,047.18
Total Municipal Fire Revenue				\$ 2,690,257.74

Pennichuck Water Works, Inc.
Calculation of Revenues Under Present Rates

Total Present Rate Revenue

Grand Total GWS Revenue	\$ 19,081,959.88
Grand Total Contract Revenue	\$ 1,304,470.22
Grand Total Private Fire Revenue	\$ 1,005,371.28
Grand Total Municipal Fire Revenue	\$ 2,690,257.74
Grand Total Revenue	\$ 24,082,059.12
Total Customer Charge Revenue	\$ 6,751,419.60
Total Volume Charge Revenue	\$ 13,521,210.50
Total Contract Fixed Fee Revenue	\$ 113,800.00
Total Private Fire Revenue	\$ 1,005,371.28
Total Municipal Fire Revenue	\$ 2,690,257.74
Grand Total Revenue	\$ 24,082,059.12

Note: All bills are monthly bills.

Pennichuck Water Works, Inc.

Comparison of Present Rate Revenues and Cost of Service Indications

	<u>Present Rates</u>		<u>Cost of Service</u>	
	<u>\$</u>	<u>%</u>	<u>\$</u>	<u>%</u>
Water Service Revenue	20,386,430.10	84.65	24,095,638	85.96
Private Fire Revenue	1,005,371.28	4.18	983,043	3.51
Municipal Fire Revenue	2,690,257.74	11.17	2,952,920	10.53
Total Revenues	24,082,059.12	100.00	28,031,601	100.00

Pennichuck Water Works, Inc.

Rate Design

Municipal Fire Protection

Functional Allocations:	
Fire Hydrants	585,710
Customer - Commercial	157
Total	585,867
Number of Hydrants	2,468
Annual Cost per Hydrant	237.39
Monthly Charge per Hydrant	19.78

Functional Allocations:	
Base Cost	81,489
Extra Capacity - Max Day	1,251,323
Extra Capacity - Max Hour	1,034,241
Total	2,367,053
Number of Inch-Feet	18,448,150
Annual Charge per Inch-Foot	0.12831

Pennichuck Water Works, Inc.

Rate Design

Private Fire Protection

Total Private Fire Protection Rev Reqmt 983,043

Present Private Fire Protection Revenue 1,005,371

Since Allocated Costs are less than present rate revenues,
no changes will be proposed for Private Fire rates.

<u>Size</u>	<u>Present Monthly Charge</u>	<u>Proposed Monthly Charge</u>	<u>Increase</u>
2"	55.70	55.70	0.00 %
4"	55.70	55.70	0.00 %
6"	93.46	93.46	0.00 %
8"	137.60	137.60	0.00 %
10"	137.60	137.60	0.00 %
12"	137.60	137.60	0.00 %
16"	137.60	137.60	0.00 %

Pennichuck Water Works, Inc.

Rate Design

Customer Charges

Functional Allocations (Water Service):	
Customer - Commercial	759,353
Customer - Meters	2,031,861
Customer - Services	<u>1,536,113</u>
Subtotal	4,327,327
Add: 75% of A&G Expenses	
75% A&G Base Cost	1,351,157
75% A&G Max Day Cost	1,016,072
75% A&G Max Hour Cost	<u>588,593</u>
Subtotal	2,955,822
Add: 40% of T&D Expenses	
40% T&D Base Cost	96,557
40% T&D Max Day Cost	72,424
40% T&D Max Hour Cost	<u>77,245</u>
Subtotal	246,226
Add: 75% of Base Fixed Costs	
75% Depreciation Expense (Less A-B)	1,131,772
75% Amortization Expense	4,686
75% Property Taxes (Less A-B)	<u>730,718</u>
Subtotal	1,867,176
Total for Customer Charge	9,396,551
Present Customer Charge Revenue	6,751,420

Increase Required 39.18 %

Meter Size	Present Monthly Charge	Proposed Monthly Charge	Increase
5/8"	18.18	25.29	39.11 %
3/4"	26.16	36.41	39.18 %
1"	42.13	58.64	39.19 %
1 1/2"	82.10	114.27	39.18 %
2"	134.41	187.07	39.18 %
3"	246.48	343.05	39.18 %
4"	406.51	565.78	39.18 %
6"	806.63	1,122.67	39.18 %
8"	1,286.90	1,791.11	39.18 %
10"	1,847.05	2,570.72	39.18 %

Pennichuck Water Works, Inc.

