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January 14, 2022

Hand Delivery
Ms. Luly Massaro, Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

Re: Providence Water Supply Board – Docket 4994

Dear Ms. Massaro:

Enclosed herewith please find an original and nine copies of the following document:

1. Surrebuttal Testimony of Michael R. Maker on behalf of the Bristol County Water Authority.

Please be advised that an electronic copy of this document has been sent to the service list. Thank you for your attention to this matter.

Sincerely,

Joseph A. Keough, Jr.

JAK/kf
Enclosures

cc: Service List (via email)

STATE OF RHODE ISLAND

PUBLIC UTILITIES COMMISSION

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

IN RE:

PROVIDENCE WATER SUPPLY BOARD

COST OF SERVICE STUDY COMPLIANCE FILING

DOCKET 4994

JANUARY 14, 2022

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I. INTRODUCTION

Q. Please state your name and business address.

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

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

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

Q. Are you the same Michael Maker who provided direct and surrebuttal testimonies on behalf of the Bristol County Water Authority in Providence's original filing in this Docket and direct testimony related to Providence's April 1, 2021 compliance filing?

A. Yes, I am.

Q. Can you provide an overview of your compliance filing surrebuttal testimony?

A. Yes. I will begin by addressing the rebuttal testimony filed by Harold Smith and Gregg Giasson on behalf of Providence related to its compliance filing, and then I will address the direct testimonies submitted by the Division's witness Jerome Mierzwa; Greenville/Lincoln's witnesses, Jason Mumm and Dr. Ivor Ellul; and, Smithfield's witness, John Guastella.

II. PROVIDENCE'S REBUTTAL TESTIMONY

Q. After reviewing Providence's rebuttal testimony, have you changed your opinion that T&D unit costs should not be allocated using data from Pare's hydraulic model as proposed by Providence?

A. No, I have not.

Q. In your direct compliance testimony, you reviewed the five issues the Commission ordered Providence to address in a revised COSS, and you pointed out that Providence made additional changes that were not ordered by the Commission. Have you changed your position on this matter after reviewing Providence's rebuttal testimony?

A. No, I have not. In Mr. Smith's compliance rebuttal testimony, he acknowledges the five issues the Commission ordered Providence to examine. (Smith Compliance Rebuttal, p. 1, l. 25 to p. 2, l. 2) Mr. Smith goes on to say that "The Order states that the new COSS should, at a minimum, address these specific issues." However, I do not see this language in the Order. The only reference to the word "minimum" is on page 15 in referencing Jerome Mierzwa's testimony that one principle of rate design is to "provide stability and predictability of the rates themselves, with a minimum of unexpected changes seriously adverse to ratepayers or the utility (gradualism)…"

Q. On page two of his testimony, Mr. Smith states the "Order is clear that the New COSS is intended to be a refinement of the Amended Settlement Agreement COSS (ASA COSS), not a complete departure from it." Do you agree with this statement?

A. I agree with Mr. Smith's characterization of the Order, and for a number of reasons, it is my position that the Revised COSS is more than a refinement. It is a significant departure from the ASA COSS due to the allocation of T&D unit costs based on the hydraulic modeling data. The hydraulic modeling data should not be used in the Revised COSS to allocate T&D unit costs.

Q. Why do you believe that Pare's hydraulic modeling data should not be used to allocate T&D unit costs?

A. The reasons are as follows:

1. Contrary to Mr. Smith's compliance rebuttal testimony, the hydraulic modeling data does not allocate "the costs associated with constructing, operating, and maintaining the T&D system in a way that better reflects how these assets are used to meet both the average and peak demands of each wholesale customer than if these costs had been allocated based on peaking factors." (Smith Compliance Rebuttal, p. 6, ll. 3-5) In fact, the hydraulic modeling data does not reflect the average and peak demands of *each* wholesale customer.

2. As Mr. Smith acknowledges in his compliance rebuttal testimony, the Revised COSS used two cost allocation approaches, the base-extra cost capacity method and the allocation of T&D unit costs using hydraulic modeling data. (Smith Compliance Rebuttal, p. 4, ll. 18-21) The first of these – the base-extra capacity method – is recognized as one of two generally accepted methods of cost allocation by the American Water Works Association (AWWA) Manual M1, *Principles of Water Rates, Fees, and Charges (*7th Edition) ("M1 Manual"). The other is not, and Mr. Smith did not address the fact that this methodology has never been used in this jurisdiction or any other jurisdiction of which I am aware.

3. The Commission did not order Providence to change the cost allocation methodology employed in the ASA COSS, and the use of two different cost allocation methods produces wholesale rates that are a significant departure from the rates approved by the Commission in the ASA COSS.

4. The hydraulic modeling data may be flawed, and neither Mr. Smith nor Mr. Giasson addressed this issue in their rebuttal testimonies.

Q. Let's begin with Providence's use of the hydraulic modeling data to allocate T&D costs. Mr. Smith's rebuttal testimony continues to maintain that this is a more accurate way to allocate these costs. Why do you disagree with this testimony?

A. To start with, I think it is important to recall Mr. Smith's testimony when Providence made its original filing in this Docket back in December 2019:

"I developed the cost of service analysis using the "Base-Extra Capacity Method'" as outlined in the American Water Works Association's Manual M1: "Principles of Rates, Fees and Charges." This approach allocates costs to customer classes in proportion to their use of the Providence Water system. Under this approach, **costs are primarily allocated based on peak demand, both on a maximum day and maximum hour**

basis. The rationale for this approach lies in the manner in which a water system is designed.

Water systems are designed to deliver water to customers to meet **both average and peak usage demands**. Accordingly, treatment, storage and pumping facilities must be designed with additional capacity to meet the peak demands, in addition to average demands. In addition, **transmission and distribution mains must also be oversized to allow for additional flow during peak demand periods**. The capacity built into Providence Water's infrastructure represents an additional cost which is incurred above and beyond what would be the case if customers used water at the same rate every day and throughout the day.

Given that that additional costs are included to provide this additional capacity, the question then becomes how those costs should be recovered from the users of the water system. **The Base-Extra Capacity Method assigns costs to users in proportion to both *their* average day demands and *their* extra capacity demands**. For example, costs which are included to provide maximum day service are allocated to users in proportion to ***their*** **maximum day usage above and beyond *their* average day usage**. This approach recovers extra capacity costs from customers **whose extra capacity demands** drive the need for the larger water system. (Smith Direct, p. 14, l. 17 to p. 15, l. 8, emphasis added)

As I pointed out in my direct compliance testimony, Pare ran its hydraulic model based on two days: May 24, 2018 for average day and July 13, 2016 for both maximum day and maximum hour. These dates represent the average day, max day, and max hours for Providence's *entire* system. They are not the average day, max day, and max hours for each individual wholesale customer.

Q. Why is this a problem?

A. It is a problem because the hydraulic modelling data does not capture how each wholesale customer uses the system during *their* individual average days, max days, and max hours. I won't repeat my direct compliance testimony, but as pointed out on pages 20-23, the May 4, 2021 Technical Session clearly established that the hydraulic modeling data is not representative of each wholesale customer's use of the system

on their individual average day, max day, and max hour. So, by using the hydraulic modeling data, T&D costs are *not* allocated to users in proportion to both *their* average day demands and *their* extra capacity demands, which is how costs should be allocated under the Base-Extra Capacity Method set forth in the M1 Manual.

Q. But Mr. Smith's compliance rebuttal testimony points out that the BCWA's legal counsel asked Providence to run a hydraulic model. Doesn't that contradict the BCWA's position?

A. No, I don't believe it does.

First, in my direct testimony, I acknowledged that the hydraulic modeling data can serve some purposes. As Mr. Smith noted, the ASA COSS separated transmission (12 inches and less) and distribution (12 inches and greater) mains strictly by diameter. So, for instance, in this Docket, the BCWA originally argued that it should not be allocated any unidirectional flushing costs because Providence only flushes mains in the system that are 12 inches and below. The BCWA maintained that it was not served by any mains 12 inches and below. Thus, a hydraulic model would be able to prove or disprove the BCWA's argument on this issue.

Second, the portion of the letter highlighted in Mr. Smith's testimony states: "This hydraulic model could be run for average day and peak day and should be able to determine the percentage capacity of each storage tank, pump station, and section of transmission main attributable to each wholesale customer." However, the hydraulic model does not measure the percentage capacity of each storage tank, pump station, and section of transmission main attributable to each wholesale customer during each wholesale customer's average day and peak day. So, from my perspective, Pare's hydraulic model does not adequately assign T&D costs.

Thus, while the hydraulic model can be used to determine which size pipes individual wholesale customers use, using the hydraulic model to allocate T&D costs is a step too far.

Q. How so?

A. As Mr. Smith stated in his compliance rebuttal, "T&D costs are allocated based on data generated by the hydraulic model using essentially two steps. First the mains which are used by a customer are determined." (Smith Compliance Rebuttal, p.5, ll. 8-9). As I stated above, I agree that the hydraulic model can be used for this purpose and the allocation of costs such as unidirectional flushing. However, Mr. Smith goes on to state: "Second, the proportion of those mains (based on relative draw rates) is determined. In other words, the hydraulic model approach identifies the universe of mains that each customer uses **and determines each customer's proportionate share of those mains only**. The result is a breakdown of mains by length and diameter for each individual wholesale customer and retail (in total). T&D costs were allocated based on each class's proportionate share of the water mains." (Id. at ll. 9-14, emphasis added)

As Providence acknowledged at the technical session, the hydraulic model only "determines each customer's proportionate share of the water mains" used on the two days the hydraulic model was run – May 14, 2018 for average day and June 13, 2016 for max day and max hour – which are not the average day, max day and max hour for each individual wholesale customer. Thus, we don't know what each wholesale customer's proportionate use of water mains is under those three conditions.

Q. Let's now turn to Providence's use of two cost allocation approaches – the base-extra cost capacity method and the allocation of T&D costs using hydraulic modeling data – in the same cost of service study. Do you agree with this method for allocating costs?

A. No, I do not.

Q. Please explain why you disagree.

A. First, as I pointed out in my direct compliance testimony, the M1 Manual sets the industry standard for generally accepted ratemaking principles, and the Base-Extra Capacity method is one of two of the most widely recognized and accepted methods of allocating water utility costs to customers (the other being the Commodity-Demand Method). The M1 Manual does not provide for the allocation of T&D costs (or any costs) based on hydraulic modeling, especially at times that may not reflect the actual average day, max day, and max hour of wholesale customers. As I also stated in my direct testimony, the phrase "draw rate" does not appear at all in the M1 Manual, and the word "hydraulic" appears exactly once:

> "Another approach to determining distribution versus transmission mains, though less common in practice and more complex to perform, is to use system hydraulic analyses to determine which water mains, by size diameter and location, function as transmission mains." (P. 303)

This suggests that a hydraulic model could be used to distinguish between transmission mains (typically used by wholesale and retail customers) and distribution mains (typically used only by retail customers). As I have stated on several occasions, I believe a hydraulic model can be used for this purpose, but there is nothing in the M1 Manual to suggest that T&D unit costs should be calculated based on hydraulic modelling data derived from days that may not be a wholesale

customer's average or max day and from hours that may not be a wholesale customer's max hour.

Q. Mr. Smith's compliance rebuttal testimony suggests that he used the two methodologies because the hydraulic modeling data provides more accurate data to assign T&D costs. Do you agree?

A. No. Mr. Smith testified that "Two different approaches were used, but each represents the best and most accurate approach for that component of the system." (Smith Compliance Rebuttal, p. 7, ll. 16-17) He went on to state that "The reason two approaches were used is because Providence Water now has a more precise method for determining how each customer class uses its T&D system." (Id., ll. 26-27) I disagree with his position because the hydraulic modeling data does not determine how each wholesale customer uses the T&D system under their individual average day, max day, and max hour. As Pare acknowledged at the technical session, hydraulic modeling "utilizes a lot of averaging", so it does not precisely determine how each wholesale customer uses the T&D system.

