



# STATE OF CONNECTICUT

**PUBLIC UTILITIES REGULATORY AUTHORITY  
TEN FRANKLIN SQUARE  
NEW BRITAIN, CT 06051**

**DOCKET NO. 13-02-20 APPLICATION OF AQUARION WATER COMPANY OF  
CONNECTICUT TO AMEND ITS RATES**

September 24, 2013

By the following Commissioners:

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**DECISION**

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# **DECISION**

## **INTRODUCTION**

### **SUMMARY**

In this Decision total annual revenues in the amount of \$176,513,655 are hereby approved subject to compliance by Aquarion Water Company of Connecticut with the Orders listed below. The total annual revenues approved herein result in an overall increase of \$13,915,886, or about 8.6%, in annual revenues over adjusted pro forma test year revenues of \$162,597,769.

The Public Utilities Regulatory Authority has determined that an allowed return on equity of 9.63% is appropriate.

### **BACKGROUND OF THE PROCEEDING**

Aquarion Water Company of Connecticut (Aquarion or Company) is a public service company within the meaning of §16-1 of the General Statutes of Connecticut (Conn. Gen. Stat.). Aquarion is a subsidiary of Aquarion Water Company, which owns water companies in Massachusetts and New Hampshire. The Company currently provides water services to over 185,000 customers and a population of approximately 625,000 in 47 towns and cities in Connecticut. For the fiscal year ending December 31, 2012, Aquarion had operating revenues of \$156.8 million and net utility plant of \$769 million. Firlotte Pre-Filed Testimony (PFT), p. 3.

In Aquarion's application filed with the Public Utilities Regulatory Authority (Authority or PURA) on March 28, 2013 (Application), the Company proposed amendments to its existing water rate schedules in accordance with the provisions of Conn. Gen. Stat. §16-19 and the Authority's regulations. Aquarion proposed that the amended rate schedules become effective for service rendered on and after August 25, 2013, which is 150 days after the filing of the application. Aquarion Application Letter dated March 28, 2013, p. 1.

The proposed amendments to the Company's existing water rates are designed to increase pro forma annual revenues, based upon adjusted test year December 31, 2012 sales, by approximately \$27.2 million, or 17.1% over the Company's present rates. By Decision dated March 19, 2013 in Docket No. 10-02-13WI07, Application of Aquarion Water Company of Connecticut for Water Infrastructure and Conservation Adjustment, Semi-Annual Filing Report Dated January 18, 2013, the Authority approved a 2.05% Water Infrastructure Conservation Adjustment (WICA) surcharge on customer bills. Concurrent with the Decision in this case, the WICA surcharge will be incorporated into base rates. Id.

Aquarion cited a need for rate relief due to significant investments in infrastructure improvements and utility plant, adding to the Company's rate base. This combined with a significant increase in depreciation expense, related to those capital investments, and cost increases outside the Company's control since Aquarion's last

general rate filing: has led to this request. Aquarion stated that current rates are based on outdated and understated pro forma consumption levels that do not permit the Company to achieve its allowed revenues. Id.

Aquarion stated that it has experienced significant declines in consumption while having to make investments in system upgrades. According to the Company, when customer usage declines, there are only a portion of expenses that are reduced as most costs are fixed in nature. The Company's revenue stream is mainly driven by the commodity charge. The Company has projected consumption declines over the rate plan period and proposed that the Authority, when establishing pro forma revenues, take this decline into account. Id., p. 2.

Aquarion proposed a 3-year rate plan. The rate increases for the second and third years would be approximately 1.8% and 1.9% and would be recovered equally from all rate classes. Id.

### **CONDUCT OF THE PROCEEDING**

By Notice of Audit dated April 11, 2013, the Authority conducted an audit of Aquarion's books and records at its offices, 600 Lindley Street, Bridgeport, Connecticut, commencing on May 9, 2013. By Notice of Inspection dated May 9, 2013, the Authority conducted an inspection of the Company's plant and facilities beginning on May 13, 2013.

By Notice of Hearing dated April 19, 2013, pursuant to Conn. Gen. Stat. §§16-19, 16-19e and 16-11, the Authority conducted evening hearing sessions for the purpose of taking public comment, on the following dates and locations: June 18, 2013, in the First Floor Conference Room, Independence Hall, 725 Old Post Road, Fairfield, Connecticut; June 24, 2013, in the Mystic Middle School, 204 Mixtuxet Avenue, Mystic, Connecticut; June 25, 2013, in the Auditorium, City Hall, 140 Main Street, Torrington, Connecticut; July 8, 2013, in the Auditorium-Eno Memorial Hall, Simsbury Senior Center, 754 Hopmeadow Street, Simsbury, Connecticut. An additional evening hearing was scheduled, by Notice of Additional Public Comment Hearing Session dated July 1, 2013. That hearing was held July 9, 2013, in the Fairfield Warde High School, 755 Melville Avenue, Fairfield, Connecticut.

Pursuant to the April 19, 2013 notice, the Authority also commenced the evidentiary portion of the hearing in this proceeding on June 3, 2013, at its offices, Ten Franklin Square, New Britain, Connecticut. The Authority held further evidentiary hearing sessions on June 4, 5, 7, 12, 14, 17, 19 and 20, 2013. The Authority closed the record on this matter by Notice of Close of Record dated July 15, 2013.

In a Notice of Taking of Administrative Notice dated July 15, 2013, the Authority entered into the record Aquarion's Annual Reports for the years ending December 31, 2011 and 2012, dated May 31, 2012 and May 31, 2013, respectively.

On September 6, 2013, the Authority issued a draft Decision in this matter. All Parties and Intervenors were provided the opportunity to submit written exceptions and to present oral arguments on the draft Decision.

### **PARTIES AND INTERVENORS**

The Authority designated Aquarion Water Company of Connecticut, 600 Lindley Street, Bridgeport, CT 06606-5044; and the Office of Consumer Counsel (OCC), Ten Franklin Square, New Britain, Connecticut 06051, as Parties to this proceeding.

The Authority granted Intervenor status to the Office of the Attorney General (AG), the Town of Fairfield (Fairfield) and United Water Westchester (UWW).

### **PUBLIC COMMENT**

The Authority conducted five evening public comment hearings within the Aquarion service territory for the purpose of receiving comments from the general public concerning the Application. Aquarion's notice to customers regarding the hearing, submitted by the Company on April 22, 2013, was approved on April 29, 2013, by the Authority.

Approximately 230 people in total attended the five evening hearings. Of that total, 78 persons provided testimony to the Authority regarding the Application. State Senator John McKinney (28<sup>th</sup> Senatorial District) stated that the Company's request was simply unaffordable and unacceptable to customers. Senator McKinney urged the Authority to thoroughly review Aquarion's request, especially in the areas regarding the recent water system acquisitions and the Company's corporate structure. Tr. 6/18/13, pp. 873-876. State Representative Brenda Kupchick (132<sup>nd</sup> Assembly District) also spoke in opposition to the rate increase request. Besides noting that a significant number of her constituents expressed their dissatisfaction with Aquarion, Representative Kupchick stated that as a small business owner herself, the Company's request would present a significant burden. Tr. 6/18/13, pp. 799-802. Fairfield First Selectman Michael Tetreau opposed Aquarion's request, calling it excessive. In addition, the First Selectman noted that as proposed, the rate increase would add an additional \$200,000 per year to the town's budget and force the town to either raise taxes or reduce services. Tr. 6/18/13, pp. 794 and 795. Simsbury Deputy First Selectman Lisa Heavner also provided comments on Aquarion's Application. The Deputy First Selectman, joined by other members of Simsbury's Board of Selectmen, opposed the proposed rate increase stating that it would unduly burden residents and businesses that were still coping with the current economy. Deputy First Selectman Heavner also noted that the proposed rate increase would negatively affect the town's budget. Tr. 7/8/13, pp. 1231-1234. The fire chiefs from the Towns of Simsbury and Westport also objected to the proposed increase noting the negative effect it would have on their respective department's operating budgets. Tr. 6/18/13, pp. 803 and 804; Tr. 7/8/13, pp. 1240 and 1241. Along with these comments provided to the Authority, a large number of customers also spoke regarding the proposed rate increase request.

The comments provided were almost entirely in opposition to Aquarion's Application. A common remark from customers was an objection to the amount of Aquarion's request. Many of these speakers believed that the amount being requested by Aquarion was unacceptable, especially to senior citizens or to those on fixed incomes. Tr. 6/18/13, pp. 824 and 825, 835 and 836, 870 and 871; Tr. 6/24/13, pp. 1191 and 1192; Tr. 7/8/13, pp. 1252, 1266 and 1267; and Tr. 7/9/13, pp. 1506 and 1507, 1514-1516. In addition, customers also provided testimony as to why they believed the rate increase request was unacceptable, which included reasons such as the influence of Aquarion's corporate structure, an excessive rate of return that the Company had requested, and infrastructure costs. Tr. 6/18/13, pp. 826-828, 834-837, 841 and 842, 844-849, 852-855, 880-882, 891-893; Tr. 6/24/13, pp. 1194 and 1195; Tr. 6/25/13, 1216-1218; Tr. 7/8/13, pp. 1245-1248, 1252 and 1253; and Tr. 7/9/13, pp. 1518-1520 and 1537-1539.

Among the correspondence received was a letter from State Senator Michael A. McLachlan (24<sup>th</sup> Senatorial District). In his correspondence, State Senator McLachlan objected to the proposed rate increase, stating that the increase was outrageous and unreasonable given the State's current economic condition. In addition to providing comment at the public hearings, members of Simsbury's Board of Selectmen also submitted written comments to the Authority. The Board of Selectmen stated that Aquarion's request was unacceptable, and if approved, would be catastrophic to residents and businesses. Further, the Board indicated that Aquarion's request should be more in line with inflationary trends, as its original request would place undue economic burden on Simsbury's residents and businesses. Customers who wrote in to the Authority were almost unanimously opposed to the Application. The comments provided by customers were similar to those expressed at the evening public hearings. The Authority received over 500 letters and emails regarding the Company's Application. This total represents a significant increase from the Company's previous rate increase request. In the Authority's September 8, 2010, Decision in Docket No. 10-02-13, Application of Aquarion Water Company of Connecticut for Amended Water Service Rate Schedules, approximately 170 letters and emails were received from customers (2010 Aquarion Rate Case).<sup>1</sup>

## **AUTHORITY ANALYSIS**

### **TEST YEAR**

It is the practice of the Authority in rate cases to establish rates prospectively on the basis of a historical test year, utilizing the most recent 12 months for which adequate records are available to reflect the actual operating results and experience during such period. Generally, the test year, adjusted for pro forma purposes, sets the boundaries within which the factors of ratemaking can be determined and used. The Authority may make certain prospective adjustments deemed necessary to ensure that a regulated utility has reasonable opportunity to achieve a fair rate of return.

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<sup>1</sup> 2010 Aquarion Rate Case, pp. 4 and 5.

The Authority has analyzed the operating experience of Aquarion for the 12 months ended December 31, 2012, and finds that this period is a reasonable test year period on which to predicate the Application.

### **MULTI-YEAR RATE PLAN**

The Company requested a multi-year rate plan which is designed to mitigate the problems of regulatory lag and customer rate shock. Morrissey PFT, pp. 12 and 13. In this Application, the Company established the test year to be the 12 months ending December 31, 2012. The multi-year plan established the rate years as follows:

- a. RY1 – October 1, 2013 through September 30, 2014
- b. RY2 – October 1, 2014 through September 30, 2015
- c. RY3 – October 1, 2015 through September 30, 2016

Morrissey PFT, p. 13.

The Company asserted that because of regulatory lag, a utility's rates are based on assumptions that tend to understate a utility's expenses during the time that rates are in effect. In addition, due to declining sales levels, revenues are understated that are necessary to recover these expenses. In rate making due to rates being set based on costs established at the mid-point of the rate year, rates do not incorporate significant capital expenses and operating costs increases incurred beyond the rate year. For each of the three years the Company has projected revenues, expenses, rate base, and capitalization. Dixon PFT, p. 3.

