# BEFORE THE PUBLIC UTILITIES COMMISSION OF RHODE ISLAND

### PROVIDENCE WATER SUPPLY BOARD ) DOCKET NO. 4994

**DIRECT TESTIMONY** 

**OF** 

JEROME D. MIERZWA

### ON BEHALF OF THE DIVISION OF PUBLIC UTILITIES AND CARRIERS

May 4, 2020



# BEFORE THE PUBLIC UTILITIES COMMISSION OF RHODE ISLAND

### PROVIDENCE WATER SUPPLY BOARD ) DOCKET NO. 4994

### DIRECT TESTIMONY OF JEROME D. MIERZWA

1		I. <u>INTRODUCTION</u>
2	Q.	WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS
3		ADDRESS?
4	A.	My name is Jerome D. Mierzwa. I am the President of and a Principle with Exeter
5		Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway,
6		Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-
7		related consulting services.
8	Q.	PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
9		EXPERIENCE.
10	A.	I graduated from Canisius College in Buffalo, New York, in 1981 with a Bachelor of
11		Science Degree in Marketing. In 1985, I received a Master's Degree in Business
12		Administration with a concentration in finance, also from Canisius College. In July
13		1986, I joined National Fuel Gas Distribution Corporation ("NFG Distribution") as a
14		Management Trainee in the Research and Statistical Services Department ("RSS").
15		I was promoted to Supervisor RSS in January 1987. While employed with NFG
16		Distribution, I conducted various financial and statistical analyses related to the
17		Company's market research activity and state regulatory affairs. In April 1987, as
18		part of a corporate reorganization, I was transferred to National Fuel Gas Supply
19		Corporation's ("NFG Supply") rate department where my responsibilities included
	Dire	ect Testimony of Jerome D. Mierzwa Page 1

1		utility cost of service and rate design analysis, expense and revenue requirement
2		forecasting and activities related to federal regulation. I was also responsible for
3		preparing NFG Supply's Federal Energy Regulatory Commission ("FERC") Purchase
4		Gas Adjustment ("PGA") filings and developing interstate pipeline and spot market
5		supply gas price projections. These forecasts were utilized for internal planning
6		purposes as well as in NFG Distribution's purchased gas cost proceedings.
7		In April 1990, I accepted a position as a Utility Analyst with Exeter
8		Associates, Inc. ("Exeter"). In December 1992, I was promoted to Senior Regulatory
9		Analyst. Effective April 1, 1996, I became a principal of Exeter. Since joining
10		Exeter, my assignments have included water and gas utility class cost of service and
11		rate design analysis, evaluating the gas purchasing practices and policies of natural
12		gas utilities, sales and rate forecasting, performance-based incentive regulation,
13		revenue requirement analysis, the unbundling of utility services, and the evaluation of
14		customer choice natural gas transportation programs.
15	Q.	HAVE YOU PREVIOUSLY TESTIFIED IN REGULATORY
16		PROCEEDINGS ON UTILITY RATES?
17	A.	Yes. I have provided testimony on more than 350 occasions in proceedings before
18		the FERC, utility regulatory commissions in Arkansas, Delaware, Georgia, Illinois,
19		Indiana, Louisiana, Maine, Massachusetts, Montana, Nevada, New Jersey, Ohio,
20		Pennsylvania, South Carolina, Texas, Utah, and Virginia, as well as before the Public
21		Utilities Commission of Rhode Island ("Commission").
22	Q.	HAVE YOU PREVIOUSLY TESTIFIED ON WATER UTILITY ISSUES
23		BEFORE THIS COMMISSION?
24	A.	Yes. I previously testified before this Commission in the following proceedings:
25 26		• Providence Water Supply Board ("Providence Water") Docket Nos. 2048, 3163, 3832, 4406, and 4618;

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Direct Testimony of Jerome D. Mierzwa

1		• Kent County Water Authority Docket Nos. 2555, 3311, and 4611;
2		• City of Newport-Water Division Docket Nos. 2985, 4355, and 4295;
3		<ul> <li>Pawtucket Water Supply Board Docket Nos. 2674 and 3945;</li> </ul>
4		<ul> <li>Woonsocket Water Division Docket No. 4320; and</li> </ul>
5		• Suez Water Rhode Island, Inc. Docket No. 4800.
6	Q.	WHAT IS THE PURPOSE OF YOUR TESTIMONY?
7	A.	On December 2, 2019, Providence Water filed an application with the Commission
8		for a multi-year rate plan, through a three-step rate increase. In the first step of the
9		rate plan ("Step 1"), Providence Water is seeking to collect an additional
10		\$13,311,349, or 18.3 percent, effective January 2, 2020. In the second step of the rate
11		plan ("Step 2"), Providence Water's proposed rates would result in an annual increase
12		in revenues of \$6,131,341, effective July 1, 2021. In the third step of the rate plan
13		("Step 3), proposed to take effect July 1, 2022, rates would increase by an additional
14		\$3,574,759. Exeter was retained by the Division of Public Utilities and Carriers
15		("Division") to review the Class Cost of Service ("CCOS") Study and rate design
16		proposals included in Providence Water's application, as well as the City Services
17		Analysis presented by Providence Water to support its City Services expense claim.
18	Q.	PLEASE SUMMARIZE YOUR RECOMMENDATIONS CONCERNING
19		PROVIDENCE WATER'S CCOS STUDY AND RATE DESIGN
20		PROPOSALS IN THIS PROCEEDING, AS WELL AS THE CITY
21		SERVICES ANALYSIS.
22	A.	My recommendations concerning the CCOS Study presented by Providence Water in
23		this proceeding are as follows. Although I find Providence Water's CCOS Study to
24		generally be reasonable and appropriate for determining cost responsibility for the

various customer classes served by Providence Water, several modifications to the