Q. In your direct compliance testimony, you indicated that you were not aware of hydraulic modeling data being used to allocate T&D unit costs in this jurisdiction or any other jurisdiction you are aware of, and, to your knowledge, Mr. Smith has never previously employed the use of such a methodology. Did Providence address this issue in its rebuttal testimony?

A. No.

Q. Is this still a concern?

A. Yes. This seems to be a new method for allocating costs, and as stated above, the M1 Manual does not address this methodology. Furthermore, it does not seem

consistent with the Base-Extra Capacity Method set forth in the M1 Manual, which seeks to allocate costs based on peak demand, both on a maximum day and maximum hour basis.

Q. Going back to the Commission's Order directing Providence to submit a revised cost of service study, did the Commission direct Providence to change the Base-Extra Capacity Methodology used in the ASA COSS?

A. No, the Commission set forth five issues it wanted Providence to address. The Order does not direct Providence to change the cost allocation methodology used in the ASA COSS. In addition, Providence indicated that it wanted to address "nuances" involved in serving each wholesale customer. However, by implementing this new cost allocation methodology, Providence has not addressed how each wholesale customer uses the system under their individual average day, max day, and max hours. Further, the rates produced by implementing the new cost allocation methodology are a significant departure from the rates approved by the Commission in the ASA COSS, which I addressed on pages 26 and 27 of my direct compliance testimony.

Q. In your direct compliance testimony, you indicated that the hydraulic modeling data may be flawed. Did either of Providence's witnesses address this issue in their rebuttal testimonies?

A. No, they did not.

Q. Did Providence's witnesses address any other issues you raised in your direct compliance testimony?

A. Yes. Mr. Smith addressed two specific sections of my testimony. The first is my testimony on page six, where I directly quoted Mr. Smith's testimony from Docket

3832, which acknowledged that Providence's single wholesale rate had not resulted from a formal cost of service study. Mr. Smith goes on to state: "With regard to my testimony that Mr. Maker references from Docket 3832, Mr. Maker seems to be implying that Providence Water's wholesale rates have historically not been calculated using cost of service principles, when in fact the purpose of my testimony in that docket was to explain that the proposed increases to wholesale rates were greater than the proposed increases to retail rates because wholesale rates in the previous docket (Docket 3684) had been set to recover less than the full cost of providing wholesale service while retail rates had been set to recover more than the cost of providing retail service." (Smith Compliance Rebuttal, p. 10, ll. 21-27)

Q. Were you making this implication?

A. No. This portion of my testimony was in the section entitled "Docket 4994 And Providence's Cost Of Service Study History" in which I was simply reviewing Providence's history regarding cost of service studies. I don't believe it is disputed that Providence had not submitted a formal cost of service in many years, which is why, in 2017, the Commission ordered Providence to "complete and submit a new cost of service study conducted without reference to previously used Commission allocators" in its next general rate filing. (See Docket 4618, Order No. 23666).

Q. Mr. Smith also referenced your direct compliance testimony in that same section about his cost of service studies for Newport Water. Do you agree with his characterization of your testimony?

A. No. Again, my testimony referencing Mr. Smith's cost of service studies for Newport Water is in the section of my testimony on the history behind Providence's submission of its original cost of service study in Docket 4994 and the litigation in that docket. The question was asked whether the BCWA had any other objections to

Providence's proposal for a single wholesale rate in Providence's original cost of service study. I responded that one of the BCWA's objections was that Mr. Smith, during his representation of Newport, had calculated individual wholesale rates for Newport's two wholesale customers – the Portsmouth Water and Fire District and the United States Navy – using those customers' peaking factors. The significance of this testimony was that if individual rates could be calculated by Mr. Smith and approved by the Commission for Newport's wholesale customers, then the same could be done for Providence's wholesale customers.

In his Compliance Rebuttal testimony, Mr. Smith confirms that my testimony was accurate as he states: "With regard to the wholesale rates calculated for Newport Water, it is true that those rates are determined in part by using peaking factors for the individual wholesale customers…" (Smith Compliance Rebuttal, p. 11, ll. 1-2) However, Mr. Smith goes on to state: "… but Mr. Maker fails to recognize that peaking factors play no part in the allocation of T&D costs to Portsmouth Water and Fire District and have only a small impact on the allocation of T&D costs to the US Navy."

Q. Did you ever testify that Mr. Smith allocated the Portsmouth Water and Fire District's T&D costs using peaking factors?

A. No. Again, I was merely recounting that one of the BCWA's original objections to Providence's proposal for a single wholesale rate was that Mr. Smith had calculated individual rates for Newport's wholesale customers in cost of service studies he prepared for Newport.

III. DIVISION'S DIRECT TESTIMONY

Q. Did the Division make any recommendations regarding Providence's Revised COSS?

A. Yes, Mr. Mierzwa suggested that the demands of retail customers who don't require pumping (those in the "low service system") should be excluded from the allocation of pumping costs. In its rebuttal testimony, Providence agreed to make this change. The BCWA does not take a position on this issue and will not object to this change.

IV. LINCOLN/GREENVILLE DIRECT TESTIMONY

Q. Do you have any observations or comments on the direct compliance testimony submitted by Lincoln/Greenville?

A. Yes. I reviewed the testimonies of Jason Mumm and Dr. Ivor Ellul, and I have some observations and comments on both of their testimonies.

Q. Let's start with Mr. Mumm. What observations and comments do you have regarding his testimony?

A. On pages 7 through 10 of Mr. Mumm's testimony, he points out that Providence used two different peaking factors – one to allocate T&D costs and another to allocate all other costs. Mr. Mumm refers to the coincidental peaking factors for the wholesale customers derived from the hydraulic study as "more precise" than the non-coincidental peaking factors. Included in that section of his testimony, he states that "Providence's decision to use coincidental peaks to allocate some costs and noncoincidental to allocate others is both irrational and inconsistent" and that "Providence could address these issues by choosing one method of calculating peak demand and then applying it the same way throughout the cost allocation process, much like it had done in its original filing." (Mumm Compliance Direct, p. 8, l.22 to p. 9, l. 1 and p. 9, ll. 11-13) Mr. Mumm then suggests that Providence should align all peaking factors with the Pare analysis. (Id. p. 9, ll. 13-18) Yet, Mr. Mumm states that

the "Pare analysis almost certainly misallocates the costs of the T&D network." (Id. p. 13, l. 18) In response to BCWA Data Request 1-4, Mr. Mumm made clear that he referred to the Pare analysis as "more precise" because that is how Providence referred to the analysis. Mr. Mumm also maintained his position that using two measures of demand in the same cost of service study is not reasonable.

Q. Do you agree with Mr. Mumm's position?

A. As stated above, I agree that Providence should not have used the base-extra capacity method to allocate most costs and then used the hydraulic modelling data to allocate T&D unit costs. Providence should use one method – the base-extra capacity method – to allocate all costs. I do not believe that Pare's hydraulic modelling data is more precise for the purpose of allocating T&D unit costs for all the reasons set forth in my direct compliance testimony and my surrebuttal compliance testimony above.

Q. Do you have any observations or comments about Dr. Ivor Ellul's testimony?

A. Yes. Dr. Ellul's testimony seems to address many of the concerns I raised in my direct testimony regarding the use of Pare's hydraulic modeling data. In particular, the May 4, 2021 Technical Session confirmed that Pare's hydraulic model is merely a snapshot in time; yet, it is being used to develop allocations that are likely to remain in effect for many years. Further, this snapshot does not provide a picture of how each individual wholesale customer uses the system on their average day, max day, and max hour. Dr. Ellul testified that:

"Thus the approach taken by Pare represents, at best, an approximation of the manner in which the pipeline network actually behaves. Pipeline networks tend to operate in a highly dynamic manner. As Pare showed during its demonstration at the technical session in this docket, in a situation with multiple pumps running, the demand pattern for a customer can change from 40% to 170% in a time span of 6

hours. This calls into question the accuracy of the steady-state approach Pare undertook." (Ellul Compliance Direct, p. 3, ll. 10-16)

Dr. Ellul also testified that:

"…there is reason to believe that the inch-mile calculations do not accurately portray the actual usage of the T&D infrastructure by the wholesale customers, thus giving a sense of false precision to the overall analysis." (Ellul Compliance Direct, p. 5, ll. 17-19)

Q. Did Dr. Ellul make any recommendations?

A. Yes, it was Dr. Ellul's position that there were flaws in Pare using a steady-state model instead of a dynamic or pseudo-dynamic model such as an Extended Period Simulation ("EPS") model, and he recommended that Pare run the latter.

Q. Do you agree with this recommendation?

A. As I stated in my direct testimony, hydraulic modeling is not within my area of expertise, so I can't say for certain whether an EPS model would show the conditions for each individual wholesale customer's average day, max day, and max hour. Furthermore, I still think Providence needs to show that using Pare's hydraulic modeling data is an appropriate method under generally accepted ratemaking principles to allocate T&D unit costs. And if it is, I also think Providence needs to demonstrate that using two different methods of allocating costs in the same cost of service study is consistent with generally accepted ratemaking principles.

V. SMITHFIELD DIRECT TESTIMONY

Q. What are your observations and comments regarding Mr. Guastella's direct compliance testimony?

A. Mr. Guastella recommends that the proposed rates for Smithfield "using the existing COSS provided by" Providence not be implemented because of the size of the

increase and because Smithfield is exploring the development of its own water sources. (Guastella Compliance Direct, p. 7 ll. 20-21)

Q. Are these valid objections?

A. No, I don't believe they are. First, I am not sure what rates Mr. Guastella proposes to be implemented. In the ASA COSS, Smithfield would have seen a 29.50% increase in FY 2021 without gradualism, and it saw an actual increase in FY 2021 of 22.83% with gradualism. In my Direct Compliance Testimony, I proposed a 19.83% increase for Smithfield in FY 2022, which has been decreased to 17.66% in my surrebuttal schedules as addressed below. In Providence's Supplemental Rebuttal Compliance testimony, it requests a 47.45% increase for Smithfield in FY 2022 without gradualism and a 12% increase with gradualism. So, some increase will have to be imposed on Smithfield.

I won't recount the entire history of how the parties arrived here, but in 2017 the Commission requested that Providence submit a cost of service study in its next general rate filing. In 2019, Providence submitted its original cost of service study in this Docket, and there was extensive litigation over this original cost of service study. We are now less than two months away from hearings on the revised cost of service study, and we should not abandon the efforts to set cost of service based rates now. It is clear that Smithfield will experience an increase because, under any of the competing scenarios in this Docket, Providence is not recovering the cost to service Smithfield. As a result, other customers are providing a subsidy. This violates generally accepted ratemaking principles, which dictate that a utility should charge rates to its customers that are based on, and proportionate to, the costs incurred to serve its different customers.

Furthermore, simply because Smithfield may develop its own water sources in the future is not a valid reason to postpone the implementation of cost of service based rates now. This is especially true because Smithfield's plan for developing its own water sources seems tenuous at this point. Attached to Mr. Guastella's testimony is a "New Water Supply Exploration" report from BETA Group, Inc. ("BETA Report"). This report indicates that the typical well development process consists of three phases. Phase I is approximately 20 weeks, and Phase II is approximately 18 months. BCWA Data Request 1-3 to Smithfield asked how long Phase III is estimated to take from beginning to completion, and Smithfield responded that "It is premature to estimate the time to complete the well project(s)." In addition, the BETA Report indicated that the costs of Phases I and II range from $90,000 to $350,000, but it did not include costs for Phase III. The BETA Report also stated that the cost estimates include the cost to install and test the well only; it does not include the additional infrastructure costs. BCWA Data Request 1-4 asked for the anticipated cost of Phase III, and BCWA Data Request 1-5 asked for the additional infrastructure costs. In response to both data requests, Smithfield stated that the cost to complete the development of Smithfield's "alternate water sources and related facilities has not been estimated." Thus, cost of service based rates should not be delayed when Smithfield does not know the time or costs needed to develop alternate water sources.