For each of the three rate years, rate base was established by calculating the average rate base for each year including year 1. The Company stated that this practice was accepted in the Decision dated June 30, 2010, in Docket 09-12-05, Application of the Connecticut Light and Power Company to Amend its Rates Schedules. The Company believes using the average rate base calculation provides for the appropriate mid-point of the rate year for calculating a revenue deficiency. The Company's past rate case practice was to adjust operating expenses for known and measureable changes in addition to other adjustments to the mid-point of the rate year. The Company, in this filing, has computed revenue requirements based on extending to the same point in time all rate base and operating income adjustments. In previous rate filings, the Company was allowed rate base additions through the hearing stage of the rate case which is approximately two months prior to the start of the new rate year. However, operating expenses have been treated differently with the Authority allowing expenses to be projected to the midpoint of the rate year which is approximately eight months beyond when rate base additions were cut off. Thus, in the instant proceeding, the Company seeks to establish consistency between rate base and operating expenses. Morrissey PFT, p. 14.

The OCC stated that it does not oppose a multi-year rate plan with the caveat that all components of a rate case are properly matched and revenue requirements are projected in a manner uniform with previous Authority methodologies. The OCC asserts that in order to adopt a multi-year rate plan, there should be a high degree of comfort

that the Company's projections of forecasted data are accurate. The OCC notes that there is no track record on the accuracy of forecasted data for the Company. Therefore, the OCC requested that any multi-year rate plan approved by the Authority for the Company must include annual reopeners that contain a reconciliation of plant additions for RY2 and RY3. These annual reopeners will afford the Authority the ability to review the accuracy of the Company's forecasted plant additions for RY1. Without these rate case reopeners, the OCC recommended that the Authority reject the Company's multi-year request. Brief, pp. 7 and 8.

The AG is opposed to the Company's multi-year rate plan pending clarification of Internal Revenue Service (IRS) issued Revenue Procedures 2012-2019 and 2012-2020. The AG claims that these new regulations allow businesses to adopt an alternative method of determining how capital expenditures can be treated for federal tax purposes. The AG requested that the Authority direct the Company to report to PURA no later than June 1, 2014, on this IRS revenue procedures issue. Brief, pp. 17-19.

The Authority was also concerned as to the accuracy of the multi-year projections. The Company indicated that it used a balanced approach in developing the multi-year rate plan and that it has projected rate base declines which are beneficial to customers. The Company also asserts that it has a decade of experience in projecting base load usage declines for its revenue projections. In addition, expense projections are based on known and measureable events, inclusive of areas where expenses decline, and inflationary adjustments for other expense areas. Response to Interrogatory FI-127.

After considering the methodologies used in the projections of the Company, the Authority finds that there is no evidence that an analytically rigorous process was applied to the projections. Therefore, rates based on these projections might not be fair and reasonable for ratepayers. The Company states that projections for RY2 and RY3 are based on known and measurable events, yet these are still projections which may or may not come to fruition. In addition, Public Act 13-83, Title 3, provides for a revenue adjustment mechanism that reconciles the difference between actual revenues and allowed revenues, which the Company has proposed in its Application. Due to the reconciling of actual and allowed revenues the Authority finds that projected revenues under a multi-year rate plan are not necessary.

In the Company's 2010 Rate Decision, the Authority denied Aquarion's request for a multi-year rate plan and stated the following:

As in the July 14, 2010 Decision in Docket No. 09-12-11, Application of The Connecticut Water Company for Amended Rates (2010 CT Water Rate Case Decision), the Department is not persuaded that there are benefits of a multi-year approach in terms of limiting customer increases as stated by the Company. Further, those purported benefits are largely unproven by the Company. Finally, and consistent with the 2010 CT Water Rate Case Decision, the

current state of the economy does not provide the appropriate environment to implement a new ratemaking mechanism. The Department rejects the Company's proposed three-year rate plan. This Decision will reflect the Department's traditional ratemaking methodology of used and useful plant at the close of hearings and known and measurable costs for the rate year.

2010 Aquarion Rate Case, pp. 5 and 6.

Based on the evidence in this proceeding, the Authority is still not persuaded that there are benefits of a multi-year approach in terms of limiting customer increases as stated by the Company. In addition, the Authority was not convinced of the accuracy of the projections for the multi-year rate plan, without which there is a good probability that the Company's rate base, expenses, revenues, and capitalization will be out of synch in the proposed Rate Years 2 and 3. Additionally, the Authority is not persuaded by the Company's argument that a multi-year rate plan will mitigate regulatory lag if the WICA with its new higher thresholds fails to do so. Public Act 13-78, Section 6. For these reasons the Authority rejects the Company's proposed multi-year rate plan and will treat RY1 as the pro forma year for rate making purposes.

## **ENGINEERING AND RATE BASE RELATED ISSUES**

### **Overview of the Company**

Aquarion is a public service company within the meaning of Conn. Gen. Stat. §16-1. The Company and its predecessor Bridgeport Hydraulic Company (BHC) have been acquiring numerous water companies in Connecticut since 1984. Recently, in the span of two years, Aquarion has purchased 57 separate systems from eight different companies, including United Water of Connecticut (United). These recent acquisitions have added approximately 10,214 customers. See table below. The Company now operates 79 systems. Much of the Company's recent emphasis has been in the Metropolitan Danbury area, including systems in and around the Town of Brookfield (Brookfield).

	Acquisition Target	# Systems	Customers	Acquisition Date
1	Topstone	3	355	Aug 2011
2	Brookfield Water	2	210	Dec 2011
3	Rural Water	21	1,246	Dec 2011
4	Birchwood Water	1	91	Dec 2011
5	Black Water Systems	14	926	Mar 2012
6	Meckauer Water	1	49	Jul 2012
7	United Water – CT	14	7,300	Sep 2012
8	Dunham Pond	<u>1</u>	<u>37</u>	Dec 2012
	<b>TOTALS</b>	<b>57</b>	<b>10,214</b>	

Aquarion has provided water and water services to Connecticut residents and customers continuously since 1857. Aquarion currently serves over 185,000 customers and an estimated population of 625,000 in 47 cities and towns in Connecticut and provides fire protection service to the majority of these communities. Aquarion's service area extends to six of the eight counties in Connecticut, namely the Fairfield, Hartford, Litchfield, Middlesex, New Haven, and New London counties. Firlotte PFT, pp. 3-10. Aquarion is the largest investor-owned water company in Connecticut and in New England. The following list identifies the towns within each county where the systems are located.

Fairfield County: Bethel, Bridgeport, Brookfield, Danbury, Darien, Easton, Fairfield, Greenwich, Monroe, New Canaan, New Fairfield, Newtown, Norwalk, Redding, Ridgefield, Shelton, Sherman, Stamford, Stratford, Trumbull, Weston, Westport and Wilton.

Hartford County: East Granby, Granby, Marlborough, Simsbury.

Litchfield County: Cornwall, Goshen, Kent, Litchfield, New Milford, Norfolk, North Canaan, Salisbury, Torrington, Washington and Woodbury.

Middlesex County: East Hampton.

New Haven County: Beacon Falls, Oxford, Seymour, Southbury and Wolcott.

New London County: Groton, Lebanon and Stonington.

Aquarion's operations include 79 water systems that are organized into the Eastern, Western, Southern, and Northern Divisions. The cities, towns and municipalities in which Aquarion supplies water service are grouped by division as follows:

Eastern: Bethel, Beacon Falls, Bridgeport, Brookfield, Cornwall, Danbury, Easton, Fairfield, Goshen, Kent, Lakeville (Salisbury), Litchfield, Monroe, New Fairfield, New Milford, Newtown, Norfolk, North Canaan, Norwalk (Saugatuck Shores), Oxford, Redding, Salisbury, Seymour, Sherman, Shelton, Southbury, Southport, Stratford, Torrington,

Trumbull, Washington, Weston, Westport and Wilton,  
Wolcott, Woodbury;

Western: New Canaan, Ridgefield and Stamford;

Northern: East Granby, Granby and Simsbury;

Southern (Greenwich): Darien and Greenwich.

Southern (Mystic): East Hampton, Groton, Lebanon, Marlborough and  
Stonington.

The following table identifies by division and town, the 79 water systems operated by Aquarion:

<b>Division</b>	<b>Name of Water System</b>	<b>Location</b>
Eastern	Ball Pond	New Fairfield
Eastern	Berkshire Office Park	Bethel
Eastern	Birches	New Fairfield
Eastern	Brook Acres	Brookfield
Eastern	Brookfield	Brookfield
Eastern	Western Brookfield	Brookfield
Eastern	Brookwood	Brookfield
Eastern	Butternut	Brookfield
Eastern	Candlewood Acres	Brookfield
Eastern	Carmen Hill	New Milford
Eastern	Cedar Heights	Danbury
Eastern	The Cedars	Danbury
Eastern	Chestnut Tree	Newtown
Eastern	Chimney Heights	Bethel
Eastern	Circle Drive	Litchfield
Eastern	Clearview Hills	Wolcott
Eastern	Cornwall	Cornwall
Eastern	Dean Heights	New Milford
Eastern	Depot	Washington
Eastern	Dunham Pond	New Fairfield
Eastern	Fieldstone Ridge	New Fairfield
Eastern	Forest Hills	New Milford
Eastern	Green (a.k.a. Judea Main)	Washington
Eastern	Greenridge	Brookfield
Eastern	Hawkstone	Seymour, Oxford
Eastern	Hollandale Estates	Danbury
Eastern	Indian Ridge	New Milford
Eastern	Indian Springs	Danbury
Eastern	Ken Oaks	Danbury
Eastern	Kent	Kent
Eastern	Lakeside	Southbury
Eastern	Lebanon	Lebanon
Eastern	Litchfield	Litchfield, Goshen, Torrington
Eastern	Greater Bridgeport (Main)	Bridgeport, Easton, Fairfield, Monroe, Redding, Shelton, Stratford, Trumbull, Weston, Westport, Wilton
Eastern	Meadowbrook	New Milford
Eastern	Meckauer	Bethel
Eastern	New Milford	New Milford
Eastern	Newtown	Newtown
Eastern	Norfolk	Norfolk
Eastern	North Canaan	North Canaan
Eastern	Oakwood Acres	New Fairfield
Eastern	Olmstead (a.k.a. Sandy Hook)	Newtown
Eastern	Park Glen	New Milford
Eastern	Pearce Manor	Danbury
Eastern	Pleasant View	New Milford
Eastern	Possum Ridge	New Fairfield
Eastern	Quarry Ridge	Washington
Eastern	Salisbury	Salisbury
Eastern	Timber Trails	Sherman, New Fairfield
Eastern	Town Brooke	Brookfield

Eastern	Twin Oaks	New Milford
Eastern	Tyler Lake	Goshen
Eastern	Valley	Beacon Falls, Oxford, Seymour
Eastern	Woodbury	Woodbury
Eastern	Woodrich Village	Wolcott
Eastern	1087 Federal Road	Brookfield
Western	Craigmoor	Western
Western	McKeon	Ridgefield
Western	New Canaan (Southwestern Fairfield County Region)	New Canaan, Darien, Stamford, Greenwich
Western	Ridgefield - Main	Ridgefield
Western	Ridgefield - Barnum	Ridgefield
Western	Ridgefield - McKeon	Ridgefield
Western	Ridgefield Knolls	Ridgefield
Western	Ridgefield Lakes Main	Ridgefield
Western	Ridgefield Lakes #1	Ridgefield
Western	Ridgefield Lakes #2	Ridgefield
Western	Ridgefield Lakes #4	Ridgefield
Western	Ridgefield Lakes #9	Ridgefield
Western	Ridgefield Lakes #11	Ridgefield
Western	Rolling Ridge	Danbury
Western	Scodon Well #4	Ridgefield
Western	Scodon Well #2 and #3	Ridgefield
Western	Soundview	Ridgefield
Western	Stamford (Southwestern Fairfield County Region)	Stamford
Northern	Simsbury	Simsbury, Granby, East Granby
Southern (Greenwich)	Darien (Southwestern Fairfield County Region)	New Canaan, Darien, Stamford and Greenwich
Southern (Mystic)	East Hampton	East Hampton
Southern (Greenwich)	Greenwich (Southwestern Fairfield County Region)	Greenwich
Southern (Mystic)	Lebanon	Lebanon
Southern (Mystic)	Birchwood	Marlborough
Southern (Mystic)	Mystic	Groton, Stonington

Since the 2010 Aquarion Rate Case Decision, the Company has completed approximately \$61.9M in utility plant additions by December 31, 2012. The Company has also scheduled for completion approximately \$55.5M in utility plant additions from January 1, 2013 to September 30, 2013.<sup>2</sup> The major plant additions consist of the following:

<sup>2</sup> The Company testified that all major projects listed below are on schedule for completion by the September 30, 2013. Tr. 6/12/13 p. 651.