Rate Design

Volumetric Charges

Net Water Revenue Requirement	28,031,601
Less Proposed Revenues:	
From Municipal Fire Protection	(2,952,887)
From Private Fire Protection	(1,005,371)
From Customer Charges	(9,366,019)
From Contract Fixed Fees	(113,800)
From A-B Carrying Charge	(742,860)
From A-B Volume Charge	(647,288)
Net Required From Volume Charges	13,203,376
Present Volume Charge Revenue	12,696,537
Increase Required	3.99 %

	<u>Present Charge</u>	<u>Proposed Charge</u>	<u>Increase</u>
General Water	2.90	3.016	4.00 %
Anheuser-Busch	1.4956	1.1739	(21.51) %
Hudson	1.8419	1.9154	3.99 %
Milford	1.8249	1.8977	3.99 %

Pennichuck Water Works, Inc.

Ratios of Present Rates

Customer Charges

<u>Meter Size</u>	<u>Monthly Present Rate</u>	<u>Present Ratio to 5/8"</u>	<u>AWWA Capacity Ratios</u>	<u>Present Ratio as % of AWWA</u>
5/8"	18.18	1.00	1.00	100.00 %
3/4"	26.16	1.44	1.50	95.93 %
1"	42.13	2.32	2.50	92.70 %
1 1/2"	82.10	4.52	5.00	90.32 %
2"	134.41	7.39	8.00	92.42 %
3"	246.48	13.56	15.00	90.39 %
4"	406.51	22.36	25.00	89.44 %
6"	806.63	44.37	50.00	88.74 %
8"	1,286.90	70.79	80.00	88.48 %
10"	1,847.05	101.60	115.00	88.35 %

Pennichuck Water Works
Transmission and Distribution Inch-Feet
Inch-Feet of Mains in Service at December 31, 2009
Reduce Larger Mains to 4" Size

<u>Actual Mains in Service</u>			<u>Reduce Larger Mains to 4" Size</u>		
<u>Size</u>	<u>Length</u>	<u>In-Ft</u>	<u>Size</u>	<u>Length</u>	<u>In-Ft</u>
1"	3,423	3,423.0	1"	3,423	3,423.0
1 1/4"	6,361	7,951.3	1 1/4"	6,361	7,951.3
1 1/2"	4,937	7,405.5	1 1/2"	4,937	7,405.5
2"	118,073	236,146.0	2"	118,073	236,146.0
3"	35,254	105,762.0	3"	35,254	105,762.0
4"	185,566	742,264.0	4"	185,566	742,264.0
6"	243,653	1,461,918.0	4"	243,653	974,612.0
8"	1,042,710	8,341,680.0	4"	1,042,710	4,170,840.0
10"	35,834	358,340.0	4"	35,834	143,336.0
12"	373,504	4,482,048.0	4"	373,504	1,494,016.0
14"	535	7,490.0	4"	535	2,140.0
16"	137,423	2,198,768.0	4"	137,423	549,692.0
20"	2,343	46,860.0	4"	2,343	9,372.0
24"	77,886	1,869,264.0	4"	77,886	311,544.0
30"	8,840	265,200.0	4"	8,840	35,360.0
42"	570	23,940.0	4"	570	2,280.0
72"	1,325	95,400.0	4"	1,325	5,300.0
Total	2,278,237	20,253,859.8	Total	2,278,237	8,801,443.8

Inch-Feet Based on Actual Size of Mains 20,253,859.8

Inch-Feet Based on Reduced Size of Mains 8,801,443.8

Difference 11,452,416.0

43.46%

Pennichuck Water Works, Inc.
Rate Design

Development of Unit Production Cost

Source of Supply

Base Cost	\$ 396,601
Extra Capacity Max Day Cost	297,486
Extra Capacity Max Hour Cost	0
Less Purchased Water Base	(139,831)
Less Purchased Water Max Day	(104,886)
Less Purchased Water Max Hr	0

Pumping

Base Cost	588,283
Extra Capacity Max Day Cost	155,614
Extra Capacity Max Hour Cost	135,879

Water Treatment

Base Cost	811,921
Extra Capacity Max Day Cost	205,025
Extra Capacity Max Hour Cost	0

Total Production Cost \$ 2,346,092

Water Use in CCF 5,049,090

Unit Production Cost per CCF \$ 0.4647

Note: Pumping Cost are at the Water Treatment Plant.
See next page for details.