VI. BCWA'S AMENDED SCHEDULES

Q. Do you continue to maintain that rates should be allocated according to the methodology set forth in your Direct Compliance Testimony?

A. Yes. I do.

Q. Have you prepared amended schedules that document the BCWA's position in this matter?

A. Yes, and they are attached to my testimony as Exhibit 1. These schedules are the same schedules attached to my direct testimony, and I have updated them to incorporate Providence's most recent model attached to Harold Smith's supplemental rebuttal testimony ("Dk 4994 Supplemental Rebuttal Model v12-15-2021 (1).xlsm"):

- Schedule HJS-13d: T&D Labor Allocation (Factor 21) (Amended Surrebuttal by Michael R. Maker) – This schedule calculates "Factor 21 - As T&D Work/Service Orders". As noted in my direct compliance testimony, I replaced the cost allocations for this factor (which were not split between CTA and Retail Only) with those from the ASA model (which were split between CTA and Retail Only).
- Schedule HJS-13e: T&D Contract Services Allocation (Factor 22) (Amended Surrebuttal by Michael R. Maker) - This schedule calculates "Factor 22 - As T&D Contract Services". As noted in my direct compliance testimony, I replaced the cost allocations for this factor (which were not split between CTA and Retail Only) with those from the ASA model (which were split between CTA and Retail Only).
- Schedule HJS-13f: Net Plant In Service (Factors 23, 24, 25, 26) (Amended Surrebuttal by Michael R. Maker) – This schedule calculates four factors:
    - Factor 23 - As T&D Plant Excl. M&S, Land, Structures

- Factor 24 - As Total Plant Excl. General Plant
- Factor 25 - As Total Plant Excl. Land, COF
- Factor 26 - As Total Plant Excl. Land

As noted in my direct compliance testimony, I did not replace any factors, but I put the split between "Transmission Mains" (40% CTA) and "Distribution Mains" (60% Retail Only) back in from the ASA model.

- Schedule HJS-16d: Summary of Customer Class Units of Service (Amended Surrebuttal by Michael R. Maker) – As noted in my direct compliance testimony, I replaced the Demand in Inch-Miles with Demand in HCF (as was included in the ASA).
- Schedule HJS-17: Unit Cost of Service (Amended Surrebuttal by Michael R. Maker) – The common to all (base, max day, and max hour) units of service were linked from Schedule HJS-16d: Summary of Customer Class Units of Service (Amended by Michael R. Maker).
- Schedule HJS-18: Customer Class Cost of Service (Amended Surrebuttal by Michael R. Maker) – The common to all (base, max day, and max hour) units of service were linked from Schedule HJS-16d: Summary of Customer Class Units of Service (Amended by Michael R. Maker).
- Schedule HJS-19: Development of Volumetric Rates (Amended Surrebuttal by Michael R. Maker) – The unit costs and units were linked from Schedule HJS-17: Unit Cost of Service (Amended by Michael R. Maker) and Schedule HJS-16d: Summary of Customer Class Units of Service (Amended by Michael R. Maker), respectively, to calculate rates.
- Schedule HJS-22a: Proposed Rates (Amended Surrebuttal by Michael R. Maker) – The rates from Schedule HJS-19: Development of Volumetric Rates (Amended by Michael R. Maker) were linked to provide a summary of rates, revenue, and percent change.

VII. CONCLUSION

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

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

Q. To the extent you have not addressed any other party's position on a particular issue within your testimony, does that indicate that you agree with their position?

A. No. My silence on a particular issue does not necessarily indicate my agreement with another party's position, and my failure to address a particular topic should not be construed as my tacit agreement with another party's stated position.

Q. With these exceptions, does this conclude your surrebuttal testimony?

A. Yes, It does.

EXHIBIT 1

Schedule HJS-13d: T&D Labor Allocation (Factor 21)

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

				CTA - Transmission & Distribution				CTA - Supply, Treatment & Low Service			High Service & Retail			Retail Only					
Description	**Year**	**Factor**	**Total**	**Base**	**Max Day**	**Max Hour**	**Base**	**Base**	**Max Day**	**Max Hour**	**Base**	**Max Day**	**Max Hour**	**Base**	**Max Day**	**Max Hour**	**Meters & Services**	**Billing & Collection**	**Direct Fire**
				HCF	*HCF/d*	*HCF/d*	*HCF*	*HCF*	*HCF/d*	*HCF/d*	*HCF*	*HCF/d*	*HCF/d*	*HCF*	*HCF/d*	*HCF/d*	*5/8" Eq.*	*Bills*	*6" Eq.*
Hydrant - Install	2017	17	$ 189,318	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 189,318
Hydrant - Install Custodian	2017	17	$ 2,573	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,573
Hydrant - Maintenance	2017	17	$ 2,525	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,525
Hydrant - Relocate Existing	2017	17	$ 2,852	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,852
Hydrant - Remove	2017	17	$ 92,751	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 92,751
Hydrant - Repair	2017	17	$ 135,902	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 135,902
Service - Curb Box - Adjust to Grade	2017	14	$ 18,097	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 18,097	$ -	$ -
Service - Curb Box - Check	2017	14	$ 45,865	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 45,865	$ -	$ -
Service - Curb Box - Dig Up	2017	14	$ 180,976	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 180,976	$ -	$ -
Service - Curb Stop - Close	2017	14	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Service - Curb Stop - Locate	2017	14	$ 1,168	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,168	$ -	$ -
Service - Curb Stop - Repair	2017	14	$ 12,022	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,022	$ -	$ -
Service - Dig Up For Meter	2017	14	$ 3,995	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,995	$ -	$ -
Service - Install - IFR	2017	14	$ 134,678	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 134,678	$ -	$ -
Service - Install - T&D	2017	14	$ 281,647	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 281,647	$ -	$ -
Service - Remove	2017	14	$ 153,262	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 153,262	$ -	$ -
Service - Repair Leak	2017	14	$ 178,649	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 178,649	$ -	$ -
TD Misc - Miscellaneous Maint	2017	Indirect	$ 3,090	$ 331	$ 254	$ 417	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,536	$ 0	$ 552
Valve - Adjust Gate Box	2017	3	$ 30,476	$ 10,063	$ 7,726	$ 12,687	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Check / Inspect	2017	3	$ 13,317	$ 4,397	$ 3,376	$ 5,544	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Install	2017	3	$ 89,979	$ 29,709	$ 22,812	$ 37,458	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Locate	2017	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Remove	2017	3	$ 53,742	$ 17,745	$ 13,625	$ 22,373	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Repair / Repack	2017	3	$ 69,879	$ 23,073	$ 17,716	$ 29,090	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Replace Box Cover	2017	3	$ 3,204	$ 1,058	$ 812	$ 1,334	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Main - Install	2017	3	$ 4,846	$ 1,600	$ 1,229	$ 2,017	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Main - Remove	2017	3	$ 1,129	$ 373	$ 286	$ 470	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Main - Repair Leak	2017	3	$ 91,906	$ 30,346	$ 23,300	$ 38,260	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Blowoff - Inspect	2018	3	$ 487	$ 161	$ 123	$ 203	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Blowoff - Install	2018	3	$ 7,488	$ 2,472	$ 1,898	$ 3,117	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Blowoff - Locate	2018	3	$ 487	$ 161	$ 123	$ 203	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Blowoff - Remove	2018	3	$ 2,048	$ 676	$ 519	$ 853	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Blowoff - Repair	2018	3	$ 9,260	$ 3,057	$ 2,348	$ 3,855	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Hydrant - Check / Inspect	2018	17	$ 15,350	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,350
Hydrant - Close	2018	17	$ 902	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 902
Hydrant - Flush	2018	17	$ 406	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 406
Hydrant - Install	2018	17	$ 162,309	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 162,309
Hydrant - Install Custodian	2018	17	$ 2,301	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,301
Hydrant - Maintenance	2018	17	$ 1,980	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,980
Hydrant - Open	2018	17	$ 51	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 51
Hydrant - Relocate Existing	2018	17	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Hydrant - Remove	2018	17	$ 63,775	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 63,775
Hydrant - Repair	2018	17	$ 130,599	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 130,599
Hydrant - Repair/Repack Valve	2018	17	$ 11,909	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,909
Service - Curb Box - Adjust to Grade	2018	14	$ 23,247	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 23,247	$ -	$ -
Service - Curb Box - Check	2018	14	$ 46,892	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 46,892	$ -	$ -
Service - Curb Box - Dig Up	2018	14	$ 179,792	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 179,792	$ -	$ -
Service - Curb Stop - Close	2018	14	$ 19,119	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 19,119	$ -	$ -
Service - Curb Stop - Locate	2018	14	$ 4,695	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,695	$ -	$ -
Service - Curb Stop - Open	2018	14	$ 23,311	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 23,311	$ -	$ -
Service - Curb Stop - Repair	2018	14	$ 10,965	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,965	$ -	$ -
Service - Curb Stop - Replace	2018	14	$ 6,194	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,194	$ -	$ -
Service - Dig Up For Meter	2018	14	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Service - Install - IFR	2018	14	$ 64,995	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 64,995	$ -	$ -
Service - Install - T&D	2018	14	$ 294,119	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 294,119	$ -	$ -
Service - Meter - Bypass Meter	2018	14	$ 205	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 205	$ -	$ -
Service - Remove	2018	14	$ 100,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 100,614	$ -	$ -
Service - Remove Lead - CS Apps	2018	14	$ 6,492	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,492	$ -	$ -
Service - Remove Lead - TD	2018	14	$ 25,454	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,454	$ -	$ -
Service - Repair Leak	2018	14	$ 169,990	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 169,990	$ -	$ -
TD Misc - Miscellaneous Maint	2018	Indirect	$ 6,000	$ 643	$ 493	$ 810	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,981	$ 0	$ 1,072
TD Misc - Pre-Mark for Digup	2018	Indirect	$ 335	$ 36	$ 28	$ 45	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 167	$ 0	$ 60
TD Misc - Pre-Mark for Saw Cut	2018	Indirect	$ 1,024	$ 110	$ 84	$ 138	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 509	$ 0	$ 183
TD Misc - Trench Repair	2018	Indirect	$ 393	$ 42	$ 32	$ 53	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 195	$ 0	$ 70
Trench - Check For Failure	2018	3	$ 100	$ 33	$ 25	$ 42	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Trench Restoration	2018	3	$ 257,373	$ 84,980	$ 65,250	$ 107,143	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Adjust Gate Box	2018	3	$ 30,505	$ 10,072	$ 7,734	$ 12,699	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Check / Inspect	2018	3	$ 8,958	$ 2,958	$ 2,271	$ 3,729	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Install	2018	3	$ 75,028	$ 24,773	$ 19,021	$ 31,234	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Locate	2018	3	$ 2,206	$ 728	$ 559	$ 918	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Raise Gate Box To Grade	2018	3	$ 489	$ 161	$ 124	$ 203	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Remove	2018	3	$ 41,701	$ 13,769	$ 10,572	$ 17,360	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Schedule HJS-13d: T&D Labor Allocation (Factor 21)

