



November 3, 2016

The Hon. Jorge O. Elorza
Mayor

Ricky Caruolo
General Manager

Mrs. Luly Massaro
Commission Clerk
RI Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

BOARD OF DIRECTORS

Xaykham Khamsyvoravong
Chairperson

Joseph D. Cataldi
Vice Chairperson

Michael J. Correia
Councilperson

Sabina Matos
Councilperson

Lawrence J. Mancini
Ex-Officio

Cristen L. Raucci, Esq.
Member

Kerri Lynn Thurber
Member

Carissa R. Richard
Secretary

William E. O'Gara, Esq.
Legal Advisor

RE: Dk 4618: Bristol County Water Authority; Set 2 & 3

Dear Mrs. Massaro:

Enclosed please find an original and nine copies of Providence Water's responses to the second and third set of data requests from Bristol County.

If you have any questions I can be reached extension 7217.

Sincerely,

Mary L. Deignan-White
Senior Manager of Regulatory

cc: service list(via email)

MEMBER

Rhode Island Water Works Assn.
New England Water Works Assn.
American Water Works Assn.
Water Research Foundation

An EPA WaterSense Partner

(401) 521-6300

552 Academy Avenue
Providence, RI 02908

www.provwater.com

Follow us @provwater

Like us at:
facebook.com/Providencewater

PROVIDENCE WATER SUPPLY BOARD

Docket No. 4618

Data Requests of the
Bristol County Water Authority - Set 2
October 13, 2016

- BCWA 2-1:** With regard to Providence's Unaccounted For Water ("UFW") calculations:
- a. Please provide all calculations as to how the leakage amount was determined.
 - b. Please include any calculations or estimates of water used for flushing, running bleeders or blow-offs, meter loss, unmetered state and municipal use, and fire department use.

Response:

- a. Based on the calculation sheet developed by the State of RI Water Resources Board (WRB) and the required annual reporting form (attached) the UFW is determined as follows:

(Total Water Produced/Purchased) – (Total Metered/Sold Water) – (Estimated Water Loss/Non-Metered Water)

- b. The following available information of Water Loss/Non-Metered Water estimates, as required by the WRB, are within industry standards for large water utilities. These estimates are identified on the FY 2016 Annual Report (attached):

Fire Fight Allowance	100 MG
Main Flushing	102.5 MG
Water Quality/Construction	150 MG
Leakage losses/other	<u>100 MG</u>
	452.5 MG

SECTION #7: Current Non-Revenue & Non-Metered Water Use Estimates (Gallons) (July 1, 2015 through June 30, 2016)	
	FY 2016
Total Water Produced/Purchased (Gallons) - PLANT INFLUENT	23,408,280,000
Total Metered (Sold) Water (Gallons)	19,305,971,203
Total Non-Metered (Not sold) Water Use (Gallons)	2,449,808,797
% Non-Metered Water (Total Non- Metered/Total Water)	10%

Water Loss/Non-Metered Water (Gallons) Complete this section if the information is available	
Fire Fighting Allowance	100,000,000
Main Flushing/System Maintenance	102,500,000
Storm Drain Flushing	
Sewer Cleaning	
Street Cleaning	
Schools and Other Public Buildings	
Landscaping in Public Areas	
Swimming Pools	
Construction Sites	
Water Quality and Other Testing	150,000,000
Process Water at Treatment Plants	1,200,000,000
Other Unmetered Uses	
Leakage	100,000,000
Total	1,652,500,000

PROVIDENCE WATER SUPPLY BOARD

Docket No. 4618

Data Requests of the
Bristol County Water Authority - Set 2
October 13, 2016

BCWA 2-2: a. Does Providence agree that the AWWA provides a methodology for calculating UFW taking into account the following:

1. continuous running of blow-offs and the flushing of the distribution system for water quality;
2. summer open hydrants;
3. usage for fire-fighting;
4. construction;
5. meter error; and,
6. unauthorized usage in the distribution system.

b. If the answer to part a. is in the affirmative, please provide all such information.

c. Does Providence agree that the State Water Resources Board, under the State Water Efficiency Act, requires that the factors enumerated in part a.1-6 be reported annually?

d. If the answer to part c. is in the affirmative, please provide such information.

