

STATE OF RHODE ISLAND
AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

DIRECT
TESTIMONY
of
MICHAEL R. MAKER
NEWGEN STRATEGIES AND SOLUTIONS, LLC
ON BEHALF OF
THE BRISTOL COUNTY WATER AUTHORITY

IN RE:
PROVIDENCE WATER SUPPLY BOARD
DOCKET 4994

MAY 11, 2020

1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Michael R. Maker. My business address is 911-A Commerce Road,
4 Annapolis, Maryland 21401.
5

6 **Q. By whom are you employed and in what capacity?**

7 A. I am an Executive Consultant with NewGen Strategies and Solutions, LLC (“NewGen”),
8 an economic and management consulting firm that focuses on municipal utilities,
9 especially water, wastewater, solid waste and stormwater.
10

11 **Prior Experience**

12 **Q. Please describe your qualifications and experience.**

13 A. I have a Bachelor of Arts degree in Economics from the University of Rochester in
14 Rochester, New York and a Master of Business Administration degree in Finance from
15 Loyola University in Baltimore, Maryland. After graduating from the University of
16 Rochester in 2003, I was employed by the Municipal & Financial Services Group, LLC
17 (“MFSG”), a financial and management consulting firm specializing in water and
18 wastewater rate studies. I worked for MFSG until the firm merged with NewGen in
19 July 2019. I also earned my MBA (graduating with honors as a member of the Beta
20 Gamma Sigma Honor Society in 2012) from Loyola University on a part-time basis
21 while working at MFSG. Over my 16+ year career, I have developed more than 120
22 cost of service and rate study models on both cash flow and utility bases involving
23 rate and fee design, performed organizational and staffing reviews and conducted
24 benchmarking and customer impact analyses for water, wastewater, stormwater and
25 solid waste utilities. My resume is attached hereto as Exhibit 1.
26
27

1 **Q. Do you belong to any professional organizations or committees?**

2 A. Yes, I am a member of the American Water Works Association (AWWA), the
3 Chesapeake chapter of the American Water Works Association (CSAWWA), the
4 Virginia chapter of the American Water Works Association (VA AWWA), the Water
5 Environment Federation (WEF) and the Government Finance Officers Association
6 (GFOA). I am a current member of AWWA's Finance, Accounting and Management
7 Controls (FAMC) Committee and AWWA's Workforce Strategies Committee (as well
8 as a member of the Committee's Veterans Affairs subcommittee). I have also
9 presented papers at various conferences, including the AWWA Annual Conference &
10 Exposition (ACE), the Chesapeake Chapter of AWWA's Tri-Association Conference
11 (Tri-Con), the Water Asset Management Conference, the Maryland GFOA Conference,
12 the New York State GFOA Conference, the Long Island Water Conference and the
13 Virginia Lakes and Watersheds Association. I am also a contributing author and editor
14 for the upcoming 5th edition of AWWA's Manual M-29, *Water Utility Capital*
15 *Financing*.

16
17 **II. SUMMARY**

18 **Q. On whose behalf are you testifying?**

19 A. I am testifying on behalf of the Bristol County Water Authority ("BCWA") regarding
20 the December 2, 2019 rate filing submitted to the Rhode Island Public Utilities
21 Commission ("Commission") by the Providence Water Supply Board ("Providence") in
22 Docket 4994.

23
24 **Q. What is the purpose of your testimony in this case?**

25 A. The purpose of my testimony is to provide my opinion of, and suggested
26 amendments to, the rate study developed by Harold Smith of Raftelis Financial
27 Consultants, Inc. for the Providence Water Supply Board and to recommend changes

1 to Providence's cost of service allocations to its wholesale customers. My testimony
2 will primarily focus on issues with the methodology, assumptions and reasonable
3 level of detailed analysis used in various cost of service and rate design schedules as
4 developed by Providence's witness Harold Smith, and the impact of these issues on
5 the proposed wholesale rates for BCWA and other wholesale customers. I will also
6 address certain revenue requirement issues.

7
8 **Q. Please summarize your recommendations.**

9 A. In 2017, the Commission ordered Providence to complete a cost of service study in its
10 next general rate filing. On December 2, 2019, Providence filed a general rate filing
11 that contained a cost of service study prepared by Mr. Smith. As the Commission
12 knows, a cost of service study is used to develop rates and charges to recover costs
13 from specific customers in relation to the way each customer demands service.
14 However, Providence's cost of service study does not accomplish this goal when it
15 comes to the individual wholesale customers. Rather, Providence's cost of service
16 study sets forth a single wholesale rate for all seven wholesale customers. In doing
17 so, Providence's cost of service study does not recover costs from each wholesale
18 customer in relation to the way each customer demands service. This single
19 wholesale rate also runs contrary to ratemaking principles set forth in the American
20 Water Works Associations' Manual M-1, *Principles of Water Rates, Fees, and Charges*
21 (7th Edition).

22
23 **Q. What are your overall recommendations?**

24 A. My recommendations are to amend and revise certain cost of service and rate design
25 schedules submitted by Mr. Smith (HJS-16a, 16c, 17, 18, 19 and 22) so that separate
26 rates are developed for each wholesale customer, as recommended by AWWA's M1
27 Manual. I have also addressed several revenue requirement issues.

1 **Q. How is your testimony organized?**

2 A. My testimony is organized to address the following topics:

- 3 • Cost of service issues, which include the following:
 - 4 ▪ General ratemaking principles and the specific reasons individual rates
 - 5 should be developed for each wholesale customer in this Docket.
 - 6 ▪ The use of individual peaking factors for each wholesale customer in
 - 7 developing each wholesale customers' rates.
 - 8 ▪ Allocation of pumping costs.
 - 9 ▪ Allocation of unidirectional flushing costs.
 - 10 ▪ Allocation of transmission and distribution labor costs.
 - 11 ▪ Allocation of Capital Fund, IFR Fund and Vehicle/Equipment Fund
 - 12 expenses.
- 13 • Revenue Requirement Issues related to:
 - 14 ▪ Providence's restricted accounts.
 - 15 ▪ Miscellaneous revenue.
 - 16 ▪ Rate case expense.
 - 17 ▪ City services.
 - 18 ▪ RECs.
 - 19 ▪ Chemical expense.
 - 20 ▪ Inflation adjustments.

21
22 **III. COST OF SERVICE ISSUES**

23 **Ratemaking Principles and Individual Wholesale Rates**

24 **Q. Can you briefly explain the purpose of a cost of service study?**

25 A. Yes. As set forth above, a cost of service study is used to determine what cost
26 differences exist between serving various customers and to develop rates and

1 charges to recover costs from specific customers in relation to the way each
2 customer demands service or causes the utility to incur costs.

3
4 **Q. Why is this important?**

5 A. Because a utility should charge fair and equitable rates to its customers that are
6 based on, and proportionate to, the costs incurred to serve different customers.

7
8 **Q. What methodology did Mr. Smith use in his cost of service study?**

9 A. As set forth in his testimony, he used the Base-Extra Capacity Method as outlined in
10 the AWWA M-1 Manual. As he stated in his direct testimony:

11 “Under this approach, costs are primarily allocated on peak demand, both on a
12 maximum day and maximum hour basis...The Base Extra-Capacity Method assigns
13 costs to users in proportion to both their average day demands and their extra
14 capacity demands. For example, costs which are incurred to provide maximum day
15 service are allocated to users in proportion to their maximum day usage above and
16 beyond their average day usage. This approach recovers extra capacity costs from
17 customers whose extra capacity demands drive the need for a large water system.”
18 (Harold Smith Direct, p. 14 -15)

19
20 **Q. Does Mr. Smith’s cost of service model follow these principles with respect to**
21 **individual wholesale customers?**

22 A. No. Mr. Smith did not use the individual peaking factors for each wholesale customer.
23 Rather, he used an average for the entire group.

24
25 **Q. Does using individual peaking factors for each wholesale customer result in**
26 **different rates for each wholesale customer?**

27 A. Yes, it does.
28
29

1 **Q. Is it acceptable under general ratemaking principles for individual wholesale**
2 **customers to pay different rates?**

3 A. Yes, each of Providence's wholesale customers should be treated individually
4 because each has different usage and peaking characteristics, like that of a retail
5 customer class (e.g., residential, commercial, industrial). In fact, each wholesale
6 customer is a group of customer classes; that is, each wholesale customer is
7 composed of a mixture of its own residential, commercial and industrial customers.

8
9 **Q. In addition to these general ratemaking principles, are there more specific reasons**
10 **why separate rates should be developed for each wholesale customer in this**
11 **Docket?**

12 A. Yes, there are several reasons Providence should have developed separate rates for
13 its wholesale customers that are more specific to this Docket. Chief among these are:

- 14 • The Commission ordered Providence to complete a cost of service study in
15 this Docket without applying previously used allocators.
- 16 • Providence has previously acknowledged that prior wholesale rates did not
17 reflect the true cost associated with providing wholesale service.
- 18 • Providence has the necessary information to calculate separate rates for each
19 wholesale customer.
- 20 • If the proper cost of service rates for individual wholesale customers are not
21 calculated now, the BCWA will pay higher rates than it should for many years
22 because Providence has requested a multi-year increase in this Docket.
- 23 • The calculation of separate wholesale rates is consistent with the AWWA's
24 Manual M-1, *Principles of Water Rates, Fees, and Charges* (7th Edition)

- Providence’s consultant, Harold Smith, has prepared cost of service studies for Newport Water, which is regulated by the Commission, that charge separate rates for wholesale customers.

Q. Can you provide some background on the Commission’s order that Providence complete a cost of service study in this Docket?

A. In Providence’s last rate filing (Docket 4618), the Commission ordered Providence to “complete and submit a new cost of service study conducted without reference to previously used Commission allocators.” Yet, Providence submitted a cost of service study that charges a “single wholesale rate to be consistent with prior rate filings and Commission approvals.” (See Providence Response to DIV. 4-5).

Q. Were the wholesale rates set by Providence in “prior rate filings” based on the cost of providing wholesale service?

A. No. They were not. In 2007, Mr. Smith acknowledged in his Docket 3832 testimony that:
“The disparity between the increases to wholesale rates and retail rates is most likely due to the fact that the wholesale rate increases that were agreed to by the parties to Providence Water’s recent abbreviated filings were not based on a complete cost of service study and did not reflect the true cost associated with providing wholesale service.” (See Exhibit 2, Harold Smith Direct Testimony, Docket 3832, p. 8-9)

Q. Does Providence have the peaking data necessary to calculate individual wholesale rates?

A. Yes. In fact, Providence has had this information since at least 2013. In Docket 4406, Mr. Smith and Providence acknowledged that it had the “data needed to allocate extra capacity costs to wholesale customers based on their relative contributions to peak demand.” (See Exhibit 3, Docket 4406, Providence Response to BCWA 1-26)

1 **Q. Has Providence addressed this issue in this Docket?**

2 A. Providence has stated that it is “open to studying separate wholesale rates if the
3 Division and Commission believe this is an appropriate course of action. Providence
4 suggests, if the Division and Commission believe Providence should explore the
5 matter, then evaluating the desirability of individual wholesale rates could be part of
6 Providence’s next full rate filing”. (See Providence Response to Div. 4-5) It is the
7 BCWA’s position that Providence should implement different rates for each of its
8 wholesale customers **now in *this*** Docket. Providence proposes a multi-year rate
9 increase with increases over three fiscal years. Thus, it could be quite some time
10 before Providence’s next rate filing and could leave rates in place for wholesale
11 customers that are not based on the cost of service.

12
13 It is the BCWA’s position that Providence should have submitted a cost of service
14 study that contained separate rates for wholesale customers in conformance with the
15 Commission’s Docket 4618 order. (See also Testimony of Pamela Marchand)
16 Furthermore, and as examined in detail below, Providence has the necessary data to
17 calculate these rates and can do so without changing Mr. Smith’s model.

18
19 **Q. Is calculating different rates for Providence’s different wholesale customers**
20 **consistent with generally accepted ratemaking principles?**

21 A. Yes, setting different rates for different wholesale customers based on their
22 individual and unique service characteristics is consistent with the AWWA’s Manual
23 M-1, *Principles of Water Rates, Fees, and Charges* (7th Edition), which states, in part,
24 that “policy objectives or differences in service characteristics...may necessitate
25 further disaggregation...across multiple wholesale customers (e.g., wholesale
26 customer A, wholesale customer B)”. (See Chapter VI.1 (*Overview of Outside*
27 *Customer Rates*))

1 Furthermore, in Docket 4618, Mr. Smith and Providence recognized that the standard
2 base/extra capacity approach allocates certain costs to the wholesale customers
3 based on their peaking characteristics.

4
5 “It is important to note that the use of the standard approach would dictate the need
6 for separate and different rates for each wholesale customer since it is likely the
7 peaking characteristics of each individual wholesale customer are different than the
8 peaking characteristics of the class as a whole.” (See Exhibit 4, Docket 4618,
9 Providence Response to Division 4-5)
10

11 **Q. Is the setting of different rates for individual wholesale customers consistent with**
12 **cost of service studies prepared by Mr. Smith for other regulated water utilities in**
13 **Rhode Island?**

14 A. Yes. Setting different rates for different wholesale customers is consistent with cost
15 of service studies prepared by Mr. Smith for the City of Newport, Utilities
16 Department, Water Division (“Newport Water”). As referenced on page two of Mr.
17 Smith’s resume, he cites his work for Newport Water in which “RFC calculated retail
18 rates for the City’s retail customer and wholesale rates for the City’s two wholesale
19 customers, the Portsmouth Water and Fire District (PWFD) and the U.S. Navy.”(See
20 Providence Response to Div. 2-10)
21

22 **Individual Peaking Factors For Wholesale Customers**

23 **Q. Are individual peaking factors readily available for each of Providence’s wholesale**
24 **customers?**

25 A. Yes. In response to DIV. 2-2 and 2-7, Providence provided an Excel Spreadsheet
26 labeled “DIV 2-2 and 2-7 Wholesale Dmd and Class Demand Factors.” This
27 spreadsheet provides peaking factors (average day, maximum day and maximum

hour) for each of Providence's wholesale customers. These characteristics are vastly different for each wholesale customer.