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

				CTA - Transmission & Distribution				CTA - Supply, Treatment & Low Service			High Service & Retail			Retail Only					
Description	Year	Factor	Total	Base	Max Day	Max Hour	Base	Base	Max Day	Max Hour	Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection	Direct Fire
				HCF	HCF/d	HCF/d	HCF	HCF	HCF/d	HCF/d	HCF	HCF/d	HCF/d	HCF	HCF/d	HCF/d	5/8" Eq.	Bills	6" Eq.
Valve - Repair / Repack	2018	3	$ 51,060	$ 16,859	$ 12,945	$ 21,256	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Replace Box Cover	2018	3	$ 1,122	$ 371	$ 285	$ 467	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Main - Install	2018	3	$ 9,226	$ 3,046	$ 2,339	$ 3,841	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Main - Remove	2018	3	$ 6,846	$ 2,260	$ 1,736	$ 2,850	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Main - Repair Leak	2018	3	$ 137,742	$ 45,480	$ 34,921	$ 57,341	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Pre-Mark	2018	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Leak Detection	2018	3	$ 642	$ 212	$ 163	$ 267	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous Work	2018	Indirect	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Report Leak	2018	3	$ 3,424	$ 1,131	$ 868	$ 1,425	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Shut Down Not	2018	15	$ 299	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 299	$ -
TD Collect Sample	2018	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Trench - Check	2018	3	$ 4,632	$ 1,529	$ 1,174	$ 1,928	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Pressure	2018	3	$ 25	$ 8	$ 6	$ 11	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Quality Issue	2018	3	$ 95	$ 31	$ 24	$ 39	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Blasting	2018	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Emergency	2018	3	$ 1,162	$ 384	$ 295	$ 484	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Freeform	2018	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Regular	2018	3	$ 2,849	$ 941	$ 722	$ 1,186	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Violation	2018	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Blowoff - Inspect	2019	3	$ 79	$ 26	$ 20	$ 33	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Blowoff - Install	2019	3	$ 15,186	$ 5,014	$ 3,850	$ 6,322	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Blowoff - Locate	2019	3	$ 79	$ 26	$ 20	$ 33	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Blowoff - Remove	2019	3	$ 6,165	$ 2,035	$ 1,563	$ 2,566	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Blowoff - Repair	2019	3	$ 7,612	$ 2,513	$ 1,930	$ 3,169	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Hydrant - Check / Inspect	2019	17	$ 18,086	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 18,086
Hydrant - Close	2019	17	$ 3,592	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,592
Hydrant - Flush	2019	17	$ 75	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 75
Hydrant - Gate Box Adjust / Replace	2019	17	$ 1,943	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,943
Hydrant - Install	2019	17	$ 104,475	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 104,475
Hydrant - Install - TD	2019	17	$ 18,592	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 18,592
Hydrant - Install Custodian	2019	17	$ 1,748	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,748
Hydrant - Maintenance	2019	17	$ 3,485	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,485
Hydrant - Open	2019	17	$ 113	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 113
Hydrant - Relocate Existing	2019	17	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Hydrant - Remove	2019	17	$ 34,757	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 34,757
Hydrant - Remove - TD	2019	17	$ 4,678	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,678
Hydrant - Repair	2019	17	$ 94,220	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 94,220
Hydrant - Repair/Repack Valve	2019	17	$ 10,469	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,469
Sampling Station - Install	2019	3	$ 6,817	$ 2,251	$ 1,728	$ 2,838	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sampling Station - Remove	2019	3	$ 1,330	$ 439	$ 337	$ 554	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Service - Curb Box - Adjust to Grade	2019	14	$ 18,893	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 18,893	$ -	$ -
Service - Curb Box - Check	2019	14	$ 37,952	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 37,952	$ -	$ -
Service - Curb Box - Dig Up	2019	14	$ 122,415	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 122,415	$ -	$ -
Service - Curb Stop - Close	2019	14	$ 47,417	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 47,417	$ -	$ -
Service - Curb Stop - Locate	2019	14	$ 13,968	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,968	$ -	$ -
Service - Curb Stop - Open	2019	14	$ 56,932	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 56,932	$ -	$ -
Service - Curb Stop - Repair	2019	14	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Service - Curb Stop - Replace	2019	14	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Service - Curb Stop - Replace / Repair	2019	14	$ 25,813	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,813	$ -	$ -
Service - Dig Up For Meter	2019	14	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Service - Field Asset Measurement	2019	14	$ 10,028	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,028	$ -	$ -
Service - Install - IFR	2019	14	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Service - Install - T&D	2019	14	$ 473,668	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 473,668	$ -	$ -
Service - Meter - Bypass Meter	2019	14	$ 1,554	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,554	$ -	$ -
Service - MLOG Leak Investigation	2019	14	$ 276	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 276	$ -	$ -
Service - Reconnect	2019	14	$ 2,096	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,096	$ -	$ -
Service - Remove	2019	14	$ 42,450	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 42,450	$ -	$ -
Service - Remove Lead - CS Apps	2019	14	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Service - Remove Lead - TD	2019	14	$ 116,483	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 116,483	$ -	$ -
Service - Repair Leak	2019	14	$ 136,350	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 136,350	$ -	$ -
TD Misc - Miscellaneous Maint	2019	Indirect	$ 226	$ 24	$ 19	$ 31	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 113	$ 0	$ 40
TD Misc - Pre-Mark for Digup	2019	Indirect	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TD Misc - Pre-Mark for Saw Cut	2019	Indirect	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TD Misc - Trench Repair	2019	Indirect	$ 17,844	$ 1,911	$ 1,467	$ 2,410	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,867	$ 1	$ 3,187
Trench - Check For Failure	2019	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Trench Restoration	2019	3	$ 747,233	$ 246,722	$ 189,441	$ 311,070	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Adjust Gate Box	2019	3	$ 5,989	$ 1,977	$ 1,518	$ 2,493	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Check / Inspect	2019	3	$ 5,836	$ 1,927	$ 1,479	$ 2,429	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Install	2019	3	$ 17,734	$ 5,855	$ 4,496	$ 7,383	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Install - TD	2019	3	$ 13,701	$ 4,524	$ 3,473	$ 5,703	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Locate	2019	3	$ 741	$ 245	$ 188	$ 309	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Raise Gate Box To Grade	2019	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Remove	2019	3	$ 6,774	$ 2,236	$ 1,717	$ 2,820	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Schedule HJS-13d: T&D Labor Allocation (Factor 21)

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

				CTA - Transmission & Distribution				CTA - Supply, Treatment & Low Service			High Service & Retail			Retail Only					
Description	**Year**	**Factor**	**Total**	**Base**	**Max Day**	**Max Hour**	**Base**	**Base**	**Max Day**	**Max Hour**	**Base**	**Max Day**	**Max Hour**	**Base**	**Max Day**	**Max Hour**	**Meters & Services**	**Billing & Collection**	**Direct Fire**
				HCF	*HCF/d*	*HCF/d*	*HCF*	*HCF*	*HCF/d*	*HCF/d*	*HCF*	*HCF/d*	*HCF/d*	*HCF*	*HCF/d*	*HCF/d*	*5/8" Eq.*	*Bills*	*6" Eq.*
Valve - Remove - TD	2019	3	$ 755	$ 249	$ 191	$ 314	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Repair / Repack	2019	3	$ 28,008	$ 9,248	$ 7,101	$ 11,660	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Valve - Replace Box Cover	2019	3	$ 2,329	$ 769	$ 590	$ 969	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Main - Install	2019	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Main - Remove	2019	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Main - Repair Leak	2019	3	$ 115,527	$ 38,145	$ 29,289	$ 48,093	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Pre-Mark	2019	3	$ 398	$ 131	$ 101	$ 165	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Leak Detection	2019	3	$ 477	$ 157	$ 121	$ 199	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Miscellaneous Work	2019	Indirect	$ 2,630	$ 282	$ 216	$ 355	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,307	$ 0	$ 470
Report Leak	2019	3	$ 9,774	$ 3,227	$ 2,478	$ 4,069	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Shut Down Not	2019	15	$ 22	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22	$ -
TD Collect Sample	2019	3	$ 142	$ 47	$ 36	$ 59	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Trench - Check	2019	3	$ 5,914	$ 1,953	$ 1,499	$ 2,462	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Pressure	2019	3	$ 279	$ 92	$ 71	$ 116	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Water Quality Issue	2019	3	$ 47	$ 16	$ 12	$ 20	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Blasting	2019	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Emergency	2019	3	$ 5,209	$ 1,720	$ 1,321	$ 2,168	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Freeform	2019	3	$ 107	$ 35	$ 27	$ 45	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Regular	2019	3	$ 1,128	$ 372	$ 286	$ 469	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DigSafe - Violation	2019	3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
3-Year Total (Direct Allocations)			$6,223,596	$666,570	$511,813	$840,418	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,092,737	$321	$1,111,735
Indirect Allocation %			100.00%	10.71%	8.22%	13.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	49.69%	0.01%	17.86%
3-Year Total (All Allocations)			$6,255,138	$ 669,949	$ 514,407	$ 844,678	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,108,412	$ 323	$ 1,117,370
Factor 21 - As T&D Work/Service Orders			**100.00%**	**4.25%**	**3.26%**	**5.36%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**6.46%**	**4.96%**	**8.15%**	**49.69%**	**0.01%**	**17.86%**

Schedule HJS-13e: T&D Contract Services Allocation (Factor 22)

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

				CTA - Transmission & Distribution				CTA - Supply, Treatment & Low Service			High Service & Retail			Retail Only					
Description	**Year**	**Factor**	**Total**	**Base**	**Max Day**	**Max Hour**	**Base**	**Base**	**Max Day**	**Max Hour**	**Base**	**Max Day**	**Max Hour**	**Base**	**Max Day**	**Max Hour**	**Meters & Services**	**Billing & Collection**	**Direct Fire**
				HCF	*HCF/d*	*HCF/d*	*HCF*	*HCF*	*HCF/d*	*HCF/d*	*HCF*	*HCF/d*	*HCF/d*	*HCF*	*HCF/d*	*HCF/d*	*5/8" Eq.*	*Bills*	*6" Eq.*
Uniforms	2017	Indirect	$ 25,500	$ 7,729	$ 5,935	$ 9,745	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,091	$ -	$ -
Markouts/Dig Safe	2017	3	$ 31,727	$ 10,476	$ 8,044	$ 13,208	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Switchboard Monitoring	2017	Indirect	$ 2,929	$ 888	$ 682	$ 1,119	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 240	$ -	$ -
Service Repair	2017	14	$ 93,580	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 93,580	$ -	$ -
Police Details	2017	3	$ 174,132	$ 57,495	$ 44,147	$ 72,490	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
T&D Contractor	2017	3	$ 47,871	$ 15,806	$ 12,136	$ 19,928	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Repair Leak on Service	2017	14	$ 47,130	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 47,130	$ -	$ -
Road Restoration - Contractor	2017	3	$ 590,536	$ 194,984	$ 149,715	$ 245,838	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Telephone	2017	Indirect	$ 8,719	$ 2,643	$ 2,029	$ 3,332	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 715	$ -	$ -
Uniforms	2018	Indirect	$ 7,100	$ 2,152	$ 1,652	$ 2,713	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 582	$ -	$ -
Markouts/Dig Safe	2018	3	$ 32,903	$ 10,864	$ 8,342	$ 13,697	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Switchboard Monitoring	2018	Indirect	$ 3,373	$ 1,023	$ 785	$ 1,289	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 277	$ -	$ -
Police Details	2018	3	$ 124,242	$ 41,022	$ 31,498	$ 51,721	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
T&D Contractor	2018	3	$ 143,850	$ 47,497	$ 36,469	$ 59,884	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Repair Leak on Service	2018	14	$ 44,813	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 44,813	$ -	$ -
Road Restoration - Contractor	2018	3	$ 538,228	$ 177,713	$ 136,453	$ 224,062	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Telephone	2018	Indirect	$ 10,860	$ 3,292	$ 2,528	$ 4,150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 890	$ -	$ -
Markouts/Dig Safe	2019	3	$ 31,113	$ 10,273	$ 7,888	$ 12,952	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Switchboard Monitoring	2019	Indirect	$ 3,000	$ 909	$ 698	$ 1,147	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 246	$ -	$ -
Police Details	2019	3	$ 150,299	$ 49,626	$ 38,104	$ 62,569	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
T&D Contractor	2019	3	$ 120,574	$ 39,811	$ 30,568	$ 50,194	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Repair Leak on Service	2019	14	$ 47,278	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 47,278	$ -	$ -
Road Restoration - Contractor	2019	3	$ 620,956	$ 205,028	$ 157,427	$ 258,501	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Misc. Expenses	2019	Indirect	$ 9,767	$ 2,960	$ 2,273	$ 3,732	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 801	$ -	$ -
3-Year Total (Direct Allocations)			$ 2,839,230	$860,594	$660,790	$1,085,045	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$232,800	$0	$0
Indirect Allocation %			100.00%	30.31%	23.27%	38.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.20%	0.00%	0.00%
3-Year Total			$ 2,910,479	$ 882,190	$ 677,372	$ 1,112,274	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 238,642	$ -	$ -
Factor 22 - As T&D Contract Services			**100.00%**	**12.08%**	**9.27%**	**15.23%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**18.23%**	**14.00%**	**22.99%**	**8.20%**	**0.00%**	**0.00%**