MAJOR ADDITIONS TO UTILITY PLANT (\$millions)				
ITEM DESCRIPTION		Additions 07/01/2010 - 12/31/12	Additions 01/01/13 - 09/30/13	Total Estimated Cost
A.	Oak Meadows Tank	\$0.0	\$1.7	\$1.7
B.	Brookside Pump Station Improvements	\$0.0	\$2.3	\$2.3
C.	Canal St. Treatment Plant Imp.	\$0.0	\$2.4	\$2.4
D.	Coleytown Treatment Plant Imp.	\$0.0	\$2.1	\$2.1
E.	Greenridge Improvements	\$3.2	\$0.0	\$3.2
F.	Iliff Pump Station	\$0.0	\$1.7	\$1.7
G.	IT Infrastructure Upgrades	\$8.6	\$1.7	\$10.3
H.	Lantern Hill Pumping & Treatment Imp.	\$0.9	\$3.8	\$4.7
I.	Main Renewal Program	\$19.5	\$16.3	\$35.8
J.	Meter Installation Program	\$7.6	\$3.7	\$11.3
K.	Route 25 –Monroe/Newtown Interconnection.	\$0.0	\$1.6	\$1.6
L.	N. Stamford Dam Rehabilitation	\$0.0	\$2.8	\$2.8
M.	Putnam Water Treatment Plant Imp.	\$6.2	\$8.6	\$14.8
N.	Ridge Ave. Pump Station Replacement	\$2.6	\$0.0	\$2.6
O.	Service, Valve, Hydrant Program	\$9.2	\$2.6	\$11.8
P.	Timber Trails Bridge	\$0.0	\$1.4	\$1.4
Q.	Vehicle Replacement Program	\$1.3	\$0.4	\$1.7
R.	Water Treatment Equipment	\$2.8	\$0.0	\$2.8
S.	West Church St. Pump Station Imp.	\$0.0	\$2.4	\$2.4
	Total	\$61.9	\$55.5	\$117

Logan PFT, pp. 14 and 15.

## **Current Status of Aquarion's Water Systems**

Aquarion's water systems are in good operating condition and are well maintained. In the following subsections, further comments are provided relative to the Company's water quality, adequacy of supply, adequacy of storage and customer complaints.

### **a. Water Quality**

Aquarion stated that it had submitted a letter the Department of Public Health (DPH) requesting that a statement be provided that the Company's water quality meets the standards of the Public Health Code. Aquarion Response to Interrogatory EN-32. The DPH letter was not made available during the course of the evidentiary portion of this case. Therefore, the Company will be ordered below to submit the letter.

### **b. Adequacy of Water Supply**

Schedule G-6.1 of the Application shows the present and projected water demands and safe yields in each of Aquarion's Connecticut systems. Most of its systems have adequate supply to meet current and projected demands over the 50-year planning period.

The Company closely monitors its purchased water usage from neighboring utilities for systems where Aquarion supplies are constrained or non-existent. Specifically, the Company purchases water from: 1) the City of Danbury (Danbury) to serve approximately 50 customers in a small portion of North Ridgefield on the Danbury line (Barnum and McKeon systems), the Hollandale, Ken Oaks and Rolling Ridge systems in Danbury and the Berkshire system in Brookfield and Bethel; 2) the South Central Connecticut Regional Water Authority for 41 customers in the Hawkstone system in Oxford and the valley system in Oxford and Seymour; 3) the Torrington Water Company (TWC) to serve the Litchfield system; and 4) the South Norwalk Electric and Water to serve the Darien system. Dunn PFT, p. 11; Aquarion Response to Interrogatory EN-4, Attachment 1.

The Company provided copies of the most recent inspection reports issued by the DPH for its systems since the 2010 Aquarion Rate Case Decision. Aquarion Response to Interrogatory EN-31. The Company has not received any consent orders from the DPH or from the Department of Energy and Environmental Protection (DEEP) since the 2010 Aquarion Rate Case Decision.

The DPH issued several Notices of Violations (NOVs) to the Company during 2011 and 2012, most of which relate to the 57 recently acquired systems. All of the public water systems that received violations are currently in compliance with the DEEP and the DPH regulations. Remedies included upgrades to source of supply and treatment infrastructure and continuous monitoring/process alarming equipment, as well as modified procedures and training. Aquarion Response to Interrogatory EN-31

The Company has taken a number of steps in the area of well monitoring. Specifically, Aquarion has implemented an aggressive drawdown and specific capacity-monitoring program which provides detailed drawdown information at each of the well facilities in the Valley system where purchased water is the highest. This information is analyzed and operational adjustments are made to ensure that sources of supply are maximized and purchased water minimized. The Company has also initiated a well redevelopment program for sources that have a reduction in production due to the clogging of those wells from iron and manganese. Dunn PFT, pp. 11 and 12

As indicated in Aquarion's 2006 Water Supply Plan, the Company is proactively identifying and addressing source of supply limitations in its systems. The following is an update of actions taken to address supply deficiencies since the 2010 Aquarion Rate Case Decision.

Ball Pond – In 2008, Aquarion installed and tested a replacement rock well (Well No. 2-08) with a safe yield of 8 gpm and abandoned Well No. 2 which had a safe yield of 2 gpm. Even with the addition of Well No. 2-08 which was included in the Aquarion 2010 Rate Case Decision, the Ball Pond System continued to have a need for additional supply. Since then Aquarion has increased the surface water setback around Gillotti Well No. 11 which increased its available yield by approximately 5 gpm. In addition, Renda Well No. 14 was installed and permitted adding available water of approximately 10 gpm to the system. With these improvements, Aquarion believes the system has adequate supply to meet maximum day demands.

Mystic – Since the 2010 Aquarion Rate Case Decision, Aquarion has negotiated and executed an agreement for an interconnection with Groton Utilities to provide an annual average supply of 0.1 mgd to the Mystic System. The available maximum day supply will be dependent on system operations but is expected to be up to 0.75 mgd. The interconnection has been constructed and the DEEP has issued the required diversion permit. The Agreement was recently approved in a Decision dated June 26, 2013, in Docket No. 12-08-06, Application of Aquarion Water Company of Connecticut for Approval of a Water Supply Agreement with the City of Groton, Groton Utilities. This additional supply and Aquarion's demand management in recent years will provide adequate supply for the Mystic System.

Litchfield - As presented in the 2006 Water Supply Plan, the Litchfield System has a peak day supply deficit. To resolve this deficit, Aquarion negotiated an agreement to increase its purchased water capacity from TWC and increase the capacity of the transfer from 0.20 mgd to 0.40 mgd. In 2005, Aquarion applied to the DEEP for a diversion permit to allow purchase of the increased quantity. As a result of significant public opposition, primarily related to issues of inadequate streamflow below TWC's dams, the DEEP issued a diversion permit in 2007 that allows the continued water purchase at the previously approved capacity through 2014, but does not allow the requested capacity increase. During this permit period, TWC is collecting streamflow data and Aquarion is managing maximum day demand through a targeted conservation and demand management program

in the Litchfield System. A new diversion permit application for 0.40 mgd is planned for 2014 and it is hoped that the DEEP's Streamflow Standards will address the concerns raised by the public in 2005. Aquarion continues to consider increased purchased water from TWC to be the most cost effective solution to the supply deficit in the Litchfield System. Aquarion believes that the issues that lead to opposition of its 2005 diversion permit have been addressed by the DEEP's Streamflow Standards, and is optimistic that a similar future application can be approved.

Dunn PFT, pp. 19-21

In addition, adequacy of supply is an issue in several of Aquarion's newly acquired systems. The following is an update of the alternatives taken for increasing supply in these systems since their acquisition.

Scodon – The recently acquired Scodon System in Ridgefield has inadequate supply to meet current peak demands. Planning has begun to evaluate supply alternatives including development of additional local supplies and interconnection with Aquarion's other systems in Ridgefield.

Birchwood – The recently acquired Birchwood System in Marlborough has inadequate supply to meet demand. At the time of acquisition the system had five wells and Well Nos. 4 and 5 were operating without formal approval. Aquarion rehabilitated Well Nos. 2 and 3, replaced the low yielding Well No. 5, and received the required approvals for continued use of Well Nos. 4 and 5. These improvements did not provide sufficient supply for the system and in 2012, Aquarion installed and tested two new wells (Well Nos. 6 and 7). Unfortunately, these wells did not adequately increase the system's available water. Aquarion is now pursuing an interconnection with the Connecticut Water Company's system currently being developed in Marlborough.

New Milford - At the time of acquisition, Well Nos. 3 and 5 in the New Milford System were out of service because they did not comply with public health code setback requirements. Project planning, design and permitting had begun to replace Well No. 5 with a new well (Well No. 5A) and increase the surface water setback around Peagler Hill Well No. 3. Aquarion is proceeding with execution of these projects which are expected to be complete in 2014.

New Canaan - Design and construction of the Iliff Pump Station will allow the transfer of water from the Stamford System to the New Canaan System to increase supply availability and reliability in New Canaan, particularly during summer demands.

Brookfield - Aquarion's plans to meet projected demands and for system consolidation in Brookfield are described in the Brookfield Water Supply Plan submitted to the Authority on April 1, 2013. As indicated in that plan, Aquarion plans to consolidate all of its water systems in the Town of Brookfield

(Candlewood Acres, Western Brookfield, Brookfield, Brook Acres, Greenridge, Brookwood, Butternut and Towne Brooke) in the five year planning period.

Projects to evaluate and increase the supply in the Brookfield Systems include:

Towne Brooke Diversion Permit - The Towne Brooke System required additional supply and treatment to serve system expansion to the Kohls\BJs shopping center. Two new wells and the treatment system were funded by the developer under a special deposit contract (see Docket No. 12-05-10 Application of Aquarion Water Company of Connecticut for Approval of a Special Deposit Contract with S&W Brookfield, LLC). Aquarion has applied for a diversion permit that will allow withdrawals from the wellfield to exceed 50,000 gpd and interconnection and consolidation of the Towne Brooke and Brookfield Systems. Excess supply from the Towne Brooke System will then be available to the Brookfield System.

Meadowbrook Wellfield Expansion - Aquarion has installed and tested two new wells in the Meadow Brook Wellfield that increases the wellfield's safe yield from 0.300 mgd to 0.481 mgd.

Brookfield System Diversion Permit – Aquarion has applied to the DEEP for a diversion permit that will allow increased withdrawal from the Meadowbrook Wellfield described above and connection and consolidation of the Brook Acres and the Brookfield Systems. Excess supply from the Brook Acres Wellfield will then be available to the Brookfield System. Approval of the permit is expected in 2013.

New Milford Interconnection - There is currently an emergency interconnection between Aquarion's Brookfield and New Milford Systems. Aquarion has begun design of a pump station that will allow this interconnection to be used as a regular supply to the Brookfield System.

Greater Bridgeport System Interconnection - Aquarion's acquisition of systems in Newtown, Bethel and Brookfield provides the opportunity to implement a regional solution to water supply needs. The Newtown System is adjacent to Aquarion's Greater Bridgeport System. An emergency interconnection has been constructed between the two systems and planning for a pump station to enable the interconnection to be used as a regular supply is in progress. The Newtown System is already connected to Aquarion's Chimney Heights System in Bethel. Planning for improvements to the Newtown System to increase the ability to transfer water from Newtown to Chimney Heights is currently in progress. Design is also in progress to interconnect Aquarion's Chimney Heights and Berkshire Office Park Systems in Bethel. The Berkshire Office Park System extends into Brookfield and can be extended to interconnect with the Brookfield System. Implementation of this solution will provide additional supply to the Brookfield System and significantly increase the reliability of supply and service in Aquarion's systems from Newtown through New Milford.

Dunn PFT, pp. 19-21; Aquarion Response to Interrogatory EN-37.