Q. Did you determine what the rates should be for each wholesale customer using these factors?

A. Yes. Without changing the methodology employed by Mr. Smith in his model, I simply put in the peaking factors set forth in "DIV 2-2 and 2-7 Wholesale Dmd and Class Demand Factors" for each wholesale customer (as opposed to using the average for the entire group) for each of the following schedules, which are attached to my testimony as Exhibit 5:

- Schedule HJS-16a: Customer Class Units of Service (Amended by Michael R. Maker) – This schedule includes base demand, maximum day extra capacity, maximum hour extra capacity and billing units of service. Maximum day and maximum hour peaking factors were entered for each of the individual wholesale customers and wholesale totals were recalculated. I also allocated the non-revenue water total amount for wholesale to the individual wholesale customers based on the percent allocation of total wholesale usage.
- Schedule HJS-16c: Customer Class Units of Service (Amended by Michael R. Maker) – The base demand, extra capacity (maximum day and maximum hour) and billing units of service for the individual wholesale customers were linked from Schedule HJS-16a Customer Class Units of Service (Amended by Michael R. Maker).
- Schedule HJS-17: Unit Cost of Service (Amended by Michael R. Maker) – The common to all (base, max day and max hour) units of service for the individual wholesale customers were linked from Schedule HJS-16c: Customer Class Units of Service (Amended by Michael R. Maker).

- Schedule HJS-18: Customer Class Cost of Service (Amended by Michael R. Maker) – The common to all (base, max day and max hour) units of service for the individual wholesale customers were linked from Schedule HJS-16c: Customer Class Units of Service (Amended by Michael R. Maker), and individual wholesale customer unit costs were calculated.

Q. Did your amendments to the schedules referenced above result in different wholesale rates?

A. Yes. Again, without changing the methodology employed by Mr. Smith in his model, I linked the peaking factors for each wholesale customer (as opposed to using the average for the entire group), which resulted in the following amended schedules attached to my testimony:

- Schedule HJS-19: Development of Volumetric Rates (Amended By Michael R. Maker) – The unit costs for the individual wholesale customers were linked from Schedule HJS-17 and the units for the individual wholesale customers were linked from Schedule HJS-16c resulting in the calculation of individual wholesale customer costs of service.
- Schedule HJS-22 (proposed rates) – The rates for each wholesale customer were linked from Schedule HJS-19.

As a result of putting in the peaking factors for each wholesale customer, each customer will now pay different rates, and the proposed revenue increase for the entire wholesale group for FY 2021 is now 24.24% (as opposed to 20.67% as previously calculated, an increase of \$548,000). Even though I did not directly change the allocation between “Common to All” and “Retail Only”, changing the peaking factors for wholesale customers affects the demand factors (ccf/day) and therefore also changes the allocation between All and Retail. The effect appears to be slightly

1 lower increases for residential and commercial retail customers and a slightly larger
2 increase for industrial retail customers in FY 2021 (compared with those previously
3 calculated).

4
5 **Q. Why is it important to use the individual peaking factors?**

6 A. In addition to the reasons previously discussed above, it is important because if the
7 rates charged to individual wholesale customers are not recovered in relation to the
8 way each customer demands service, then certain wholesale customers will subsidize
9 other wholesale customers.

10
11 **Pumping Costs**

12 **Q. Do you believe Providence should assign pumping costs to the BCWA?**

13 A. No. The BCWA's connection is gravity fed, while other wholesale customers require
14 the use of pumps. As set forth in Providence's response to Div. 4-5:

15
16 "The Greenville Water District, Lincoln Water Commission, and Smithfield Water
17 District are all served by the High Service Area which requires the use of pumps and
18 an increase in operation and maintenance costs. The high service system is
19 comprised of the Neutaconkanut Pumping Station, Bath Street Pumping Station, and
20 Longview Storage Reservoir.

21
22 The Bristol County Water Authority, East Providence Water Department, Warwick
23 Water Department, and Kent County Water Authority are all served by the Low
24 Service system that is fed by gravity. The low service system is comprised of the
25 Aqueduct Storage Reservoir, and Neutaconkanut Storage Reservoir."

26
27 **Q. Do you have an estimate as to what the effect would be on rates if Providence did
28 not assign pumping costs to the BCWA?**

29 A. Yes. As a result of not assigning pumping costs to the BCWA, the BCWA's rate
30 decreases slightly and other customer rates increase slightly. See Schedules HJS-17
31 (Amended By Michael R. Maker, V.2), HJS-18 (Amended By Michael R. Maker, V.2),

HJS-19 (Amended By Michael R. Maker, V.2) and HJS-22(Amended By Michael R. Maker, V.2) attached to my testimony as Exhibit 6.

Unidirectional Flushing Costs

Q. Do you believe Providence should assign unidirectional flushing costs to the BCWA?

A. No. According to Providence's response to Div. 5-1, it allocated unidirectional flushing costs to wholesale customers because it flushes all mains in the system that are 12 inches and below and some wholesale customers are fed by 8 inch and 12 inch mains. BCWA is not one of these customers and should not be allocated any of these costs.

Q. Do you have an estimate as to what the effect would be on rates if Providence did not assign unidirectional flushing costs to the BCWA?

A. Yes. As a result of not assigning unidirectional costs to the BCWA, the BCWA's rate decreases slightly and other customer rates increase slightly See Schedules HJS-17 (Amended By Michael R. Maker, V.2), HJS-18 (Amended By Michael R. Maker, V.2), HJS-19 (Amended By Michael R. Maker, V.2) and HJS-22 (Amended By Michael R. Maker, V.2) attached to my testimony as Exhibit 6.

Allocation of Transmission and Distribution Labor Costs

Q. Does the BCWA have any concerns about the allocation of transmission and distribution labor costs?

A. Yes. These concerns are addressed in Ms. Marchand's testimony, and the BCWA is waiting for responses to discovery requests. As such, this may be addressed further in my surrebuttal testimony.

Capital Fund, IFR Fund, and Vehicle/Equipment Fund

Q. Do you have any concerns regarding the allocation of expenses related to the Capital Fund, IFR Fund, and Vehicle/Equipment Fund?

A. Yes. In Schedule HJS-14a, Providence allocates the Capital Fund, IFR Fund, and Vehicle/Equipment Fund expenses using “Net Plant In Service” (“Factor 21 - As Total Plant Excl. Land, COF”). This factor allocates expenses to Common to All and Retail Only based on the historical book value of assets and not planned capital spending, such as that indicated in the IFR Expenditure Plan (as provided in Exhibit GG-1 of the Direct Testimony of Gregg M. Giasson, PE). The historical capital spending of Providence should have no bearing on its future spending of capital. In fact, basing costs on historical spending allocates more costs to Common to All components as opposed to Retail Only components.

IV. REVENUE REQUIREMENT ISSUES

Q. Have you reviewed any revenue requirement issues in this Docket?

A. It is my understanding that the witnesses for the Division of Public Utilities and Carriers (“Division”) typically address revenue requirement issues as the ratepayer advocate, and the BCWA will review the Division’s testimony on these matters. That being said, there are some issues that I will address generally in my direct testimony.

Providence’s Restricted Accounts

Q. In Docket 4618, the BCWA argued that Providence should use funds in its restricted accounts to offset rates. Does the BCWA believe this is an issue the Commission should examine in this Docket as well?

A. Yes. It is my understanding that in Docket 4618, the Division’s expert maintained that funds in some of Providence’s restricted accounts should be used to offset the

1 proposed rate increase, and the BCWA agreed. It is further my understanding that
2 the BCWA made recommendations in this regard in addition to those made by the
3 Division. In this Docket, the BCWA again urges the Commission to examine the
4 balances in Providence's restricted accounts.

5
6 **Q. Can you provide some background on Providence's restricted accounts?**

7 A. Yes. Providence has 10 restricted accounts:

- 8 1. Capital
- 9 2. Western Cranston
- 10 3. IFR Replacement
- 11 4. AMR/Meter
- 12 5. Equipment/Vehicle Replacement
- 13 6. Insurance
- 14 7. Chemicals/Sludge
- 15 8. Property Tax Refund
- 16 9. Private Side Lead Service Replacement
- 17 10. Revenue Reserve

18
19 Based on Mr. Smith's Schedules HJS-10a through HJS-10j, Providence had combined
20 balances of \$20,240,261 in its restricted accounts at the end of FY 2019.

21
22 **Q. Are there any specific accounts you think the Commission should examine?**

23 A. Yes. Providence's restricted IFR Fund and Insurance Fund.

24
25 **Q. What issues do you think the Commission should examine regarding the IFR Fund?**

26 A. Providence's original filing showed that the IFR Fund had a balance of \$8,312,576 at
27 the end of FY 2019. (See Schedule HJS-10c) This schedule also reflected Providence's

1 request for \$12 million of additional funding over the next three years (\$2 million in
2 FY 2021, \$4 million in FY 2022 and \$6 million in FY 2023). With this additional funding,
3 Providence estimated it would have a balance of \$6,634,750 at the end of FY 2023.

4
5 In Providence's response Division 6-16d, it submitted a revised Schedule HJS-10c,
6 which shows a balance of \$9,702,126 at the end of FY 2019. This revised schedule
7 shows the same proposed funding amounts as the original schedule for each of the
8 next three years (\$2 million in FY 2021, \$4 million in FY 2022 and \$6 million in FY
9 2023). However, it shows different amounts for future debt service and cash funded
10 capital. At the end of FY 2019, the revised schedule shows a balance of \$5,003,351.

11
12 There are two issues the Commission should examine regarding this account.

13
14 First, the requested funding levels leave Providence with a \$5 to \$6.6 million balance
15 at the end of three years (FY 2023). However, this assumes Providence actually
16 spends the amount it forecasts on Cash Funded Projects for FY 2020, 2021, 2022 and
17 2023. According to the original Schedule HJS-10c, Providence projected spending
18 \$92,513,095 on Cash Funded Projects from FY 2020 to FY 2023 (\$28,308,095 in FY
19 2020; \$11,185,000 in FY 2021; \$35,065,000 in FY 2022; and \$17,955,000 in FY 2023).
20 According to the revised schedule, Providence now anticipates spending \$94,381,552
21 on Cash Funded Projects from FY 2020 to FY 2023 (\$29,113,852 in FY 2020;
22 \$12,709,208 in FY 2021; \$34,834,246 in FY 2022; and \$17,724,246 in FY 2023) As set
23 forth in response to BCWA 2-14, Providence does not typically spend the budgeted
24 amounts on projects funded by the IFR Account. In the period from FY 2015 to FY
25 2019, Providence spent \$8,912,702 less than budgeted on projects funded from the
26 IFR Fund. (See Providence response to BCWA 2-14) By way of example, this is an
27 average of \$1,782,540 per year less than budgeted amounts. If this were applied

1 going forward in the four years from FY 2020 to FY 2023, Providence could have
2 \$7,130,160 of additional funds in this account and a balance of \$12,133,511 to
3 \$13,764,910 at the end of FY 2023. Rather than have a balance of this magnitude, the
4 Commission should evaluate whether the increases sought by Providence are
5 necessary.

6
7 Second, even if Providence's spending forecasts over the next three years are
8 accurate, the Commission should examine whether Providence needs a balance of \$5
9 to \$6.6 million in this account.

10
11 **Q. Does the BCWA believe the Commission should also examine Providence's**
12 **restricted Insurance Fund?**

13 A. Yes. Although Providence does not seek an increase in funding for this account, it
14 may be that the annual funding should be decreased. It is my understanding that in
15 Docket 4618, Providence claimed it needed to maintain a balance "in excess of \$2
16 million" in the Insurance Fund. (See Docket 4618, Parrillo Rebuttal, p. 5, ll. 15-23, p.
17 6., ll. 1-11) It is further my understanding that the BCWA questioned whether
18 Providence needed this large of a balance. As set forth in Schedule HJS-10f,
19 Providence's balance will continue to exceed two million dollars through FY 2023, and
20 the future balances set forth in this schedule may be even higher.

21
22 Providence forecasts two expense increases that it has not adequately supported.
23 The first is the increase in the injuries and damages line item from \$85,000 in FY 2020
24 to \$224,654 in FY 2021. When asked to support the FY 2021 expense, Providence
25 provided a document entitled "Claims, Losses and Lawsuits through 2020." (See
26 Providence Responses to BCWA 1-15) This only shows payments of \$57,676 "As of

1 1/31/20”, but it is difficult to tell over what period these payments were made and
2 how many were paid in the Test Year of FY 2019.

3
4 The second is the increase to Program Expense from \$5,000 in FY 2020 to \$255,000 in
5 FY21 and FY22 and then back down to \$5,000 in FY23. Providence seems to indicate
6 that this is the budgeted cost for a property assessment. If it is, then Providence
7 should provide more definitive information and costs once they are known.