25

1	CCOS Study are appropriate. I incorporate these modifications in a revised CCOS
2	Study as discussed in my testimony. This revised CCOS Study should serve as a
3	guide to establishing rates in this proceeding. My specific modifications to
4	Providence Water's CCOS Study are as follows:
5 6 7	<ul> <li>A portion of the costs associated with non-revenue water ("NRW") used for water quality and other testing purposes should be assigned to Wholesale customers;</li> </ul>
8 9	<ul> <li>Water treatment salaries/wages and pension/benefits should be functionalized and allocated to customer class based on average day demands;</li> </ul>
10 11	<ul> <li>Bad Debt expense and the revenues associated with interest on delinquent accounts should be assigned to all retail functional cost categories;</li> </ul>
12 13	<ul> <li>Direct Fire Protection should be assigned a portion of functionalized base costs; and</li> </ul>
14 15	• A portion of Commercial Services Central Operations Facility ("COF") costs should be assigned to Wholesale customers.
16	Based on the Division's revised CCOS Study, my rate design proposals for
17	Step 1 are as follows:
18 19	<ul> <li>Rates for Wholesale customers should be based on the indicated cost of providing Wholesale service;</li> </ul>
20 21 22 23	• To provide for gradualism, monthly service charges, the Public Fire surcharge, and Public Fire Hydrant and Private Fire charges should each be increased by 1.75 times the system average increase authorized by the Commission in this proceeding; and
24 25 26 27 28	• The volumetric charges for retail customers established in this proceeding should be sufficient to recover the indicated cost of service plus the revenue shortfalls resulting from establishing monthly service charges, the Public Fire surcharge, the Public Fire Hydrant charge, and Private Fire charges at less than the indicated cost of service.
29	The across-the-board Step 2 and Step 3 increases proposed by Providence Water are

1		With respect to the City Services Analysis, Providence Water has been unable
2		to provide certain information necessary to support its expense claim due to the
3		Coronavirus Pandemic. Therefore, I recommend that the City Services expense claim
4		approved by the Commission in Docket No. 4618 continue to be utilized in this
5		proceeding.
6	Q.	HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?
7	A.	Following this introductory section, my testimony is divided into four additional
8		sections. The first section provides an overview of water utility cost of service
9		methodologies. Next, I address Providence Water's CCOS Study. In the third
10		additional section, I present my recommendations concerning rate design. In the final
11		section, I address Providence Water's City Services Analysis.
12		II. OVERVIEW OF COST OF SERVICE METHODOLOGIES
<ul><li>12</li><li>13</li></ul>	Q.	II. OVERVIEW OF COST OF SERVICE METHODOLOGIES  WHAT IS THE OBJECTIVE OF A COST OF SERVICE STUDY?
	Q. A.	
13		WHAT IS THE OBJECTIVE OF A COST OF SERVICE STUDY?
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13 14 15		WHAT IS THE OBJECTIVE OF A COST OF SERVICE STUDY?  A cost of service study is conducted to assist a utility or commission in determining the level of costs properly recoverable through the rates applicable for the various
<ul><li>13</li><li>14</li><li>15</li><li>16</li></ul>		WHAT IS THE OBJECTIVE OF A COST OF SERVICE STUDY?  A cost of service study is conducted to assist a utility or commission in determining the level of costs properly recoverable through the rates applicable for the various services provided by the utility from each of the classes to which the utility provides
13 14 15 16 17		WHAT IS THE OBJECTIVE OF A COST OF SERVICE STUDY?  A cost of service study is conducted to assist a utility or commission in determining the level of costs properly recoverable through the rates applicable for the various services provided by the utility from each of the classes to which the utility provides service. Allocation of recoverable costs to each class of service is generally based on
13 14 15 16 17	A.	WHAT IS THE OBJECTIVE OF A COST OF SERVICE STUDY?  A cost of service study is conducted to assist a utility or commission in determining the level of costs properly recoverable through the rates applicable for the various services provided by the utility from each of the classes to which the utility provides service. Allocation of recoverable costs to each class of service is generally based on usage and cost causation principles.
13 14 15 16 17 18	A.	WHAT IS THE OBJECTIVE OF A COST OF SERVICE STUDY?  A cost of service study is conducted to assist a utility or commission in determining the level of costs properly recoverable through the rates applicable for the various services provided by the utility from each of the classes to which the utility provides service. Allocation of recoverable costs to each class of service is generally based on usage and cost causation principles.  WHAT ARE THE PRIMARY COST OF SERVICE STUDY
13 14 15 16 17 18 19 20	A. Q.	WHAT IS THE OBJECTIVE OF A COST OF SERVICE STUDY?  A cost of service study is conducted to assist a utility or commission in determining the level of costs properly recoverable through the rates applicable for the various services provided by the utility from each of the classes to which the utility provides service. Allocation of recoverable costs to each class of service is generally based on usage and cost causation principles.  WHAT ARE THE PRIMARY COST OF SERVICE STUDY  METHODOLOGIES UTILIZED FOR WATER UTILITIES?

l		Water Works Association's ("AWWA") Principles of Water Rates, Fees and
2		Charges ("AWWA M1 Manual").
3	Q.	WHAT METHODOLOGY HAS PROVIDENCE WATER UTILIZED FOR
4		ITS CLASS COST OF SERVICE STUDY?
5	A.	Providence Water has utilized the base-extra capacity method in preparing its CCOS
6		Study. Under the base-extra capacity method, investment and costs are first classified
7		into four primary functional cost categories: base or average capacity, extra capacity,
8		customer and fire protection. Once investment and costs are classified to these
9		functional categories, they are allocated to the various customer classes. Providence
10		Water's CCOS Study is presented by Mr. Harold J. Smith of Raftelis Financial
11		Consultants, Inc. ("Raftelis").
12	Q.	PLEASE DESCRIBE IN GREATER DETAIL THE FOUR PRIMARY
13		FUNCTIONAL COST CATEGORIES AND HOW THESE COSTS ARE
14		ALLOCATED TO THE VARIOUS CUSTOMER CLASSES UNDER THE
15		BASE-EXTRA CAPACITY METHOD.
16	A.	Base Costs are costs that tend to vary with the quantity of water used, plus costs
17		associated with supplying, treating, pumping, and distributing water to customers
18		under average load conditions. Base costs were allocated to customer class on the
19		basis of average daily usage in Providence Water's CCOS Study.
20		Extra Capacity Costs are costs associated with meeting usage requirements
21		in excess of average usage. This includes operating and capital costs for additional
22		plant and system capacity beyond that required for average usage. Extra capacity
23		costs in Providence Water's study have been subdivided into costs necessary to meet
24		maximum day extra demand and maximum hour extra demand. These extra capacity

costs were allocated to customer classes on the basis of each class	ss' maximum day and
maximum hour usage in excess of average usage.	

Customer Costs are costs associated with serving customers regardless of their usage or demand characteristics. Customer costs include the operating costs related to meters and services, meter reading costs, and billing and collection costs. Customer costs were allocated on the basis of the capital cost of meters and services and the number of customer bills.