### Pro Forma Plant Additions

The Company projected cumulative multi-year pro forma additions for plant that will be in service for 2013, 2014, 2015 and 2016 of approximately \$156,594,602. Application, Exhibit B, Schedules B-2.2 A, B-2.2 B and B-2.2 C. As discussed in Section II.B, above, the Department rejected the Company's multi-year rate plan that includes plant in service to the midpoint of the rate year. The Authority will allow plant in service which is used and useful as of September 30, 2013, the beginning of RY1.

Aquarion is requesting that the Authority provide a return on the full value of each of the pro forma projects so that its customers will receive full benefit of the projects in the pro forma period. The Company proposed \$56,835,843 for the 2013 pro forma plant additions. Late Filed Exhibit No. 3, Supplemental Attachment 1. Aquarion provided numerous updated and revised schedules of the Company's proposed 2013 pro forma capital improvements additions.

The requested post-test year additions total approximately \$57 million. Id. The OCC indicates that the Company lists 19 post-test year projects to be included in rates. The Company was requested to identify the post-test year plant additions that were completed and used and useful as of June 12, 2013. The Company stated that four of the post-test year projects were complete and used and useful: Oak Meadows Tank, Brookside Pump Station, Route 25 Noroton Connection and West Church Pump Street Station. One of the post-test year projects that was included in rate base is a bridge which the Company acknowledged was complete but not used and useful. Thus, the OCC recommends that only the plant additions that were complete and used and useful as of June 12, 2013, be allowed in rates at this time. This would reduce the Company's rate base for RY1 by \$25,360,439. Id.

<b>MAJOR ADDITIONS TO UTILITY PLANT</b>			
	<b>ITEM DESCRIPTION</b>	<b>In-Service Date</b>	<b>Spending from 01/01/13 to 09/30/13</b>
A.	Oak Meadows Tank (Brookfield)	May-13	\$1,573,451
B.	Brookside Pump Station Improvements	May-13	\$1,999,089
C.	Canal St. Treatment Plant Imp.	Jun-13	\$1,644,331
D.	Coleytown Treatment Plant Imp.	Jun-13	\$1,362,916
E.	Greenridge Improvements	Complete	\$0
F.	Iliff Pump Station	Jul-13	\$965,667
G.	IT Infrastructure Upgrades	Sep-13	\$333,031

H.	Lantern Hill Pumping & Treatment Imp.	Jun-13	\$3,165,129
I.	Main Renewal Program	Sep-13	\$3,857,408
J.	Meter Installation Program	Sep-13	\$1,732,020
K.	Route 25 –Monroe/Newtown Interconnection.	May-13	\$1,402,647
L.	N. Stamford Dam Rehabilitation	Jun-13	\$2,187,571
M.	Putnam Water Treatment Plant Imp.	Sep-13	\$7,436,873
N.	Ridge Ave. Pump Station Replacement	Complete	\$0
O.	Service, Valve, Hydrant Program	Sep-13	\$831,262
P.	Timber Trails Bridge	Sep-13	\$1,370,223
Q.	Vehicle Replacement Program		\$347,554
R.	Water Treatment Equipment	Sep-13	\$126,454
S.	West Church St. Pump Station Imp.	Apr-13	\$1,835,626
	<b>TOTAL:</b>		<b>\$32,171,252</b>

#### Aquarion Response to Interrogatory OCC-193

As shown in the table above, which was prepared May 30, 2013, seven projects were not expected to be in service before September 2013. The Table below was created using information contained in Logan PFT, pp. 14 and 15.

<b>MAJOR PROFORMA ADDITIONS TO UTILITY PLANT (\$millions)</b>		
<b>ITEM DESCRIPTION</b>		<b>Additions 01/01/13 - 09/30/13</b>
<b>A.</b>	<b>Oak Meadows Tank</b>	<b>\$1.7</b>
<b>B.</b>	<b>Brookside Pump Station Improvements</b>	<b>\$2.3</b>
<b>C.</b>	<b>Canal St. Treatment Plant Imp.</b>	<b>\$2.4</b>
<b>D.</b>	<b>Coleytown Treatment Plant Imp.</b>	<b>\$2.1</b>
<b>F.</b>	<b>Iliff Pump Station</b>	<b>\$1.7</b>
<b>G.</b>	<b>IT Infrastructure Upgrades</b>	<b>\$1.7</b>
<b>H.</b>	<b>Lantern Hill Pumping &amp; Treatment Imp.</b>	<b>\$3.8</b>
<b>I.</b>	<b>Main Renewal Program</b>	<b>\$16.3</b>
<b>J.</b>	<b>Meter Installation Program</b>	<b>\$3.7</b>
<b>K.</b>	<b>Route 25 –Monroe/Newtown Interconnection.</b>	<b>\$1.6</b>
<b>L.</b>	<b>N. Stamford Dam Rehabilitation</b>	<b>\$2.8</b>
<b>M.</b>	<b>Putnam Water Treatment Plant Imp.</b>	<b>\$8.6</b>
<b>O.</b>	<b>Service, Valve, Hydrant Program</b>	<b>\$2.6</b>
<b>P.</b>	<b>Timber Trails Bridge</b>	<b>\$1.4</b>
<b>Q.</b>	<b>Vehicle Replacement Program</b>	<b>\$0.4</b>
<b>S.</b>	<b>West Church St. Pump Station Imp.</b>	<b>\$2.4</b>
	<b>Total</b>	<b>\$55.5</b>

The pro forma plant additions consist of meter replacements, new water mains, water treatment equipment, pumping plants and computer upgrades. Detailed descriptions of the pro forma plant additions are shown in Appendix B of this Decision.

The Authority has reviewed the Company's pro forma plant and finds the pro forma plant additions to be acceptable as of September 30, 2013. The Authority will allow pro forma plant in the amount of \$56,835,843 and the associated depreciation expense of \$3,444,363. The Authority finds the progress with the September projects to be substantial enough that they are appropriate for inclusion in the Company's Rate Base at this time. The Authority is using a compromise to forward looking rate base by allowing capital improvements to the end of the pro forma period. The Authority will require confirmation through an order that these projects have been placed in service as of September 30, 2013. This compromise will allow the Company greater ability to earn its allowed return with minimal risk that rate payers will be paying for plant that is not yet used and useful. The Authority will deliberate the result of this small change in any future consideration of forward-looking rate base for water companies.

The Company does not appear to have acted on the recommendations of the Authority following issuance of the 2010 Aquarion Rate Case Decision in the area of scaling back investment. Aquarion's capital improvement spending has increased by approximately 50% over average annual spending between 2008 and 2010. Also, the Company's coordinated effort in the WICA process has been disappointing with one of 19 projects involving coordinated effort (working with municipal paving schedules and sharing in the cost) in its last WICA filing in Docket No. 10-02-13WI07, - Application of Aquarion Water Company of Connecticut for a Water Infrastructure and Conservation Adjustment, Semi-Annual Filing Report Dated January 18, 2013. The Company seems to have an aggressive approach to capital investment when it should be scaling back. The economy is no better now than it was at the time of the 2010 Aquarion Rate Case Decision. Aquarion must balance the needs of its customers and the Company while being cognizant of the effects on utility rates that such levels of capital investment can have. The Company appeared to understand this as it reduced its capital expenditures in 2009 from \$35.8M to \$32.1M in response to the downturn in the economy. In 2009, the Company budgeted \$3.7M for the Putnam Water Treatment Plant related to the clearwell and the chemical feed and storage building and then placed those projects on hold. 2010 Aquarion Rate Case Decision, p. 16. The following is an excerpt from that Decision;

The Authority believes that the pro forma plant additions will enhance the quality and performance of the water system. However, due to present economic conditions, the Authority advises the Company to continue its annual downsizing of capital improvements that will not minimize the water quantity or quality of the water produced by its water systems. The Authority also encourages the Company to continue its efforts in working with the towns and cities on their road paving schedules to minimize the Company's cost associated with the repaving of the roads after the installation of water mains.

Looking forward again, it does not appear the Company followed the Authority's recommendations. Even though projected spending through 2014 in the Company's 2010 Five-Year Capital Improvement Program was \$40M, that figure has increased dramatically to between \$54M and \$59M annually from 2013 to 2017. The Authority strongly recommends that Aquarion reduce its capital spending level, if possible, by postponing projects or parts of projects that do not have a direct effect on improving water quality or quantity.

### **Water Infrastructure and Conservation Adjustment (WICA)**

Aquarion's Five-Year Capital Improvement Plan anticipates WICA spending to be as follows:

2013 - \$18.0M  
2014 - \$24.0M  
2015 - \$25.0M  
2016 - \$25.5M  
2017 - \$25.5M

The WICA process is intended to ensure more timely replacement of aging infrastructure. Dunn PFT. p. 9.

The following table lists WICA pre-approved projects to be completed between January 1 and September 30, 2013 that have been included in the Application case for recovery in rates. The Authority expects those projects, by number, will be identified in the Company's next WICA filing, expected to be no earlier than April of 2014.

Division	WICA #	Asset description	System	Estimated Length	Estimated Project Cost
East	459	Canal Street, Shelton	Main	2000	500,000
East	537	Bronson Road I, Fairfield	Main	1879	500,949
West	560	Horton Lane, New Canaan	New Canaan	644	192,500
Mystic	314	Charles Street, Groton	Mystic	440	117,337
North	499	Hopmeadow Street, Simsbury	Simsbury	980	662,234
Greenwich	515	Chestnut St., Darien	Greenwich	293	115,196
East	302	Westside Road, Norfolk	Litchfield	1699	386,504
East	304	Judd Avenue, Kent	Litchfield	500	168,480
East	303	Locust Lane, Kent	Litchfield	500	165,780
West	606	Charles Place, New Canaan	New Canaan	360	110,000
East	580	Beaver Dam Transmission Main, Stratford	Main	3500	962,500
East	605	Circle Drive, Litchfield	RJ Black	1000	300,000
East	154	Blueberry Hill Road, Monroe	Main	1100	282,679
East	610	Deer Run Lane, Brookfield	Rural	2700	810,000
East	614	Mist Hill Drive, Brookfield	Rural	400	140,000
East	604	Meadow Drive, Brookfield	Greenridge	1000	300,000
East	602	Beech Tree Road, Brookfield	Greenridge	1300	390,000
East	611	Main Drive, Brookfield	Rural	1900	390,000
East	589	Millstone Ridge II, New Milford	Forest Hill Estates	1760	572,000
East	590	Maple Drive North, New Milford	Forest Hill Estates	1090	299,750
East	595	Maple Drive South, New Milford	Forest Hill Estates	1370	376,750
East	593, United #5	Route 202 (Robins Ridge), New Milford	Forest Hill Estates	1750	437,500
West	569	West Road, New Canaan	New Canaan	1200	360,000
West	570	Oenoke Ridge II, New Canaan	New Canaan	800	280,000
West	581	Weed Street I, New Canaan	New Canaan	1250	375,000
West	582	Weed Street II, New Canaan	New Canaan	2000	600,000
West	571	Sunset Hill Road, New Canaan	New Canaan	3250	975,000
Greenwich	608	Shore Road, Greenwich	Greenwich	2600	780,000
Mystic	313	Holmes Street, Stonington	Mystic	350	110,149
Mystic	312	Bay Street, Stonington	Mystic	560	174,424
Mystic	572	School Street, Stonington	Mystic	1300	422,500
Mystic	573	Washington Ave, Stonington	Mystic	800	150,000
Mystic	574	Broadway Avenue, Stonington	Mystic	1600	480,000
East	552	Bronson Road II, Fairfield	Main	1400	665,000

Late Filed Exhibit No. 37, Attachment.