Response:

- a/b Providence Water is familiar with the methodology presented in AWWA guidance manual M36 that might potentially be used, where feasible, to attempt to subcategorize non-account water use. Some of the outlined methodology is, however, not feasible in the Providence Water system. Some of the information and data necessary for this, as outlined in the methodology, is simply not available, nor is it reasonably obtainable. Providence Water has provided estimates for some of the outlined sub-categories where data was reasonably obtainable. See attached Water Resources Board, WSSMP report, Section #7, FY 2016.
- c/d Providence Water has had past discussions with the Water Resources Board (WRB) relative to the State Water Efficiency Act and the requirements for reporting non-account water use estimates. The WRB, in concert with the act, has formulated Rules and Procedures that include the annual reporting of various operating statistics by water utilities. These rules request the reporting of "non-billed water and the components of non-billed water" use estimates where information is available. The referenced Rules and Procedures include provisions for the WRB, where if it finds a utility's submission or report to be incomplete or deficient, the WRB can issue a "Notices of Violation" to the utility requiring the submission of required information. To the best of my knowledge, Providence Water has never received a Notice of Violation in regards to the above referenced requirements for UFW reporting.

SECTION #7: Current Non-Revenue & Non-Metered Water Use Estimates (Gallons) (July 1, 2015 through June 30, 2016)	
	FY 2016
Total Water Produced/Purchased (Gallons) - PLANT INFLUENT	23,408,280,000
Total Metered (Sold) Water (Gallons)	19,305,971,203
Total Non-Metered (Not sold) Water Use (Gallons)	2,449,808,797
% Non-Metered Water (Total Non- Metered/Total Water)	10%

Water Loss/Non-Metered Water (Gallons) Complete this section if the information is available	
Fire Fighting Allowance	100,000,000
Main Flushing/System Maintenance	102,500,000
Storm Drain Flushing	
Sewer Cleaning	
Street Cleaning	
Schools and Other Public Buildings	
Landscaping in Public Areas	
Swimming Pools	
Construction Sites	
Water Quality and Other Testing	150,000,000
Process Water at Treatment Plants	1,200,000,000
Other Unmetered Uses	
Leakage	100,000,000
Total	1,652,500,000

Providence Water Docket 4618

**Data Requests of the
Bristol County Water Authority
Set 2**

BCWA 2-3: Please provide all source data, assumptions, calculations and work papers used to derive the share of UWF attributable to wholesale customers and separately the share of lost water attributable to retail customers

Response: The determination of the allocation of lost water is shown on Schedule HJS-17 in the rate model, but is summarized on the attached schedule.

Providence Water Docket 4618

**Data Requests of the
Bristol County Water Authority
Set 2**

Response to BCWA 2-3

Allocation of T&D System

Length Breakdown (Miles)

Local Distribution (<12" + Services)	1,007	HJS-17
12" Mains	95	HJS-17
Transmission (>12")	132	HJS-17
Total	1,233	

Local Distribution %	81.63%	Retail Only
12" Mains	7.68%	Retail Only
Transmission	10.69%	Split Based on Consumption

Local Distribution + 12" Mains	89.31%
Transmission (Mains >12")	10.69%

Allocation of Transmission Mains

Retail Consumption	13,090,745	HJS-15
Wholesale Consumption	12,743,865	HJS-15
Total Consumption	25,834,610	

Retail Share of Consumption	50.67%
Wholesale Share of Consumption	49.33%

Retail Share of Transmission	5.42%
Wholesale Share of Transmission	5.27%

UFW Responsibility

UFW Pro-Forma 3,537,360 from HJS-15

Retail

Local Distribution %	89.31%	Mains <=12" + Services
Transmission %	5.42%	Proportionate Share of Mains >12" based on Pro-Forma Retail Consumption (from HJS-15)
Total Retail Share	94.73%	

Wholesale Customers

Local Distribution	0.00%	
Transmission	5.27%	Proportionate Share of Mains >12" based on Pro-Forma Wholesale Consumption (from HJS-15)
Total Wholesale Share	5.27%	

UFW Allocated to Retail	3,350,883
UFW Allocated to Wholesale	186,477

PROVIDENCE WATER SUPPLY BOARD

Docket No. 4618

Data Requests of the
Bristol County Water Authority - Set 2
October 13, 2016

BCWA 2-4: Schedule HJS-17 lists a 90 inch main. Please identify this main, including its location and the manner in which it serves as a transmission main.