Fire Protection Costs are costs associated with providing the facilities to meet the potential peak demand of fire protection service. In Providence Water's CCOS Study, fire protection costs have been subdivided into the costs associated with meeting Public Fire Protection and Private Fire Protection demands. The extra capacity costs assigned to fire protection were allocated to Public and Private Fire Protection demands. The extra capacity costs assigned to fire protection were allocated to Public and Private Fire Protection on the basis of the total relative demands of hydrants and fire service lines.

### III. EVALUATION OF PROVIDENCE WATER'S CLASS COST OF SERVICE STUDY

Q. BEFORE ASSESSING AND EVALUATING PROVIDENCE WATER'S

CCOS STUDY AND RATE DESIGN PROPOSALS, DO YOU HAVE ANY

PRELIMINARY MATTERS TO ADDRESS?

Yes. My testimony and analysis are based on Providence Water's proposed revenue requirement. This is a standard practice because it allows the cost of service and rate design recommendations of different parties to be compared on a comparable basis. This should not be taken, however, as an endorsement of Providence Water's proposed revenue requirement claims in this proceeding.

A.

1	Q.	PLEASE IDENTIFY THE CUSTOMER CLASSES INCLUDED IN
2		PROVIDENCE WATER'S CCOS STUDY.
3	A.	Providence Water provides Retail service to three customer classes:
4		• Residential
5		• Commercial
6		• Industrial
7		Providence Water also provides Public and Private Fire Protection service and serves
8		Wholesale (water for resale) customers. Each of these customer classes is included in
9		Providence Water's CCOS Study.
10	Q.	DO YOU HAVE ANY CONCERNS WITH PROVIDENCE WATER'S
11		CCOS STUDY?
12	A.	Yes. While Providence Water's CCOS Study is generally reasonable, I have several
13		concerns with the CCOS Study.
14	Q.	PLEASE IDENTIFY THE CONCERNS YOU HAVE WITH PROVIDENCE
15		WATER'S CCOS STUDY.
16	A.	I have the following concerns with respect to the functionalization and/or assignment
17		of the following cost items in Providence Water's CCOS Study:
18		• The assignment of non-revenue water to Wholesale customers;
19 20		• The functionalization of water treatment salaries/wages and pensions/benefits (collectively "labor expense");
21 22		<ul> <li>The functionalization of bad debt expense and the revenues associated with interest on delinquent accounts;</li> </ul>
23		• The functionalization of base costs to Direct Fire Protection service; and
24		• The assignment of Central Operations Facility costs to Wholesale customers.

Q.	PLEASE IDENTIFY YOUR CONCERN WITH PROVIDENCE WATER'S
	ALLOCATION OF NON-REVENUE WATER.
A.	Approximately 15 percent of the water produced by Providence Water is NRW.
	NRW water is water that has been produced which is not registered as consumption
	by customers. NRW on the Providence Water System by type is identified on
	Schedule HJS-15b. Schedule HJS-15b also provides for the allocation of the costs
	associated with NRW to Providence Water's Retail and Wholesale customers.
	As shown on Schedule HJS-15b, the most significant contribution to NRW on
	the Providence Water System is water that is used for water quality and other testing
	purposes. Although Wholesale customers benefit from the water quality and other
	testing performed by Providence Water, none of the costs associated with NRW are
	assigned to Wholesale customers. This is unreasonable, and Wholesale customers
	should be allocated a proportionate share of water quantity and other testing NRW.
	Schedule JDM-15b attached to my testimony assigns a proportionate share of water
	quality and other testing NRW to Wholesale customers.1
Q.	DOES PROVIDENCE WATER AGREE THAT WATER QUALITY AND
	OTHER TESTING NRW SHOULD BE ALLOCATED TO WHOLESALE
	CUSTOMERS?
A.	Yes, in the response to DIV 4-1, Providence Water agreed that water quality and
	other testing NRW should be allocated to Wholesale customers, and that Providence
	Water's CCOS Study witness Mr. Smith will incorporate such an adjustment in his
	rebuttal testimony.
	A. Q.

<sup>1</sup> Schedules attached to my testimony have been numbered to reflect the sequence used by Providence Water.

1	Q.	PLEASE DESCRIBE YOUR CONCERN WITH PROVIDENCE WATER'S
2		FUNCTIONALIZATION AND ALLOCATION OF WATER TREATMENT
3		LABOR EXPENSES?
4	A.	Providence Water has assigned water treatment labor expenses based on Factor 2
5		which functionalizes and allocates costs partially based on average day demands and
6		partially based on maximum hour demands. These labor expenses do not vary with
7		changes in water usage and, therefore, these costs should be functionalized and
8		allocated based on average day demands (Factor 1).
9	Q.	WHAT IS YOUR CONCERN WITH PROVIDENCE WATER'S
10		FUNCTIONALIZATION AND ALLOCATION OF BAD DEBT EXPENSE
11		AND THE REVENUES ASSOCIATED WITH INTEREST ON
12		DELINQUENT ACCOUNTS?
13	A.	In Providence Water's CCOS Study, bad debt expense has been assigned 50 percent
14		to the meters/services cost function and 50 percent to the billing/collection cost
15		function. Bad debt expense is related to the failure to recover all of Providence
16		Water's functional costs, including base, maximum day, and maximum hour
17		functional costs, not just meters/services and billing/collection costs. As such bad
18		debt expense should be assigned to all retail functional costs, and this would be
19		consistent with the assignment of bad debt expense in the AWWA M1 Manual that
20		Providence Water is using as a guide for its CCOS Study (page 67, 6 <sup>th</sup> Edition). Bad
21		debt expense should not be assigned to Wholesale customers because they experience
22		their own bad debt expense from their retail customers.
23		Providence Water has also functionalized the revenues associated with interest
24		on delinquent accounts consistent with its assignment of bad debt expense. That is,
25		50 percent of these revenues have been assigned to the meters/services cost function

and 50 percent to the billing/collection cost function. Delinquent account balances
are related to all of Providence Water's functional costs not just meters/services and
billing/collection. Therefore, interest on delinquent accounts should also be assigned
to all retail functional costs.

I would note that in Providence Water's CCOS Study, bad debt expense totals \$215,956, and the revenues associated with interest on delinquent accounts is \$411,817. In Providence Water's CCOS Study, expenses increase the cost of service, and the revenues associated with delinquent accounts reduce the cost of service.