8
9 **Miscellaneous Revenue**

10 **Q. Do you have any concerns regarding Providence’s test year adjustment to**
11 **Miscellaneous Revenues?**

12 A. Yes. Schedule HJS-1 shows \$1,693,375 of Miscellaneous Revenue for the Test Year
13 and a downward adjustment of \$328,629 for a rate year amount of \$1,364,746. The
14 BCWA issued data requests to Providence regarding this line item, and it is still a bit
15 unclear what the rate year amount should be for this line item. Providence’s
16 response to BCWA 1-1 a. indicated that the test year amount consisted of the Foster
17 Property Tax Refund (\$291,000) and other miscellaneous revenues of \$1,402,375 that
18 was “spread proportionally based on the values from Docket 4618.” When asked why
19 this was done rather than showing the actual miscellaneous revenues received from
20 each source, Providence responded that “The final actual miscellaneous revenues, by
21 source were not available at the time of filing because Providence Water’s FY 2019
22 audit was not yet completed. These amounts are now available and will be
23 incorporated into Harold Smith’s rebuttal testimony.” (See Providence Response to
24 BCWA 2-1 a.) Thus, it is my understanding that Providence will be increasing the
25 amount of miscellaneous revenue in Mr. Smith’s rebuttal testimony based on
26 Providence’s response to BCWA 1-1 a. Finally, there are some adjustments to
27 miscellaneous revenues in Providence’s attachment to BCWA 1-1 for which there

1 does not seem to be detailed explanations (e.g. Road Restoration, Forest Product
2 Sales, Misc. Revenue Water Lien, etc.).

3
4 **Rate Case Expense**

5 **Q. Do you have a position on Providence's request for rate case expense?**

6 A. Yes. Providence estimates that its rate case costs will be \$311,986, which will be
7 amortized over three years. (See Providence Response to BCWA 1-7) The amount
8 used for amortization should be Providence's actual rate case expense at the
9 conclusion of this Docket.

10
11 **City Services**

12 **Q. Do you have any concerns regarding Providence's request to increase City Services**
13 **payments to the City of Providence?**

14 A. Yes. Providence seeks a \$651,527 increase in payments to the City of Providence
15 from \$839,167 to \$1,490,693 per year as shown in Schedule HJS-1. The BCWA has
16 asked several questions regarding City Services that have not been answered as of
17 this date. (See BCWA 1-24, 25, 26, 27, 28 and 2-18, 19, 20, 21, 22, 23, 25). As such,
18 the BCWA needs more information. However, some observations can be made based
19 on the information currently available.

- 20 • Providence seeks to reimburse \$63,084 to the City for services provided by
21 the Law Department. This is based on an estimate from Providence's Deputy
22 City Solicitor that 1% of the Law Department's time was spent reviewing
23 Providence contracts. According to Providence's response to BCWA 1-30, this
24 1% equates to 10-20 hours annually. This equates to a rate of \$3,154.21 to
25 \$6,308.41 per hour, which is excessive.
- 26
27 • Providence seeks to reimburse \$94,584 for services provided by the Finance
28 Department. This is based on the claim that Providence's expenditures in FY
29 2018 represented 9.89% of total City Expenditures. However, according to
30 Providence's response to BCWA 1-31, the Finance Department only expends

36 hours annually “working on or preparing for Water Supply Board matters.”
This equates to \$2,627.33/hour, which again, is excessive.

RECs

Q. Do you have any concerns about Providence’s request to retire rather than re-sell its RECs?

A. Yes. In Mr. Caruolo’s direct testimony he indicates that Providence’s goal is to become 100% reliant on renewable power. He further testified that “It’s my understanding that to claim you’re 100% renewable power, then you must produce and utilize all of your energy needs and retire Renewable Energy Certificates (REC) that are earned. Therefore, Providence Water will be retiring our REC’s.” (Caruolo Direct, p. 7)

In response to BCWA 1-40, Providence estimated the annual value of its RECs to be \$101,750 to \$370,000. Further, in response to BCWA 2-24, Providence acknowledges that it could produce enough renewable energy to offset electricity use at all of its facilities *and* sell its RECs. Thus, while the BCWA supports Providence’s use of renewable energy and its desire to lead by example, the annual income it would receive from RECs can be used to reduce rates for its customers, *and* Providence can still utilize renewable energy for its electricity needs.

Chemical Expense

Q. Does the BCWA have any concerns about Providence’s chemical expense?

A. Yes. These concerns are addressed in Ms. Marchand’s testimony, and the BCWA is waiting for responses to discovery requests. As such, this may be addressed further in my surrebuttal testimony.

1 **Inflation Adjustments**

2 **Q Should the Commission allow the inflationary adjustments proposed by Providence**
3 **for the second and third steps of its multi-year increase?**

4 A. It is my understanding that the Commission previously ruled that inflation
5 adjustments for future step increases should not be granted based on its
6 interpretation of the statute that allows water utilities to obtain step increases. (See
7 Exhibit 7, Excerpt from Pawtucket Water Supply Board, Docket 4171, Order #20376)
8 Thus, based on this previous ruling the inflation adjustments for FY 2022 and FY 2023
9 should not be allowed.

10
11 **V. CONCLUSION**

12 **Q. Do you have any additional issues you would like to address?**

13 A. Not currently, but I reserve the right to address any further changes Providence
14 makes or issues the Division other intervenors raise in this filing. Also, to the extent
15 that any further issues are raised through ongoing data requests, I reserve the right
16 to address these issues as well. Finally, if I discover or otherwise learn of additional
17 issues that could impact the wholesale rates charged to BCWA, I reserve the right to
18 address those issues.

19
20 **Q. With these exceptions, does this conclude your direct testimony?**

21 A. Yes. It does.

EXHIBIT 1

Bringing 16 years of experience, Mr. Maker is an Executive Consultant applying management, financial and technical experience. He has served as either Project Manager or Lead Analyst for over 100 financial and management studies. Day-to-day responsibilities include management of client projects, development of analytical financial models and compilation of comprehensive reports and presentations.

EDUCATION

- Master of Business Administration in Finance, Loyola University (Beta Gamma Sigma Honor Society)
- Bachelor of Arts in Economics, University of Rochester, Minor: Electrical Engineering

PROFESSIONAL REGISTRATIONS / MEMBERSHIPS

- American Water Works Association (AWWA)
 - active member of the Workforce Strategies Committee
 - active member of the Finance, Accounting & Management Controls Committee
- Water Environment Federation (WEF)
- Government Finance Officers Association (GFOA)

KEY EXPERTISE

- | | |
|----------------------------|--|
| ▪ Rate and Fee Design | ▪ Efficiency and Effectiveness Studies |
| ▪ Financial Modeling | ▪ Demand/Usage Projections |
| ▪ Cost of Service Analyses | ▪ Benchmarking/Comparative Analyses |
| ▪ Operational Audits | ▪ Research and Data Analyses |
| ▪ Management Studies | ▪ Process/Workflow Mapping |

SELECT FINANCIAL AND MANAGEMENT EXPERIENCE

Water Rate Study: Bristol County Water Authority, RI

Performed a rate study for the water system, resulting in a financial plan and implementation of meter-based fixed charges, 3-tier inclining residential block consumption charges, unit rate non-residential consumption charge, fire service base charges, other miscellaneous fees and charges.

Performance Measurement Analysis: Washington Suburban Sanitary Commission, MD

Assessed and analyzed key performance indicators in specific operational areas within the utility and engaged Commission staff and managers in a continuous effort to improve service delivery and operational effectiveness. Led or participated in the following efforts: review of performance on street and paving restoration, review of water line rehabilitation activity, evaluation of property damage claims processing, review of overtime utilization across the Commission, assessment of customer billing operations, development of new key performance indicators (KPI's) for all of WSSC major operations, creation of an internal survey of customer service, operational review of the SLMBE (Small, Local and Minority Business Enterprises) Office, development of an economic benefit analysis for the Office of Communications to estimate the direct and indirect economic impact of WSSC's capital construction program on the local economies of Prince George's and Montgomery Counties, assistance to the Fleet Management Division on the development of a cost-benefit analysis for automatic vehicle location (AVL) technology.

Michael Maker

Executive Consultant

Rate Analysis and Design Services Study: Suffolk County Water Authority, NY

Developed a financial plan and provided water rate design analysis, resulting in the following recommendations: consolidation of several rate schedules; development of a two-tier inclining rate design and an infrastructure charge; review and update of fire protection charges, wholesale rates and tapping fees; creation of a manual meter read fee.

Water and Sewer Utility Rate Review Study: Albemarle County Service Authority, VA

Performed a cost of service/rate study and developed a financial model to project water and sewer fees over a five-year period. The study included projecting operating and capital expenses, with the largest coming from the Rivanna Water and Sewer Authority (RWSA) for water and sewer treatment service. As part of the study, system development fees were developed to offset the cost of providing water and sewer infrastructure solely within the ACSA system to serve new customers and capacity fees were developed to offset ACSA's share of annual debt service on capacity in RWSA's facilities.

Water and Wastewater Management Analysis: Maryland Environmental Service (MES)

Provided a comprehensive management study that evaluated the Water and Wastewater Group on six attributes: product quality, customer satisfaction, employee and leadership development, operational optimization, financial viability and operational resiliency.

Water Rate Study & Water Audit: City of Rochester, NY Water Bureau

Performed a rate study and audit of the water system, resulting in a financial plan and implementation of the following rates and fees: meter-based fixed charges; 5-tier declining block consumption charges; fire service charges and other miscellaneous fees and charges.

Stormwater Financial Analysis: Norfolk, VA

Performed a financial analysis of the City's stormwater system. The study included the following: development of a stormwater financial model; identification of the City's stormwater-related costs; review of databases used for allocation and billing of costs and billing mechanisms employed to issue stormwater utility bills; calculation of stormwater rates per equivalent unit, square foot of impervious acre, etc. for residential and non-residential customer classes; review of criteria and methodologies for quantifying on-site and site-specific stormwater management activities that qualify for credits; calculation of bill impacts for each customer class based on the rates developed.

Newport, RI Water Division Review: Rhode Island Public Utilities Commission

Studied the organization and management of the Newport Water Division, as requested by the Rhode Island Public Utilities Commission (RI PUC). The study involved an assessment of the policies, procedures and organizational structure of the Division as well as a benchmarking analysis of PUC regulated water utilities. Recommendations were made for all sections of the Division including Management, Finance, Water Quality Treatment, Collection & Distribution and Meter.

COST OF SERVICE AND RATE DESIGN

Mr. Maker prepares cost of service and rate studies for water, wastewater, stormwater and solid waste utilities. His responsibilities included the development of cost of service cash flow model, rate design, fee design and customer impact analysis. Mr. Maker completed cost of service and rate studies for the following clients (sorted alphabetically by state and utility):

Branford, CT	Barnstable, MA	Summit County, OH
Cheshire, CT	Claremont, NH	Tallmadge, OH
Manchester, CT	Exeter, NH	North Middleton Township, PA
Montville, CT	Camden, NJ	Pittsburgh Water/Sewer Auth., PA
Stratford, CT	Evesham Municipal Utilities Auth., NJ	Bristol County Water Authority, RI
Watertown, CT	Albertson Water District, NY	North Kingstown, RI
Milton, DE	Beacon, NY	Albemarle County, VA
Glenview, IL	Fishers Island, NY	Chincoteague, VA
Morton Grove, IL	Fishkill (Town), NY	Fauquier County, VA
Orland Park, IL	Fishkill (Village), NY	Franklin, VA
Anne Arundel County, MD	Hicksville Water District, NY	Hampton, VA
Calvert County, MD	Jericho Water District, NY	Herndon, VA
Cecil County, MD	Mohawk Valley Water Authority, NY	James City Service Authority, VA
Elkton, MD	Port Washington Water District, NY	Leesburg, VA
Frederick, MD	Rochester, NY	Lexington, VA
Frederick County, MD	Suffolk County Water Authority, NY	Lovettsville, VA
Frostburg, MD	Tivoli, NY	Newport News, VA
Garrett County, MD	Water Auth. of Great Neck North, NY	Norfolk, VA
Hagerstown, MD	Cape Fear Public Utilities Auth., NC	Portsmouth, VA
Harford County, MD	Canton, OH	Purcellville, VA
Kent County, MD	Clermont County, OH	Richmond, VA
Rockville, MD	Cleveland, OH	Southampton County, VA
Washington Sub. San. Comm., MD	Dublin, OH	Stafford County, VA
Westminster, MD	Perrysburg, OH	Warrenton, VA
Auburn, MA		

PRESENTATIONS AND PUBLICATIONS

Mr. Maker has given numerous presentations and participated in training and workshops.