### Five Year Capital Improvement Program

The Company provided a Five-Year Capital Improvement Program (Capital Improvement Program) for projected construction and maintenance projects. Application, Schedule F-7.0. A detailed description of the Company's proposed capital improvements is included in Appendix B of this Decision. The following table summarizes the Capital Improvement Program:

<b>FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM</b>					
<b>DESCRIPTION</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Water Treatment Plant Improvements	\$4,170,000	\$2,850,000	\$1,325,000	\$2,000,000	
T&D Mains - Transmission. & Distribution Mains Replacements	\$20,833,500	\$26,200,500	\$25,535,500	\$26,035,500	\$26,035,500
Dam Improvements & Construction	\$2,084,230	\$2,971,375	\$4,400,000	\$7,200,000	\$6,250,000
T&D - Transmission. & Distribution Upgrades Storage tanks, Hydrants & Valves	\$4,489,398	\$4,944,439	\$5,472,118	\$4,731,400	\$7,196,891
IT – Technical Platforms - MS, Server, Misc. Upgrades, storage expand, document and archive	\$940,000	\$1,680,000	\$1,075,000	\$1,035,000	\$1,450,000
Business Operations Support - IT	\$1,573,000	\$1,135,000	\$1,105,000	\$1,210,000	\$835,000
Meters - Periodic Meter Changes, New Meters, and upgrades.	\$4,390,097	\$3,251,038	\$3,427,457	\$2,679,835	\$2,609,074
Source of Supply Improvements	\$2,435,160	\$1,296,065	\$1,870,000	\$2,370,000	\$3,395,000
Supply Operations - Recurring	\$2,200,000	\$2,650,000	\$2,700,000	\$2,800,000	\$2,800,000
Water Treatment Improvements	\$7,124,468	\$955,000	\$6,291,100	\$3,200,000	\$3,450,000
Pump Station Improvements	\$5,884,196	\$4,395,000	\$2,940,650	\$4,065,000	\$3,330,270
Misc. Improvements-Loader, Lab Equipment, Building Mods, Vehicles, SCADA	\$2,223,325	\$1,256,500	\$1,231,500	\$1,256,500	\$1,231,500
<b>GRAND TOTAL (2010 - 2014)</b> <b>\$198,748,400</b>	<b>\$58,347,374</b>	<b>\$53,584,917</b>	<b>\$57,373,325</b>	<b>\$58,583,235</b>	<b>\$58,583,235</b>

Application, Schedule F-7.0.

For the period 2013 to 2017, the Company's capital investments are budgeted to be \$58M for 2013, \$53M for 2014 and \$58M for the years 2015 through 2017. This includes all spending for WICA-related projects as well as for the capital needed for the new acquisitions. The Company indicates that it is carefully reviewing its capital improvement program to ensure that capital is deployed in the areas where it is needed most. Dunn PFT, p. 8.

The capital improvement program was developed to address risks and implement service improvements identified through a variety of planning efforts, including the Company's water supply plan, master plans, security plans and infrastructure investment planning. The Company claims a sustained investment of between \$53.6M and \$58.6M per year is necessary to continue to provide the level and reliability of service that its customers expect, in compliance with all applicable regulations and at an affordable rate. Within the five-year planning period, the most significant facility upgrades for the Company occur in the following Pipeline Replacement Program, Dam Rehabilitation and at the Trap Falls (a.k.a. D.W. Loiselle) Water Treatment Plant.

Pipeline Replacement Program - The capital improvement program includes annual water main investments that begin at \$20.8M in 2013 and increase to \$26M in 2017. Most of this investment is for WICA-eligible water main replacement work which ranges from \$18M in 2013 to \$25.5M in 2017. All water main replacement work will be justified using criteria established through the

WICA process. Current models and best practices will be universally deployed to ensure an appropriate level of infrastructure replacement in a capital efficient manner.

Dam Rehabilitation - The Company maintains an active program to inspect, monitor, maintain and repair its 29 dams that impound water for public drinking water supply purposes. The current Capital Improvement Program includes spending of between \$2.0M and \$7.0M per year on this program.

Generally, dam rehabilitation includes the replacement of aged gatehouse valves and appurtenances and concrete or earthen repairs intended to extend the useful life of the structure. In 2011, the DEEP issued regulations that require modification of most of the Company's dams in order to retrofit them so that they can make measured releases of water to their receiving streams and come into compliance with the new rules, which are intended to improve the health of Connecticut's streams. The current 5-year plan for dams includes the individual rehabilitation of 7 dams, including: Means Brook (\$3.6M), Saugatuck (\$3.5M), Lakeville #3 (\$1.1M), Hemlocks (\$2.75M), Brush Pond (\$1.7M), Rockwood (\$1.7M), and Aspetuck (\$2.75M). The Company has also budgeted \$3.7M in order to begin the process of retrofitting dams to comply with the streamflow regulations. Logan PFT, pp. 23-25.

Trap Falls Water Treatment Plant Capital Improvement Program - The Trap Falls Water Treatment Plant in Shelton is a 24 mgd surface water treatment plant that was built in the 1970s. The plant capacity is adequate to meet current and future needs. However, the electrical, mechanical, treatment and structural elements of the facility need to be rehabilitated in order to ensure the operability and efficiency of the facility into the future. The 5-Year capital plan includes filter rehabilitation (\$1.6M) and the development and execution of a capital improvement plan (\$4.2M) for various treatment plant upgrades.

Logan PFT, pp. 23-25.

In summary, within 2013-2017, the Company plans to spend approximately \$198.7M on capital improvements to the water systems. The Authority has reviewed the various construction and budgeted projects included in the Company's capital improvement program and cautions the Company that the projects be essential to the future operations of the Company. The Authority concurs that a certain level of capital investment is necessary to continue to provide the level and reliability of service in compliance with all applicable regulations. However, the level of investment to achieve this needs to be tested by the Company in rigorous reviewing and planning phases that truly examine the need for each proposed project or portions thereof. The Authority expects that Aquarion, in response to the continued downturn in the economy, will continue to monitor its capital expenditures.

### **Periodic Meter Testing**

In order to maintain meter effectiveness, a water company must periodically test its meters for accuracy. Meter tests are necessary to determine their accuracy in order to: (1) insure that billings to customers are accurate; (2) assist a company in controlling its levels of Non-revenue Water (NRW); and (3) assist customers in reducing their consumption. As specified by the Regulations of Connecticut State Agencies (Conn. Agencies Regs.) §16-11-88, all  $\frac{5}{8}$ -inch,  $\frac{3}{4}$ -inch and 1-inch meters must be tested at intervals of 8 years and all other size meters at more frequent intervals. Meter testing may be required more frequently in the event of a consumer request or a complaint to the Authority. Conn. Agencies Regs. §16-11-88(a) states:

If a utility's meters are maintained in compliance with the provisions for meter testing over the most current consecutive three-year period including the condition that the utility has not exceeded an amount of overdue meters equal to ten percent (10%) of the total due tests in any year over that three-year period, and if at least ninety percent (90%) of the meters so tested register an accuracy of not less than ninety-six percent (96%) nor more than one hundred two percent (102%) during the given three-year period, such utility, upon request, may be granted an extension in the time interval between test years.

The Company is on a 12-year cycle for periodic meter testing. Aquarion Response to Interrogatory EN-54. The Company submits its Periodic Meter Testing results to the Authority on an annual basis. The Company's reports for the last two years indicate that it has not tested at least 90% of its scheduled periodic meters and less than 90% of the tested meters fell within 96% and 102% accuracy. Therefore, the Company has not complied with the periodic meter testing requirements outlined in Conn. Agencies Regs. §16-11-88. However, most of the shortfall is related to smaller, newly acquired systems. Except for 54% of overdue meters in the North Division, the Authority fully expects the Company to bring all systems into compliance in this area by the time it files for the next rate case.

The Authority will review the Company's next Annual Periodic Meter Test Report to ensure that Aquarion has corrected the annual meter testing process in all of its systems.

### **Recent System Acquisitions**

Under the Company's ownership, operational decisions for all acquired systems are now made centrally, leading to consistent solutions for problem solving and operational efficiencies. In Brookfield, the Greenridge water district was plagued with uranium and other pollutant contamination for years. As a result of consolidation, Aquarion was able to develop and implement a plan whereby plentiful potable water could be piped to Greenridge from the nearby Meadowbrook Wellfield which was recently acquired by the Company. Water resource and infrastructure planning is now

centralized leading to efficiencies in identifying, prioritizing, executing and coordinating necessary capital improvement projects. The Company has also made significant improvements to the water quality in Brookfield. Connors PFT, pp. 2 and 3.

Aquarion initiated a capital investment plan to improve operating conditions needed to ensure safety for its workers and the continued safe delivery of water to its new customers of acquired systems. These improvements included general site cleanup, sanitary improvements, electrical improvements and site access improvements, control and data collection improvements, consistent sampling and monitoring practices, chemical feed and treatment improvements and permanent backup power generators. Connors PFT, p. 4.

Aquarion's acquisition of these systems has benefited regional water resource planning. In Brookfield, the Company has consolidated the former Rural Water Company's Western Brookfield and Towne Brooke Systems and the former United's Greenridge System into the former Brookfield Water Company System to create one operating entity now known as the Brookfield System. The quantity of water now available to water systems in Brookfield has increased by approximately 260,000 gallons per day (GPD) as a result of the addition of new wells at the Towne Brooke and Meadowbrook well fields. The Company also plans to further augment Brookfield supplies with water from its New Milford and Main Systems through interconnections. Connors PFT, pp. 6 and 7.

### **Customer Complaints**

Aquarion provided a summary of the major types of customer complaints, including water quality and quantity issues that the Company has recorded and monitored since the 2010 Aquarion Rate Case Decision. Application, Section H, Schedule H-4.0 and Docket No. 06-06-18, Application of Kalda Group Inc. and Macquarie Utilities Inc. For Approval of a Change of Control, Order 9 Compliance. In a separate filing, the Company listed the major types of service quality complaints (e.g., taste, odor, appearance/discoloration, chemical, illness/biological) that are reported to the Authority on a quarterly basis. Aquarion Response to Interrogatory EN-41. Most complaints concerning water quality issues are monitored by the Company's water product quality committee. Aquarion's Utility Operations and Engineering and Planning are involved in the monitoring of complaints and determine the best way to address the specific issue.

Major capital improvements implemented by the Company since the 2010 Rate Case Decision to reduce water quality-related customer complaints include the following:

Glenville Street Pipe Lining – Aquarion lined approximately 1,300 feet of 8" diameter main in Glenville Street in Greenwich in response to customer complaints regarding dirty water.

Circle Drive Main Replacement – Aquarion replaced approximately 1,025 feet of 3.5” steel main with 8” ductile iron pipe in the Circle Drive System in Litchfield in response to customer complaints regarding water quality.

West Street Main Replacement – Approximately 2,600 feet of 6” diameter cast iron main was replaced with 12” ductile iron main primarily in response to customer’s dirty water complaints.

Iliff Pump Station – The Iliff Pump Station will pump water from the Stamford System to the western side of the New Canaan system in the vicinity of the West School Tank. In addition to supplementing supply to New Canaan, this project will address localized low pressure complaints in New Canaan.

Birchwood Treatment Improvements – Aquarion improved the Birchwood Wellfield treatment system in order to improve water quality and address customer complaints regarding dirty water. The upgrades included changing the oxidant from potassium permanganate to chlorine and replacing the iron removal filter media.

Reservoir Aeration – Since the 2010 Aquarion Rate Case Decision, in-reservoir aeration systems for taste and odor control were installed at the Means Brook (Greater Bridgeport System), Lakeville (Salisbury System), Bargh (Greenwich System) and North Stamford (Stamford System) Reservoirs.

WICA Program – Customer complaints is a criteria used in the prioritization of mains for rehabilitation in the Company’s WICA-funded program. These projects also help avoid customer complaints by controlling the number of main breaks in the system.

Aquarion Response to Interrogatory EN-41.

### **Non-Revenue Water**

The Company’s Un-Accounted for Water (UAW) control program focuses on four key components: Administration; Revenue and Consumption Management; Distribution System Monitoring and Leakage Control; and Production Management. Action plans address all aspects of UAW control including meter reading, unmetered consumption, unauthorized water usage, leak detection and repair, and production and consumption data reporting and validity.

In its newly acquired systems, poor record keeping by the prior owners, inaccurate or lack of production and consumption meters, poorly maintained underground distribution piping and the lack of viable system mapping are several issues that have complicated the Company’s ability to manage lost water. The Company will address the system deficiencies that are affecting UAW by focusing on installing Supervisory Control and Data Acquisition (SCADA) at production facilities, installing meters in unmetered systems, and performing system wide leak surveys.

Upon the acquisition of United's Greenridge system, by tracking daily production, the Company was able to respond to a spike that saw production increase from 60,000 GPD to over 100,000 GPD. Leak survey crews identified two customer service line leaks and had them repaired. These leaks would have continued if the Company did not have the daily production data. Dunn PFT, pp. 12-17.