Pennichuck Water Works, Inc.
Rate Design

Allocation of Pumping Costs at Water Treatment Plant
For Use in Development of Unit Production Cost

<u>Pumping Expenses:</u>	<u>Total</u>	<u>At WTP</u>	<u>Base Cost</u>	<u>Extra Cap Max Day</u>	<u>Extra Cap Max Hour</u>	<u>Allocation Code</u>
Fuel or Power Purchased	935,016	531,315	451,617	53,132	26,566	43
Pumping Labor and Expenses	229,700	229,700	90,088	67,555	72,057	41
Miscellaneous Expenses	82,521	82,521	32,365	24,269	25,887	41
Maint. of Structures and Imp.	82,794	19,473	7,637	5,727	6,109	41
Maint. of Pumping Equipment	210,533	16,767	6,576	4,931	5,260	41
Total Pumping Expenses	1,540,564	879,776	588,283	155,614	135,879	

WTP Pumping is 57.11% of Total Pumping

Pennichuck Water Works, Inc.
Rate Design

Allocation of Administrative and General Costs to Anheuser-Busch

	<u>Total</u>	<u>Allocation to A-B</u>		<u>A-B Charge</u>
		<u>%</u>	<u>\$</u>	<u>\$ per CCF</u>
<u>Administrative and General Costs:</u>				
Base Cost	1,801,542	10.92	196,728	
Extra Capacity Max Day Cost	1,354,763	11.65	157,830	
Extra Capacity Max Hour Cost	784,791	4.65	36,493	
Total A-B Share of Admin and General			391,051	\$ 0.7092

Anheuser-Busch Annual Volume = 551,400 CCF

Development of Anheuser-Busch Volumetric Rate

Unit Production Cost per CCF	\$ 0.4647
Total A-B Share of Admin and General	<u>0.7092</u>
Anheuser-Busch Volumetric Rate	\$ 1.1739

Pennichuck Water Works, Inc.
Summary of Proposed Rates

General Service - Metered
Schedule G-M

<u>Meter Size</u>	<u>Monthly Proposed Charge</u>
5/8"	\$ 25.29
3/4"	36.41
1"	58.64
1 1/2"	114.27
2"	187.07
3"	343.05
4"	565.78
6"	1,122.67
8"	1,791.11
10"	2,570.72
Volumetric Charge per 100 cu. ft.	\$ 3.016

Municipal Fire Protection Service
Schedule FP-M

	<u>Monthly Proposed Charge</u>
Each Hydrant	\$ 19.78
Inch-Foot per year	\$ 0.12831

Private Fire Protection Service
Schedule FP-NM

<u>Connection Size</u>	<u>Monthly Proposed Charge</u>
4" or smaller	\$ 55.70
6"	93.46
8" or larger	137.60

Special Contract Service

Anheuser-Busch

Annual Carrying Chg	\$ 742,860
Volumetric Charge per 100 cu. ft.	\$ 1.1739

Hudson

Annual Charge	\$ 32,800
Volumetric Charge per 100 cu. ft.	\$ 1.9154

Milford

Annual Fixed Fee	\$ 81,000
Volumetric Charge per 100 cu. ft.	\$ 1.8977

Pennichuck Water Works, Inc.
Calculation of Revenues Under Proposed Rates

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"	23,188	278,256	\$ 25.29	\$ 7,037,094.24
3/4"	325	3,900	36.41	141,999.00
1"	205	2,460	58.64	144,254.40
1 1/2"	131	1,572	114.27	179,632.44
2"	45	540	187.07	101,017.80
3"	19	228	343.05	78,215.40
4"	3	36	565.78	20,368.08
6"	0	0	1,122.67	0.00
8"	0	0	1,791.11	0.00
10"	0	0	2,570.72	0.00
Subtotal	23,916	286,992		\$ 7,702,581.36
	<u>CCFT</u>			
Volume	3,190,170		\$ 3.016	\$ 9,621,552.72
Total Residential Revenue				\$ 17,324,134.08