Therefore, the net cost of service impact of these two items on the cost of service is \$195,861, or 0.2 percent of Providence Water's total cost of service. Later in my testimony, I modify Providence Water's CCOS Study to address the concerns I have identified. In doing so, I do not include modifications for the allocation of bad debt expense and interest on delinquent account revenues. This is because the impact would not be material, and Providence Water CCOS Study has not been developed so as to readily enable such a modification. Reflecting this modification in Providence Water's CCOS Study would require an extensive resource effort, and such an effort is not justified by the magnitude of the impact.

PLEASE EXPLAIN YOUR CONCERN WITH PROVIDENCE WATER'S
FUNCTIONALIZATION OF BASE COSTS TO DIRECT FIRE
PROTECTION SERVICE.

Providence Water has assigned no base functional costs to Direct Fire Protection service. This implies that with respect to the functionalized base costs such as source of supply related costs, no water is used on an annual basis to provide Direct Fire Protection service. This is clearly unreasonable. I would note that in Providence Water's most recent prior rate proceeding in Docket No. 4618, Mr. Smith assigned 1

Q.

A.

l		percent of functionalized base costs to Direct Fire Protection service. Based on the
2		fire flow requirements identified in the DIV 2-13, I recommend that Direct Fire
3		Protection be assigned 0.5 percent of functionalized base costs in this proceeding.
4	Q.	WHAT IS YOUR CONCERN WITH THE FUNCTIONALIZATION OF
5		THE COSTS ASSOCIATED WITH PROVIDENCE WATER'S CENTRAL
6		OPERATIONS FACILITY?
7	A.	As shown on Schedule HJS-13(g), Providence Water is proposing to functionalize
8		COF costs based on an analysis of the square footage associated with the various
9		functions performed at the COF. My particular concern with this analysis is the
10		functionalization of Commercial Services. The response to DIV 4-10 indicates that
11		Commercial Services consists of all large and small meter related services, all billing
12		related activity, and all collection related activity. A review of Schedule HJS-13(g)
13		indicates that all Commercial Services costs are assigned to Retail customers. This
14		appears unreasonable. Wholesale customers also require these services. I
15		recommend that Providence Water address the allocation of COF Commercial
16		Services costs in its rebuttal testimony. Unless Providence Water can demonstrate
17		that an alternative allocation is more reasonable, I recommend that 10 percent of
18		Commercial Services COF costs be assigned to Wholesale customers. My adjustment
19		to the assignment of COF costs is presented in Schedule JDM-13(g).
20	Q.	HAVE YOU REVISED PROVIDENCE WATER'S CCOS STUDY TO
21		ADDRESS YOUR CONCERNS?
22	A.	Yes. I have modified Providence Water's CCOS Study to reflect an allocation of
23		water quality and other testing NRW to Wholesale customers, the functionalization of
24		labor expenses based on Factor 2, the functionalization of 0.5 percent of base costs to
25		Direct Fire Protection, and the assignment of 10 percent of COF Commercial

Services to Wholesale customers. For the reasons previously identified, I am not modifying Providence Water's CCOS Study to reflect the assignment of bad debt expense and interest on delinquent account revenues to all functional cost components. A summary of the results of the Division's Modified CCOS Study is presented as Schedule JDM-18 to my testimony. A comparison of the cost of service by major component for Providence Water's CCOS Study and the Division's Modified CCOS Study is provided in Table 1. As shown in Table 2, my modifications to Providence Water's CCOS Study results in slight increases to the indicated cost of service for Public Fire and the Wholesale class.

Table 1
Cost of Service Study Results

		,		
		Cost of Ser	vice	
Service Component	Providence Water <sup>[1]</sup>	Division <sup>[2]</sup>	Change	Percent
Monthly Service Charge	\$17,642,361	\$17,642,361	\$0	0.0%
Volumetric Charge	38,880,580	38,465,382	(415,198)	(1.1)
Public Fire Surcharge	2,252,028	2,344,254	92,226	4.1
Public Fire Hydrants	2,311,952	2,406,632	94,680	4.0
Private Fire	4,863,565	4,811,955	(51,610)	(1.1)
Wholesale	18,521,958	18,801,860	279,902	1.5
Total	\$84.472.444	\$84.472.444	\$0	0.0%

### Notes:

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### 10 IV. RATE DESIGN

- 11 Q. WHAT ARE SOME OF THE PRINCIPLES OF A SOUND REVENUE
  12 ALLOCATION AND RATE DESIGN?
- 13 A. A sound revenue allocation should:
  - Utilize class cost of service study results as a guide;
  - Provide stability and predictability of the rates themselves, with a minimum of unexpected changes seriously adverse to ratepayers or the utility (gradualism);

<sup>[1]</sup> Schedule HJS-18.

<sup>[2]</sup> Schedule JDM-18.

2 3		<ul> <li>Provide for simplicity, certainty, convenience of payment, understandability, public acceptability, and feasibility of application; and</li> </ul>
4 5		• Reflect fairness in the apportionment of the total cost of service among the various customer classes. <sup>2</sup>
6	Q.	HOW DID PROVIDENCE WATER DEVELOP THE RATES IT IS
7		PROPOSING IN THIS PROCEEDING?
8	A.	For the first step in its multi-year rate plan, Providence Water used the results of its
9		CCOS Study as a guide to design rates in this proceeding. Providence Water also
10		attempted to minimize rate shock. That is, Providence Water attempted to move
11		current rates towards those indicated by its CCOS Study but mitigated those increases
12		to provide for gradualism. For the second step of the proposed multi-year rate plan,
13		Providence Water is proposing an across-the-board increase in the Step 1 rates of 7.26
14		percent. For the third step, Providence Water is proposing an across-the-board
15		increase of 3.91 percent to the Step 2 rates.
16	Q.	PLEASE PROVIDE A COMPARISON OF PROVIDENCE WATER'S
17		COST OF SERVICE STUDY RESULTS WITH THE RATES PROPOSED
18		BY PROVIDENCE WATER FOR STEP 1.
19	A.	Table 2 below summarizes Providence Water's major cost of service components,
20		revenues for each component at present and proposed Step 1 rates, the increases at
21		proposed rates filed by Providence Water, and the increase which would be necessary
22		to adopt cost of service rates. As indicated in Table 2, Providence Water limited the
23		increase in monthly service charge and the Public Fire surcharge applicable to
24		customers located in the City pf Providence to 40 percent to provide for gradualism.
25		The Public Fire hydrant charge applicable outside the City of Providence and Private

Yield the total revenue requirement;

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<sup>&</sup>lt;sup>2</sup> Principles of Public Utility Rates, Second Edition, James C. Bonbright, Albert L. Danielsen, David R. Kamerschen; Public Utility Reports, Inc. 1988, pages 383-384.