NRW is the difference between the volume of water produced or purchased by a company's water system and the volume of water delivered to its customers. NRW losses may be due to theft and illegal connections, water used at unmetered connections, fire hydrant usage, overflowing tanks and water leakage within the distribution system. A company can reduce NRW by implementing leakage management techniques and carrying out main replacement programs. When a company has more than 15% NRW loss within the system, it should investigate various ways to reduce the operating cost associated with the power and chemicals required to supply the water. Lowering NRW will improve the operating efficiency of the company.

At a minimum, 85% of the water produced by a water system should be used to supply water to its customers. Therefore, a water system should not have more than 15% of NRW, which is the guideline accepted by the National Association of Regulatory Utility Commissioners (NARUC). In this age of conservation, it is important that all water companies continue to initiate supply and demand management techniques to curtail high NRW levels.

The Company provided tables titled Non-Revenue water (NRW); however, the percentages that were reported were for UAW, not NRW. Application, Schedule G-6.0. Data was provided for the water systems for the period from 2008-2012. UAW is the difference between the NRW and the Company's water usage such as flushing hydrants, flushing of the water mains, water main breaks, and any other Company water usage of the system. The Company provides its NRW and UAW numbers in its Annual Report filed with the Authority.

The OCC indicates that in Late Filed Exhibit No. 28, the Company submitted the cost associated with NRW for its systems which were in excess of the Authority and NARUC guidelines. The cost, as calculated for UAW as provided in Late Filed Exhibit Nos. 27 and 28, is \$74,846. OCC Brief, p. 32.

The calculations are shown below:

System Delivery MGD (from LFE 28)	81.3
NARUC Allowed NRW %	15%
NARUC Allowed NRW (MG)	<u>12.195</u>
Actual NRW (from LFE 27 - 15.8%)	<u>12.8454</u>
Overage	0.6504
Variable Cost per MG (from LFE-28)	315.28
"Over-Run daily"	<u>205</u>
Annualized Cost over-run (365 Days)	<u><u>\$74,846</u></u>

The OCC therefore recommends a reduction of \$74,846 for non-revenue water.

The Authority notes that Late Filed Exhibit No. 35, Supplemental Attachment 1, updated numerous NRW figures and listed Company-wide NRW at 16.56%. The Authority will use this updated number and has recalculated the OCC-suggested adjustment to \$146,000. The Authority believes the OCC inadvertently used the NRW (although the OCC referred to it as UAW in its Brief) figure from Late Filed Exhibit No. 27 of 15.8% when the new number for Companywide NRW is 16.56%.

System Delivery MGD ( LFE 28)	81.3
NARUC Allowed NRW %	15%
NARUC Allowed NRW (MG)	<u>12.195</u>
Actual NRW (LFE 27 – 16.56%)	<u>13.4633</u>
Overage	1.2683
Variable Cost per MG (from LFE-28)	315.28
"Over-Run daily"	<u>400</u>
Annualized Cost over-run (365 Days)	<u><u>\$146,000</u></u>

The OCC believes that the Authority has established and followed a benchmark for NRW consistent with NARUC guidelines. The OCC notes that the Authority has made adjustments in past rate proceedings when a water utility exceeds the allowed level of NRW. OCC Brief, pp. 31 and 32.

Aquarion believes it would be inappropriate to penalize the Company for an NRW that is greater than 15% on a system by system basis given the fact that the costs associated with the capital investments (e.g., pipeline replacements) necessary to reduce NRW in the smaller systems would far outweigh the benefit derived from the reduction in the operating expenses. Aquarion believes it has made great strides in addressing this issue and will continue to do so in the future. Aquarion Reply Brief, pp. 23 and 24.

The Authority has evaluated the evidence submitted by the Company and has determined that its system-wide NRW is above the 15% acceptable range. The Authority also finds that the NRW for some of Aquarion's water systems greatly exceed the 15% acceptable range. The Authority recognizes that the Company has taken many actions to reduce system NRW. The long and expensive effort to reduce NRW appears impressive, but the results for recent years is not. After evaluating the OCC's proposed reduction of production costs related to the high NRW, the Authority concurs with the reduction. The Authority is not satisfied with the Company's efforts to date on this matter and will disallow \$146,000 in production expenses.

Lowering NRW would improve the Company's revenues. The Authority believes that in this age of conservation, it is important that all water companies continue to initiate supply and demand management techniques to curtail high NRW levels. The Authority encourages Aquarion to continue its efforts in reducing the NRW in all of its

water systems. The Authority will closely monitor the Company's NRW as provided in its Annual Report that is filed with the PURA. The Authority expects the Company to meet NRW levels in its small water systems by its next rate case filing.

### **Adequacy of Storage**

The Company's water storage within its distribution systems is generally considered adequate. The Company constantly evaluates water storage requirements through operations, system master plans and water supply plans. The addition of storage in the Brookfield System (Oak Meadow Tank) and increased storage at the Putnam Water Treatment Plant are recent examples of where Aquarion's planning activities have identified and improved system water storage capabilities. Aquarion Response to Interrogatory EN 34.

In Ridgefield, the Company plans to add a second tank for the distribution system at the site of the existing Peaceable Hill Tank. Once the new tank is constructed, the Company ultimately plans to refurbish or replace the existing tank. Id.

The Company's five-year plan also includes replacement of storage tanks in the recently acquired Scodon and Oakwood Systems. These replacements are driven by tank condition rather than capacity. Id.

The Groton interconnection is a cost-effective alternative to adding physical storage on the Company's Mystic/Stonington system to meet peak summer demands. Id.

### **Deferred Tank Painting**

Aquarion stated \$5,257,543 for deferred tank painting for the test year with a pro forma adjustment of (\$375,345) for a pro forma total of \$4,882,198 for RY1. Application Schedule B-1.0A and Schedule B-6.0 A.

The Company reflected projected deferred tank painting for five tanks to be painted to the mid-point of the rate year. The five tanks are West Hill for \$567,000; Canterbury for \$270,000; Putnam Height for \$1,040,000; Monroe Center for \$1,050,000 and Peguotsepos for \$351,000 for an overall total of \$3,278,000. Aquarion Response to Interrogatory AC-30.

The Company's witness confirmed that the five tanks' painting costs are projected and the amounts are reflected in the Company's Late Filed Exhibit No. 13. Tr. 6/3/2013, pp.139-149; Late Filed Exhibit No. 13. The \$3,278,000 mentioned above and referenced to by the witness were actually referring to the projected additions to RY1 and RY2.

The Authority utilized Late Filed Exhibit-03 to establish amounts of deferred storage tank painting that meet the Authority's standard of known and measurable. The following are the tank painting balances that are not completed or near completion and do not meet the Authority's standard: Weed Hill for \$574,519, Canterbury for \$326,979, Putnam High for \$326,027, Monroe Center for \$1,050,000 and Pequotsepos for

\$351,000 for the total of \$2,628,525. Late Filed Exhibit No. 3, Schedule WPC-3-13A. Therefore, the Authority will reduce the deferred tank painting balance by \$2,627,525 for the RY1 from \$5,222,336 to \$2,593,811 (\$5,222,336-\$2,628,525).

### **Cash Working Capital**

The Company proposed a revised average working capital allowance of \$14,644,444 for RY1. Late Filed Exhibit No. 3 Supplemental Attachment 3, p. 3. This amount included average materials and supplies inventory of \$1,331,259. Late Filed Exhibit No. 3 Schedule B-4.0 A. Thus, Aquarion's proposed average cash working capital (CWC) requirement is \$13,513,185 (\$14,644,444 - \$1,313,259) for RY1. The Company testified that the CWC requirement is approximately 15.1% of the total RY1 expense included in the lead/lag study. Late Filed Exhibit No. 3 Supplemental Attachment 3, p. 3.

In the instant proceeding, the Authority disallows total operating expenses of \$5,340,384. Therefore, the Company's proposed CWC requirement is reduced by \$806,398, which is 15.1% of the total disallowed operating expense amount. Consequently, the total allowed average working capital allowance for RY1 is \$12,706,787 (\$13,513,185 - \$806,398).

### **Customer Deposits**

The OCC recommends that customer deposits of \$793,827 be treated as a reduction to rate base. Deposits not returned to customers are a low-cost source of funds for the Company. OCC Brief, pp. 9 and 10.

Aquarion stated that the balance sheet items that the OCC recommended should be included as reductions to rate base have existed in the Company's books for many years. The Company stated that if the Authority accepts the OCC recommendations, expenses such as unamortized rate case and storm expenses that were excluded from rate base should be included. Aquarion Reply Brief, pp. 22 and 23.

Customer deposits are payments made by some customers in order to receive water services. These payments protect Aquarion from potential losses if certain customers fail to pay their bills. The Authority will reduce rate base by \$793,827 in the proposed rate year for the customer deposit balance as of March 2013.

### **Reserve Accounts**

#### **a. Automobile Insurance Reserve**

The OCC recommends that the automobile reserve balance of \$332,698 be deducted from rate base. The funds set aside in the Company's automobile self-insurance reserve account for automobile claims resulted from accumulation of cost-free capital from the ratepayer. OCC Brief, p. 31.

Aquarion stated that the balance sheet items that the OCC recommended be included as reductions to rate base have existed in the Company's books for many years. The Company stated that if the Authority accepts the OCC recommendations, expenses such as unamortized rate case and storm expenses that were excluded from rate base should be included. Aquarion Reply Brief, pp. 22 and 23.

Funds accrued in reserve accounts are collected in rates charged to customers. Any balance in the reserve accounts not yet used to pay claims should provide benefits to the ratepayers. Therefore, the Authority agrees with the OCC's recommendation and will reduce rate base by \$332,698.

**b. Self-Insured Reserve**

The OCC recommends that the self-insured reserve balance of \$645,884 be deducted from rate base. According to the OCC, the money the Company set aside in self-insured reserve for general liabilities claims represents cost-free capital from its ratepayers. OCC Brief, p. 29.

Aquarion stated that the balance sheet items that the OCC recommended be included as reductions to rate base have existed in the Company's books for many years. The Company stated that if the Authority accepts the OCC recommendations, expenses such as unamortized rate case and storm expenses that were excluded from rate base should be included. Aquarion Reply Brief, pp. 22 and 23.

Funds accrued in reserve accounts are collected in rates charged to customers. Any balance in the reserve accounts not yet used to pay claims should provide benefits to the ratepayers. Therefore, the Authority agrees with the OCC's recommendation and will reduce rate base by \$645,884.

**c. Workers' Compensation Liability Reserve**

The OCC recommends that the workers compensation reserve balance of \$276,349 should be deducted from rate base. The funds accumulating in the workers' compensation self-insurance reserve account for workers' compensation claims are also cost-free capital from ratepayers. OCC Brief, p. 29.

Aquarion stated that the balance sheet items that the OCC recommended be included as reductions to rate base have existed in the Company's books for many years. The Company stated that if the Authority accepts the OCC recommendations, expenses such as unamortized rate case and storm expenses that were excluded from rate base should be included. Aquarion Reply Brief, pp. 22 and 23.

Funds accrued in reserve accounts are collected in rates charged to customers. Any balance in the reserve accounts not yet used to pay claims should provide benefits to the ratepayers. Therefore, the Authority agrees with the OCC's recommendation and will reduce rate base by \$276,349.

## Deferred Income Taxes – Accelerated Depreciation

### a. Normal Timing Differences

Aquarion reduced rate base by accelerated depreciation deferred taxes of \$53,490,425 for the test year ended December 31, 2012, and by \$55,045,666 for the pro forma year ending September 30, 2013. Response to Interrogatory OCC-43 Attachment 1. In its Application, the Company proposed period-ending deferred taxes of \$57,363,728 for RY1. Id. Subsequently, Aquarion revised its proposed deferred taxes to \$54,728,972 for the pro forma period and \$56,542,313 for RY1. Late Filed Exhibit No. 3, Supplemental Schedules B-1.0 A. The Company proposed updated average deferred taxes of \$55,635,642 for RY1. Id. The Company calculated its proposed additional deferred taxes for the test year by applying the Federal statutory income tax rate of 35% to the differences between tax and book depreciation amounts for each period. Aquarion applied tax depreciation of 4% and book depreciation rates of 2.1% for the pro forma period and 2.86% for RY1. Id. Initially, the Company stated that the test year deferred tax increase for the pre-2013 plant in service was \$1,889,140. Response to Interrogatory OCC-43, Attachment 1. Subsequently, Aquarion testified that the correct deferred tax for the pre-2013 plant additions is \$1,547,080 and consists of \$1,026,180 for state and \$520,900 for Federal. Late Filed Exhibit No. 11.

