

**WATER COST OF SERVICE AND RATE DESIGN STUDY
CONSOLIDATING THE WATER RATES OF
HARRISVILLE FIRE DISTRICT WATER DIVISION
AND
PASCOAG UTILITY DISTRICT WATER DIVISION**

For

**HARRISVILLE FIRE DISTRICT
AND
THE PASCOAG UTILITY DISTRICT**

September 2023

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INTRODUCTION

Executive Overview:

Harrisville

The Water Department of the Harrisville Fire District (HW) provides the retail water needs of 1/7th of the town's population which is approximately 3,000 residents. In addition, HW sells approximately 51% of its water production on a wholesale basis to an independent water authority. This independent water authority, the Pascoag Utility District, serves approximately 4,000 people.

HW is operated as an independent enterprise fund. Revenues are generated from user rates and other charges in amounts adequate to cover all of the costs of operating the HW supply, storage, pumping, and transmission and distribution systems. The Water Superintendent manages daily operations of the Water Department while the financial aspects are processed by the Office Manager who manages the District Office for both the Fire and Water Departments.

HW currently charges new customers an initial "hook up" fee (Demand/Connection charge) based upon the size of the connection and/or number of units, a fixed customer charge for all meter and billing related costs and a consumption charge for water use for retail customers. HW charges a wholesale rate for water purchased in bulk by an independent water authority. Also, there are a number of miscellaneous service fees (such as a meter testing fee) that are charged to customers at cost.

In addition to providing water for public consumption, HW provides water for public and private fire protection. HW charges fire protection charges based upon the number of hydrants.

Pascoag

The Pascoag Utility District was incorporated by a special act of the Rhode Island General Assembly. A quasi-municipal utility, Pascoag provides Electricity and Water on a “not for profit” basis. The Pascoag Utility District – Water Division (Pascoag Water or PW) provides service to approximately 1,200 water connections (meters) and hydrants.

PW is operated as an independent enterprise fund. Revenues are generated from user rates and other charges in amounts adequate to cover all of the costs of operating the PW storage, pumping, and transmission and distribution systems. The Water Division manages daily operations as well as financial aspects of the Division.

PW currently charges customers a fixed monthly meter charge dependent of size, a consumption charge for water use and a purchase water surcharge to reflect the wholesale cost increases in purchased water. Also, there are a number of miscellaneous service fees that are charged to customers at cost.

In addition to providing water for public consumption, PW provides water for public fire protection. PW however charges not the municipality but rather the water ratepayers. PW currently charges customers a fixed monthly fire protection dependent of size.

Harrisville wholesale water sales to Pascoag

Harrisville is under court order to provide Pascoag “a supply of water adequate to meet Defendant/Third Party Plaintiff Pascoag Utility District’s needs”. The court further ordered that “just compensation for all water delivered” to Pascoag “shall be paid by” Pascoag to Harrisville. This need arose due to an incident involving groundwater contamination of Pascoag’s wells. A test of the groundwater conducted on September 14,

2001, showed that the water contained the ether MTBE (methyl tertiary-butyl ether) at levels of over 350 ppb. MTBE is a gasoline additive intended to enhance octane levels. It is believed to have come from leaking tanks at a local Exxon Mobil gas station. Bacon & Edge PC had developed a rate model and calculated the wholesale rate for the proposed rate year in order to determine compensation in accordance with generally accepted ratemaking guidelines.

That rate study had allocated cost on a prorata basis to Harrisville and Pascoag for supply and transmission costs based on each Harrisville's retail water sales consumption and Pascoag's water purchase consumption. This is not say that PW is allocated on a retail basis since PW is not allocated any distribution costs. Furthermore, unaccounted for water, due to line loss, is not allocated to the wholesale rate as well in accordance with generally accepted ratemaking guidelines. Although costs have been reasonably controlled by Pascoag, the purchase water cost now represents nearly a third of all the expenses.

The solution to Pascoag's need for rate relief came during 2012 due to a settlement with Exxon Mobil. Pascoag had used some its money to provide rate stabilization however using settlement money in this manner is only a short term fix. As a long term solution, Pascoag has been engaged in water exploration for several years and in 2014 had started drilling and developing new wells to provide service at a lower overall cost to their ratepayers. This situation however creates a dilemma for Harrisville since many of the costs for Harrisville are fixed (not subject to fluctuations in water production). The loss of the sales to Pascoag would drive Harrisville's retail rates higher.

The possible solution to both Pascoag and Harrisville may very well be a consolidation of the two water systems into one entity. As a result B&E Consulting, LLC was hired to conduct a study to provide a consolidated rate for the potential of a merged water system between the Harrisville Fire District and the Pascoag Utility District.