Fire charges were limited to 20 percent to provide for gradualism. The charges for
Wholesale service were designed to recover the indicated cost of providing service.

The retail volumetric charge was designed to recover the indicated cost of service plus the revenue shortfall resulting from establishing other charges at less than the indicated cost of service.

Table 2
Comparison of Present, Proposed Step 1 and Cost of Service Rates

		Revenues		In	crease
Service Component	Present <sup>[1]</sup>	Proposed <sup>[1]</sup>	Cost of Service <sup>[2]</sup>	Proposed	Cost of Service
Monthly Service Charge	\$7,662,995	\$10,732,613	\$17,642,361	40.06%	130.23%
Volumetric Charge	42,274,117	47,859,677	38,880,580	13.21	(8.03)
Public Fire Surcharge	1,434,918	2,011,593	2,252,028	40.19	56.94
Public Fire Hydrant	1,506,438	1,807,746	2,311,952	20.00	53.47
Private Fire	3,028,110	3,633,806	4,863,565	20.00	60.61
Wholesale	15,349,475	18,521,968	18,521,958	20.67	20.67
Total	\$71.256.053	\$84.567.403	\$84.472.444	18.68%	18.55%

Notes:

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Q. ARE PROVIDENCE WATER'S STEP 1 RATE DESIGN PROPOSALS
 REASONABLE AND WOULD YOU RECOMMEND ALTERNATIVES TO
 THOSE PROPOSALS.

Certain aspects of Providence Water's Step 1 design proposals are reasonable while others are not. Providence Water's proposal to establish rates for Wholesale customers based on the indicated cost of service is reasonable; however, the results of the Division's Modified CCOS Study should be utilized to establish Wholesale charges rather than Providence Water's CCOS Study. To the extent the Commission approves a rate increase for Providence Water which is less than its requested increase, the Wholesale cost of service should be proportionately scaled based to account for the reduction in the requested increase.

<sup>[1]</sup> Schedule HJS-22

<sup>[2]</sup> Schedule HJS-18

With respect to the monthly service charges and the Public Fire surcharge, Providence Water has proposed a cap of 40 percent to avoid rate shock and provide for gradualism. Based on Providence Water's overall requested system average increase in rate revenues of 18.7 percent, the 40 percent increase is slightly in excess of 2 times the system average increase. Above average system increases are warranted for these rates since the revenues currently provided by these services are less than the indicated cost of service. Although there is no hard and fast rule as to what level of increase is consistent with the principle of gradualism, it is my experience that application of the principle of gradualism would limit an increase to 1.5 to 2.0 times the system average increase.<sup>3</sup> Therefore, I recommend that the increases in the monthly service charges and Public Fire surcharge be limited to 1.75 times the system average increase authorized by the Commission in this proceeding.

Providence Water has proposed increases in the Public Fire Hydrant and Private Fire charges to 20 percent to provide for gradualism. This is approximately equal to the system average increase. The revenues generated by each of these service classifications is significantly less than the indicated cost of service. Therefore, I believe an increase in excess of the system average would be appropriate. For these service classifications, I would also recommend increases that are 1.75 percent times the system average increase.

Providence Water has proposed volumetric charges for retail customers sufficient to recover the indicated cost of service plus the revenue shortfalls resulting from establishing monthly service charges, the Public Fire surcharge, the Public Fire

<sup>&</sup>lt;sup>3</sup> In Pittsburgh Water and Sewer Authority Docket Nos. R-2020-3017951 and R-2020-3017970 currently before the Pennsylvania Public Utility Commission, Mr. Smith has recommended a rate cap of 1.5 times the system average increase to avoid adverse rate impacts.

1		Hydrant charge, and Private Fire charges at less than the indicated cost of service. I
2		agree with this approach.
3	Q.	DO YOU AGREE WITH PROVIDENCE WATER'S PROPOSED
4		INCREASES FOR STEP 2 AND STEP 3 OF THE MULTI-YEAR RATE
5		PLAN?
6	A.	Providence Water is proposing across-the-board percentage increases for Step 2 and
7		Step 3. I agree with this approach.
8	Q.	HAVE YOU PREPARED A SCHEDULE TO SHOW THE IMPACT OF
9		YOUR PROPOSED REVENUE DISTRIBUTION AND RATE DESIGN
10		RECOMMENDATIONS?
11	A.	Yes. Schedule JDM-23 attached to my testimony shows the impact of my Step 1 rate
12		design recommendations based on Providence Water's request rate increase.
13		V. <u>CITY SERVICES ANALYSIS</u>
14	Q.	PLEASE EXPLAIN THE PURPOSE OF THE CITY SERVICES
15		ANALYSIS PRESENTED IN PROVIDENCE WATER'S APPLICATION
16		AND PROVIDE A HISTORY OF THE EXPENSE AMOUNTS
17		PREVIOUSLY APPROVED BY THE COMMISSION.
18	A.	Providence Water is a department of the City of Providence ("City"). The City
19		provides certain services to Providence Water, and the costs associated with these
20		services are recovered through a reimbursement (City Service expense) paid by
21		Providence Water to the City. This reimbursement is included in Providence Water's
22		cost of service that is recovered through the rates assessed to its customers. In Docke
23		No. 3832 in 2008, the City Services expenses approved by the Commission was
24		\$839,167. In Docket No. 4618, Providence Water's most recent prior rate
25	_	proceeding, Providence Water calculated a City Services expense claim of \$957,400,
	Dire	ect Testimony of Jerome D. Mierzwa Page 17