Response:

The 90" aqueduct is one of the two major transmission aqueducts that delivers potable water leaving the Treatment Plant to supply our system. This aqueduct was constructed in the mid 1920's and is approximately 4.5 miles long. The 90" pipeline begins at the Treatment Plant in Scituate and terminates at our Siphon Chamber in Cranston.

Providence Water Docket 4618

Data Requests of the Bristol County Water Authority Set 2

BCWA 2-5: Did Providence include the portion of the service line from the curb stop to the meter in its calculation and allocation of UFW retail customers? If not, why not?

Response: Providence included the estimated length of customer service lines from the main to the curb stop (225 miles), consistent with what was used in Docket 4406. The additional length from the curb stop to the customer's meter was not included. See response to the response to KCWA's data request 4-2 in Docket 4406.

**Data Requests of the
Kent County Water Authority
Set 4**

KCWA 4-2: Does Providence Water have an estimate of the total length of customer service pipe including the full length for the tapped main all the way to the customer's building, not just to the property line? If Providence Water does not have such an estimate please provide Providence Water's opinion on the best way to estimate this length and provide the estimate.

Response: Providence Water owns from the water main to the curb stop. The building owner owns from the curb stop to the building. Providence Water has an estimate of the total length (ranging in size from 0.5 inch to 42 inch) of service pipe from the main to the curb stop. This length is approximately 225 miles.

It would require tremendous effort and man-hours to estimate the length of service pipe from the curb stop to the building. In addition, the length that would be estimated, would be subject to a large degree of error.

PROVIDENCE WATER SUPPLY BOARD

Docket No. 4618

Data Requests of the
Bristol County Water Authority - Set 3
October 13, 2016

BCWA 3-1: Please provide all reports Providence Water submitted to the State of Rhode Island Water Resources Board that report lost water from 2011 to the present, including, but not limited to, reports submitted pursuant to the “Rules and Procedures Governing the Water Use and Efficiency Act for Major Public Water Suppliers.”

Response: See attached RI Water Resources Board, Water Supply System Management Plan (WSSMP), Annual Reporting Forms for Section #7 covering FY 2011 through FY 2016.

RI Water Resources Board - WSSMP Annual Reporting on Non-Metered Water Use Estimates (FY 2011 through FY 2016)

FY 2011 (WRB Worksheet)

SECTION #7: Current Non-Revenue & Non-Metered Water Use Estimates (MG) (Worksheet #28) (July 1, 2010 through Jun 30, 2011)	
FY 2011	
Total Water Produced/Purchased (MG)	22575
PLANT EFFLUENT	
Total Metered (Sold) Water (MG)	20026
Total Non-Metered (Not sold) Water Use (MG)	2450
% Non-Metered Water (Total Non-Metered/Total Water)	11%

Water Loss/Non-Metered Water (gallons) - Complete this section if the information is available			
Fire Fighting Allowance	100		
Main Flushing/System Maintenance			
Storm Drain Flushing			
Sewer Cleaning			
Street Cleaning			
Schools and Other Public Buildings			
Landscaping in Public Areas			
Swimming Pools			
Construction Sites			
Water Quality and Other Testing			
Process Water at Treatment Plants			
Other Unmetered Uses			
Leakage, Theft, Meter Error			
Total	100		

FY 2012 (WRB Worksheet)

SECTION #7: Current Non-Revenue & Non-Metered Water Use Estimates (MG) (Worksheet #28) (July 1, 2011 through Jun 30, 2012)	
FY 2012	
Total Water Produced/Purchased (MG)	22530
PLANT EFFLUENT	
Total Metered (Sold) Water (MG)	19700
Total Non-Metered (Not sold) Water Use (MG)	2730
% Non-Metered Water (Total Non-Metered/Total Water)	12.1%

Water Loss/Non-Metered Water (gallons) - Complete this section if the information is available			
Fire Fighting Allowance	100		
Main Flushing/System Maintenance			
Storm Drain Flushing			
Sewer Cleaning			
Street Cleaning			
Schools and Other Public Buildings			
Landscaping in Public Areas			
Swimming Pools			
Construction Sites			
Water Quality and Other Testing			
Process Water at Treatment Plants			
Other Unmetered Uses			
Leakage, Theft, Meter Error			
Total	100		