Scope of the Current Engagement and Assumptions Used:

The scope of the engagement is as follows:

1. Prepare a review of each utility current financials and make any necessary, normalizing adjustments, rate making adjustments and or reclassification. This study will also include a detailed review of each system's water sale consumption so a unified rate structure could be designed and calculated.
2. B&E will prepare a pro-forma revenue requirement for both utilities and combine them to help calculate a unified rate. B&E will be assuming the combined system of the Water Departments of both Harrisville Fire District and Pascoag Utility District will be an unregulated utility within the State of Rhode Island; therefore the combined water system will still have much more flexibility than the six regulated water utilities within the State. The pro-forma revenue requirement can be determined in such a way as to provide insurance for unexpected items and contingencies.
3. B&E will not be performing a management review as part of the engagement. Also, this Pro-forma will assume that all salary positions will be maintained and that the expenses for both the HW and PW, aside for things like needing only one department of health license, will be maintained. Any cost savings in the operation will be provided by both HW and PW management.
4. B&E will provide a cost allocation study for each utility as a "standalone" entity and as a combined entity. Under the stand alone scenario Harrisville will be assumed as having zero water sales to Pascoag. Pascoag will assume the same but have some additional costs due to the operation of its new potential wells. The cost allocation will furthermore be used to calculate new rates.
5. Both Standalone scenarios will utilize the budget 2024 expenditures and revenues will be estimated with current usage patterns. The standalone for Pascoag will assume additional costs of debt service in the amount of \$160,000 and \$80,000 in additional O&M costs for Clear River and Columbus Club properties coming online. These costs will not be included in the combined entity. Both the standalone for Harrisville and the combined entity will include debt service in the amount of \$70,000 for line repairs for the line to the dam.
6. The combined entity will use the 4 block water sales rate blocks of Pascoag rather than the 3 block water sales rate block of Harrisville. The combined entity will also assume the Harrisville will recover fire rates thru a separate customer service charge rather than a hydrant charge.
7. Prepare a written report showing all findings, comments and recommendations.

All of the above tasks were completed and the report that follows will provide B&E's findings, comments and recommendations.

A Summary of the findings:

A summary of B&E recommended rates along with a summary of the impact on various sizes of users is attached to this section for each utility (please see schedules ES-1, ES-2 & ES-3). Schedule ES-1 displays the summary of revenues and expenditures based on the various scenarios. Schedule ES-2 displays the ratepayer impact on the average 14,992 gallon per year user, 44,976 gallon per year user, 299,300 gallon per year user, 897,720 gallon per year user, 8,977,200 gallon per year user, and 14,363,520 gallon per year user. Each schedule shows that both Pascoag and Harrisville would benefit from a reduction in rates by combining rather than separating completely. With regards to separating Harrisville's ratepayers would see 46% to 74% increase in their rates while Pascoag's ratepayers would see a 0% to 16% decrease in rates. In addition, I have calculated that while even though separating, Harrisville's ratepayers with lower consumption would see a decline in rates by adopting a block rate structure like Pascoag. Schedule ES-3 displays the projected rates for the combined entity.

B&E cannot make an overall recommendation whether Harrisville and Pascoag should consolidate because that is beyond the scope of this engagement. The scope of this engagement was to prepare a pro-forma revenue requirement for both utilities and combine them to help calculate a unified rate. B&E can state however that based upon the calculated unified rate for combined system of the Water Departments of **both the Harrisville Fire District and the Pascoag Utility District ratepayers would see a benefit in their rates by consolidating** vs each water company as a "standalone" entity. (Please see schedules ES-1, ES-2 & ES-3).

B&E would like to take this opportunity to thank management and staff of both Harrisville and Pascoag for the excellent assistance they provided during this engagement. Their knowledge of the system and candid feedback were crucial to B&E in designing the rate model.

Summary of Revenues and Expenditures by Scenario
Combined HFD & PUD - Water Divisions