1		which reflected the amount approved by the Commission in Docket No. 3832
2		adjusted for inflation. In Docket No. 4618, Providence Water acknowledges that it
3		had no detailed analysis supporting its City Services expense claim. Therefore, the
4		Commission rejected Providence Water's City Services expense claim in Docket No.
5		4618 and accepted the \$839,167 approved in Docket No. 3832. The Commission
6		further indicated that future City Services expense claims would need to be supported
7		by a cost allocation manual.
8		In its application in this proceeding, Providence Water witness Mr. Smith
9		presents an analysis of the services provided by the City to Providence Water and the
10		costs associated with providing these services for the purpose of determining an
11		appropriate reimbursement to the City.
12	Q.	HOW WAS THE CITY SERVICES ANALYSIS CONDUCTED?
13	A.	Members of Raftelis' staff interviewed staff from the various City departments.
14		Based on these interviews, Raftelis' developed measures used to allocate a portion of
15		the cost of each department to Providence Water based on the services each City
16		department provides to Providence Water. Allocated costs were based on the City's
17		budget for the Fiscal Year ending June 30, 2020 ("FY 2020").
18	Q.	WHAT WERE THE RESULTS OF PROVIDENCE WATER'S CITY
19		SERVICES ANALYSIS?
20	A.	The City Services Analysis conducted by Providence Water indicated that a
21		reimbursement of \$1,490,693 was appropriate for FY 2021, or an increase of
22		\$651,527 above the \$839,167 most recently approved by the Commission in Docket
23		No. 4618.
24	Q.	HAVE YOU EVALUATED THE REASONABLENESS OF PROVIDENCE
25		WATER'S FY 2021 CITY SERVICES EXPENSE CLAIM?

1		I attempted to evaluate the reasonableness of Providence Water's City Services
2		expense claim through the discovery process but was unable to do so. A significant
3		number of the discovery responses directed at evaluating the City Services expense
4		claim required information for which it was necessary for Providence Water to rely
5		on the City to provide. Due to the Coronavirus Pandemic, the City has been unable to
6		provide the necessary information.
7	Q.	WHAT DO YOU RECOMMEND?
8	A.	Since Providence Water has been unable to support its City Services expense claim, I
9		recommend that rates in this proceeding be based on Providence Water's most
10		recently approved City Service expense claim of \$839,167.
11	Q.	WHAT WOULD BE THE IMPACT OF REFLECTING YOUR
12		RECOMMENDED CITY SERVICES EXPENSE CLAIM IN THE
13		DIVISION'S MODIFIED CCOS STUDY?
14	A.	Reducing the City Services expense claim to \$839,167 would have a decrease of
15		approximately 1 percent on the indicated cost of service for each major service
16		classification.
17	Q.	DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?
18	A.	Yes, it does at this time.

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# BEFORE THE PUBLIC UTILITIES COMMISSION OF RHODE ISLAND

### PROVIDENCE WATER SUPPLY BOARD ) DOCKET NO. 4994

### SCHEDULES ACCOMPANYING THE DIRECT TESTIMONY

**OF** 

JEROME D. MIERZWA

### ON BEHALF OF THE DIVISION OF PUBLIC UTILITIES AND CARRIERS

May 4, 2020



Schedule JDM-13g: Central Operations Facility Square Footage for Allocation of COF Net Plant In Service (Factor 22)

Providence Water Supply Board

Docket No. 4994
Request for General Rate Relief
Direct Testimony of Jerome D. Mierzwa
Test Year Ending June 30, 2019
Rate Years Ending June 30, 2021 through

2023
through
2021
30,
June
Ending
Years
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								Con	OI HOW				Re	etail Only		
				,	1											
	Total			Common	Retail	Common	Retail						_	_		
	Square	Common to All	Retail Only	to All	Only	to All	Only		Max	Max		Max	Max	Meters &	Billing &	
Description	Feet	Share	Share	Sq. Feet	Sq. Feet	Factor	Factor	Base	Day	Hour	Base	Day	Hour	Services C	Collection	Direct Fire
1ST FLOOR / COMMON SPACE / Area 516 SF	516	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	96	34	24	64	32	22	140	37	29
1ST FLOOR / COMMON SPACE / Area 731 SF	731	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	136	49	34	91	49	81	199	52	41
1ST FLOOR / COMMON SPACE / Area 1637 SF	1,637	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	304	109	75	204	110	181	445	117	92
1ST FLOOR / COMMON SPACE / Area 10280 SF	10,280	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	1,908	683	474	1,281	688	1,136	2,795	736	581
1ST FLOOR / MUSEUM / Area 1632 SF	1,632	0.00%	100.00%	0	1,632	N/A	4			•	1,624	£		ı	ï	1
1ST FLOOR / AUTOMOTIVE / Area 7680 SF	7,680	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	1,425	510	354	957	514	848	2,088	550	434
1ST FLOOR / BOARD ROOM / Area 1041 SF	1,041	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	193	69	48	130	2	115	283	74	29
1ST FLOOR / COMMERCIAL SERVICES / Area 9989 SF	686'6	0.00%	100.00%	0	9,989	N/A	တ	2,342	1	1	1	1		3,823	3,823	1
1ST FLOOR / ENGINEERING / Area 16804 SF	16,804	100.00%	100.00%	16,804	16,804	7	21	4,773	2,150	155	2,054	1,459	2,410	3,412	•	391
1ST FLOOR / FINANCE / Area 7232 SF	7,232	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	1,342	480	333	901	484	799	1,967	518	408
1ST FLOOR / IT/ Area 6771 SF	6,771	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	1,257	450	312	844	453	748	1,841	485	382
1ST FLOOR / SECURITY / Area 5731 SF	5,731	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	1,064	381	264	714	383	633	1,558	410	324
1ST FLOOR / T&D / Area 14683 SF	14,683	100.00%	100.00%	14,683	14,683	13	13	929	466	692	966	708	1,169	7,297	-	2,623
1ST FLOOR / CENTRAL RECORDS / Area 5731 SF	5,731	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	1,064	381	264	714	383	633	1,558	410	324
1ST FLOOR / PARKING GARAGE / Area 43924 SF	43,924	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	8,151	2,917	2,025	5,472	2,939	4,853	11,944	3,143	2,481
1ST FLOOR / WAREHOUSE & STORAGE/ Area 1177 SF	1,177	39.84%	60.16%	469	708	es	9	163	116	191	246	174	288	٠	•	•
1ST FLOOR / WAREHOUSE & STORAGE / Area 2777 SF	2,777	39.84%	60.16%	1,106	1,671	٣	9	384	273	450	579	412	680	j	1	,
1ST FLOOR / WAREHOUSE & STORAGE / Area 5550 SF	5,550	39.84%	60.16%	2,211	3,339	r	9	767	545	006	1,158	822	1,358	1	•	1
2ND FLOOR - AREA 'H' COMMON SPACE / Area 772 SF	772	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	143	51	36	96	25	82	210	55	44
2ND FLOOR - AREA 'H' COMMON SPACE / Area 3019 SF	3,019	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	260	200	139	376	202	334	821	216	170
2ND FLOOR - AREA 'H' COMMON SPACE / Area 3946 SF	3,946	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	732	262	182	492	264	436	1,073	282	223
2ND FLOOR - AREA 'H' DINING/CAFETERIA / Area 4575 SI	4,575	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	849	304	211	570	306	202	1,244	327	258
2ND FLOOR - AREA 'H' FUTURE SPACE / Area 237 SF	237	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	4	16	÷	30	16	56	64	17	13
2ND FLOOR - AREA 'H' FUTURE SPACE / Area 540 SF	240	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	100	36	22	29	36	9	147	39	30
2ND FLOOR - AREA 'H' FUTURE SPACE / Area 981 SF	981	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	182	92	45	122	99	108	267	20	22
2ND FLOOR - GM/EXUCTIVE MANAGEMENT / Area 2491 §	2,491	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	462	165	115	310	167	275	229	178	141
2ND FLOOR - HUMAN RESOURCES (1)/ Area 1169 SF	1,169	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	217	78	24	146	78	129	318	84	99
2ND FLOOR HUMAN RESOURCES (2) / Area 2632 SF	2,632	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	488	175	121	328	176	291	716	188	149
2ND FLOOR - LABORATORY /Area 837 SF	837	100.00%	100.00%	837	837	-	-	833	ť	ï	ŗ	t	,	•	•	4
				Total (Direct Allocations)	(locations)		53.441	9.917	3.549	2.464	6.658		5.904	14 532	3.824	3.018
				Indirect Allocation %	ition %		100.00%	18.56%	6.64%	4.61%	12.46%	6.69% 1	11.05%	27.19%	7.16%	5.65%