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"	605	7,260	\$ 25.29	\$ 183,605.40
3/4"	175	2,100	36.41	76,461.00
1"	255	3,060	58.64	179,438.40
1 1/2"	233	2,796	114.27	319,498.92
2"	150	1,800	187.07	336,726.00
3"	17	204	343.05	69,982.20
4"	2	24	565.78	13,578.72
6"	1	12	1,122.67	13,472.04
8"	0	0	1,791.11	0.00
10"	0	0	2,570.72	0.00
Subtotal	1,438	17,256		\$ 1,192,762.68
	<u>CCFT</u>			
Volume	766,150		\$ 3.016	\$ 2,310,708.40
Total Commercial Revenue				\$ 3,503,471.08

Pennichuck Water Works, Inc.
Calculation of Revenues Under Proposed Rates

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	360	\$ 25.29	\$ 9,104.40
3/4"	17	204	36.41	7,427.64
1"	39	468	58.64	27,443.52
1 1/2"	29	348	114.27	39,765.96
2"	35	420	187.07	78,569.40
3"	13	156	343.05	53,515.80
4"	2	24	565.78	13,578.72
6"	2	24	1,122.67	26,944.08
8"	0	0	1,791.11	0.00
10"	0	0	2,570.72	0.00
Subtotal	167	2,004		\$ 256,349.52
	<u>CCFT</u>			
Volume	222,313		\$ 3.016	\$ 670,496.01
Total Industrial Revenue				\$ 926,845.53

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	204	\$ 25.29	\$ 5,159.16
3/4"	10	120	36.41	4,369.20
1"	16	192	58.64	11,258.88
1 1/2"	27	324	114.27	37,023.48
2"	37	444	187.07	83,059.08
3"	8	96	343.05	32,932.80
4"	2	24	565.78	13,578.72
6"	2	24	1,122.67	26,944.08
8"	0	0	1,791.11	0.00
10"	0	0	2,570.72	0.00
Subtotal	119	1,428		\$ 214,325.40
	<u>CCFT</u>			
Volume	79,953		\$ 3.016	\$ 241,138.25
Total Municipal Revenue				\$ 455,463.65
Grand Total GWS Revenue				\$ 22,209,914.34

Pennichuck Water Works, Inc.
Calculation of Revenues Under Proposed Rates

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> 45,237	\$ 1.8977	\$ 85,846.25
Total Milford Revenue			\$ 166,846.25

Town of Hudson

		<u>Proposed Rate</u>	<u>Proposed Revenue</u>
Annual Demand Charge		\$ 32,800.00	\$ 32,800.00
Volume	<u>CCFT</u> 143,376	\$ 1.9154	\$ 274,622.39
Total Hudson Revenue			\$ 307,422.39

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	\$ -	\$ -
Volume	<u>CCFT</u> 551,400		1.1739	\$ 647,288.46
Annual Carrying Charge			\$ 742,860.00	\$ 742,860.00
Total Anheuser-Busch Revenue				\$ 1,390,148.46
Grand Total Contract Revenue				\$ 1,864,417.11

Pennichuck Water Works, Inc.
Calculation of Revenues Under Proposed Rates

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"	29	348	\$ 55.70	\$ 19,383.60
4"	105	1,260	55.70	70,182.00
6"	369	4,428	93.46	413,840.88
8"	284	3,408	137.60	468,940.80
10"	6	72	137.60	9,907.20
12"	13	156	137.60	21,465.60
16"	1	12	137.60	1,651.20
Total	807	9,684		\$ 1,005,371.28

Municipal Fire Protection

<u>Size</u>	<u>Number</u>	<u>of Bills</u>	<u>Proposed Rate</u>	<u>Proposed Revenue</u>
Hydrant	2,468	60	\$ 19.78	\$ 585,804.48
Inch-Feet	18,448,150		0.12831	2,367,082.13
Total Municipal Fire Revenue				\$ 2,952,886.61

Pennichuck Water Works, Inc.
Calculation of Revenues Under Proposed Rates

Total Proposed Rate Revenue

Grand Total GWS Revenue	\$ 22,209,914.34
Grand Total Contract Revenue	\$ 1,864,417.11
Grand Total Private Fire Revenue	\$ 1,005,371.28
Grand Total Municipal Fire Revenue	\$ 2,952,886.61
Grand Total Proposed Revenue	\$ 28,032,589.33
Total Customer Charge Revenue	\$ 9,366,018.96
Total Volume Charge Revenue	\$ 13,851,652.48
Total Contract Fixed Fee Revenue	\$ 856,660.00
Total Private Fire Revenue	\$ 1,005,371.28
Total Municipal Fire Revenue	\$ 2,952,886.61
Grand Total Proposed Revenue	\$ 28,032,589.33
Net Water Revenue Requirement	\$ 28,031,601.00
Difference	\$ 988.33 0.004%

Pennichuck Water Works, Inc.