| | Harrisville Current | Harrisville stand alone | Combined | Pascoag Stand Alone | Pascoag Current |
|---|------------------------|----------------------------|--------------|------------------------|--------------------|
| Revenue Breakdown | | | | | |
| Retail Water Sales | \$ 511,468 | \$ 908,902 | \$ 1,319,667 | \$ 651,880 | \$ 418,401 |
| Wholesale Rates/Surcharge | \$ 346,456 | \$ - | \$ - | \$ - | \$ 346,744 |
| Customer Service | \$ 89,730 | \$ 100,199 | \$ 274,655 | \$ 172,729 | \$ 172,729 |
| Fire Rates | \$ 39,150 | \$ 47,700 | \$ 78,815 | \$ 30,386 | \$ 30,386 |
| Total General Rate Revenue | \$ 986,804 | \$ 1,056,800 | \$ 1,673,137 | \$ 854,995 | \$ 968,260 |
| Restricted Revenue (infrastructure) | \$ - | \$ - | \$ 117,673 | \$ 117,673 | \$ 117,673 |
| Misc. Revenue | \$ 36,419 | \$ 36,419 | \$ 292,519 | \$ 256,100 | \$ 256,100 |
| Total Revenue | \$ 1,023,223 | \$ 1,093,219 | \$ 2,083,329 | \$ 1,228,768 | \$ 1,342,033 |
| Expense Breakdown | | | | | |
| PERSONNEL SERVICES | \$ 408,250 | \$ 408,250 | \$ 766,105 | \$ 357,855 | \$ 357,855 |
| OTHER O&M EXPENSES | \$ 394,300 | \$ 394,300 | \$ 677,253 | \$ 362,953 | \$ 282,723 |
| DEBT SERVICE | \$ 165,668 | \$ 235,668 | \$ 368,703 | \$ 293,265 | \$ 133,265 |
| CAPITAL & RESERVE EXPENDITURES | \$ 55,000 | \$ 55,000 | \$ 155,500 | \$ 100,500 | \$ 100,500 |
| Total Expense before IFR and Water Purchase | \$ 1,023,218 | \$ 1,093,218 | \$ 1,967,561 | \$ 1,114,573 | \$ 874,343 |
| Restricted Expenditure (infrastructure) | \$ - | \$ - | \$ 117,673 | \$ 117,673 | \$ 117,673 |
| Purchase Water | \$ - | \$ - | \$ - | \$ - | \$ 346,744 |
| Total Expenses | \$ 1,023,218 | \$ 1,093,218 | \$ 2,085,234 | \$ 1,232,246 | \$ 1,338,760 |
| | | | | | |
| Total Expense before IFR and Water Purchase | \$ 1,023,218 | \$ 1,093,218 | \$ 1,967,561 | \$ 1,114,573 | \$ 874,343 |
| Misc. Revenue | \$ (36,419) | \$ (36,419) | \$ (292,519) | \$ (256,100) | \$ (256,100) |
| Net Revenue Requirement from General Rates | \$ 986,799 | \$ 1,056,799 | \$ 1,675,042 | \$ 858,473 | \$ 618,243 |

Impact of Proposed Rates
Combined HFD & PUD - Water Divisions

| | | | | Monthly Impact | | | | |
|--|------------|------------------------|-----------------------|----------------------------------|--------------------------------------|--------------------|----------------------------------|------------------------------|
| | | Usage / Year | Usage Per Month | Harrisville Current Impact | Harrisville stand alone Impact | Combined Impact | Pascoag Stand Alone Impact | Pascoag Current Impact |
| Typical Monthly Bill for Ratepayers with the follow parameters | | | | | | | | |
| 5/8 | Inch Meter | 14,992 gallons/yr. | 1,249 gallons/mo. | \$ 11.12 | \$ 16.18 | \$ 15.65 | \$ 20.11 | \$ 23.94 |
| 5/8 | Inch Meter | 44,976 gallons/yr. | 3,748 gallons/mo. | \$ 21.37 | \$ 35.15 | \$ 31.62 | \$ 41.27 | \$ 46.51 |
| 1 | Inch Meter | 299,300 gallons/yr. | 24,942 gallons/mo. | \$ 136.13 | \$ 235.89 | \$ 232.17 | \$ 299.39 | \$ 300.41 |
| 4 | Inch Meter | 897,720 gallons/yr. | 74,810 gallons/mo. | \$ 434.84 | \$ 754.52 | \$ 827.66 | \$ 1,053.27 | \$ 1,219.39 |
| 4 | Inch Meter | 8,977,200 gallons/yr. | 748,100 gallons/mo. | \$ 4,467.85 | \$ 7,756.74 | \$ 8,202.30 | | |
| 4 | Inch Meter | 14,363,520 gallons/yr. | 1,196,960 gallons/mo. | \$ 7,156.52 | \$ 12,418.18 | \$ 13,118.73 | | |
| Monthly Increase/(Decrease) by going stand alone for Ratepayers with the follow parameters | | | | | | | | |
| 5/8 | Inch Meter | 14,992 gallons/yr. | 1,249 gallons/mo. | | \$ 5.06 46% | | \$ (3.83) -16% | |
| 5/8 | Inch Meter | 44,976 gallons/yr. | 3,748 gallons/mo. | | \$ 13.78 64% | | \$ (5.24) -11% | |
| 1 | Inch Meter | 299,300 gallons/yr. | 24,942 gallons/mo. | | \$ 99.76 73% | | \$ (1.02) 0% | |
| 4 | Inch Meter | 897,720 gallons/yr. | 74,810 gallons/mo. | | \$ 319.68 74% | | \$ (166.12) -14% | |
| 4 | Inch Meter | 8,977,200 gallons/yr. | 748,100 gallons/mo. | | \$ 3,288.89 74% | | | |
| 4 | Inch Meter | 14,363,520 gallons/yr. | 1,196,960 gallons/mo. | | \$ 5,261.66 74% | | | |
| Benefit of Merger vs Stand Alone Monthly Increase/(Decrease) by going stand alone for Ratepayers with the follow parameters | | | | | | | | |
| 5/8 | Inch Meter | 14,992 gallons/yr. | 1,249 gallons/mo. | | \$ (0.53) -3% | | \$ (4.46) -22% | |
| 5/8 | Inch Meter | 44,976 gallons/yr. | 3,748 gallons/mo. | | \$ (3.53) -10% | | \$ (9.65) -23% | |
| 1 | Inch Meter | 299,300 gallons/yr. | 24,942 gallons/mo. | | \$ (3.72) -2% | | \$ (67.22) -22% | |
| 4 | Inch Meter | 897,720 gallons/yr. | 74,810 gallons/mo. | | \$ 73.14 10% | | \$ (225.61) -21% | |
| 4 | Inch Meter | 8,977,200 gallons/yr. | 748,100 gallons/mo. | | \$ 445.56 6% | | | |
| 4 | Inch Meter | 14,363,520 gallons/yr. | 1,196,960 gallons/mo. | | \$ 700.55 6% | | | |