- “Setting Water Rates: State of the Industry”; Long Island Water Conference (2019)
- “EPA’s Definition of Affordability”; 2017 Tri-Association Conference (CSAWWA, CWEA, WWOA)
- “Setting Water and Sewer Rates”; 2017 New York State GFOA 38th Annual Conference
- “Defining Affordability”; 2016 AWWA Annual Conference & Exposition (ACE)
- “A World without Crystal Balls: Attempting to Forecast Operating Expenses”; 2015 Water Asset Management Conference
- “Stormwater Utility Financial Analysis: A Case Study of the City of Hampton”; Virginia Lakes and Watersheds Association 2013 Virginia Water Conference
- “LEED Certified Water Efficient Buildings and Water and Sewer Capacity Fees”; 2012 CSAWWA Tri-Association Conference
- “Stormwater Utilities in Virginia”; 2013 Brown Edwards Conference
- “Creating Sustainable Infrastructure”; Maryland GFOA 2009 Spring Conference

EXHIBIT 2

1 **Q. What is the purpose for implementing a wholesale service charge?**

2 A. The purpose of the wholesale service charge is to help stabilize Providence Water's revenues
3 such that they are better able to meet some of their fixed costs.
4

5 **Q. What is the basis for allocating 25% of each wholesale customer's anticipated revenues**
6 **to the service charge?**

7 A. The amount of the service charge was set at 25% of revenues because this amount will help
8 stabilize Providence Water's revenues, but is low enough such that it should not place an
9 inordinate burden on the wholesale customers.
10

11 **Q. Is this type of cost recovery from wholesale customers unusual in the industry?**

12 A. No. In fact most contracts between water providers and their large customers involve the
13 customer paying a portion of the annual charges on a fixed basis either through "take or pay"
14 provisions or a fixed component of the service fee. This approach provides a more stable stream
15 of revenue for the provider and also reduces the risk that the customer will dramatically reduce
16 their consumption to a level that will not allow the provider to recover their fixed costs of
17 service.
18

19 **Q. Won't the implementation of the wholesale service charge mean that the wholesale**
20 **customers will end up paying more?**

21 A. No, if each wholesale customer's actual rate year consumption is consistent with their
22 projected consumption the combination of the wholesale service charge and commodity charges
23 should result in the wholesale customers paying the same amount as they would pay under a
24 commodity charge only approach.
25

26 **Q. Is the disparity in the increases in wholesale rates and retail rates due to some**
27 **difference in the way costs are allocated to the wholesale customers or the way in which**
28 **their rates are calculated?**

29 A. No, the cost allocation approach used in this filing is the same as was used in Providence
30 Water's last full rate filing and the percentage of costs allocated to the wholesale class is

1 generally the same in this filing as it was in the last filing. The disparity between the increases to
2 wholesale rates and retail rates is most likely due to the fact that the wholesale rate increases that
3 were agreed to by the parties to Providence Water's recent abbreviated filings were not based on
4 a complete cost of service study and did not reflect the true cost associated with providing
5 wholesale service.
6

7 **Q. Have you provided information on what the customer impacts are projected to be?**

8 A. Yes, HJS Exhibit - 12 shows bills under existing and proposed rates and the percentage
9 impacts that are likely to occur for typical residential, commercial, and industrial customers. For
10 a typical residential customer using 100 hcf per year, their annual charges increase from \$244.56
11 to \$286.16 which represents a 17% increase.
12

13 **Q. What consideration has been given as to whether the revenues from the rates and
14 charges are sufficient to cover revenue requirements for Providence Water?**

15 A. HJS Exhibit - 13 serves as a revenue proof to determine revenue sufficiency of the proposed
16 rates and charges. The revenues that would be generated under the proposed rate structure are
17 shown for commodity rates, service charges, and fire protection charges.
18

19 **Q. According to the rate model, are the rates and charges calculated sufficient to meet
20 revenue requirements?**

21 A. Yes, as shown in HJS Exhibit - 13, the revenues projected to be recovered from the proposed
22 rates are approximately \$7,861 greater than the revenue requirements for the Rate Year.
23

24 **Does this conclude your testimony?**

25 Yes.
26

EXHIBIT 3

**Data Requests of the
Bristol County Water Authority
Set 1**

- BCWA 1-26 Refer to the testimony of Harold Smith, page 14, lines 24 – 29.
- a. Does PWSB have the data needed to allocate extra capacity costs to wholesale customers based on their relative contributions to peak demands?
 - b. If affirmative, why wasn't it used?
 - c. If Providence doesn't have the data, how long would it take and what would it cost to obtain the necessary data?

Response:

- a. Yes, the data are available.
- b. It is not used because the agreed upon methodology involves the calculation of one wholesale rate based on the total wholesale proportion of system consumption. This methodology was approved by the commission in Docket 3832 and has been maintained for this filing.
- c. See response to a above.

EXHIBIT 4

Providence Water Docket 4618

Data Requests of the Division of Public Utilities and Carriers Set 4

1. **DIV 4-5:** Reference page 6, lines 26-29 of Mr. Smith's testimony:
 - a. Please explain what is meant by the phrase "in which the wholesale class demands service."
 - b. Does the term total consumption refer to volumetric usage or base, maximum day and maximum hour usage? If the former, please identify where costs are allocated to wholesale customers on the basis of volumetric usage (except allocations based on factor A) in the cost of service study.
 - c. Please explain how the results of the PWSB's cost of service study would differ if the standard base/extra capacity approach was utilized.

Response:

- a. This phrase, in the context of the sentence from which it was taken, speaks to the fact that the maximum day and maximum hour demands of the wholesale class are not taken into consideration in the allocation of costs to the wholesale class.
- b. The term total consumption refers to volumetric usage. As shown on Schedules HJS-5 and HJS-6, all costs allocated to the wholesale class are based on that class' proportionate share of total consumption.
- c. Without performing the cost of service analysis using the "standard base/extra capacity approach" it is not possible to determine with any degree of specificity how the analysis would differ. However, the major difference would be that the analysis using the standard approach would allocate certain costs to the wholesale customers based on their peaking characteristics. It is important to note that use of the standard approach would dictate the need for separate and different rates for each wholesale customer since it is likely the peaking characteristics of each individual wholesale customer are different than the peaking characteristics of the class as a whole.

EXHIBIT 5

Schedule HJS-16a: Customer Class Units of Service

AMENDED BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # _____
Request for General Rate Relief
Direct Testimony of Harold J. Smith
Test Year Ending June 30, 2019
Rate Years Ending June 30, 2021 through 2023

Customer Class	Base Demand			Maximum Day Extra Capacity				Maximum Hour Extra Capacity				Billing		Direct Fire
	Rate Year Sales	Plus NRW	Base	Average Day	Peaking Factor	Maximum Day	Maximum Day Extra	Average Day	Peaking Factor	Maximum Hour	Maximum Hour Extra	Meters & Services	Monthly Bills	
	HCF	HCF	HCF	HCF/d		HCF/d	HCF/d	HCF/d		HCF/d	HCF/d	5/8" Eq.		6" Eq.
Retail														
Residential	8,396,176	2,631,185	11,027,361	23,003	1.56	35,958	12,954	23,003	3.13	71,915	35,958			
Commercial	4,041,665	1,266,573	5,308,238	11,073	1.68	18,644	7,571	11,073	3.37	37,289	18,644			
Industrial	187,186	58,660	245,846	513	1.44	741	228	513	2.89	1,481	741			
Sub-total Retail	12,625,027	3,956,418	16,581,445	34,589	1.60	55,343	20,753	34,589	3.20	110,685	55,343	88,313	931,056	
Fire Protection														
Private						690	690			2,759	2,070	40,187	23,940	
Public (Providence)						1,085	1,085			4,338	3,254			3,232
Public (All Other)						1,113	1,113			4,453	3,340			3,318
Subtotal Fire Protection			-			2,888	2,888			11,551	8,663	40,187	23,940	6,550
Bristol County	1,494,845	12,925	1,507,770	4,095	1.51	6,191	2,096	4,095	1.81	7,429	1,238			
East Providence	1,822,773	15,760	1,838,533	4,994	1.67	8,317	3,323	4,994	2.76	13,797	5,480			
East Smithfield	-	-	-	-	0.00	-	-	-	0.00	-	-			
Greenville	421,521	3,645	425,166	1,155	2.01	2,323	1,168	1,155	3.05	3,525	1,202			
Johnston	-	-	-	-	0.00	-	-	-	0.00	-	-			
Kent County	2,727,147	23,580	2,750,727	7,472	1.42	10,638	3,166	7,472	2.18	16,260	5,622			
Lincoln	1,038,229	8,977	1,047,205	2,844	1.90	5,402	2,557	2,844	2.23	6,354	952			
Smithfield	391,600	3,386	394,986	1,073	2.17	2,328	1,255	1,073	2.56	2,747	419			
Warwick	3,466,644	29,974	3,496,618	9,498	2.40	22,752	13,254	9,498	2.81	26,693	3,941			
Wholesale	11,362,760	98,246	11,461,006	31,131	1.86	57,951	26,821	31,131	2.47	76,806	18,855			
Grand Total	23,987,787	4,054,664	28,042,451	65,720	1.77	116,182	50,462	65,720	3.03	199,042	82,860	128,499	954,996	6,550

Intraclass Distribution of Retail Max Day Based on Monthly Analysis

	Max Day	%
Residential	36,616	64.97%
Commercial	18,986	33.69%
Industrial	754	1.34%
	56,357	100.00%

Schedule HJS-16c: Customer Class Units of Service

Providence Water Supply Board

AMENDED BY MICHAEL R. MAKER

Docket # _____

Request for General Rate Relief

Direct Testimony of Harold J. Smith

Test Year Ending June 30, 2019

Rate Years Ending June 30, 2021 through 2023

Customer Class	Base	Extra Capacity		Billing		Direct Fire
		Maximum Day Extra	Maximum Hour Extra	Meters & Services	Monthly Bills	
	HCF	HCF/d	HCF/d	5/8" Eq.	Bills	6" Eq.
Retail						
Residential	11,027,361	12,954	35,958			
Commercial	5,308,238	7,571	18,644			
Industrial	245,846	228	741			
Sub-total Retail	16,581,445	20,753	55,343	88,313	931,056	
Fire Protection						
Private		690	2,070	40,187	23,940	
Public (Providence)		1,085	3,254			3,232
Public (All Other)		1,113	3,340			3,318
Subtotal Fire Protection		2,888	8,663	40,187	23,940	6,550
Subtotal East Smithfield						
Bristol County	1,507,770	2,096	1,238			
East Providence	1,838,533	3,323	5,480			
East Smithfield	-	-	-			
Greenville	425,166	1,168	1,202			
Johnston	-	-	-			
Kent County	2,750,727	3,166	5,622			
Lincoln	1,047,205	2,557	952			
Smithfield	394,986	1,255	419			
Warwick	3,496,618	13,254	3,941			
Wholesale	11,461,006	26,821	18,855			
Grand Total	28,042,451	50,462	82,860	128,499	954,996	6,550

Schedule HJS-17: Unit Cost of Service

AMENDED BY MICHAEL R. MAKER

Providence Water Supply Board

Docket # _____

Request for General Rate Relief

Direct Testimony of Harold J. Smith

Test Year Ending June 30, 2019

Rate Years Ending June 30, 2021 through 2023

	Total	Common To All			Retail Only					
		Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection	Direct Fire
		HCF	HCF/d	HCF/d	HCF	HCF/d	HCF/d	Eq. 5/8" Mtrs.	Bills	Eq. 6" Conn.
Total Units of Service										
Retail		16,581,445	20,753	55,343	16,581,445	20,753	55,343	88,313	931,056	-
Fire Protection		-	2,888	8,663	-	2,888	8,663	40,187	23,940	6,550
Bristol County		1,507,770	2,096	1,238						
East Providence		1,838,533	3,323	5,480						
East Smithfield		-	-	-						
Greenville		425,166	1,168	1,202						
Johnston		-	-	-						
Kent County		2,750,727	3,166	5,622						
Lincoln		1,047,205	2,557	952						
Smithfield		394,986	1,255	419						
Warwick		3,496,618	13,254	3,941						
Wholesale		11,461,006	26,821	18,855						
Total		28,042,451	50,462	82,860	16,581,445	23,641	64,006	128,499	954,996	6,550
Unit Cost of Service										
O&M Expense	\$ 39,379,283	\$ 13,641,988	\$ 5,996,232	\$ 1,468,661	\$ 1,056,689	\$ 811,358	\$ 1,332,284	\$ 4,998,959	\$ 8,039,288	\$ 2,033,823
Unit Cost (\$/Unit)		\$ 0.49	\$ 118.83	\$ 17.72	\$ 0.06	\$ 34.32	\$ 20.82	\$ 38.90	\$ 8.42	\$ 310.51
Capital Expense	\$ 34,317,000	\$ 9,200,580	\$ 4,416,794	\$ 311,195	\$ 3,857,048	\$ 2,961,558	\$ 4,863,002	\$ 7,705,739	\$ 250,000	\$ 751,082
Unit Cost (\$/Unit)		\$ 0.33	\$ 87.53	\$ 3.76	\$ 0.23	\$ 125.27	\$ 75.98	\$ 59.97	\$ 0.26	\$ 114.67
City Services Expense	\$ 1,490,693	\$ 440,610	\$ 209,444	\$ 50,293	\$ 46,105	\$ 35,401	\$ 58,130	\$ 239,902	\$ 326,807	\$ 84,003
Unit Cost (\$/Unit)		\$ 0.02	\$ 4.15	\$ 0.61	\$ 0.00	\$ 1.50	\$ 0.91	\$ 1.87	\$ 0.34	\$ 12.82
Property Tax Expense	\$ 7,629,145	\$ 7,629,145	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unit Cost (\$/Unit)		\$ 0.27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Operating Revenue Allowance	\$ 1,656,322	\$ 618,246	\$ 212,449	\$ 36,603	\$ 99,197	\$ 76,166	\$ 125,068	\$ 258,892	\$ 172,322	\$ 57,378
Unit Cost (\$/Unit)		\$ 0.02	\$ 4.21	\$ 0.44	\$ 0.01	\$ 3.22	\$ 1.95	\$ 2.01	\$ 0.18	\$ 8.76
Total Cost of Service	\$ 84,472,444	\$ 31,530,569	\$ 10,834,920	\$ 1,866,752	\$ 5,059,039	\$ 3,884,484	\$ 6,378,484	\$ 13,203,492	\$ 8,788,417	\$ 2,926,286
Unit Cost (\$/Unit)		\$ 1.12	\$ 214.72	\$ 22.53	\$ 0.31	\$ 164.31	\$ 99.65	\$ 102.75	\$ 9.20	\$ 446.76

Schedule HJS-18: Customer Class Cost of Service

AMENDED BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # _____
Request for General Rate Relief
Direct Testimony of Harold J. Smith
Test Year Ending June 30, 2019
Rate Years Ending June 30, 2021 through 2023