Schedule HJS-13f: Net Plant In Service (Factors 23, 24, 25, 26)

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

Description	Allocation Factor	Plant in Service	Accumulated Depreciation	Net Book Value	CTA - Transmission & Distribution				CTA - Supply, Treatment & Low Service			High Service & Retail			Retail Only					
					Base	Max Day	Max Hour	Base	Base	Max Day	Max Hour	Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection	Direct Fire
					HCF	*HCF/d*	*HCF/d*	*HCF*	*HCF*	*HCF/d*	*HCF/d*	*HCF*	*HCF/d*	*HCF/d*	*HCF*	*HCF/d*	*HCF/d*	*5/8" Eq.*	*Bills*	*6" Eq.*
Source of Supply & Pumping																				
Land and Land Rights	4	$ 38,927,814	$ -	$ 38,927,814	$ -	$ -	$ -	$ -	$ 38,733,175	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 194,639
Structures and Improvements	4	22,401,415	16,642,333	5,759,082	-	-	-	-	5,730,287	-	-	-	-	-	-	-	-	-	-	28,795
Collecting & Impounding Reservoirs	4	13,373,233	8,994,270	4,378,962	-	-	-	-	4,357,068	-	-	-	-	-	-	-	-	-	-	21,895
Land & Impounding Reservoirs	4	4,306,409	-	4,306,409	-	-	-	-	4,284,877	-	-	-	-	-	-	-	-	-	-	21,532
Supply Mains	4	22,350,197	6,939,341	15,410,856	-	-	-	-	15,333,801	-	-	-	-	-	-	-	-	-	-	77,054
Other Water Source Plant	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Power Production Equipment	4	459,318	408,911	50,407	-	-	-	-	50,154	-	-	-	-	-	-	-	-	-	-	252
Electric Pumping Equipment	18	1,709,401	1,395,416	313,985	-	-	-	-	-	-	-	64,413	49,458	81,212	39,259	30,145	49,499	-	-	-
Hydraulic Pumping Equipment	18	107,721	62,678	45,043	-	-	-	-	-	-	-	9,240	7,095	11,650	5,632	4,324	7,101	-	-	-
Other Plant & Miscellaneous Equipn	18	1,150,739	1,150,739	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Source of Supply & Pumping Plant		$104,786,247	$ 35,593,689	$ 69,192,558	$ -	$ -	$ -	$ -	$ 68,489,362	$ -	$ -	$ 73,653	$ 56,553	$ 92,862	$ 44,891	$ 34,469	$ 56,599	$ -	$ -	$ 344,168
Water Treatment Plant																				
Land and Land Rights	5	$ 29,994	$ -	$ 29,994	$ -	$ -	$ -	$ -	$ 16,967	$ 13,027	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Structures and Improvements	5	64,787,943	54,483,966	10,303,977	-	-	-	-	5,828,601	4,475,376	-	-	-	-	-	-	-	-	-	-
Water Treatment Equipment	5	13,736,209	13,116,332	619,878	-	-	-	-	350,643	269,234	-	-	-	-	-	-	-	-	-	-
Other Plant & Miscellaneous Equipn	5	27,674,487	20,360,815	7,313,672	-	-	-	-	4,137,089	3,176,583	-	-	-	-	-	-	-	-	-	-
Total Water Treatment Plant		$106,228,633	$ 87,961,113	$ 18,267,521	$ -	$ -	$ -	$ -	$ 10,333,300	$ 7,934,221	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Transmission & Distribution Plant																				
Land and Land Rights	23	$ 614,902	$ -	$ 614,902	$ -	$ -	$ -	$ -	$ 71,623	$ 54,995	$ 90,303	$ 20,799	$ 15,970	$ 26,224	$ 7,967	$ 6,118	$ 10,045	$ -	$ -	$ 310,857
Structures and Improvements	23	204,660	204,660	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Distribution Reservoirs & Standpipes	20	18,722,912	12,104,381	6,618,531	-	-	-	-	1,559,113	1,197,135	1,965,745	452,764	347,646	570,849	173,438	133,171	218,672	-	-	-
Transmission Mains[1,+]	2	82,274,598	12,825,029	69,449,569	39,285,201	30,164,368	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Distribution Mains[1,+]	12	124,218,289	19,363,244	104,855,046	-	-	-	-	-	-	-	-	-	-	34,621,168	26,583,182	43,650,695	-	-	-
T&D Services	14	73,240,742	19,756,961	53,483,781	-	-	-	-	-	-	-	-	-	-	-	-	-	53,483,781	-	-
Meters & Meter Installation	14	31,296,939	24,361,180	6,935,760	-	-	-	-	-	-	-	-	-	-	-	-	-	6,935,760	-	-
Hydrants	17	11,546,412	4,779,609	6,766,803	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,766,803
Other Plant & Miscellaneous Equipn	2	7,834,658	7,834,658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Transmission & Distribution Plant		$349,954,113	$101,229,721	$248,724,392	$ 39,285,201	$ 30,164,368	$ -	$ -	$ 1,630,737	$ 1,252,129	$ 2,056,048	$ 473,563	$ 363,616	$ 597,073	$ 34,802,574	$ 26,722,471	$ 43,879,412	$ 60,419,541	$ -	$ 7,077,660
General Plant																				
Land and Land Rights	24	$ 23,380	$ -	$ 23,380	$ 2,732	$ 2,098	$ -	$ -	$ 5,595	$ 639	$ 143	$ 38	$ 29	$ 48	$ 2,423	$ 1,861	$ 3,056	$ 4,202	$ -	$ 516
Structures and Improvements[1,+]	24	5,690,927	5,648,798	42,129	$ 4,923	$ 3,780	$ -	$ -	$ 10,082	$ 1,151	$ 258	$ 69	$ 53	$ 86	$ 4,367	$ 3,353	$ 5,506	$ 7,571	$ -	$ 930
Central Operations Facility	27	29,637,233	995,351	28,641,882	$ 5,931,867	$ 2,460,738	$ 2,541,801	$ -	$ 1,734,692	$ 275,974	$ 59,551	$ 15,945	$ 12,243	$ 20,103	$ 2,432,737	$ 1,199,784	$ 1,970,096	$ 7,051,241	$ 1,313,311	$ 1,621,799
Office Furniture & Equipment	24	620,787	595,641	25,146	$ 2,939	$ 2,256	$ -	$ -	$ 6,018	$ 687	$ 154	$ 41	$ 31	$ 52	$ 2,607	$ 2,001	$ 3,286	$ 4,519	$ -	$ 555
Transportation Equipment	24	8,897,148	7,866,240	1,030,909	$ 120,468	$ 92,499	$ -	$ -	$ 246,710	$ 28,170	$ 6,305	$ 1,678	$ 1,288	$ 2,116	$ 106,860	$ 82,050	$ 134,730	$ 185,276	$ -	$ 22,759
Computer Equipment	24	11,690,744	4,739,235	6,951,508	$ 812,326	$ 623,729	$ -	$ -	$ 1,663,588	$ 189,952	$ 42,514	$ 11,315	$ 8,688	$ 14,266	$ 720,564	$ 553,271	$ 908,494	$ 1,249,335	$ -	$ 153,466
Tools, Shop & Garage Equipment	24	846,649	657,232	189,417	$ 22,134	$ 16,996	$ -	$ -	$ 45,330	$ 5,176	$ 1,158	$ 308	$ 237	$ 389	$ 19,634	$ 15,076	$ 24,755	$ 34,042	$ -	$ 4,182
Laboratory Equipment	1	198,137	196,548	1,589	$ 1,581	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8
Power Operated Equipment	24	497,025	384,436	112,589	$ 13,157	$ 10,102	$ -	$ -	$ 26,944	$ 3,077	$ 689	$ 183	$ 141	$ 231	$ 11,670	$ 8,961	$ 14,714	$ 20,235	$ -	$ 2,486
Communication Equipment	24	1,138,195	1,133,547	4,648	$ 543	$ 417	$ -	$ -	$ 1,112	$ 127	$ 28	$ 8	$ 6	$ 10	$ 482	$ 370	$ 607	$ 835	$ -	$ 103
Miscellaneous Equipment	24	697,209	696,132	1,077	$ 126	$ 97	$ -	$ -	$ 258	$ 29	$ 7	$ 2	$ 1	$ 2	$ 112	$ 86	$ 141	$ 193	$ -	$ 24
Other Tangible Plant	24	117,627	80,638	36,989	$ 4,322	$ 3,319	$ -	$ -	$ 8,852	$ 1,011	$ 226	$ 60	$ 46	$ 76	$ 3,834	$ 2,944	$ 4,834	$ 6,648	$ -	$ 817
Total General Plant		$ 60,055,059	$ 22,993,797	$ 37,061,262	$ 6,917,118	$ 3,216,030	$ 2,541,801	$ -	$ 3,749,181	$ 505,993	$ 111,033	$ 29,647	$ 22,764	$ 37,379	$ 3,305,289	$ 1,869,757	$ 3,070,219	$ 8,564,098	$ 1,313,311	$ 1,807,643
Total Plant		$621,024,052	$247,778,320	$373,245,732	$ 46,202,319	$ 33,380,398	$ 2,541,801	$ -	$ 84,202,580	$ 9,692,343	$ 2,167,081	$ 576,862	$ 442,932	$ 727,314	$ 38,152,754	$ 28,626,696	$ 47,006,230	$ 68,983,638	$ 1,313,311	$ 9,229,471
Construction Work in Progress	24			$ 53,315,917	$ 6,230,289	$ 4,783,805	$ -	$ -	$ 12,759,205	$ 1,456,875	$ 326,071	$ 86,784	$ 66,635	$ 109,418	$ 5,526,503	$ 4,243,417	$ 6,967,867	$ 9,582,011	$ -	$ 1,177,037
Total Plant Investment		$621,024,052	$247,778,320	$426,561,649	$ 52,432,609	$ 38,164,203	$ 2,541,801	$ -	$ 96,961,786	$ 11,149,218	$ 2,493,152	$ 663,646	$ 509,568	$ 836,731	$ 43,679,258	$ 32,870,113	$ 53,974,098	$ 78,565,649	$ 1,313,311	$ 10,406,507
(1) Net of Central Operations Facility	T&D Plant Excl. M&S, Land, Structures			$ 13,385,334	$ -	$ -	$ -	$ -	$ 1,559,113	$ 1,197,135	$ 1,965,745	$ 452,764	$ 347,646	$ 570,849	$ 173,438	$ 133,171	$ 218,672	$ -	$ -	$ 6,766,803
Factor 23 - As T&D Plant Excl. M&S, Land, Structures				**100.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**11.65%**	**8.94%**	**14.69%**	**3.38%**	**2.60%**	**4.26%**	**1.30%**	**0.99%**	**1.63%**	**0.00%**	**0.00%**	**50.55%**
Total Plant Excl. General Plant				$336,184,470	$ 39,285,201	$ 30,164,368	$ -	$ -	$ 80,453,399	$ 9,186,350	$ 2,056,048	$ 547,216	$ 420,169	$ 689,935	$ 34,847,465	$ 26,756,939	$ 43,936,012	$ 60,419,541	$ -	$ 7,421,827
Factor 24 - As Total Plant Excl. General Plant				**100.00%**	**11.69%**	**8.97%**	**0.00%**	**0.00%**	**23.93%**	**2.73%**	**0.61%**	**0.16%**	**0.12%**	**0.21%**	**10.37%**	**7.96%**	**13.07%**	**17.97%**	**0.00%**	**2.21%**
Total Plant Excl. Land, COF				**$305,007,760**	**$ 40,267,721**	**$ 30,917,562**	**$ -**	**$ -**	**$ 43,640,528**	**$ 9,347,708**	**$ 2,017,084**	**$ 540,080**	**$ 414,690**	**$ 680,938**	**$ 35,709,627**	**$ 27,418,933**	**$ 45,023,033**	**$ 61,928,196**	**$ -**	**$ 7,101,660**
Factor 25 - As Total Plant Excl. Land, COF				**100.00%**	**13.20%**	**10.14%**	**0.00%**	**0.00%**	**14.31%**	**3.06%**	**0.66%**	**0.18%**	**0.14%**	**0.22%**	**11.71%**	**8.99%**	**14.76%**	**20.30%**	**0.00%**	**2.33%**
Total Plant Excl. Land				$333,649,642	$ 46,199,587	$ 33,378,300	$ 2,541,801	$ -	$ 45,375,220	$ 9,623,682	$ 2,076,635	$ 556,025	$ 426,933	$ 701,042	$ 38,142,363	$ 28,618,718	$ 46,993,129	$ 68,979,436	$ 1,313,311	$ 8,723,459
Factor 26 - As Total Plant Excl. Land					**13.85%**	**10.00%**	**0.76%**	**0.00%**	**13.60%**	**2.88%**	**0.62%**	**0.17%**	**0.13%**	**0.21%**	**11.43%**	**8.58%**	**14.08%**	**20.67%**	**0.39%**	**2.61%**