Comparison of Cost of Service Indications and Proposed Rate Revenues

	<u>Cost of Service</u>		<u>Proposed Rates</u>	
	<u>\$</u>	<u>%</u>	<u>\$</u>	<u>%</u>
Water Service Revenue	24,095,638	85.96	24,074,331.44	85.88
Private Fire Revenue	983,043	3.51	1,005,371.28	3.59
Municipal Fire Revenue	2,952,920	10.53	2,952,886.61	10.53
Total Revenues	28,031,601	100.00	28,032,589.33	100.00

PENNICHUCK WATER WORKS, INC.
MERRIMACK, NEW HAMPSHIRE

APPENDIX
TO
REPORT ON
COST OF SERVICE ALLOCATIONS
AND WATER RATE DESIGN

by

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April 2010

Appendix
Pennichuck Water Works
Development of Carrying Costs and Carrying Charges
for Water Supply and Treatment Facilities

As developed in this analysis, a carrying cost may be defined as the embedded annual cost or expense related to owning a given element of utility property. In other words, it is the expense incurred by ownership. It includes a return on the monies invested in the property, taxes on this return, depreciation of the property, and taxes on the property. For purposes of this analysis, it does not include operation and maintenance costs such as salaries and wages, electric power, chemicals, or repairs. Thus, it is more of a fixed cost than a variable cost. A carrying charge relates the carrying cost to units of capacity or use to allow for fair, just, and reasonable recovery of the expense of ownership.

The data required to develop a carrying cost are available from the books and records of Pennichuck Water Works. For purposes of this analysis, emphasis is placed on the core system water supply and treatment facilities. These facilities include the Supply Pond, Holt Dam, the Water Treatment Plant, and the Fifield Tank (which is used to control the hydraulic gradient in the core system). The accompanying Schedule A-1 summarizes the asset values and related expenses used in the development of the carrying cost parameters. As shown thereon, the investment in water supply and treatment assets for the facilities considered herein totals \$55,161,618 at December 31, 2009. Similarly, the accumulated depreciation reserve totals \$8,491,006 while the annual depreciation expense was \$1,539,523 during calendar year 2009.

The amount of deferred income taxes related to the water supply and treatment facility assets is a needed component in the determination of the return on the investment

in these assets. While deferred income taxes are calculated at the Company level (as opposed to being calculated on each individual utility plant element), it is possible to estimate the deferred taxes related to the water supply and treatment facilities by comparing the investment in these facilities to the total utility plant investment. Using such an approach, it is estimated that \$13,373,304 of deferred income taxes are related to the water supply and treatment facility investment at December 31, 2009.

Property taxes on the water supply and treatment facilities are paid both on a local municipal level and on a state level. Local property taxes totaled \$1,450,055 during calendar year 2009. State property taxes, much like the deferred income taxes, are calculated at the Company level. It is possible to estimate the state property taxes related to the water supply and treatment facilities by comparing the state valuations by town and the town valuations by plant asset category. Under such an approach, it is estimated that the state property taxes related to the water supply and treatment facilities were \$384,924 for calendar year 2009.

The above data may be used to develop the carrying cost of the water supply and treatment facility assets. This development is set forth on the accompanying Schedule A-2. As shown thereon, a rate base of \$35,608,498 is calculated by deducting the accumulated depreciation and the deferred income tax from the original cost of the water supply and treatment facility assets. The overall 7.38% rate of return allowed in Pennichuck's most recent rate proceeding when applied to the rate base results in a \$2,627,907 return on the investment in the water supply and treatment facilities. Taxes on this return are \$1,723,653 using a 60.39% tax factor. As shown on Schedule 2, depreciation expense is \$1,539,523 while total property taxes are \$1,834,979. The sum

of the return on the water supply and treatment facility investment, the taxes on this return, the depreciation expenses, and the property taxes is \$7,726,062 which is the annual carrying cost of these facilities during 2009. It is noted that all numeric values referred to above are for the total of the Supply Pond, Holt Dam, the Water Treatment Plant, and the Fifield Tank. Schedule 2 sets forth comparable values for each individual facility.