	Total	Common To All			Retail Only					
		Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection	Direct Fire
Unit Cost of Service (\$/Unit)		\$1.12	\$214.72	\$22.53	\$0.31	\$164.31	\$99.65	\$102.75	\$9.20	\$446.76
Retail Service:										
Residential Volume										
Units of Service		11,027,361	12,954	35,958	11,027,361	12,954	35,958	-	-	-
Cost of Service	\$25,066,956	\$12,399,022	\$2,781,496	\$810,084	\$3,364,475	\$2,128,529	\$3,583,350	\$-	\$-	\$-
Commercial Volume										
Units of Service		5,308,238	7,571	18,644	5,308,238	7,571	18,644	-	-	-
Cost of Service	\$12,735,832	\$5,968,514	\$1,625,678	\$420,037	\$1,619,556	\$1,244,044	\$1,858,004	\$-	\$-	\$-
Industrial Volume Charge										
Units of Service		245,846	228	741	245,846	228	741	-	-	-
Cost of Service	\$528,278	\$276,426	\$48,915	\$16,686	\$75,008	\$37,432	\$73,810	\$-	\$-	\$-
Meter Service Charge										
Units of Service		-	-	-	-	-	-	88,313	931,056	-
Cost of Service	\$17,642,361	\$-	\$-	\$-	\$-	\$-	\$-	\$9,074,253	\$8,568,108	\$-
Fire Protection:										
Private Fire Lines										
Units of Service		-	690	2,070	-	690	2,070	40,187	23,940	-
Cost of Service	\$4,863,874	\$-	\$148,118	\$46,624	\$-	\$113,347	\$206,237	\$4,129,239	\$220,310	\$-
Public Fire (Providence)										
Units of Service		-	1,085	3,254	-	1,085	3,254	-	-	3,232
Cost of Service	\$2,252,514	\$-	\$232,860	\$73,298	\$-	\$178,195	\$324,229	\$-	\$-	\$1,443,932
Public Fire (All Other)										
Units of Service		-	1,113	3,340	-	1,113	3,340	-	-	3,318
Cost of Service	\$2,312,451	\$-	\$239,056	\$75,248	\$-	\$182,937	\$332,856	\$-	\$-	\$1,482,354
East Smithfield Surcharge										
Units of Service		-	-	-	-	-	-	-	-	-
Cost of Service	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Wholesale Service:										
Bristol County		1,507,770	2,096	1,238						
East Providence		1,838,533	3,323	5,480						
East Smithfield		-	-	-						
Greenville		425,166	1,168	1,202						
Johnston		-	-	-						
Kent County		2,750,727	3,166	5,622						
Lincoln		1,047,205	2,557	952						
Smithfield		394,986	1,255	419						
Warwick		3,496,618	13,254	3,941						
Units of Service		11,461,006	26,821	18,855						
Bristol County	\$2,173,218	\$1,695,317	\$450,017	\$27,884						
East Providence	\$2,904,248	\$2,067,223	\$713,577	\$123,449						
East Smithfield	\$-	\$-	\$-	\$-						
Greenville	\$755,958	\$478,051	\$250,822	\$27,085						
Johnston	\$-	\$-	\$-	\$-						
Kent County	\$3,899,400	\$3,092,882	\$679,852	\$126,666						
Lincoln	\$1,748,032	\$1,177,464	\$549,115	\$21,453						
Smithfield	\$723,060	\$444,117	\$269,502	\$9,441						
Warwick	\$6,866,262	\$3,931,552	\$2,845,914	\$88,796						
Cost of Service	\$19,070,179	\$12,886,607	\$5,758,797	\$424,775						
Total Allocated Cost of Service	\$84,472,444	\$31,530,569	\$10,834,920	\$1,866,752	\$5,059,039	\$3,884,484	\$6,378,484	\$13,203,492	\$8,788,417	\$2,926,286

Schedule HJS-19: Development of Volumetric Rates

AMENDED BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # _____
Request for General Rate Relief
Direct Testimony of Harold J. Smith
Test Year Ending June 30, 2019
Rate Years Ending June 30, 2021 through 2023

	Units	Residential	Commercial	Industrial	Bristol County	East Providence	East Smithfield	Greenville	Johnston	Kent County	Lincoln	Smithfield	Warwick	Wholesale
Unit Cost														
CTA Base	\$/HCF	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
CTA Maximum Day	\$/HCF/d	214.72	214.72	214.72	214.72	214.72	214.72	214.72	214.72	214.72	214.72	214.72	214.72	214.72
CTA Maximum Hour	\$/HCF/d	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53
Retail Only Base	\$/HCF	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Retail Only Maximum Day	\$/HCF/d	164.31	164.31	164.31	164.31	164.31	164.31	164.31	164.31	164.31	164.31	164.31	164.31	164.31
Retail Only Maximum Hour	\$/HCF/d	99.65	99.65	99.65	99.65	99.65	99.65	99.65	99.65	99.65	99.65	99.65	99.65	99.65
Units														
Base	HCF	11,027,361	5,308,238	245,846	1,507,770	1,838,533	0	425,166	0	2,750,727	1,047,205	394,986	3,496,618	11,461,006
Maximum Day	HCF/d	12,954	7,571	228	2,096	3,323	0	1,168	0	3,166	2,557	1,255	13,254	26,821
Maximum Hour	HCF/d	35,958	18,644	741	1,238	5,480	0	1,202	0	5,622	952	419	3,941	18,855
Total Cost														
CTA Base		\$12,399,022	\$ 5,968,514	\$ 276,426	\$1,695,317	\$2,067,223	\$ -	\$ 478,051	\$ -	\$3,092,882	\$1,177,464	\$ 444,117	\$3,931,552	\$ 12,886,607
CTA Maximum Day		\$ 2,781,496	\$ 1,625,678	\$ 48,915	\$ 450,017	\$ 713,577	\$ -	\$ 250,822	\$ -	\$ 679,852	\$ 549,115	\$ 269,502	\$2,845,914	\$ 5,758,797
CTA Maximum Hour		\$ 810,084	\$ 420,037	\$ 16,686	\$ 27,884	\$ 123,449	\$ -	\$ 27,085	\$ -	\$ 126,666	\$ 21,453	\$ 9,441	\$ 88,796	\$ 424,775
Retail Only Base		\$ 3,364,475	\$ 1,619,556	\$ 75,008	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Only Maximum Day		\$ 2,128,529	\$ 1,244,044	\$ 37,432	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Only Maximum Hour		\$ 3,583,350	\$ 1,858,004	\$ 73,810	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PLUS:														
Retail Service Charge Costs		\$ 4,521,584	\$ 2,297,293	\$ 95,291	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Fire Protection Costs		\$ 159,323	\$ 80,948	\$ 3,358	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Private Fire Line Costs		\$ 804,414	\$ 408,701	\$ 16,953	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Public Fire Costs		\$ 330,056	\$ 167,693	\$ 6,956	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Rate Year Revenue Requirement		\$30,882,334	\$15,690,466	\$ 650,835	\$2,173,218	\$2,904,248	\$ -	\$ 755,958	\$ -	\$3,899,400	\$1,748,032	\$ 723,060	\$6,866,262	\$ 19,070,179
Rate Year Sales														
	HCF	8,396,176	4,041,665	187,186	1,494,845	1,822,773	0	421,521	0	2,727,147	1,038,229	391,600	3,466,644	11,362,760
Volumetric Rate Build-Up														
Base	\$/HCF	\$ 1.877461	\$ 1.877461	\$1.877461	\$ 1.134109	\$ 1.134109	\$ -	\$1.134109	\$ -	\$ 1.134109	\$ 1.134109	\$1.134109	\$ 1.134109	\$ 1.134109
Maximum Day	\$/HCF	\$ 0.584793	\$ 0.710034	\$0.461292	\$ 0.301046	\$ 0.391479	\$ -	\$0.595039	\$ -	\$ 0.249290	\$ 0.528896	\$0.688207	\$ 0.820942	\$ 0.506813
Maximum Hour	\$/HCF	\$ 0.523266	\$ 0.563639	\$0.483454	\$ 0.018654	\$ 0.067726	\$ -	\$0.064256	\$ -	\$ 0.046446	\$ 0.020663	\$0.024109	\$ 0.025614	\$ 0.037383
Service Charge	\$/HCF	\$ 0.538529	\$ 0.568403	\$0.509071	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Fire	\$/HCF	\$ 0.018976	\$ 0.020028	\$0.017938	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Private Fire	\$/HCF	\$ 0.095807	\$ 0.010122	\$0.090566	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Public Fire	\$/HCF	\$ 0.039310	\$ 0.041491	\$0.037160	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$/HCF	\$ 3.678143	\$ 3.882179	\$3.476942	\$ 1.453808	\$ 1.593313	\$ -	\$1.793404	\$ -	\$ 1.429846	\$ 1.683668	\$1.846424	\$ 1.980665	\$ 1.678305
Rounded	\$/HCF	\$ 3.679000	\$ 3.883000	\$3.477000	\$ 1.453809	\$ 1.593314	\$ -	\$1.793404	\$ -	\$ 1.429846	\$ 1.683669	\$1.846425	\$ 1.980666	\$ 1.678306
Revenues		\$30,889,532	\$15,693,785	\$ 650,846	\$2,173,219	\$2,904,249	\$ -	\$ 755,958	\$ -	\$3,899,401	\$1,748,033	\$ 723,061	\$6,866,264	\$ 19,070,185
COS		\$30,882,334	\$15,690,466	\$ 650,835	\$2,173,218	\$2,904,248	\$ -	\$ 755,958	\$ -	\$3,899,400	\$1,748,032	\$ 723,060	\$6,866,262	\$ 19,070,179
Variance due to Rounding		\$ 7,197	\$ 3,319	\$ 11	\$ 1	\$ 1	\$ -	\$ 0	\$ -	\$ 1	\$ 1	\$ 0	\$ 3	\$ 7

Schedule HJS-22: Proposed Rates

AMENDED BY MICHAEL R. MAKER

Providence Water Supply Board

Docket # _____

Request for General Rate Relief

Direct Testimony of Harold J. Smith

Test Year Ending June 30, 2019

Rate Years Ending June 30, 2021 through 2023

Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Service Charges												
5/8"	57,812	\$ 7.56	\$ 5,244,705	40.08%	\$ 10.59	\$ 7,346,749	7.26%	\$ 11.36	\$ 7,879,926	3.94%	\$ 11.81	\$ 8,190,784
3/4"	11,326	\$ 8.05	\$ 1,094,092	40.00%	\$ 11.27	\$ 1,531,728	7.26%	\$ 12.09	\$ 1,642,891	3.94%	\$ 12.56	\$ 1,707,702
1"	5,335	\$ 9.50	\$ 608,190	40.00%	\$ 13.30	\$ 851,466	7.26%	\$ 14.27	\$ 913,260	3.94%	\$ 14.83	\$ 949,287
1.5"	1,547	\$ 11.43	\$ 212,187	40.07%	\$ 16.01	\$ 297,210	7.26%	\$ 17.17	\$ 318,779	3.94%	\$ 17.85	\$ 331,355
2"	1,357	\$ 16.76	\$ 272,920	40.04%	\$ 23.47	\$ 382,185	7.26%	\$ 25.17	\$ 409,922	3.94%	\$ 26.17	\$ 426,093
3"	73	\$ 56.01	\$ 49,065	40.01%	\$ 78.42	\$ 68,696	7.26%	\$ 84.11	\$ 73,681	3.94%	\$ 87.43	\$ 76,588
4"	35	\$ 70.55	\$ 29,631	40.00%	\$ 98.77	\$ 41,483	7.26%	\$ 105.94	\$ 44,494	3.94%	\$ 110.12	\$ 46,249
6"	57	\$ 104.47	\$ 71,457	40.00%	\$ 146.26	\$ 100,042	7.26%	\$ 156.87	\$ 107,302	3.94%	\$ 163.06	\$ 111,535
8"	42	\$ 143.23	\$ 72,188	40.01%	\$ 200.53	\$ 101,067	7.26%	\$ 215.08	\$ 108,402	3.94%	\$ 223.57	\$ 112,678
10"	4	\$ 178.36	\$ 8,561	40.00%	\$ 249.71	\$ 11,986	7.26%	\$ 267.83	\$ 12,856	3.94%	\$ 278.40	\$ 13,363
12"	-	\$ 213.49	\$ -	40.00%	\$ 298.89	\$ -	7.26%	\$ 320.58	\$ -	3.94%	\$ 333.23	\$ -
Total Service Charge	77,588		\$ 7,662,995	40.06%		\$ 10,732,613	7.26%		\$ 11,511,512	3.94%		\$ 11,965,635
						\$ -						
Retail Fire Protection Service Charges (Providence Only)												
5/8"	25,954	\$ 1.38	\$ 429,798	40.58%	\$ 1.94	\$ 604,209	7.26%	\$ 2.08	\$ 648,058	3.94%	\$ 2.16	\$ 673,624
3/4"	4,580	\$ 2.07	\$ 113,767	40.10%	\$ 2.90	\$ 159,384	7.26%	\$ 3.11	\$ 170,951	3.94%	\$ 3.23	\$ 177,695
1"	2,091	\$ 5.15	\$ 129,224	40.00%	\$ 7.21	\$ 180,913	7.26%	\$ 7.73	\$ 194,043	3.94%	\$ 8.04	\$ 201,698
1.5"	902	\$ 13.74	\$ 148,722	40.03%	\$ 19.24	\$ 208,254	7.26%	\$ 20.64	\$ 223,367	3.94%	\$ 21.45	\$ 232,179
2"	792	\$ 32.96	\$ 313,252	40.02%	\$ 46.15	\$ 438,610	7.26%	\$ 49.50	\$ 470,441	3.94%	\$ 51.45	\$ 489,000
3"	55	\$ 89.26	\$ 58,912	40.01%	\$ 124.97	\$ 82,480	7.26%	\$ 134.04	\$ 88,466	3.94%	\$ 139.33	\$ 91,956
4"	20	\$ 151.05	\$ 36,252	40.00%	\$ 211.47	\$ 50,753	7.26%	\$ 226.82	\$ 54,436	3.94%	\$ 235.76	\$ 56,584
6"	28	\$ 308.97	\$ 103,814	40.00%	\$ 432.56	\$ 145,340	7.26%	\$ 463.95	\$ 155,888	3.94%	\$ 482.25	\$ 162,038
8"	15	\$ 466.89	\$ 84,040	40.00%	\$ 653.65	\$ 117,657	7.26%	\$ 701.09	\$ 126,196	3.94%	\$ 728.74	\$ 131,174
10"	2	\$ 714.07	\$ 17,138	40.00%	\$ 999.70	\$ 23,993	7.26%	\$ 1,072.25	\$ 25,734	3.94%	\$ 1,114.55	\$ 26,749
12"	-	\$ 1,180.95	\$ -	40.00%	\$ 1,653.33	\$ -	7.26%	\$ 1,773.32	\$ -	3.94%	\$ 1,843.27	\$ -
Total Retail FPSC (Providence Only)	34,439		\$ 1,434,918	40.19%		\$ 2,011,593	7.26%		\$ 2,157,580	3.94%		\$ 2,242,696
Total Retail Service Charge Revenue			\$ 9,097,913	40.08%		\$ 12,744,205	7.26%		\$ 13,669,093	3.94%		\$ 14,208,330
Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Retail Consumption Charges												
Residential	8,396,176	\$ 3.403	\$ 28,572,187	8.11%	\$ 3.679	\$ 30,889,532	7.26%	\$ 3.946	\$ 33,131,283	3.94%	\$ 4.102	\$ 34,438,292
Commercial	4,041,665	\$ 3.223	\$ 13,026,286	20.48%	\$ 3.883	\$ 15,693,785	7.26%	\$ 4.165	\$ 16,832,733	3.94%	\$ 4.329	\$ 17,496,774
Industrial	187,186	\$ 3.169	\$ 593,192	9.72%	\$ 3.477	\$ 650,846	7.26%	\$ 3.729	\$ 698,080	3.94%	\$ 3.876	\$ 725,619
Total Retail Consumption Charge	12,625,027		\$ 42,191,666	11.95%		\$ 47,234,162	7.26%		\$ 50,662,095	3.94%		\$ 52,660,685
East Smithfield Debt Surcharge	235,576	\$ 0.35	\$ 82,451	0.00%	\$ 0.350	\$ 82,451	0.00%	\$ 0.350	\$ 82,451	0.00%	\$ 0.350	\$ 82,451
Total Retail Volume Charge Revenue			\$ 42,274,117	11.93%		\$ 47,316,614	7.24%		\$ 50,744,547	3.94%		\$ 52,743,136
Total Retail Revenue			\$ 51,372,030	16.91%		\$ 60,060,819	7.25%		\$ 64,413,640	3.94%		\$ 66,951,467