Schedule HJS-16d: Summary of Customer Class Units of Service

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

Customer Class	Demand				Demand			Billing		
	Base	Maximum Day Extra	Maximum Hour Extra	Base	Base	Maximum Day Extra	Maximum Hour Extra	Meters & Services	Monthly Bills	Direct Fire
	HCF	*HCF/d*	*HCF/d*	*HCF*	*HCF*	*HCF/d*	*HCF/d*	*5/8" Eq.*	*Bills*	*6" Eq.*
Retail										
Residential - Low	5,607,430	5,711	17,751	5,607,430	5,607,430	5,711	17,751			
Commercial - Low	2,699,247	3,408	9,204	2,699,247	2,699,247	3,408	9,204			
Industrial - Low	125,013	97	366	125,013	125,013	97	366			
Residential - High	5,105,321	7,244	18,206	5,105,321	5,105,321	7,244	18,206			
Commercial - High	2,457,547	4,163	9,440	2,457,547	2,457,547	4,163	9,440			
Industrial - High	113,819	131	375	113,819	113,819	131	375			
Sub-total Retail	16,108,376	20,753	55,343	16,108,376	16,108,376	20,753	55,343	88,313	931,056	
Fire Protection										
Private	-	690	2,070	-		690	2,070	40,187	23,940	
Public (Providence)	69,188	1,085	3,254	69,188	69,188	1,085	3,254			3,232
Public (All Other)	71,029	1,113	3,340	71,029	71,029	1,113	3,340			3,318
Subtotal Fire Protection	140,217	2,888	8,663	140,217	140,217	2,888	8,663	40,187	23,940	6,550
Wholesale										
Bristol County	1,574,775	2,096	1,238	1,574,775	1,574,775	2,096	1,238			
East Providence	1,910,247	3,323	5,480	1,910,247	1,910,247	3,323	5,480			
Greenville	448,469	1,168	1,202	448,469	448,469	1,168	1,202			
Kent County	2,849,950	3,166	5,622	2,849,950	2,849,950	3,166	5,622			
Lincoln	1,108,770	2,557	952	1,108,770	1,108,770	2,557	952			
Smithfield	415,430	1,255	419	415,430	415,430	1,255	419			
Warwick	3,626,433	13,254	3,941	3,626,433	3,626,433	13,254	3,941			
Wholesale	11,934,074	26,821	18,855	11,934,074	11,934,074	26,821	18,855	-	-	-
Grand Total	28,182,668	50,462	82,860	28,182,668	28,182,668	50,462	82,860	128,499	954,996	6,550

Schedule HJS-17: Unit Cost of Service

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

		CTA - Transmission & Distribution				CTA - Supply, Treatment & Low Service			High Service & Retail			Retail Only					
Description	**Total**	**Base**	**Max Day**	**Max Hour**	**Base**	**Base**	**Max Day**	**Max Hour**	**Base**	**Max Day**	**Max Hour**	**Base**	**Max Day**	**Max Hour**	**Meters & Services**	**Billing & Collection**	**Direct Fire**
		HCF	*HCF/d*	*HCF/d*	*HCF*	*HCF*	*HCF/d*	*HCF/d*	*HCF*	*HCF/d*	*HCF/d*	*HCF*	*HCF/d*	*HCF/d*	*5/8" Eq.*	*Bills*	*6" Eq.*
Total Units of Service																	
Retail		16,108,376	20,753	55,343	16,108,376	16,108,376	20,753	55,343	7,676,686	11,537	28,021	16,108,376	20,753	55,343	88,313	931,056	-
Fire Protection		140,217	2,888	8,663	140,217	140,217	2,888	8,663	140,217	2,888	8,663	140,217	2,888	8,663	40,187	23,940	6,550
Bristol County		1,574,775	2,096	1,238	1,574,775	1,574,775	2,096	1,238									
East Providence		1,910,247	3,323	5,480	1,910,247	1,910,247	3,323	5,480									
Greenville		448,469	1,168	1,202	448,469	448,469	1,168	1,202	448,469	1,168	1,202						
Kent County		2,849,950	3,166	5,622	2,849,950	2,849,950	3,166	5,622									
Lincoln		1,108,770	2,557	952	1,108,770	1,108,770	2,557	952	1,108,770	2,557	952						
Smithfield		415,430	1,255	419	415,430	415,430	1,255	419	415,430	1,255	419						
Warwick		3,626,433	13,254	3,941	3,626,433	3,626,433	13,254	3,941									
Total		28,182,668	50,462	82,860	28,182,668	28,182,668	50,462	82,860	9,789,573	19,406	39,258	16,248,593	23,641	64,006	128,499	954,996	6,550
Unit Cost of Service																	
O&M Expense	$ 38,256,980	$ 437,086	$ 335,616	$ 874,937	$ 2,261,317	$ 15,623,680	$ 1,705,736	$ (12,867)	$ 198,198	$ 152,182	$ 249,890	$ 934,539	$ 717,576	$ 1,178,289	$ 4,186,904	$ 7,692,605	$ 1,721,291
Unit Cost ($/Unit)		$ 0.02	$ 6.65	$ 10.56	$ 0.08	$ 0.55	$ 33.80	$ (0.16)	$ 0.02	$ 7.84	$ 6.37	$ 0.06	$ 30.35	$ 18.41	$ 32.58	$ 8.06	$ 262.79
Capital Expense	$ 37,967,000	$ 4,624,840	$ 3,537,605	$ 16,204	$ -	$ 4,982,291	$ 1,066,587	$ 230,152	$ 61,624	$ 47,317	$ 77,696	$ 4,096,514	$ 3,141,168	$ 5,157,929	$ 8,099,390	$ 2,008,372	$ 819,312
Unit Cost ($/Unit)		$ 0.16	$ 70.10	$ 0.20	$ -	$ 0.18	$ 21.14	$ 2.78	$ 0.01	$ 2.44	$ 1.98	$ 0.25	$ 132.87	$ 80.59	$ 63.03	$ 2.10	$ 125.09
City Services Expense	$ 839,167	$ 14,126	$ 10,847	$ 17,811	$ 52,409	$ 305,957	$ 18,993	$ -	$ 3,388	$ 2,601	$ 4,271	$ 24,479	$ 18,795	$ 30,862	$ 114,361	$ 179,336	$ 40,929
Unit Cost ($/Unit)		$ 0.00	$ 0.21	$ 0.21	$ 0.00	$ 0.01	$ 0.38	$ -	$ 0.00	$ 0.13	$ 0.11	$ 0.00	$ 0.80	$ 0.48	$ 0.89	$ 0.19	$ 6.25
Property Tax Expense	$ 7,934,311	$ -	$ -	$ -	$ -	$ 4,445,430	$ 3,098,233	$ 72,874	$ 104,242	$ 80,040	$ 131,429	$ -	$ -	$ -	$ -	$ -	$ 2,062
Unit Cost ($/Unit)		$ -	$ -	$ -	$ -	$ 0.16	$ 61.40	$ 0.88	$ 0.01	$ 4.12	$ 3.35	$ -	$ -	$ -	$ -	$ -	$ 0.31
Net Op Rev Allowance	$ 1,699,949	$ 101,521	$ 77,681	$ 18,179	$ 46,275	$ 507,147	$ 117,791	$ 5,803	$ 7,349	$ 5,643	$ 9,266	$ 101,111	$ 77,551	$ 127,342	$ 248,013	$ 197,606	$ 51,672
Unit Cost ($/Unit)		$ 0.00	$ 1.54	$ 0.22	$ 0.00	$ 0.02	$ 2.33	$ 0.07	$ 0.00	$ 0.29	$ 0.24	$ 0.01	$ 3.28	$ 1.99	$ 1.93	$ 0.21	$ 7.89
Total Cost of Service	$ 86,697,407	$ 5,177,574	$ 3,961,750	$ 927,131	$ 2,360,001	$ 25,864,505	$ 6,007,340	$ 295,963	$ 374,801	$ 287,783	$ 472,552	$ 5,156,643	$ 3,955,089	$ 6,494,422	$ 12,648,668	$ 10,077,919	$ 2,635,266
Unit Cost ($/Unit)		$ 0.18	$ 78.51	$ 11.19	$ 0.08	$ 0.92	$ 119.05	$ 3.57	$ 0.04	$ 14.83	$ 12.04	$ 0.32	$ 167.30	$ 101.47	$ 98.43	$ 10.55	$ 402.33