FY 2013 (WRB Worksheet - Format Changed)

SECTION #7: Current Non-Revenue & Non-Metered Water Use Estimates (MG) (Worksheet #28) (July 1, 2012 through June 30, 2013)	
FY 2013	
Total Water Produced/Purchased (MG) - PLANT EFFLUENT	22,211
Total Metered (Sold) Water (MG)	19,259
Total Non-Metered (Not sold) Water Use (MG)	2,947
% Non-Metered Water (Total Non-Metered/Total Water)	12.8%

Water Loss/Non-Metered Water (MG) - Complete this section if the information is available		
Fire Fighting Allowance	100.0	
Main Flushing/System Maintenance	5.5	
Storm Drain Flushing		
Sewer Cleaning		
Street Cleaning		
Schools and Other Public Buildings		
Landscaping in Public Areas		
Swimming Pools		
Construction Sites		
Water Quality and Other Testing		
Process Water at Treatment Plants		
Other Unmetered Uses		
Leakage, Theft, Meter Error		
Total	105.5	

RI Water Resources Board - WSSMP Annual Reporting on Non-Metered Water Use Estimates (FY 2011 through FY 2016)

FY 2014 (WRB Worksheet)

SECTION #7 - Current Non-Revenue & Non-Metered Water Use Estimates (MG) (Worksheet #26) (July 1, 2013 through June 30, 2014)	
	FY 2014
Total Water Produced/Purchased (MG) - PLANT EFFLUENT	21,736
Total Metered (Sold) Water (MG)	18,736
Total Non-Metered (Not sold) Water Use (MG)	2,294
% Non-Metered Water (Total Non-Metered/Total Water)	10.6%

FY 2015 (WRB Worksheet - Format Changed)

SECTION #7 - Current Non-Revenue & Non-Metered Water Use Estimates (Gallons) (July 1, 2014 through June 30, 2015)	
	FY 2015
Total Water Produced/Purchased (Gallons) - PLANT INFLUENT	23,849,000,000
Total Metered (Sold) Water (Gallons)	19,780,535,844
Total Non-Metered (Not sold) Water Use (Gallons)	2,467,464,156
% Non-Metered Water (Total Non-Metered/Total Water)	10%

FY 2016 (WRB Worksheet)

SECTION #7 - Current Non-Revenue & Non-Metered Water Use Estimates (Gallons) (July 1, 2015 through June 30, 2016)	
	FY 2016
Total Water Produced/Purchased (Gallons) - PLANT INFLUENT	23,408,290,000
Total Metered (Sold) Water (Gallons)	19,305,071,202
Total Non-Metered (Not sold) Water Use (Gallons)	2,445,808,797
% Non-Metered Water (Total Non-Metered/Total Water)	10%

Water Loss/Non-Metered Water (MG) Complete this section if the information is available	
Fire Fighting Allowance	100.0
Main Flushing/System Maintenance	14.2
Storm Drain Flushing	
Sewer Cleaning	
Street Cleaning	
Schools and Other Public Buildings	
Landscaping in Public Areas	
Swimming Pools	
Construction Sites	
Water Quality and Other Testing	
Process Water at Treatment Plants	
Other Unmetered Uses	
Leakage, Theft, Meter Error	
Total	114.2

Water Loss/Non-Metered Water (Gallons) Complete this section if the information is available	
Fire Fighting Allowance	100,000,000
Main Flushing/System Maintenance	16,000,000
Storm Drain Flushing	
Sewer Cleaning	
Street Cleaning	
Schools and Other Public Buildings	
Landscaping in Public Areas	
Swimming Pools	
Construction Sites	
Water Quality and Other Testing	85,000,000
Process Water at Treatment Plants	1,100,000,000
Other Unmetered Uses	
Leakage	100,000,000
Total	1,401,000,000

Water Loss/Non-Metered Water (Gallons) Complete this section if the information is available	
Fire Fighting Allowance	100,000,000
Main Flushing/System Maintenance	102,500,000
Storm Drain Flushing	
Sewer Cleaning	
Street Cleaning	
Schools and Other Public Buildings	
Landscaping in Public Areas	
Swimming Pools	
Construction Sites	
Water Quality and Other Testing	150,000,000
Process Water at Treatment Plants	1,200,000,000
Other Unmetered Uses	
Leakage	100,000,000
Total	1,652,500,000