Schedule HJS-22: Proposed Rates

AMENDED BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # _____
Request for General Rate Relief
Direct Testimony of Harold J. Smith
Test Year Ending June 30, 2019
Rate Years Ending June 30, 2021 through 2023

Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Wholesale Charges												
Bristol County	1,494,845	\$ 1.350858	\$ 2,019,323	7.62%	\$ 1.453809	\$ 2,173,219	7.26%	\$ 1.559317	\$ 2,330,936	3.94%	\$ 1.620831	\$ 2,422,890
East Providence	1,822,773	\$ 1.350858	\$ 2,462,307	17.95%	\$ 1.593314	\$ 2,904,249	7.26%	\$ 1.708946	\$ 3,115,020	3.94%	\$ 1.776363	\$ 3,237,906
Greenville	421,521	\$ 1.350858	\$ 569,415	32.76%	\$ 1.793404	\$ 755,958	7.26%	\$ 1.923557	\$ 810,820	3.94%	\$ 1.999440	\$ 842,807
Kent County	2,727,147	\$ 1.350858	\$ 3,683,989	5.85%	\$ 1.429846	\$ 3,899,401	7.26%	\$ 1.533614	\$ 4,182,393	3.94%	\$ 1.594115	\$ 4,347,386
Lincoln	1,038,229	\$ 1.350858	\$ 1,402,499	24.64%	\$ 1.683669	\$ 1,748,033	7.26%	\$ 1.805858	\$ 1,874,894	3.94%	\$ 1.877098	\$ 1,948,857
Smithfield	391,600	\$ 1.350858	\$ 528,996	36.69%	\$ 1.846425	\$ 723,061	7.26%	\$ 1.980426	\$ 775,535	3.94%	\$ 2.058553	\$ 806,130
Warwick	3,466,644	\$ 1.350858	\$ 4,682,944	46.62%	\$ 1.980666	\$ 6,866,264	7.26%	\$ 2.124409	\$ 7,364,571	3.94%	\$ 2.208216	\$ 7,655,099
Total Wholesale Revenue	11,362,760		15,349,475	24.24%	\$ 1.678306	19,070,185	7.26%	\$ 1.800106	20,454,169	3.94%	\$ 1.871119	21,261,074

Wholesale (per million gallons) 8,499 \$ 1,805.96 \$ 15,349,475 24.24% \$ 2,243.72 \$ 19,070,185 \$ 2,406.56 \$ 20,454,169 \$ 2,501.50 \$ 21,261,074

Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Private Fire Service Charges												
3/4"	2	\$ 8.64	\$ 207	20.02%	\$ 10.37	\$ 249	7.26%	\$ 11.12	\$ 267	3.94%	\$ 11.56	\$ 277
1"	9	\$ 10.21	\$ 1,103	20.08%	\$ 12.26	\$ 1,324	7.26%	\$ 13.15	\$ 1,420	3.94%	\$ 13.67	\$ 1,476
1-1/2"	2	\$ 12.57	\$ 302	20.05%	\$ 15.09	\$ 362	7.26%	\$ 16.19	\$ 388	3.94%	\$ 16.82	\$ 404
2"	68	\$ 18.64	\$ 15,210	20.01%	\$ 22.37	\$ 18,254	7.26%	\$ 23.99	\$ 19,579	3.94%	\$ 24.94	\$ 20,351
4"	391	\$ 79.67	\$ 373,812	20.01%	\$ 95.61	\$ 448,602	7.26%	\$ 102.55	\$ 481,159	3.94%	\$ 106.59	\$ 500,140
6"	1,245	\$ 129.89	\$ 1,940,557	20.00%	\$ 155.87	\$ 2,328,698	7.26%	\$ 167.18	\$ 2,497,699	3.94%	\$ 173.78	\$ 2,596,232
8"	256	\$ 196.73	\$ 604,355	20.00%	\$ 236.08	\$ 725,238	7.26%	\$ 253.21	\$ 777,871	3.94%	\$ 263.20	\$ 808,557
10"	4	\$ 274.06	\$ 13,155	20.00%	\$ 328.88	\$ 15,786	7.26%	\$ 352.75	\$ 16,932	3.94%	\$ 366.66	\$ 17,600
12"	18	\$ 367.64	\$ 79,410	20.00%	\$ 441.17	\$ 95,293	7.26%	\$ 473.19	\$ 102,208	3.94%	\$ 491.85	\$ 106,240
16"	-	\$ 611.43	\$ -	20.00%	\$ 733.72	\$ -	7.26%	\$ 786.97	\$ -	3.94%	\$ 818.01	\$ -
Total		\$ 3,028,110	\$ 3,028,110	20.00%		\$ 3,633,806	7.26%		\$ 3,897,522	3.94%		\$ 4,051,277

Hydrants (Excluding Providence) 3,318 \$ 454.02 \$1,506,438 20.00% \$ 544.83 \$1,807,746 7.26% \$ 584.37 \$1,938,940 3.94% \$ 607.42 \$2,015,430

Total Fire Protection Charge Revenue		\$4,534,548.24			\$5,441,551.62			\$5,836,462.26			\$6,066,707.22	
Total Rate Revenues		\$ 71,256,053			\$ 84,572,556			\$ 90,704,271			\$ 94,279,248	
Miscellaneous Revenues		\$ 1,364,746			\$ 1,364,746			\$ 1,364,746			\$ 1,364,746	
Total Revenues		\$ 72,620,799	18.34%		\$ 85,937,302	7.14%		\$ 92,069,017	3.88%		\$ 95,643,994	

EXHIBIT 6

Schedule HJS-17: Unit Cost of Service

AMENDED BY MICHAEL R. MAKER

Providence Water Supply Board

Docket # _____

Request for General Rate Relief

Direct Testimony of Harold J. Smith

Test Year Ending June 30, 2019

Rate Years Ending June 30, 2021 through 2023

	Common To All			Retail Only						
	Total	Base HCF	Max Day HCF/d	Max Hour HCF/d	Base HCF	Max Day HCF/d	Max Hour HCF/d	Meters & Services Eq. 5/8" Mtrs.	Billing & Collection Bills	Direct Fire Eq. 6" Conn.
Total Units of Service										
Retail		16,581,445	20,753	55,343	16,581,445	20,753	55,343	88,313	931,056	-
Fire Protection		-	2,888	8,663	-	2,888	8,663	40,187	23,940	6,550
Bristol County		1,507,770	2,096	1,238						
East Providence		1,838,533	3,323	5,480						
East Smithfield		-	-	-						
Greenville		425,166	1,168	1,202						
Johnston		-	-	-						
Kent County		2,750,727	3,166	5,622						
Lincoln		1,047,205	2,557	952						
Smithfield		394,986	1,255	419						
Warwick		3,496,618	13,254	3,941						
Wholesale		11,461,006	26,821	18,855						
Total		28,042,451	50,462	82,860	16,581,445	23,641	64,006	128,499	954,996	6,550
All but Bristol County		26,534,681	48,366	81,623	16,581,445	23,641	64,006	128,499	954,996	6,550

Unit Cost of Service

O&M Expense	\$ 37,571,410	\$ 13,430,100	\$ 5,833,539	\$ 1,201,511	\$ 938,471	\$ 720,587	\$ 1,183,234	\$ 4,402,833	\$ 8,039,227	\$ 1,821,909
All but Bristol County	\$ 1,807,873	\$ 211,888	\$ 162,694	\$ 267,150	\$ 118,218	\$ 90,771	\$ 149,050	\$ 596,126	\$ 61	\$ 211,914
Unit Cost (\$/Unit)		\$ 0.48	\$ 115.60	\$ 14.50	\$ 0.06	\$ 30.48	\$ 18.49	\$ 34.26	\$ 8.42	\$ 278.15
All but Bristol County		\$ 0.01	\$ 3.36	\$ 3.27	\$ 0.01	\$ 3.84	\$ 2.33	\$ 4.64	\$ 0.00	\$ 32.35
Capital Expense	\$ 34,317,000	\$ 9,200,580	\$ 4,416,794	\$ 311,195	\$ 3,857,048	\$ 2,961,558	\$ 4,863,002	\$ 7,705,739	\$ 250,000	\$ 751,082
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unit Cost (\$/Unit)		\$ 0.33	\$ 87.53	\$ 3.76	\$ 0.23	\$ 125.27	\$ 75.98	\$ 59.97	\$ 0.26	\$ 114.67
All but Bristol County		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
City Services Expense	\$ 1,490,693	\$ 440,610	\$ 209,444	\$ 50,293	\$ 46,105	\$ 35,401	\$ 58,130	\$ 239,902	\$ 326,807	\$ 84,003
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unit Cost (\$/Unit)		\$ 0.02	\$ 4.15	\$ 0.61	\$ 0.00	\$ 1.50	\$ 0.91	\$ 1.87	\$ 0.34	\$ 12.82
All but Bristol County		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Property Tax Expense	\$ 7,629,145	\$ 7,629,145	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unit Cost (\$/Unit)		\$ 0.27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
All but Bristol County		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Operating Revenue Allowance	\$ 1,656,322	\$ 618,246	\$ 212,449	\$ 36,603	\$ 99,197	\$ 76,166	\$ 125,068	\$ 258,892	\$ 172,322	\$ 57,378
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unit Cost (\$/Unit)		\$ 0.02	\$ 4.21	\$ 0.44	\$ 0.01	\$ 3.22	\$ 1.95	\$ 2.01	\$ 0.18	\$ 8.76
All but Bristol County		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Cost of Service	\$ 82,664,571	\$ 31,318,682	\$ 10,672,226	\$ 1,599,602	\$ 4,940,821	\$ 3,793,712	\$ 6,229,434	\$ 12,607,366	\$ 8,788,356	\$ 2,714,372
All but Bristol County	\$ 1,807,873	\$ 211,888	\$ 162,694	\$ 267,150	\$ 118,218	\$ 90,771	\$ 149,050	\$ 596,126	\$ 61	\$ 211,914
Unit Cost (\$/Unit)		\$ 1.12	\$ 211.49	\$ 19.30	\$ 0.30	\$ 160.47	\$ 97.33	\$ 98.11	\$ 9.20	\$ 414.41
All but Bristol County		\$ 0.01	\$ 3.36	\$ 3.27	\$ 0.01	\$ 3.84	\$ 2.33	\$ 4.64	\$ 0.00	\$ 32.35