Schedule HJS-18: Customer Class Cost of Service

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

Description	Total	CTA - Transmission & Distribution				CTA - Supply, Treatment & Low Service			High Service & Retail			Retail Only					
		Base	Max Day	Max Hour	Base	Base	Max Day	Max Hour	Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection	Direct Fire
		HCF	HCF/d	HCF/d	HCF	HCF	HCF/d	HCF/d	HCF	HCF/d	HCF/d	HCF	HCF/d	HCF/d	5/8" Eq.	Bills	6" Eq.
Unit Cost of Service ($/Unit)		$ 0.18	$ 78.51	$ 11.19	$ 0.08	$ 0.92	$ 119.05	$ 3.57	$ 0.04	$ 14.83	$ 12.04	$ 0.32	$ 167.30	$ 101.47	$ 98.43	$ 10.55	$ 402.33
Retail Service:																	
Residential Volume																	
Units of Service		10,712,750	12,954	35,958	10,712,750	10,712,750	12,954	35,958	5,105,321	7,244	18,206	10,712,750	12,954	35,958	-	-	-
Cost of Service	$ 25,524,259	$ 1,968,091	$ 1,017,044	$ 402,332	$ 897,080	$ 9,831,574	$ 1,542,180	$ 128,434	$ 195,461	$ 107,422	$ 219,150	$ 3,399,791	$ 2,167,218	$ 3,648,482	$ -	$ -	$ -
Commercial Volume																	
Units of Service		5,156,794	7,571	18,644	5,156,794	5,156,794	7,571	18,644	2,457,547	4,163	9,440	5,156,794	7,571	18,644	-	-	-
Cost of Service	$ 12,947,250	$ 947,380	$ 594,423	$ 208,613	$ 431,827	$ 4,732,622	$ 901,345	$ 66,594	$ 94,089	$ 61,738	$ 113,632	$ 1,636,557	$ 1,266,656	$ 1,891,776	$ -	$ -	$ -
Industrial Volume Charge																	
Units of Service		238,832	228	741	238,832	238,832	228	741	113,819	131	375	238,832	228	741	-	-	-
Cost of Service	$ 538,871	$ 43,877	$ 17,886	$ 8,287	$ 20,000	$ 219,187	$ 27,121	$ 2,645	$ 4,358	$ 1,937	$ 4,514	$ 75,796	$ 38,113	$ 75,151	$ -	$ -	$ -
Meter Service Charge																	
Units of Service		-	-	-	-	-	-	-	-	-	-	-	-	-	88,313	931,056	-
Cost of Service	$ 18,518,229	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,692,944	$ 9,825,284	$ -
Fire Protection:																	
Private Fire Lines																	
Units of Service		-	690	2,070	-	-	690	2,070	-	690	2,070	-	690	2,070	40,187	23,940	-
Cost of Service	$ 4,735,722	$ -	$ 54,159	$ 23,156	$ -	$ -	$ 82,123	$ 7,392	$ -	$ 10,230	$ 24,911	$ -	$ 115,407	$ 209,985	$ 3,955,724	$ 252,635	$ -
Public Fire (Providence)																	
Units of Service		69,188	1,085	3,254	69,188	69,188	1,085	3,254	69,188	1,085	3,254	69,188	1,085	3,254	-	-	3,232
Cost of Service	$ 2,236,019	$ 12,711	$ 85,144	$ 36,404	$ 5,794	$ 63,497	$ 129,107	$ 11,621	$ 2,649	$ 16,083	$ 39,163	$ 21,957	$ 181,434	$ 330,122	$ -	$ -	$ 1,300,333
Public Fire (All Other)																	
Units of Service		71,029	1,113	3,340	71,029	71,029	1,113	3,340	71,029	1,113	3,340	71,029	1,113	3,340	-	-	3,318
Cost of Service	$ 2,295,517	$ 13,049	$ 87,410	$ 37,372	$ 5,948	$ 65,187	$ 132,543	$ 11,930	$ 2,719	$ 16,511	$ 40,205	$ 22,542	$ 186,262	$ 338,906	$ -	$ -	$ 1,334,933
Wholesale Service:																	
Units of Service												-	-	-	-	-	-
Bristol County		1,574,775	2,096	1,238	1,574,775	1,574,775	2,096	1,238									
East Providence		1,910,247	3,323	5,480	1,910,247	1,910,247	3,323	5,480									
Greenville		448,469	1,168	1,202	448,469	448,469	1,168	1,202	448,469	1,168	1,202						
Kent County		2,849,950	3,166	5,622	2,849,950	2,849,950	3,166	5,622									
Lincoln		1,108,770	2,557	952	1,108,770	1,108,770	2,557	952	1,108,770	2,557	952						
Smithfield		415,430	1,255	419	415,430	415,430	1,255	419	415,430	1,255	419						
Warwick		3,626,433	13,254	3,941	3,626,433	3,626,433	13,254	3,941									
		11,934,074	26,821	18,855	11,934,074	11,934,074	26,821	18,855	1,972,669	4,981	2,574	-	-	-	-	-	-
Cost of Service																	
Bristol County	$ 2,298,748	$ 289,310	$ 164,547	$ 13,849	$ 131,871	$ 1,445,242	$ 249,508	$ 4,421	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
East Providence	$ 3,001,461	$ 350,941	$ 260,917	$ 61,312	$ 159,963	$ 1,753,120	$ 395,637	$ 19,572	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Greenville	$ 829,015	$ 82,390	$ 91,712	$ 13,452	$ 37,555	$ 411,580	$ 139,066	$ 4,294	$ 17,170	$ 17,323	$ 14,471	$ -	$ -	$ -	$ -	$ -	$ -
Kent County	$ 4,086,274	$ 523,578	$ 248,585	$ 62,909	$ 238,653	$ 2,615,527	$ 376,939	$ 20,082	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Lincoln	$ 1,925,242	$ 203,697	$ 200,782	$ 10,655	$ 92,848	$ 1,017,568	$ 304,453	$ 3,401	$ 42,450	$ 37,926	$ 11,462	$ -	$ -	$ -	$ -	$ -	$ -
Smithfield	$ 786,082	$ 76,321	$ 98,542	$ 4,689	$ 34,788	$ 381,259	$ 149,423	$ 1,497	$ 15,905	$ 18,614	$ 5,044	$ -	$ -	$ -	$ -	$ -	$ -
Warwick	$ 6,974,719	$ 666,230	$ 1,040,598	$ 44,101	$ 303,675	$ 3,328,141	$ 1,577,895	$ 14,078	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ 19,901,540	$ 2,192,467	$ 2,105,684	$ 210,966	$ 999,353	$ 10,952,438	$ 3,192,922	$ 67,346	$ 75,525	$ 73,863	$ 30,978	$ -	$ -	$ -	$ -	$ -	$ -
Total Cost of Service	$ 86,697,407	$ 5,177,574	$ 3,961,750	$ 927,131	$ 2,360,001	$ 25,864,505	$ 6,007,340	$ 295,963	$ 374,801	$ 287,783	$ 472,552	$ 5,156,643	$ 3,955,089	$ 6,494,422	$ 12,648,668	$ 10,077,919	$ 2,635,266

Schedule HJS-19: Development of Volumetric Rates

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

Description	Units	Residential	Commercial	Industrial	Bristol County	East Providence	Greenville	Kent County	Lincoln	Smithfield	Warwick
Unit Cost											
CTA Base - T&D	$/HCF	$ 0.18	$ 0.18	$ 0.18	$ 0.18	$ 0.18	$ 0.18	$ 0.18	$ 0.18	$ 0.18	$ 0.18
CTA Max Day - T&D	$/HCF/d	$ 78.51	$ 78.51	$ 78.51	$ 78.51	$ 78.51	$ 78.51	$ 78.51	$ 78.51	$ 78.51	$ 78.51
CTA Max Hour - T&D	$/HCF/d	$ 11.19	$ 11.19	$ 11.19	$ 11.19	$ 11.19	$ 11.19	$ 11.19	$ 11.19	$ 11.19	$ 11.19
CTA Base - T&D <=12"	$/HCF	$ 0.08	$ 0.08	$ 0.08	$ 0.08	$ 0.08	$ 0.08	$ 0.08	$ 0.08	$ 0.08	$ 0.08
CTA Base - SOS, WTP, LS	$/HCF	$ 0.92	$ 0.92	$ 0.92	$ 0.92	$ 0.92	$ 0.92	$ 0.92	$ 0.92	$ 0.92	$ 0.92
CTA Max Day - SOS, WTP, LS	$/HCF/d	$ 119.05	$ 119.05	$ 119.05	$ 119.05	$ 119.05	$ 119.05	$ 119.05	$ 119.05	$ 119.05	$ 119.05
CTA Max Hour - SOS, WTP, LS	$/HCF/d	$ 3.57	$ 3.57	$ 3.57	$ 3.57	$ 3.57	$ 3.57	$ 3.57	$ 3.57	$ 3.57	$ 3.57
HSR Base	$/HCF	$ 0.04	$ 0.04	$ 0.04			$ 0.04		$ 0.04	$ 0.04	
HSR Max Day	$/HCF/d	$ 14.83	$ 14.83	$ 14.83			$ 14.83		$ 14.83	$ 14.83	
HSR Max Hour	$/HCF/d	$ 12.04	$ 12.04	$ 12.04			$ 12.04		$ 12.04	$ 12.04	
Retail Only Base	$/HCF	$ 0.32	$ 0.32	$ 0.32							
Retail Only Max Day	$/HCF/d	$ 167.30	$ 167.30	$ 167.30							
Retail Only Max Hour	$/HCF/d	$ 101.47	$ 101.47	$ 101.47							
Units											
Base	$/HCF	10,712,750	5,156,794	238,832	1,574,775	1,910,247	448,469	2,849,950	1,108,770	415,430	3,626,433
Maximum Day	$/HCF/d	12,954	7,571	228	2,096	3,323	1,168	3,166	2,557	1,255	13,254
Maximum Hour	$/HCF/d	35,958	18,644	741	1,238	5,480	1,202	5,622	952	419	3,941
Base	$/HCF	10,712,750	5,156,794	238,832	1,574,775	1,910,247	448,469	2,849,950	1,108,770	415,430	3,626,433
Base	HCF	10,712,750	5,156,794	238,832	1,574,775	1,910,247	448,469	2,849,950	1,108,770	415,430	3,626,433
Maximum Day	HCF/d	12,954	7,571	228	2,096	3,323	1,168	3,166	2,557	1,255	13,254
Maximum Hour	HCF/d	35,958	18,644	741	1,238	5,480	1,202	5,622	952	419	3,941
Base - HSR Only	$/HCF	5,105,321	2,457,547	113,819							
Maximum Day - HSR Only	$/HCF/d	7,244	4,163	131							
Maximum Hour - HSR Only	$/HCF/d	18,206	9,440	375							