9,322

7.16%

44,888 27.19%

7,611 20,565 11,044 #### 4.61% 12.46% 6.69% 11.05%

10,962 6.64%

165,077 30,634 100.00% 18.56%

Total (Direct Allocations)

Factor 22 - As Central Operations Facility Square Footage

### Schedule JDM-15b: Assignment of Non-Revenue Water (NRW)

Providence Water Supply Board
Docket No. 4994
Request for General Rate Relief
Direct Testimony of Jerome D. Mierzwa
Test Year Ending June 30, 2019
Rate Years Ending June 30, 2021 through 2023

Line	Description		Allocation (HCF)
	<u> </u>		
1	Start: Annual Water Production		28,042,451
2	Less: Annual Sales	-	23,987,787
3	Equals: Non-Revenue Water		4,054,664
4	Less: Non-Billed Water Use		
5	Unauthorized Consumption <sup>(1)</sup>		70,106
6	Customer Metering Inaccuracy <sup>(2)</sup>		741,890
7	Firefighting Allowance <sup>(3)</sup>		133,690
8	Water Quality and Other Testing <sup>(3)</sup>		1,178,162
9	Main Flushing/System Maintenance <sup>(3)</sup>		66,845
10	Other Authorized Unbilled <sup>(3)</sup>		13,501
10	Total Non-Billed Use	-	2,204,194
11	Equals: Real Losses (Leakage)	-	1,850,470
			7,555,055
12	Leakage on Distribution Mains and Services <sup>(4)</sup>	89.2%	1,650,295
13	Leakage on Transmission Mains <sup>(4)</sup>	10.8%	200,175
14	Retail Transmission Leakage <sup>(5)</sup>	52.6%	105,354
15	Wholesale Transmission Leakage <sup>(5)</sup>	47.4%	94,821
16	Flushing on Distribution Mains and Services <sup>(4)</sup>	89.2%	59,614
	Flushing on Transmission Mains (4)	10.8%	7,231
17	Flushing on Transmission Mains	10.6%	7,231
18	Retail Transmission Flushing	52.6%	3,806
19	Wholesale Transmission Flushing	47.4%	3,425
20	Retail Non-Revenue Water		
21	100% of Unauthorized Consumption		70,106
22	100% of Customer Metering Inaccuracy		741,890
23	100% of Firefighting Allowance		133,690
24	52.6% of Water Quality and Testing		620,079
25	100% of Flushing on Distribution Mains		59,614
26	52.6% of Flushing on Transmission Mains		3,806
27	100% of Leakage on Distribution Mains		1,650,295
28	52.6% of Leakage on Transmission Mains		105,354
29	100% of Other Authorized Unbilled		13,501
30 31	Total Retail NRW %		3,398,335 83.81%
31	76		03.0176
32	Wholesale Non-Revenue Water		
33	0% of Unauthorized Consumption		-
34	0% of Customer Metering Inaccuracy		-
35	0% of Firefighting Allowance		
36	47.4% of Water Quality and Testing		558,083
37	0% of Flushing on Distribution Mains		- 405
38	47.4% of Flushing on Transmission Mains		3,425
39 40	0% of Leakage on Distribution Mains 47.4% of Leakage on Transmission Mains		94,821
41	0% of Other Authorized Unbilled		34,021
42	Total Wholesale NRW		656,329
43	%		16.19%

<sup>(1)</sup> Estimated at 0.25% of Production

<sup>(2)</sup> Estimated at 3%. Calculated as: (Sales / 0.97) - Sales

<sup>(3)</sup> Per Providence Water FY 2019

<sup>(4)</sup> Based on Length of Pipe

<sup>(5)</sup> Based on Pro-Forma Sales

# Schedule JDM-18: Customer Class Cost of Service Providence Water Supply Board Docket No. 4994 Request for General Rate Relief Direct Testimony of Jerome D. Mierzwa Test Year Ending June 30, 2019 Rate Years Ending June 30, 2021 through 2023