Total Pumping Expenses	\$ 151,744	\$ 116,513	\$ 191,320	\$ 26,899	\$ 20,654	\$ 33,915	\$ -	\$ -	\$ -	\$ -
13 UDF Allocated on Factor 13 - Salaries, Ber	\$1,186,315	\$ 50,421	\$ 38,715	\$ 63,571	\$ 76,638	\$ 58,845	\$ 96,626	\$ 589,524	\$ 61	\$ 211,914
14 UDF Allocated on Factor 14 - Police Detail	\$80,512	\$ 9,723	\$ 7,466	\$ 12,259	\$ 14,681	\$ 11,272	\$ 18,509	\$ 6,602	\$ -	\$ -
Total O&M Expense (All but Bristol County)	\$ 211,888	\$ 162,694	\$ 267,150	\$ 118,218	\$ 90,771	\$ 149,050	\$ 596,126	\$ 61	\$ 211,914	\$ -

Schedule HJS-18: Customer Class Cost of Service **AMENDED BY MICHAEL R. MAKER**

Providence Water Supply Board
Docket # _____
Request for General Rate Relief
Direct Testimony of Harold J. Smith
Test Year Ending June 30, 2019
Rate Years Ending June 30, 2021 through 2023

Total	Common To All			Retail Only						
	Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection	Direct Fire	
Unit Cost of Service (\$/Unit)	\$1.12	\$211.49	\$19.30	\$0.30	\$160.47	\$97.33	\$98.11	\$9.20	\$414.41	
All but Bristol County	\$0.01	\$3.36	\$3.27	\$0.01	\$3.84	\$2.33	\$4.64	\$0.00	\$32.35	

Retail Service:

Residential Volume										
Units of Service	11,027,361	12,954	35,958	11,027,361	12,954	35,958	-	-	-	
Cost of Service	\$ 25,075,259	\$ 12,403,757	\$ 2,783,306	\$ 811,842	\$ 3,364,475	\$ 2,128,529	\$ 3,583,350	\$ -	\$ -	\$ -
Commercial Volume										
Units of Service	5,308,238	7,571	18,644	5,308,238	7,571	18,644	-	-	-	
Cost of Service	\$ 12,740,081	\$ 5,970,793	\$ 1,626,735	\$ 420,949	\$ 1,619,556	\$ 1,244,044	\$ 1,858,004	\$ -	\$ -	\$ -
Industrial Volume Charge										
Units of Service	245,846	228	741	245,846	228	741	-	-	-	
Cost of Service	\$ 528,451	\$ 276,532	\$ 48,947	\$ 16,722	\$ 75,008	\$ 37,432	\$ 73,810	\$ -	\$ -	\$ -
Meter Service Charge										
Units of Service	-	-	-	-	-	-	88,313	931,056	-	
Cost of Service	\$ 17,642,361	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,074,253	\$ 8,568,108	\$ -	

Fire Protection:

Private Fire Lines										
Units of Service	-	690	2,070	-	690	2,070	40,187	23,940	-	
Cost of Service	\$ 4,864,071	\$ -	\$ 148,215	\$ 46,725	\$ -	\$ 113,347	\$ 206,237	\$ 4,129,239	\$ 220,310	\$ -
Public Fire (Providence)										
Units of Service	-	1,085	3,254	-	1,085	3,254	-	-	3,232	
Cost of Service	\$ 2,252,824	\$ -	\$ 233,011	\$ 73,457	\$ -	\$ 178,195	\$ 324,229	\$ -	\$ -	\$ 1,443,932
Public Fire (All Other)										
Units of Service	-	1,113	3,340	-	1,113	3,340	-	-	3,318	
Cost of Service	\$ 2,312,769	\$ -	\$ 239,211	\$ 75,412	\$ -	\$ 182,937	\$ 332,856	\$ -	\$ -	\$ 1,482,354
East Smithfield Surcharge										
Units of Service	-	-	-	-	-	-	-	-	-	
Cost of Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Wholesale Service:

Bristol County	1,507,770	2,096	1,238	
East Providence	1,838,533	3,323	5,480	
East Smithfield	-	-	-	
Greenville	425,166	1,168	1,202	
Johnston	-	-	-	
Kent County	2,750,727	3,166	5,622	
Lincoln	1,047,205	2,557	952	
Smithfield	394,986	1,255	419	
Warwick	3,496,618	13,254	3,941	
Units of Service	11,461,006	26,821	18,855	
Bristol County	\$ 2,151,078	\$ 1,683,924	\$ 443,260	\$ 23,894
East Providence	\$ 2,905,770	\$ 2,068,012	\$ 714,041	\$ 123,717
East Smithfield	\$ -	\$ -	\$ -	\$ -
Greenville	\$ 756,362	\$ 478,234	\$ 250,985	\$ 27,144
Johnston	\$ -	\$ -	\$ -	\$ -
Kent County	\$ 3,901,298	\$ 3,094,063	\$ 680,294	\$ 126,941
Lincoln	\$ 1,748,886	\$ 1,177,914	\$ 549,472	\$ 21,500
Smithfield	\$ 723,426	\$ 444,287	\$ 269,677	\$ 9,461
Warwick	\$ 6,869,808	\$ 3,933,053	\$ 2,847,765	\$ 88,989
Cost of Service	\$ 19,056,627	\$ 12,879,487	\$ 5,755,494	\$ 421,645

Total Allocated Cost of Service	\$ 84,472,444	\$ 31,530,569	\$ 10,834,920	\$ 1,866,752	\$ 5,059,039	\$ 3,884,484	\$ 6,378,484	\$ 13,203,492	\$ 8,788,417	\$ 2,926,286
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Schedule HJS-19: Development of Volumetric Rates

AMENDED BY MICHAEL R. MAKER

V.2

Providence Water Supply Board
Docket # _____
Request for General Rate Relief
Direct Testimony of Harold J. Smith
Test Year Ending June 30, 2019
Rate Years Ending June 30, 2021 through 2023

	Units	Residential	Commercial	Industrial	Bristol County	East Providence	East Smithfield	Greenville	Johnston	Kent County	Lincoln	Smithfield	Warwick	Wholesale
Unit Cost														
CTA Base	\$/HCF	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
CTA Maximum Day	\$/HCF/d	214.86	214.86	214.86	211.49	214.86	214.86	214.86	214.86	214.86	214.86	214.86	214.86	211.49
CTA Maximum Hour	\$/HCF/d	22.58	22.58	22.58	19.30	22.58	22.58	22.58	22.58	22.58	22.58	22.58	22.58	19.30
Retail Only Base	\$/HCF	0.31	0.31	0.31	0.30	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.30
Retail Only Maximum Day	\$/HCF/d	164.31	164.31	164.31	160.47	164.31	164.31	164.31	164.31	164.31	164.31	164.31	164.31	160.47
Retail Only Maximum Hour	\$/HCF/d	99.65	99.65	99.65	97.33	99.65	99.65	99.65	99.65	99.65	99.65	99.65	99.65	97.33
Units														
Base	HCF	11,027,361	5,308,238	245,846	1,507,770	1,838,533	0	425,166	0	2,750,727	1,047,205	394,986	3,496,618	11,461,006
Maximum Day	HCF/d	12,954	7,571	228	2,096	3,323	0	1,168	0	3,166	2,557	1,255	13,254	26,821
Maximum Hour	HCF/d	35,958	18,644	741	1,238	5,480	0	1,202	0	5,622	952	419	3,941	18,855
Total Cost														
CTA Base		\$ 12,403,757	\$ 5,970,793	\$ 276,532	\$ 1,683,924	\$ 2,068,012	\$ -	\$ 478,234	\$ -	\$ 3,094,063	\$ 1,177,914	\$ 444,287	\$ 3,933,053	\$ 12,879,487
CTA Maximum Day		\$ 2,783,306	\$ 1,626,735	\$ 48,947	\$ 443,260	\$ 714,041	\$ -	\$ 250,985	\$ -	\$ 680,294	\$ 549,472	\$ 269,677	\$ 2,847,765	\$ 5,755,494
CTA Maximum Hour		\$ 811,842	\$ 420,949	\$ 16,722	\$ 23,894	\$ 123,717	\$ -	\$ 27,144	\$ -	\$ 126,941	\$ 21,500	\$ 9,461	\$ 88,989	\$ 421,645
Retail Only Base		\$ 3,364,475	\$ 1,619,556	\$ 75,008	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Only Maximum Day		\$ 2,128,529	\$ 1,244,044	\$ 37,432	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Only Maximum Hour		\$ 3,583,350	\$ 1,858,004	\$ 73,810	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PLUS:														
Retail Service Charge Costs		\$ 4,521,581	\$ 2,297,297	\$ 95,291	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Fire Protection Costs		\$ 159,526	\$ 81,051	\$ 3,362	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Private Fire Line Costs		\$ 804,543	\$ 408,767	\$ 16,955	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Public Fire Costs		\$ 330,265	\$ 167,799	\$ 6,960	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Rate Year Revenue Requirement		\$ 30,891,173	\$ 15,694,994	\$ 651,019	\$ 2,151,078	\$ 2,905,770	\$ -	\$ 756,362	\$ -	\$ 3,901,298	\$ 1,748,886	\$ 723,426	\$ 6,869,808	\$ 19,056,627
Rate Year Sales	HCF	8,396,176	4,041,665	187,186	1,494,845	1,822,773	0	421,521	0	2,727,147	1,038,229	391,600	3,466,644	11,362,760
Volumetric Rate Build-Up														
Base	\$/HCF	\$ 1.878025	\$ 1.878025	\$ 1.878025	\$ 1.126488	\$ 1.134542	\$ -	\$ 1.134542	\$ -	\$ 1.134542	\$ 1.134542	\$ 1.134542	\$ 1.134542	\$ 1.133482
Maximum Day	\$/HCF	\$ 0.585009	\$ 0.710296	\$ 0.461462	\$ 0.296525	\$ 0.391733	\$ -	\$ 0.595426	\$ -	\$ 0.249453	\$ 0.529240	\$ 0.688654	\$ 0.821476	\$ 0.506523
Maximum Hour	\$/HCF	\$ 0.523475	\$ 0.563865	\$ 0.483647	\$ 0.015984	\$ 0.067873	\$ -	\$ 0.064395	\$ -	\$ 0.046547	\$ 0.020708	\$ 0.024161	\$ 0.025670	\$ 0.037108
Service Charge	\$/HCF	\$ 0.538529	\$ 0.568403	\$ 0.509069	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Fire	\$/HCF	\$ 0.019000	\$ 0.020054	\$ 0.017960	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Private Fire	\$/HCF	\$ 0.095823	\$ 0.101138	\$ 0.090581	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Public Fire	\$/HCF	\$ 0.039335	\$ 0.041517	\$ 0.037183	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$/HCF	\$ 3.679195	\$ 3.883299	\$ 3.477928	\$ 1.438997	\$ 1.594148	\$ -	\$ 1.794363	\$ -	\$ 1.430542	\$ 1.684490	\$ 1.847357	\$ 1.981688	\$ 1.677113
Rounded	\$/HCF	\$ 3.680000	\$ 3.884000	\$ 3.478000	\$ 1.438998	\$ 1.594149	\$ -	\$ 1.794364	\$ -	\$ 1.430542	\$ 1.684491	\$ 1.847358	\$ 1.981689	\$ 1.677113
Revenues		\$ 30,897,928	\$ 15,697,827	\$ 651,033	\$ 2,151,079	\$ 2,905,771	\$ -	\$ 756,363	\$ -	\$ 3,901,299	\$ 1,748,887	\$ 723,426	\$ 6,869,811	\$ 19,056,635
COS		\$ 30,891,173	\$ 15,694,994	\$ 651,019	\$ 2,151,078	\$ 2,905,770	\$ -	\$ 756,362	\$ -	\$ 3,901,298	\$ 1,748,886	\$ 723,426	\$ 6,869,808	\$ 19,056,627
Variance due to Rounding		\$ 6,755	\$ 2,833	\$ 13	\$ 1	\$ 1	\$ -	\$ 0	\$ -	\$ 1	\$ 1	\$ 0	\$ 3	\$ 8