Schedule HJS-19: Development of Volumetric Rates

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

Description	Units	Residential	Commercial	Industrial	Bristol County	East Providence	Greenville	Kent County	Lincoln	Smithfield	Warwick
Total Cost											
CTA Base - T&D		$ 1,968,091	$ 947,380	$ 43,877	$ 289,310	$ 350,941	$ 82,390	$ 523,578	$ 203,697	$ 76,321	$ 666,230
CTA Max Day - T&D		$ 1,017,044	$ 594,423	$ 17,886	$ 164,547	$ 260,917	$ 91,712	$ 248,585	$ 200,782	$ 98,542	$ 1,040,598
CTA Max Hour - T&D		$ 402,332	$ 208,613	$ 8,287	$ 13,849	$ 61,312	$ 13,452	$ 62,909	$ 10,655	$ 4,689	$ 44,101
CTA Base - T&D <=12"		$ 897,080	$ 431,827	$ 20,000	$ 131,871	$ 159,963	$ 37,555	$ 238,653	$ 92,848	$ 34,788	$ 303,675
CTA Base - SOS, WTP, LS		$ 9,831,574	$ 4,732,622	$ 219,187	$ 1,445,242	$ 1,753,120	$ 411,580	$ 2,615,527	$ 1,017,568	$ 381,259	$ 3,328,141
CTA Max Day - SOS, WTP, LS		$ 1,542,180	$ 901,345	$ 27,121	$ 249,508	$ 395,637	$ 139,066	$ 376,939	$ 304,453	$ 149,423	$ 1,577,895
CTA Max Hour - SOS, WTP, LS		$ 128,434	$ 66,594	$ 2,645	$ 4,421	$ 19,572	$ 4,294	$ 20,082	$ 3,401	$ 1,497	$ 14,078
HSR Base		$ 195,461	$ 94,089	$ 4,358	$ -	$ -	$ 17,170	$ -	$ 42,450	$ 15,905	$ -
HSR Maximum Day		$ 107,422	$ 61,738	$ 1,937	$ -	$ -	$ 17,323	$ -	$ 37,926	$ 18,614	$ -
HSR Maximum Hour		$ 219,150	$ 113,632	$ 4,514	$ -	$ -	$ 14,471	$ -	$ 11,462	$ 5,044	$ -
Retail Only Base		$ 3,399,791	$ 1,636,557	$ 75,796	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Retail Only Max Day		$ 2,167,218	$ 1,266,656	$ 38,113	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Retail Only Max Hour		$ 3,648,482	$ 1,891,776	$ 75,151	$ -	$ -	$ -	$ -	$ -	$ -	$ -
PLUS:											
Retail Service Charge Costs		$ 5,251,258	$ 2,663,715	$ 110,865	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Retail Fire Protection Costs		$ 175,218	$ 88,880	$ 3,699	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Private Fire Line Costs		$ 386,777	$ 196,194	$ 8,166	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Public Fire Costs		$ 152,894	$ 77,556	$ 3,228	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Rate Year Revenue Requirement		$ 31,490,406	$ 15,973,595	$ 664,829	$ 2,298,748	$ 3,001,461	$ 829,015	$ 4,086,274	$ 1,925,242	$ 786,082	$ 6,974,719
Rate Year Sales	HCF	8,396,176	4,041,665	187,186	1,494,845	1,822,773	421,521	2,727,147	1,038,229	391,600	3,466,644
Volumetric Rate Build-Up											
Base	$/HCF	$ 1.940407	$ 1.940407	$ 1.940407	$ 1.248573	$ 1.242077	$ 1.301703	$ 1.238568	$ 1.306613	$ 1.297938	$ 1.239829
Maximum Day	$/HCF	$ 0.575722	$ 0.698762	$ 0.454392	$ 0.276989	$ 0.360195	$ 0.588586	$ 0.229369	$ 0.523160	$ 0.680743	$ 0.755340
Maximum Hour	$/HCF	$ 0.523857	$ 0.564276	$ 0.484000	$ 0.012222	$ 0.044374	$ 0.076432	$ 0.030432	$ 0.024579	$ 0.028677	$ 0.016783
Service Charge	$/HCF	$ 0.625434	$ 0.659064	$ 0.592272	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Retail Fire	$/HCF	$ 0.020869	$ 0.021991	$ 0.019762	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Private Fire	$/HCF	$ 0.046066	$ 0.048543	$ 0.043623	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Public Fire	$/HCF	$ 0.018210	$ 0.019189	$ 0.017244	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$/HCF	$ 3.750565	$ 3.952231	$ 3.551702	$ 1.537783	$ 1.646646	$ 1.966721	$ 1.498369	$ 1.854352	$ 2.007359	$ 2.011951
Rounded	$/HCF	$ 3.751000	$ 3.953000	$ 3.552000	$ 1.537784	$ 1.646646	$ 1.966721	$ 1.498370	$ 1.854353	$ 2.007359	$ 2.011952
Revenues		$ 31,494,056	$ 15,976,702	$ 664,885	$ 2,298,749	$ 3,001,461	$ 829,015	$ 4,086,276	$ 1,925,242	$ 786,082	$ 6,974,722
COS		$ 31,490,406	$ 15,973,595	$ 664,829	$ 2,298,748	$ 3,001,461	$ 829,015	$ 4,086,274	$ 1,925,242	$ 786,082	$ 6,974,719
Variance due to Rounding		$ 3,650	$ 3,107	$ 56	$ 1	$ 0	$ 0	$ 2	$ 1	$ 0	$ 3

Schedule HJS-22a: Proposed Rates

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Description	Units	FY 2022 - Existing		FY 2022 - Cost of Service		
		Rates	Revenue	% Change	Rates	Revenue
Service Charges						
5/8"	57,812	$ 10.35	$ 7,180,250	0.00%	$ 10.35	$ 7,180,250
3/4"	11,326	$ 11.03	$ 1,499,109	0.00%	$ 11.03	$ 1,499,109
1"	5,335	$ 13.01	$ 832,900	0.00%	$ 13.01	$ 832,900
1.5"	1,547	$ 15.65	$ 290,527	0.00%	$ 15.65	$ 290,527
2"	1,357	$ 22.94	$ 373,555	0.00%	$ 22.94	$ 373,555
3"	73	$ 76.67	$ 67,163	0.00%	$ 76.67	$ 67,163
4"	35	$ 96.57	$ 40,559	0.00%	$ 96.57	$ 40,559
6"	57	$ 142.99	$ 97,805	0.00%	$ 142.99	$ 97,805
8"	42	$ 196.04	$ 98,804	0.00%	$ 196.04	$ 98,804
10"	4	$ 244.12	$ 11,718	0.00%	$ 244.12	$ 11,718
12"	-	$ 292.20	$ -	0.00%	$ 292.20	$ -
Total Service Charge	77,588		$ 10,492,391	0.00%		$ 10,492,391
Retail Fire Protection Service Charges (Providence Only)						
5/8"	25,954	$ 1.90	$ 591,751	0.00%	$ 1.90	$ 591,751
3/4"	4,580	$ 2.84	$ 156,086	0.00%	$ 2.84	$ 156,086
1"	2,091	$ 7.06	$ 177,150	0.00%	$ 7.06	$ 177,150
1.5"	902	$ 18.81	$ 203,599	0.00%	$ 18.81	$ 203,599
2"	792	$ 45.12	$ 428,820	0.00%	$ 45.12	$ 428,820
3"	55	$ 122.17	$ 80,632	0.00%	$ 122.17	$ 80,632
4"	20	$ 206.74	$ 49,618	0.00%	$ 206.74	$ 49,618
6"	28	$ 422.88	$ 142,088	0.00%	$ 422.88	$ 142,088
8"	15	$ 639.01	$ 115,022	0.00%	$ 639.01	$ 115,022
10"	2	$ 977.32	$ 23,456	0.00%	$ 977.32	$ 23,456
12"	-	$ 1,616.32	$ -	0.00%	$ 1,616.32	$ -
Total Retail FPSC (Providence Only)	34,439		$ 1,968,222	0.00%		$ 1,968,222
Total Retail Service Charge Revenue			$ 12,460,613	0.00%		$ 12,460,613

Description	Units	FY 2022 - Existing		FY 2022 - Cost of Service		
		Rates	Revenue	% Change	Rates	Revenue
Retail Consumption Charges						
Residential	8,396,176	$ 3.830	$ 32,157,354	-2.06%	$ 3.751	$ 31,494,056
Commercial	4,041,665	$ 4.014	$ 16,223,243	-1.52%	$ 3.953	$ 15,976,702
Industrial	187,186	$ 3.650	$ 683,229	-2.68%	$ 3.552	$ 664,885
Total Retail Consumption Charge	12,625,027		$ 49,063,826	-1.89%		$ 48,135,643
East Smithfield Debt Surcharge	235,576	$ 0.350	$ 82,451	0.00%	$ 0.350	$ 82,451
Total Retail Volume Charge Revenue			$ 49,146,278	-1.89%		$ 48,218,094
Total Retail Revenue			**$ 61,606,891**	**-1.51%**		**$ 60,678,707**

Schedule HJS-22a: Proposed Rates

Providence Water Supply Board
Docket # 4994
Individual Wholesale Cost of Service Study
Per RIPUC Report and Order No. 23928
Test Year Ending June 30, 2019
Rate Year Ending June 30, 2022

AMENDED SURREBUTTAL BY MICHAEL R. MAKER

Description	Units	FY 2022 - Existing		FY 2022 - Cost of Service		
		Rates	Revenue	% Change	Rates	Revenue
Wholesale Charges						
Bristol County	1,494,845	$ 1.618318	$ 2,419,134	-4.98%	$ 1.537784	$ 2,298,749
East Providence	1,822,773	$ 1.654429	$ 3,015,648	-0.47%	$ 1.646646	$ 3,001,461
Greenville	421,521	$ 1.698487	$ 715,948	15.79%	$ 1.966721	$ 829,015
Kent County	2,727,147	$ 1.615908	$ 4,406,819	-7.27%	$ 1.498370	$ 4,086,276
Lincoln	1,038,229	$ 1.669560	$ 1,733,385	11.07%	$ 1.854353	$ 1,925,242
Smithfield	391,600	$ 1.706054	$ 668,091	17.66%	$ 2.007359	$ 786,082
Warwick	3,466,644	$ 1.736015	$ 6,018,147	15.89%	$ 2.011952	$ 6,974,722
Total Wholesale Revenue	**11,362,760**		**$ 18,977,173**	**4.87%**		**$ 19,901,547**
Wholesale Charges						
Bristol County	1,118	$ 2,163.53	$ 2,419,134	-4.98%	$ 2,055.86	$ 2,298,749
East Providence	1,363	$ 2,211.80	$ 3,015,648	-0.47%	$ 2,201.40	$ 3,001,461
Greenville	315	$ 2,270.70	$ 715,948	15.79%	$ 2,629.31	$ 829,015
Kent County	2,040	$ 2,160.30	$ 4,406,819	-7.27%	$ 2,003.17	$ 4,086,276
Lincoln	777	$ 2,232.03	$ 1,733,385	11.07%	$ 2,479.08	$ 1,925,242
Smithfield	293	$ 2,280.82	$ 668,091	17.66%	$ 2,683.64	$ 786,082
Warwick	2,593	$ 2,320.88	$ 6,018,147	15.89%	$ 2,689.78	$ 6,974,722
Wholesale (per million gallons)	**8,499**		**$ 18,977,173**	**4.87%**		**$ 19,901,547**

Description	Units	FY 2022 - Existing		FY 2022 - Cost of Service		
		Rates	Revenue	% Change	Rates	Revenue
Private Fire Service Charges						
3/4"	2	$ 11.83	$ 284	0.00%	$ 11.83	$ 284
1"	9	$ 13.98	$ 1,510	0.00%	$ 13.98	$ 1,510
1-1/2"	2	$ 17.22	$ 413	0.00%	$ 17.22	$ 413
2"	68	$ 25.52	$ 20,824	0.00%	$ 25.52	$ 20,824
4"	391	$ 109.05	$ 511,663	0.00%	$ 109.05	$ 511,663
6"	1,245	$ 177.78	$ 2,656,033	0.00%	$ 177.78	$ 2,656,033
8"	256	$ 269.26	$ 827,167	0.00%	$ 269.26	$ 827,167
10"	4	$ 375.10	$ 18,005	0.00%	$ 375.10	$ 18,005
12"	18	$ 503.18	$ 108,687	0.00%	$ 503.18	$ 108,687
16"	-	$ 785.75	$ -	0.00%	$ 785.75	$ -
Total			$ 4,144,586	0.00%		$ 4,144,586
Hydrants (Excluding Providence)	3,318	$621.41	$ 2,061,838	0.00%	621.41	$ 2,061,838
Total Fire Protection Charge Revenue			**$ 6,206,424**			**$ 6,206,424**
Total Rate Revenues			**$ 86,790,488**			**$ 86,786,678**
Miscellaneous Revenues			**1,543,163**			**1,543,163**
Total Revenues			$ 88,333,651	0.00%		$ 88,329,841

CERTIFICATION

I hereby certify that on January 14, 2022, I sent a copy of the within to all parties set forth on the attached Service List by electronic mail and copies to Luly Massaro, Commission Clerk, by electronic mail and hand delivery.

Parties	E-mail	Phone
Providence Water Supply Board (PWSB) Michael McElroy, Esq. McElroy & Donaldson PO Box 6721 Providence, RI 02940-6721	Michael@McElroyLawOffice.com; Leah@McElroyLawOffice.com;	401-351-4100
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