			Com	mon To All							Ref	Refail Only	vio	١		7	
	Total	Base	Φ	Max Day		Max Hour	B	Base	Max Day	Jay	Max Hour	<u> </u>	Meters & Services		Billing & Collection	Direct Fire	9
Unit Cost of Service (\$/Unit)		\$1.26		\$147.51		\$23.67	\$0.33	33	\$159.66	99	\$97.38	~	\$102.75		\$9.20	\$466.48	<u> </u>
Retail Service:																	
Residential Volume Units of Service Cost of Service	\$25,218,149	10,656,212 \$13,382,731	€9	12,954 1,910,867	69	35,958 850,971	10,656,212 \$3,503,629	000000	12,954 \$2,068,302		35,958 \$3,501,648	<b>↔</b>	' '	€9	٠,	ا چ	
Commercial Volume Units of Service Cost of Service	\$12,711,133	5,129,578 \$ 6,442,042	€9	7,571	69	18,644	5,129,578 \$1,686,541		7,571		18,644	69		↔		. €9	1
Industrial Volume Charge Units of Service Cost of Service	\$ 536,100	237,572 \$ 298,357	69	228 33,604	69	741 17,528	237,572	72	36,		741	69	1	↔	1	«Э	1
Meter Service Charge Units of Service Cost of Service	\$17,642,361	· ·	69	٠.	€9	,	₩	· ·		1	· · · · · · · · · · · · · · · · · · ·	↔	88,313 9,074,253	\$8,5	931,056 \$8,568,108	ı Gə	
Fire Protection: Private Fire Lines Units of Service Cost of Service	\$ 4,811,955	69	69	690	69	2,070	₩	€ <del>9</del>	110	1,2185.9	2,070	es	40,187	8	23,940	, ea	Ĭ
Public Fire (Providence) Units of Service Cost of Service	\$ 2,344,254	69,188 \$ 86,891	<b>↔</b>	1,085 159,973	69	3,254 76,998	69,188 \$ 22,748	88 88 88	17		3,254 \$ 316,836	↔		€9	1	3,232	2 9
Public Fire (All Other) Units of Service Cost of Service	\$ 2,406,632	71,029 \$ 89,203	69	1,113	69	3,340 79,046	71,029	29 53 \$	1,113	13	3,340	*	· x	€9	' 1	3,318 \$1,547,773	ထက္
East Smithfield Surcharge Units of Service Cost of Service		, ,	€9	1	€9	٠.	· € <del>9</del>	,		٠		69	i i	69	1	•	1
Wholesale Service:																	
Units of Service Cost of Service	\$18,801,860	12,019,088 \$15,094,316	↔	23,037 3,398,113	€9	13,075 309,432	•	ı	'	1		€9		€9	٠,	, es	L
Total Allocated Cost of Service	\$84,472,444	\$35,393,539		\$ 6,885,370	4.	\$1,824,190	\$5,314,382		\$3,774,572		\$6,233,053		\$13,203,492	\$8,7	\$8,788,417	\$3,055,429	6

# Schedule JDM-23: Comparison of Revenues by Customer Class

Providence Water Supply Board
Docket No. 4994
Request for General Rate Relief
Direct Testimony of Jerome D. Mierzwa
Test Year Ending June 30, 2019
Rate Years Ending June 30, 2021 through 2023

		FY 2021			FY 2022			FY 2023	
	Existing Rates	Proposed Rates	% Change	Existing Rates	Proposed Rates	% Change	Existing Rates	Proposed Rates	% Change
Retail									
Monthly Service Charge	\$ 7,662,995	\$10,175,736	32.8%	6,	\$10,914,221	7.3%	\$ 10,914,221	\$11,344,781	3.9%
East Smithfield Debt Surcharge	\$ 82,451	\$ 82,451	%0.0	\$ 82,451	\$ 82,451	%0.0	\$ 82,451	\$ 82,451	%0:0
Periodic FPSC	\$ 1,434,918	2,	32.9%	\$ 1,907,281	\$ 2,045,699	7.3%	\$ 2,045,699	\$ 2,126,400	3.9%
Volume Charge Residential	\$28.572.187	\$31,200,190	9.5%	\$31,200,190	\$ 33,464,487	7.3%	\$ 33,464,487	\$ 34.784.641	3.9%
Commercial	\$13,026,286	\$ 15,726,118	20.7%	\$15,726,118		7.3%	\$ 16,867,413		3.9%
Industrial	\$ 593,192	\$ 663,200	11.8%	\$ 663,200		7.3%	\$ 711,331		3.9%
Total Retail	\$51,372,030	\$ 59,754,977	16.3%	\$ 59,754,977	\$ 64,085,601	7.2%	\$ 64,085,601	\$ 66,610,487	3.9%
Wholesale			ò		6	1	e	9 010	ò
Bristol County			%6.77		\$ 2,053,018	1.3%		\$ 2,757,978	3.9%
East Providence	N	\$ 3,016,127	22.5%	က	က	7.3%	က်	ന	3.9%
Greenville			22.5%		\$ 748,107	7.3%			3.9%
Kent County	\$ 3,683,989	\$ 4,512,589	22.5%	\$ 4,512,589	\$ 4,840,082	7.3%	\$ 4,840,082	\$ 5,031,020	3.9%
Lincoln	\$ 1,402,499	\$ 1,717,949	22.5%	\$ 1,717,949	\$ 1,842,626	7.3%	\$ 1,842,626	\$ 1,915,316	3.9%
Smithfield	\$ 528,996	\$ 647,978	22.5%	\$ 647,978	\$ 695,004	7.3%	\$ 695,004	\$ 722,421	3.9%
Warwick	\$ 4,682,944	\$ 5,736,229	22.5%	\$ 5,736,229	\$ 6,152,525	7.3%	\$ 6,152,525	\$ 6,395,238	3.9%
Total Wholesale	\$15,349,475	\$ 18,801,867	22.5%	\$ 18,801,867	\$20,166,378	7.3%	\$20,166,378	\$20,961,930	3.9%
Fire Protection	90000		707 00			7.00			ò
Private Fire Protection	\$ 3,026,110 \$4,506,438	4,016,461 41,000,062	32.7%	\$ 4,018,461 \$ 1,000,062	6 24410,094	7.3%	6 244440	\$ 4,480,125 \$2,228,725	2.6%
	004,000,14	200,666,1¢	07:170			5.5		\$2,620,120	0.0
Total Fire Protection	\$ 4,534,548	\$ 6,017,523	32.7%	\$ 6,017,523	\$ 6,454,234	7.3%	\$ 6,454,234	\$ 6,708,850	3.9%
Total Rate Revenues	\$71,256,053	\$ 84,574,368	18.7%	\$ 84,574,368	\$ 90,706,214	7.3%	\$ 90,706,214	\$ 94,281,267	3.9%
Miscellaneous Revenues	\$ 1,364,746	\$ 1,364,746		\$ 1,364,746	\$ 1,364,746		\$ 1,364,746	\$ 1,364,746	
Total Revenues	\$ 72,620,799	\$85,939,113	18.3%	\$85,939,113	\$ 92,070,960	7.1%	\$ 92,070,960	\$ 95,646,013	3.9%