The Authority reviewed the accelerated depreciation deferred taxes proposed by Aquarion and finds them to be understated. Also, the Authority noted inconsistencies in the reported book depreciation rates. The Company subsequently reported book depreciation rates of 2.92% for the pro forma period and RY1. Late Filed Exhibit No. 11, Attachment, p. 1. These rates are different from those reported in the Company's previously cited response. Based on the Company's response to the Late Filed Exhibit No. 11 Attachment, the Authority calculated the deferred taxes without the effect of the 2013 bonus depreciation on pro forma plant additions as depicted in the table below:

**Calculations of Deferred Taxes for Pro Forma Plant Additions**

	09/30/2013	09/30/2014
Total Tax Depreciation	1,707,616	4,393,033
Total Book Depreciation	811,483	2,061,267
Differences	896,133	2,331,766
Tax Rate	35%	35%
Deferred Tax Additions	313,646	816,118

Based on the amount for the period ending September 30, 2013, the Authority determines that the deferred tax amount for plant additions during the 9-month bridge period is \$235,235 ( $\$313,646 / 12 \times 9$ ).

Furthermore, the total deferred tax liability as of December 31, 2011, was \$50,466,877. Response to Audit Document Request (ADR) No. 14, p. 3. Thus, the net change in the deferred tax liability between 2012 and 2011 was \$3,023,548 ( $\$53,490,425 - \$50,466,877$ ). Id. The total change of \$3,023,548 is comprised of \$1,547,081 for the Company and \$1,476,467 additional deferred tax liability resulting

from the acquisition of United. The total change of \$3,023,548 also represents the total of a decrease in deferred tax asset of \$878,914, a decrease in deferred investment tax credit (ITC) of \$81,199 and an increase in deferred tax liability of \$2,225,833. Id. Aquarion did not include the \$1,476,467 representing the additional deferred tax liability from the acquisition of United in the test year amount. Additionally, the total plant in service as of December 31, 2012, was \$1,103,609,296. Schedule B-1.0 A. Based on the Company's proposed composite depreciation rate of 2.87%, the annual Federal deferred tax rate due is 1.13% (4% - 2.87%). Disregarding subsequent annual decreases to deferred ITC and tax asset, the Authority determines that the annual deferred tax liability increases for pre-2013 plant in service is approximately \$4,364,775 ( $\$1,103,609,296 \times 35\% \times 1.13\%$ ). Based on this calculation, the Authority finds that the appropriate deferred tax liability for the pre-2013 plant in service should at minimum be the test year addition of \$3,023,548. The impact of the pre-2013 plant in service on the 9-month pro forma period deferred tax liability balance is \$2,267,661 ( $\$3,023,548 / 12 \times 9$ ). Therefore, the Authority calculates the accelerated depreciation deferred taxes for the pro forma period and each of the proposed rate years as detailed in the table below:

#### Calculation of Accelerated Depreciation Deferred Taxes

	Pro Forma (\$)	RY1 (\$)
Beginning Amounts	53,490,425	55,993,321
Test Years Amounts	2,267,661	3,023,548
Additions	235,235	816,118
Ending Amounts	55,993,321	59,832,987

#### b. Bonus Depreciation

Aquarion testified that tax bonus depreciation is only available for property with tax lives of 20 years or less and that most of its utility plant additions have tax lives of 25 years. As a result, the Company decided that the impact of utilizing bonus depreciation in any one given year is relatively small. Late Filed Exhibit No. 10. Furthermore, the Company stated that bonus depreciation only yields a temporary benefit to ratepayers through an increased level of deferred taxes which reverses over time. Aquarion concluded that ratepayers do not benefit from decisions to utilize bonus depreciation. Id. Based on the above, Aquarion elected to not take bonus depreciation allowances available for tax years 2009 through 2012 and does not plan to take the 50% bonus depreciation special allowance available for plant added in 2013. Late Filed Exhibit No. 10 Supplemental. The Company stated that its decision not to avail itself of the bonus depreciation election is consistent with those of other water utilities and other regulated utilities in Connecticut. Id. However, the Company determined that its deferred tax liability would have increased by approximately \$38.4 million if it had elected bonus depreciation deductions for tax years 2009 through 2013. Id. Also, Aquarion stated that the reasons why bonus depreciation may not be elected include a significant increase in fixed assets record keeping, segregating and tracking differences for federal and state depreciable amounts because the State of Connecticut does not allow bonus depreciation, and complex adjustments involving those assets for which bonus depreciation was taken once the new temporary tax regulations are finalized. Id.

The Authority has several issues with the Company's decision not to elect the special tax depreciation deductions available for the periods indicated above. Deferred taxes, resulting from timing differences between tax deductions and allowed regulatory deductions increase or decrease rate base. Aquarion's decision not to deduct tax bonus depreciation available from 2009 to 2013 means rate base for calculating its customers' retail rates would be higher by approximately \$38.4 million by December 2013. In other words, rate base would decrease by \$35.7 (\$38.4 - \$2.7) million in 2014 and \$34.7 (\$38.4 - \$3.7) million in 2015 if Aquarion had elected to take the bonus depreciation. Consequently, the Company's customers are responsible for cost of capital return on the amount for which rate base was not reduced. Additionally, the equity portion of cost of capital would be grossed up for income taxes which the Company should have deferred with election of bonus depreciation deductions.

The Authority also takes issue with the Company's position that electing the bonus depreciation deductions would require complex record keeping tracking and segregating the differences between adjusted book bases for state and federal. The Company should be tracking the depreciable amounts of its fixed assets for federal and state purposes regardless of the bonus depreciation election. The complexity of the record keeping involved is not a valid reason not to take deductions that would reduce retail rates charged to its customers.

Also, the Company's assertion that its position not to take bonus depreciation deductions is consistent with those of other regulated utilities in Connecticut is not correct. In the Decision dated July 17, 2009 in Docket No. 08-12-07, Application of The Southern Connecticut Gas Company for a Rate Increase (2009 SCG Rate Decision), The Southern Connecticut Gas Company revised its rate year's accumulated deferred income taxes (ADIT) from \$41,384,854 to \$46,378,930 because of Federal bonus depreciation available for tax year 2009. 2009 SCG Rate Decision, p. 37. Also, in the Decision dated June 29, 2011, in Docket No. 10-12-02, Application of Yankee Gas Service Company for Amended Rate Schedules (Yankee 2010 Rate Decision), the Authority required that Yankee Gas Service Company (Yankee) update its schedules to reflect the IRS guidance on asset eligibility for bonus depreciation. For the rate years considered during that proceeding, the final updates reduced Yankee's proposed revenue requirements by a total \$6.340 million. Yankee 2010 Rate Decision, p. 4. Additionally, in the Decision dated June 6, 2012, in Docket No. 11-12-02, Application of PSEG New Haven LLC for Establishment of 2012 Revenue Requirement (2012 PSEG AFRR Decision), the Authority recalculated deferred taxes for 2011 and directed PSEG New Haven LLC to determine if long lived assets acquired prior to 2012 were eligible for 100% bonus depreciation deductions. 2012 PSEG AFRR Decision, pp. 8-11. Consequently, the Authority has applied bonus depreciation in its determinations of ADIT to offset rate base for several regulated utilities.

Finally, the Company's assertion that only property with a life of 20 years or less and not its utility plant additions that are mostly 25-year tax life properties qualify for the bonus depreciation is unsupported. The Authority took administrative notice of section of IRS Publication 946 which indicates that water utilities are specifically allowed the 50% special deduction available for property acquired subsequent to 2007. The Company agrees that based on the information provided by the Authority, it appears

water utility property qualifies for the bonus depreciation. Tr. 07/10/13, pp. 1612-1615. The Company's calculation indicates that if it takes the bonus depreciation elections 2009 through 2013, the increase in the deferred tax liability is \$38,419,939. Late Filed Exhibit No. 10 Supplemental. This amount includes deferred tax liability of \$7,580,512 for 2013. Id. Aquarion should be making tax elections that provide benefits to both the Company and its customers. The Company's determination that most of its additions are not eligible for special tax deductions means the proposed average rate base is approximately \$38,419,939 more than it should have been otherwise. The Company indicated that it expects to file its 2013 Federal income tax return in September 2014. Id. Given the fact that calendar year 2013 is an open tax year, the Authority herein directs Aquarion to make and take the 50% special deduction for its 2013 plant additions when it files the 2013 Federal income tax return. As a result, the Authority increases the Company's accelerated deferred tax by \$7,580,512. For the 9-month pro forma period, the deferred tax amount is \$5,685,384 ( $\$7,580,512 / 12 \times 9$ ). The total accelerated depreciation deferred taxes for pro forma periods are shown in the table below:

**Accelerated Depreciation Deferred Taxes with 2013 Bonus Depreciation Election**

	Proforma (\$)	RY1 (\$)
Deferred Taxes	55,993,321	59,832,987
2013 Bonus Depreciation	5,685,384	7,580,512
Revised Amounts	61,678,705	67,413,499

Based on the calculations shown in the table above, the Authority determines that the appropriate average accelerated depreciation deferred tax for RY1 is \$64,546,102 ( $[\$61,678,705 + \$67,413,499] / 2$ ). Thus, the Authority increases the average deferred taxes and consequently reduces rate base by \$8,910,460 ( $\$64,546,102 - \$55,635,642$ ) in RY1.

**RATE BASE SUMMARY – TABLE I****RY1 RATE BASE:**

				TABLE I	
	COMPANY	AUTHORITY	AS ADJUSTED		
	PRO FORMA	ADJUSTMENTS	BY AUTHORITY		
UTILITY PLANT IN SERVICE	\$ 1,175,122,602	0	\$ 1,175,122,602		
PLANT 2	0	0	0		
LESS: CONS. WORK IN PROGRESS	0	0	0		
LESS: ACCUM DEP AND AMORT	394,608,000	(19,490)	394,588,510		
NET PLANT	\$ 780,514,602	19,490	\$ 780,534,092		
PLUS:					
MATERIALS & SUPPLIES INVENTORY	\$ 1,131,259	0	\$ 1,131,259		
WORKING CAPITAL	13,513,185	(806,398)	12,706,787		
DEFERRED TANK PAINTING	6,008,047	(2,628,525)	3,379,522		
VEHICLES	0	(194,898)	(194,898)		
AMORTIZATION ON CIAC	23,666,553	0	23,666,553		
AMORTIZABLE REGULATORY ASSETS	0	105,148	105,148		
STORM REGULATORY ASSET	0	0	0		
LESS:					
DEFERRED INCOME TAXES	\$ 101,612,510	8,917,282	\$ 110,529,792		
CUST. ADVANCES FOR CONSTRUCTION	43,741,481	0	43,741,481		
CUSTOMER DEPOSITS	0	793,827	793,827		
INSURANCE RESERVES	0	978,582	978,582		
ALLOWANCE FOR BAD DEBT	0	0	0		
WORKERS' COMPENSATION LIABILITY RESERVE	0	276,349	276,349		
RESERVE FOR INJURIES AND DAMAGES	0	0	0		
CIAC	55,635,642	0	55,635,642		
RATE BASE	\$ 623,844,013	(14,471,223)	\$ 609,372,790		

**PRO FORMA REVENUES AND AUTHORITY ADJUSTMENTS****General**

In the Application, Aquarion reported actual test year revenues of \$156,804,270. Application, Schedule C-1.0. The Company made net adjustments totaling \$1,965,611 to arrive at adjusted pro forma annual revenues of \$158,769,880 at present rates. Id. The Company proposed a multi-year rate plan to allow the Company to recover its cost of providing service on an annual basis. Dixon PFT, p. 3.