Schedule HJS-22: Proposed Rates**AMENDED BY MICHAEL R. MAKER**

Providence Water Supply Board

Docket # _____

Request for General Rate Relief

Direct Testimony of Harold J. Smith

Test Year Ending June 30, 2019

Rate Years Ending June 30, 2021 through 2023

Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Service Charges												
5/8"	57,812	\$ 7.56	\$ 5,244,705	40.08%	\$ 10.59	\$ 7,346,749	7.26%	\$ 11.36	\$ 7,879,926	3.94%	\$ 11.81	\$ 8,190,784
3/4"	11,326	\$ 8.05	\$ 1,094,092	40.00%	\$ 11.27	\$ 1,531,728	7.26%	\$ 12.09	\$ 1,642,891	3.94%	\$ 12.56	\$ 1,707,702
1"	5,335	\$ 9.50	\$ 608,190	40.00%	\$ 13.30	\$ 851,466	7.26%	\$ 14.27	\$ 913,260	3.94%	\$ 14.83	\$ 949,287
1.5"	1,547	\$ 11.43	\$ 212,187	40.07%	\$ 16.01	\$ 297,210	7.26%	\$ 17.17	\$ 318,779	3.94%	\$ 17.85	\$ 331,355
2"	1,357	\$ 16.76	\$ 272,920	40.04%	\$ 23.47	\$ 382,185	7.26%	\$ 25.17	\$ 409,922	3.94%	\$ 26.17	\$ 426,093
3"	73	\$ 56.01	\$ 49,065	40.01%	\$ 78.42	\$ 68,696	7.26%	\$ 84.11	\$ 73,681	3.94%	\$ 87.43	\$ 76,588
4"	35	\$ 70.55	\$ 29,631	40.00%	\$ 98.77	\$ 41,483	7.26%	\$ 105.94	\$ 44,494	3.94%	\$ 110.12	\$ 46,249
6"	57	\$ 104.47	\$ 71,457	40.00%	\$ 146.26	\$ 100,042	7.26%	\$ 156.87	\$ 107,302	3.94%	\$ 163.06	\$ 111,535
8"	42	\$ 143.23	\$ 72,188	40.01%	\$ 200.53	\$ 101,067	7.26%	\$ 215.08	\$ 108,402	3.94%	\$ 223.57	\$ 112,678
10"	4	\$ 178.36	\$ 8,561	40.00%	\$ 249.71	\$ 11,986	7.26%	\$ 267.83	\$ 12,856	3.94%	\$ 278.40	\$ 13,363
12"	-	\$ 213.49	\$ -	40.00%	\$ 298.89	\$ -	7.26%	\$ 320.58	\$ -	3.94%	\$ 333.23	\$ -
Total Service Charge	77,588		\$ 7,662,995	40.06%		\$ 10,732,613	7.26%		\$ 11,511,512	3.94%		\$ 11,965,635
						\$ -						
Retail Fire Protection Service Charges (Providence Only)												
5/8"	25,954	\$ 1.38	\$ 429,798	40.58%	\$ 1.94	\$ 604,209	7.26%	\$ 2.08	\$ 648,058	3.94%	\$ 2.16	\$ 673,624
3/4"	4,580	\$ 2.07	\$ 113,767	40.10%	\$ 2.90	\$ 159,384	7.26%	\$ 3.11	\$ 170,951	3.94%	\$ 3.23	\$ 177,695
1"	2,091	\$ 5.15	\$ 129,224	40.00%	\$ 7.21	\$ 180,913	7.26%	\$ 7.73	\$ 194,043	3.94%	\$ 8.04	\$ 201,698
1.5"	902	\$ 13.74	\$ 148,722	40.03%	\$ 19.24	\$ 208,254	7.26%	\$ 20.64	\$ 223,367	3.94%	\$ 21.45	\$ 232,179
2"	792	\$ 32.96	\$ 313,252	40.02%	\$ 46.15	\$ 438,610	7.26%	\$ 49.50	\$ 470,441	3.94%	\$ 51.45	\$ 489,000
3"	55	\$ 89.26	\$ 58,912	40.01%	\$ 124.97	\$ 82,480	7.26%	\$ 134.04	\$ 88,466	3.94%	\$ 139.33	\$ 91,956
4"	20	\$ 151.05	\$ 36,252	40.00%	\$ 211.47	\$ 50,753	7.26%	\$ 226.82	\$ 54,436	3.94%	\$ 235.76	\$ 56,584
6"	28	\$ 308.97	\$ 103,814	40.00%	\$ 432.56	\$ 145,340	7.26%	\$ 463.95	\$ 155,888	3.94%	\$ 482.25	\$ 162,038
8"	15	\$ 466.89	\$ 84,040	40.00%	\$ 653.65	\$ 117,657	7.26%	\$ 701.09	\$ 126,196	3.94%	\$ 728.74	\$ 131,174
10"	2	\$ 714.07	\$ 17,138	40.00%	\$ 999.70	\$ 23,993	7.26%	\$ 1,072.25	\$ 25,734	3.94%	\$ 1,114.55	\$ 26,749
12"	-	\$ 1,180.95	\$ -	40.00%	\$ 1,653.33	\$ -	7.26%	\$ 1,773.32	\$ -	3.94%	\$ 1,843.27	\$ -
Total Retail FPSC (Providence Only)	34,439		\$ 1,434,918	40.19%		\$ 2,011,593	7.26%		\$ 2,157,580	3.94%		\$ 2,242,696
Total Retail Service Charge Revenue												
			\$ 9,097,913	40.08%		\$ 12,744,205	7.26%		\$ 13,669,093	3.94%		\$ 14,208,330
Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Retail Consumption Charges												
Residential	8,396,176	\$ 3.403	\$ 28,572,187	8.14%	\$ 3.680	\$ 30,897,928	7.26%	\$ 3.947	\$ 33,140,288	3.94%	\$ 4.103	\$ 34,447,653
Commercial	4,041,665	\$ 3.223	\$ 13,026,286	20.51%	\$ 3.884	\$ 15,697,827	7.26%	\$ 4.166	\$ 16,837,068	3.94%	\$ 4.330	\$ 17,501,280
Industrial	187,186	\$ 3.169	\$ 593,192	9.75%	\$ 3.478	\$ 651,033	7.26%	\$ 3.730	\$ 698,280	3.94%	\$ 3.878	\$ 725,827
Total Retail Consumption Charge	12,625,027		\$ 42,191,666	11.98%		\$ 47,246,787	7.26%		\$ 50,675,637	3.94%		\$ 52,674,760
East Smithfield Debt Surcharge	235,576	\$ 0.35	\$ 82,451	0.00%	\$ 0.350	\$ 82,451	0.00%	\$ 0.350	\$ 82,451	0.00%	\$ 0.350	\$ 82,451
Total Retail Volume Charge Revenue			\$ 42,274,117	11.96%		\$ 47,329,239	7.24%		\$ 50,758,088	3.94%		\$ 52,757,212
Total Retail Revenue			\$ 51,372,030	16.94%		\$ 60,073,444	7.25%		\$ 64,427,181	3.94%		\$ 66,965,542

Schedule HJS-22: Proposed Rates**AMENDED BY MICHAEL R. MAKER**

Providence Water Supply Board

Docket # _____

Request for General Rate Relief

Direct Testimony of Harold J. Smith

Test Year Ending June 30, 2019

Rate Years Ending June 30, 2021 through 2023

Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Wholesale Charges												
Bristol County	1,494,845	\$ 1.350858	\$ 2,019,323	6.52%	\$ 1.438998	\$ 2,151,079	7.26%	\$ 1.543431	\$ 2,307,189	3.94%	\$ 1.604318	\$ 2,398,207
East Providence	1,822,773	\$ 1.350858	\$ 2,462,307	18.01%	\$ 1.594149	\$ 2,905,771	7.26%	\$ 1.709841	\$ 3,116,652	3.94%	\$ 1.777294	\$ 3,239,602
Greenville	421,521	\$ 1.350858	\$ 569,415	32.83%	\$ 1.794364	\$ 756,363	7.26%	\$ 1.924587	\$ 811,254	3.94%	\$ 2.000510	\$ 843,258
Kent County	2,727,147	\$ 1.350858	\$ 3,683,989	5.90%	\$ 1.430542	\$ 3,901,299	7.26%	\$ 1.534361	\$ 4,184,429	3.94%	\$ 1.594891	\$ 4,349,502
Lincoln	1,038,229	\$ 1.350858	\$ 1,402,499	24.70%	\$ 1.684491	\$ 1,748,887	7.26%	\$ 1.806740	\$ 1,875,809	3.94%	\$ 1.878015	\$ 1,949,809
Smithfield	391,600	\$ 1.350858	\$ 528,996	36.75%	\$ 1.847358	\$ 723,426	7.26%	\$ 1.981427	\$ 775,927	3.94%	\$ 2.059593	\$ 806,537
Warwick	3,466,644	\$ 1.350858	\$ 4,682,944	46.70%	\$ 1.981689	\$ 6,869,811	7.26%	\$ 2.125506	\$ 7,368,375	3.94%	\$ 2.209356	\$ 7,659,053
Total Wholesale Revenue	11,362,760		15,349,475	24.15%	\$ 1.677113	19,056,635	7.26%	\$ 1.798827	20,439,636	3.94%	\$ 1.869789	21,245,967

Wholesale (per million gallons)	8,499	\$ 1,805.96	\$ 15,349,475	24.15%	\$ 2,242.13	\$ 19,056,635		\$ 2,404.85	\$ 20,439,636		\$ 2,499.72	\$ 21,245,967
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Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Private Fire Service Charges												
3/4"	2	\$ 8.64	\$ 207	20.02%	\$ 10.37	\$ 249	7.26%	\$ 11.12	\$ 267	3.94%	\$ 11.56	\$ 277
1"	9	\$ 10.21	\$ 1,103	20.08%	\$ 12.26	\$ 1,324	7.26%	\$ 13.15	\$ 1,420	3.94%	\$ 13.67	\$ 1,476
1-1/2"	2	\$ 12.57	\$ 302	20.05%	\$ 15.09	\$ 362	7.26%	\$ 16.19	\$ 388	3.94%	\$ 16.82	\$ 404
2"	68	\$ 18.64	\$ 15,210	20.01%	\$ 22.37	\$ 18,254	7.26%	\$ 23.99	\$ 19,579	3.94%	\$ 24.94	\$ 20,351
4"	391	\$ 79.67	\$ 373,812	20.01%	\$ 95.61	\$ 448,602	7.26%	\$ 102.55	\$ 481,159	3.94%	\$ 106.59	\$ 500,140
6"	1,245	\$ 129.89	\$ 1,940,557	20.00%	\$ 155.87	\$ 2,328,698	7.26%	\$ 167.18	\$ 2,497,699	3.94%	\$ 173.78	\$ 2,596,232
8"	256	\$ 196.73	\$ 604,355	20.00%	\$ 236.08	\$ 725,238	7.26%	\$ 253.21	\$ 777,871	3.94%	\$ 263.20	\$ 808,557
10"	4	\$ 274.06	\$ 13,155	20.00%	\$ 328.88	\$ 15,786	7.26%	\$ 352.75	\$ 16,932	3.94%	\$ 366.66	\$ 17,600
12"	18	\$ 367.64	\$ 79,410	20.00%	\$ 441.17	\$ 95,293	7.26%	\$ 473.19	\$ 102,208	3.94%	\$ 491.85	\$ 106,240
16"	-	\$ 611.43	\$ -	20.00%	\$ 733.72	\$ -	7.26%	\$ 786.97	\$ -	3.94%	\$ 818.01	\$ -
Total		\$ 3,028,110	\$ 3,028,110	20.00%		\$ 3,633,806	7.26%		\$ 3,897,522	3.94%		\$ 4,051,277
						\$ -						
Hydrants (Excluding Providence)	3,318	\$ 454.02	\$ 1,506,438	20.00%	\$ 544.83	\$ 1,807,746	7.26%	\$ 584.37	\$ 1,938,940	3.94%	\$ 607.42	\$ 2,015,430
Total Fire Protection Charge Revenue			\$4,534,548.24			\$5,441,551.62			\$5,836,462.26			\$6,066,707.22

Total Rate Revenues	\$ 71,256,053				\$ 84,571,631			\$ 90,703,279			\$ 94,278,216
Miscellaneous Revenues	\$ 1,364,746				\$ 1,364,746			\$ 1,364,746			\$ 1,364,746
Total Revenues	\$ 72,620,799	18.34%			\$ 85,936,377	7.14%		\$ 92,068,025	3.88%		\$ 95,642,962

EXHIBIT 7

have been six years of declines where the utility was unable to collect its anticipated revenues, that consumption has continued to decrease and may continue to decrease with the implementation of monthly billing and that an end to the decline in consumption is unknown, the majority opined that modifying the Division's recommendation to half of the adjustment it originally recommended would be fair and reasonable. It conditioned this allowance of additional funds to the test year amount on restricting any revenues that are obtained in excess of this target being held in a restricted account to afford the PWSB with greater IFR ability.

The Commission also discussed the PWSB's debt service funding proposal and how the appropriate timing would ensure that rates are producing the revenue required to make the PWSB's bond payments. The majority reasoned that in order to achieve an appropriate match, the PWSB should have six months of payments at the conclusion of FY2012. The fact that the revenue is restricted provides sufficient protections to ensure that the money is not being used for purposes other than those for which it is intended. Accepting that failure of the utility to comply with its bond covenants would jeopardize its bond rating, the majority agreed to allow the utility to collect the amount it proposed conditioning the approval upon the continuation of the requirement that such funds be restricted.

The last issue the Commission discussed was the proposal for a Phase II increase commencing on January 1, 2012. The majority approved the PWSB's proposal for a Phase II increase for new debt and trustee costs, denied the request for an inflationary adjustment and followed the Division's recommendation as to the increase to the revenue stability fund. The majority reasoned that its interpretation of the intent of the legislature

in passing R.I. Gen. Laws §39-15.1-4 was to allow for water utilities to obtain step increases for those expenses that were known and measurable. The majority did not believe that the statute was intended to “open up Pandora’s box” by allowing for every projected cost which the majority believed would undermine the Commission’s role in the ratemaking process. The majority opined that an increase for inflation as part of Phase II was speculative and not known or measurable and therefore denied it based on its interpretation of the legislative intent of the statute. With regard to the increase requested for the rate stabilization fund, the majority found no reason to increase the total amount of funding beyond the incremental increases, as the Commission had just approved the 1.5% of all operating expenses for the revenue stability fund as part of Phase I of this Docket. It therefore approved the PWSB’s request for an increase to the rate stabilization fund of 1.5% but only as to incremental costs as recommended by the Division. The Chairman dissented arguing that the statute, R.I. Gen. Laws §39-15.1-4 specifically refers to projections and therefore, the utility should not be limited to known and measurable changes.

Even though not disputed by the parties, the Commission is compelled to discuss its reasoning and decision with regard to the PWSB’s request to convert to monthly billing. Previously, in Docket No. 4026, the Commission found that the implementation of monthly billing by the Narragansett Bay Commission would allow customers the ability to better manage smaller bills. See Order No. 19693. The Commission has no evidence that would support denying this request. Currently, customers of National Grid, Pascoag Utility District, and the Narragansett Bay Commission are billed on a monthly basis. This frequency of billing affords the utility the access to the money it needs to