Rates and Revenue Proof
Combined HFD & PUD - Water Divisions

| | | Count or Usage | Proposed Rate | Proposed Revenue |
|--|-----------------|----------------|---------------|----------------------|
| Minimum Service Charge | | | | |
| Customer Service Charge All Ratepayers (Monthly Rate) | | | | |
| 5/8 | Inch | 2,178 | \$ 9.00 | \$ 235,317 |
| 3/4 | Inch | 6 | \$ 10.65 | \$ 767 |
| 1 | Inch | 136 | \$ 11.97 | \$ 19,534 |
| 1 1/4 | Inch | 13 | \$ 14.72 | \$ 2,296 |
| 1 1/2 | Inch | 4 | \$ 17.85 | \$ 857 |
| 2 | Inch | 26 | \$ 22.99 | \$ 7,173 |
| 3 | Inch | 12 | \$ 29.74 | \$ 4,283 |
| 4 | Inch | 7 | \$ 42.56 | \$ 3,575 |
| 6 | Inch | 1 | \$ 71.21 | \$ 855 |
| | | <u>2,383</u> | | <u>\$ 274,655</u> |
| Hydrant Charge All Ratepayers (Monthly Rate) | | | | |
| 5/8 | Inch | 2,178 | \$ 2.39 | \$ 62,442 |
| 3/4 | Inch | 6 | \$ 3.39 | \$ 244 |
| 1 | Inch | 136 | \$ 4.20 | \$ 6,854 |
| 1 1/4 | Inch | 13 | \$ 5.88 | \$ 917 |
| 1 1/2 | Inch | 4 | \$ 7.79 | \$ 374 |
| 2 | Inch | 26 | \$ 10.93 | \$ 3,410 |
| 3 | Inch | 12 | \$ 15.05 | \$ 2,167 |
| 4 | Inch | 7 | \$ 22.88 | \$ 1,922 |
| 6 | Inch | 1 | \$ 40.38 | \$ 485 |
| | | <u>2,383</u> | | <u>\$ 78,815</u> |
| | | | | <u>\$ 353,470</u> |
| Metered Rates | | | | |
| | Monthly Gallons | | | |
| 1st Block | 0-1247 | 29,331,670 | \$ 0.00275 | \$ 80,662 |
| 2nd Block | 1248-3740 | 49,641,892 | \$ 0.00572 | \$ 283,952 |
| 3rd Block | 3741-24937 | 40,069,611 | \$ 0.00858 | \$ 343,797 |
| 4th Block | 24938+ | 56,092,599 | \$ 0.01030 | \$ 577,529 |
| 4th Block CC | 24938+ | 3,930,860 | \$ 0.00858 | \$ 33,727 |
| Retail | | 179,066,633 | | \$ 1,319,667 |
| Total Rates and Charges | | | | \$ 1,673,137 |
| Restricted Revenue (infrastructure) | all gallons | 179,066,633 | \$ 0.0007 | \$ 117,673 |
| surcharge | all gallons | 179,066,633 | \$ - | \$ - |
| Misc Revenue | | | | <u>\$ 292,519</u> |
| Total Revenue | | | | \$ 2,083,329 |
| Total Revenue Required | | | | 2,085,233 |
| Variance | | | | \$ (1,904) -0.09% |