This \$7,726,062 carrying cost can be used to develop a carrying charge related to the capacity requirements of Anheuser-Busch. In accordance with the Anheuser-Busch contract, Pennichuck must maintain facilities capable of delivering 2.0 million gallons per day on a continuous basis. In addition these facilities must also be capable of delivering 3.0 million on a maximum day basis and the 24-hour equivalent of 4.0 million gallons during the peak hour. It has recently been reported that the water supply and treatment facility is capable of delivering water at a rate of 31.2 million gallons per day. This 31.2 million gallons per day is the maximum day delivery volume from the treatment facility.

Since the treatment facilities are designed to meet maximum day demands, it is appropriate to relate the Anheuser-Busch maximum day contract requirements to the treatment plant capacity. The 3.0 million gallon Anheuser-Busch maximum day requirement is equivalent to 9.615% of the treatment plant capacity. (That is, $3.0 \div 31.2 = 9.615\%$.) Applying this 9.615% to the total annual carrying cost of \$7,726,062 results in a carrying charge of \$742,861 applicable to service to Anheuser-Busch. (That is, $9.615\% \times \$7,726,062 = \$742,861$.)

The carrying charge developed herein can be incorporated with the rate schedules applicable to service to Anheuser-Busch. The use of a carrying charge will aid in assuring that Anheuser-Busch provides its fair share of the fixed costs of the water supply and treatment facilities in which certain capacity requirements are reserved for Anheuser-Busch's use and will give recognition to the fact that Pennichuck must maintain certain capacity requirements for Anheuser-Busch irrespective of the amount of water actually taken.

Pennichuck Water Works
 Asset Values and Related Expenses for Development of Carrying Cost Parameters
 For Water Supply and Treatment Facilities

	<u>Supply Pond</u>	<u>Holt Dam</u>	<u>Water Treatment Plant</u>	<u>Fifield Tank</u>	<u>Total</u>
<u>Plant Investment</u>					
Original Cost	\$ 969,382	\$ 638,469	\$ 48,908,994	\$ 4,644,773	\$ 55,161,618
Accumulated Depreciation	143,242	116,542	7,544,701	686,521	8,491,006
Net Book Value	826,140	521,927	41,364,293	3,958,252	46,670,612
Depreciation Expense	21,774	11,339	1,431,515	74,895	1,539,523
Estimated Deferred Income Tax	303,908	8,167,355	2,007,282	2,894,759	13,373,304
<u>Property Taxes</u>					
Local Taxes	0	0	1,389,748	60,307	1,450,055
Estimated State Taxes	0	0	368,903	16,021	384,924
Total Property Taxes	0	0	1,758,651	76,328	1,834,979

Pennichuck Water Works
Development of Carrying Cost
For Water Supply and Treatment Facilities

	<u>Supply Pond</u>	<u>Holt Dam</u>	<u>Water Treatment Plant</u>	<u>Fifield Tank</u>	<u>Total</u>
<u>Plant Investment</u>					
Original Cost	\$ 969,382	\$ 638,469	\$ 48,908,994	\$ 4,644,773	\$ 55,161,618
Accumulated Depreciation	143,242	116,542	7,544,701	686,521	8,491,006
Net Book Value	826,140	521,927	41,364,293	3,958,252	46,670,612
Estimated Deferred Income Tax	583,569	303,908	8,167,355	2,007,282	11,062,114
Rate Base	242,571	218,019	33,196,938	1,950,970	35,608,498
Allowed Rate of Return	7.38 %	7.38 %	7.38 %	7.38 %	7.38 %
Return on Investment	17,902	16,090	2,449,934	143,982	2,627,907
Tax Factor on Return	60.39 %	60.39 %	60.39 %	60.39 %	60.39 %
Taxes on Return	11,742	10,553	1,606,920	94,438	1,723,653
Depreciation Expense	21,774	11,339	1,431,515	74,895	1,539,523
<u>Property Taxes</u>					
Local Taxes	0	0	1,389,748	60,307	1,450,055
Estimated State Taxes	0	0	368,903	16,021	384,924
Total Property Taxes	0	0	1,758,651	76,328	1,834,979
Total Annual Carrying Cost	\$ 51,418	\$ 37,982	\$ 7,247,020	\$ 389,643	\$ 7,726,062