The Company anticipates new rates to take effect on or before October 1, 2013. Therefore, the rate years are from October 1, 2013 through September 30, 2014, 2015 and 2016. The mid-points of the projected expenses and rate base are March 31, 2014, 2015 and 2016. Dixon PFT, p. 3. The Company requested an overall revenue increase of \$27,225,348, or 17.1%, over adjusted pro forma annual revenues, to arrive at pro forma annual revenues of \$185,995,228 at proposed rates for RY1. For RY2, an increase of \$3,259,850, or 1.8% over adjusted pro forma annual revenues to arrive at

pro forma annual revenues of \$188,246,786; and for RY3, a \$3,579,931, or 1.9% increase over adjusted pro forma revenues to arrive at pro forma proposed rates of \$190,804,531. Application, Dixon, PFT, p. 8; Schedules C-1.0, C 2.0 A, B and C; and Schedules C-3.0 A, B and C.

The Company submitted its final adjustments to the Application. Late Filed Exhibit No. 3. This exhibit incorporated detailed adjustments, corrections and revisions made to certain components of the Application based on facts clarified in the record as the case unfolded. As a result, Aquarion restated its figures for adjusted pro forma annual revenues as \$159,008,632 at present rates and \$185,933,056 at proposed rates, an overall revenue increase of \$26,924,424, or 16.9%. Late Filed Exhibit No. 3, Schedules C-1.0, C-2.0 A, B and C; and Schedules C-3.0 A, B and C.

Previously, the Company was authorized to impose a 2.05% WICA surcharge on its customers' bills. Aquarion WI07 Decision, p. 8. That surcharge was the result of the Company completing a total of \$23,733,898 in WICA-eligible construction as well as the purchases of leak detection equipment, and was designed to increase the Company's annual revenues by \$3,187,019. Consequently, the overall revenue increase requested by the Company in this Application incorporates into rates the \$3,186,979 previously approved by the Authority. During the Test Year; however, WICA surcharges of 0.85% and 1.47% were in place for most of the Company's customers and already included in rates. Therefore, an adjustment to pro forma revenues of \$1,545,597 must be made or revenues would overstate the required increase in this case. Application, Dixon PFT, p. 9.

### **Test Year and Acquisition Annualizations**

In addition to Test Year annualizations, Aquarion acquired United, the assets of the former Ron Black Systems and Dunham Pond during the Test Year. Additional service charge counts and annual usage were added to reflect 12 months of billings. Based on Test Year annualizations due to acquisitions, additional revenues of \$3,861,692 reduced the overall rate increase in this case. Application, Exhibit E, Schedule E-5.2; Schedule WPC-3.1A, Dixon PFT, p. 16 and Aquarion Response to Interrogatory RA-21.

### **Customer Growth Adjustments**

Aquarion projected customer growth to the mid-point of each of the rate years based on customer growth over 2012 for all metered classes of customers for systems owned at the end of 2011. The Company adjusted revenues to account for an additional 6 months of revenue for those additions from the Test Year and also for an additional 15 months of growth to reach the mid-point of RY1 (December 31, 2012 to March 31, 2014). Customer growth in 2012 is used as a proxy for future growth. Aquarion Response to Interrogatory RA-23. RY2 and RY3 each reflect an additional 12 months of growth. Application, Schedule E-5.2; Dixon PFT, pp. 15 and 16. The detailed calculations demonstrate that the Company combined both annualization and customer growth for its determination of "customer growth adjustments." Application, Exhibit E, Schedule 5.4, pp. 1-3. For RY1, the Company multiplied customer growth by

seven quarterly bills. The Company accounted for the 6-month annualization and the 15 months of customer growth. For 2011 and 2012, Year-end counts for each customer class were used in the calculations.

For the service charge component, the seven additional bills are multiplied by the average test year service charge calculated from Schedule 5.2A, page 1. The usage adjustment reviews at test year usage per customer, as per page 6 of Exhibit E, Schedule 5.4 and takes the Test Year usage minus the Weather Load adjustment minus the Base Load adjustment. Then the adjusted pro forma usage amount is separated into billing tiers and multiplied by the number of new bills and customers and then by the appropriate rates to arrive at the adjustment figures. The same process is used to calculate the pro forma adjustments for RY2 and RY3.

The Company increased test year revenue by \$513,049 for the RY1 growth adjustment. For RY2 and RY3, the growth adjustment was based on 4 quarterly bills or 12 months of growth. For RY2, the growth adjustment was \$349,030. For RY3, the growth adjustment was \$352,183. Late Filed Exhibit No. 3, Exhibit E, Schedule 5.4, pp. 1-3. Additional inch feet and hydrants growth has been assumed within the public fire classes. Total Fire Growth amounted to \$31,095, \$24,982 and \$25,240 for RY1, RY2 and RY3, respectively. Application, Schedule E-5.2 A, B and C; Dixon PFT, p. 16; Late Filed Exhibit No. 42, Schedule WPC-3.1 A, B and C.

The OCC recommended using the 2012 volumetric sales plus the growth projections used by Aquarion in Schedule E-5.2 A and to remove the Base and Weather Load adjustments as billing determinants in calculating growth. Late Filed Exhibit 40.

Upon review, the Authority finds the Company's calculations acceptable for determining the customer growth rate adjustments for the service charge and commodity charge components as well as for the fire growth adjustments. Consistent with this increase in proposed sales, the Authority has included an additional \$247,297 of expense to cover the marginal cost of electricity, chemicals and sludge. Aquarion Written Exceptions, p. 3.

### **The Authority's Multi-Year Average Approach**

The Authority typically has allowed the use of a weather normalization adjustment to set pro forma usage levels representative of a test year with "normal" weather conditions. Its use serves to acknowledge that yearly variations in consumption levels occur and are due in most part to weather-related use (e.g., lawn and garden irrigation, car washing, and the filling of swimming pools). While other variables (e.g., the economy, conservation, type of housing, household size, lifestyle and saturation of water-using appliances) are involved, the Authority recognizes that consumption variations from year to year are largely due to weather-related use. Generally, the Authority has found it reasonable to use an approach that averages a multi-year period of consumption per customer to determine a "normal" year's usage for the residential, commercial and public authority classes (Multi-year Average approach). As a rule, the Authority excluded the industrial class from such an adjustment on the

basis that water consumption by this customer class is not significantly impacted by weather variations.

The multi-year average approach takes the following steps. For each of the residential, commercial and public authority customer classes, total annual consumption is divided by the year-end customer count to arrive at the average consumption per customer for that year. This is done for each year of the multi-year period being used. Next, the average consumption per customer for each year are added together, and then divided by the number of years in the multi-year period to determine that period's average consumption per customer. This represents the average consumption per customer for a "normal" year, which is then compared against the test year average to arrive at a weather normalization factor. As the last step, annualized test year consumption is multiplied by the consumption amount representing the weather normalization adjustment.

In the 2010 Aquarion Rate Case Decision, the Authority found it appropriate to adjust revenues for weather normalization using the multi-year average approach based on a three-year average (2007 through test year 2009) of annual consumption per customer for the residential, commercial and public authority classes in each division.

### **Aquarion's Proposed Base Load Approach/Adjustment**

Aquarion argued that the Authority's continued use of the multi-year average approach "does nothing more than accelerate the Company's need for rate relief and increase the amounts of future rate requests all the while taking away from the Company any reasonable expectation of earning its allowed return." Dixon PFT, pp. 13 and 14. Instead, the Company proposed the use of a Base Load approach that addresses what it argues to be a downward trend in Base Load water consumption over the last several years. To this end, Aquarion found it necessary to differentiate Base Load consumption from Weather Load consumption. The Company generally defines the Base Load as "everyday internal usage, such as toilets, showers and household appliances and therefore it does not fluctuate due to weather conditions," and estimates it to be approximately 85% of total usage. According to the Company, the remaining 15% is the Weather Load, which represents outdoor use primarily related to lawn watering, weather conditions such as rain fall, heat and relative humidity. The Weather Load is the consumption component that may fluctuate from year to year based on weather conditions. Dixon PFT, pp. 9 and 10.

Aquarion stated that the decline in Base Load usage is attributed to the conservation impacts associated with the advent of water saving appliances and plumbing fixtures which has dramatically reduced water consumption which has exhibited a downward trend over the last several years. The Company predominantly attributed the long-term Base Load decline to the continued replacement of these appliances with water saving appliances, particularly over the last decade. The Company also stated that the conservation ethic is now stronger than ever. Dixon PFT, pp. 11 and 12; Aquarion Brief, p. 38.

In view of the above, Aquarion concluded that test year revenues should first be adjusted for pro forma purposes by its proposed Base Load adjustment to reflect that the decline in Base Load will continue. Second, the Company proposed a weather normalization adjustment that tweaks the multi-year average approach by basing the multi-year average on a four-year average of Weather Load (i.e., annual consumption less Base Load) per customer, rather than annual consumption per customer. Dixon PFT, pp. 12-15.

In the Company's view, billings for the months of January, February and March are the most representative of the non-weather sensitive usage.<sup>3</sup> Dixon PFT, p. 12. To determine Base Load, the Company annualized the consumption from these billing periods to arrive at a proxy for the annual Base Load for each residential, commercial and public authority class in each division. Dixon PFT, p. 10; Late Filed Exhibit No. 3, Exhibit E, Schedule 5.4, pp. 4-7.

Aquarion proposed a Base Load adjustment to test year revenues to reflect the impact of Base Load decline in annual consumption. To derive its Base Load adjustment for each residential, commercial and public authority class in each division, the Company first examined the annualized Base Load consumption per customer. A four-year average growth/decline rate for Base Load is then computed for the most recent four-year period, 2009 through 2012. A four-year period was chosen because the Company contended that more recent history will be indicative of future trends. Next, the resulting four-year average growth/decline rate for Base Load is applied to the Base Load per customer for test year to derive the change in usage. The change in usage is then multiplied by the year-end number of customers for the test year to determine the consumption adjustment. Last, the consumption adjustment is multiplied by the current rates to calculate the Base Load adjustment. Dixon PFT, pp. 9-13; Late Filed Exhibit No. 3, Exhibit E, Schedule 5.4, pp. 4-7; Aquarion Response to Interrogatory RA-1.

Under its multi-year rate plan, the Company extended the impact of Base Load decline to the midpoint of RY1 (from December 31, 2012 to April 1, 2014) to reflect 15 months of continued decline in consumption. As a result, the Company proposed a Base Load adjustment to reduce revenues by \$2,152,102 for RY1, \$1,299,425 for RY2 and \$1,321,049 for RY3. Dixon PFT, p. 13; Late Filed Exhibit No. 3, Exhibit E, Schedule 5.4, p. 4; Schedule WPC-3.1 A, B and C.

### **Proposed Weather Load Adjustment**

In the 2010 Aquarion Rate Case Decision, the Authority weather-normalized test year revenues using the multi-year average approach based on a three-year average

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<sup>3</sup> For customers billed on a quarterly basis, January billings would, on average, represent consumption for 15 days in October, the entire months of November and December, and 15 days in January. February billings would, on average, represent consumption for 15 days in November, the entire months of December and January, and 15 days in February. March billings would, on average, represent consumption for 15 days in December, the entire months of January and February, and 15 days in March. Dixon PFT, p. 12.

(2007 through test year 2009) of annual consumption per customer for the residential, commercial and public authority classes in each division.

In the instant proceeding, for each year from 2009 to test year 2012, the Company subtracted the Base Load usage per customer from the annual usage per customer to derive the Weather Load usage per customer. Next, the Company calculated the average Weather Load per customer for the 4-year period. The average Weather Load per customer was then compared to the Weather Load for the test year 2012. The difference is then multiplied by the number of customers to determine the consumption adjustment. Lastly, the consumption adjustment is multiplied by the appropriate rates to calculate the adjustment to test year revenue at present and proposed rates. The Company proposed to reduce revenues for RY1 by \$1,437,035 for the Weather Load adjustment. Application, Dixon PFT, p. 15; Late Filed Exhibit No. 3, Exhibit E, Schedule 5.4, pp. 5-7. The combined Base Load and Weather Load adjustment for RY1 resulted in a decrease of \$3,589,137 (\$2,152,102 + \$1,437,035) to the Company's sales and revenues. Late Filed Exhibit No. 3, Exhibit E, pp. 4 and 5, Late Filed Exhibit No. 42, Attachment 1, p. 1.

**a. Positions of the OCC and the AG**

The OCC argued that Aquarion's Base Load approach projected a substantial decline in sales between calendar year 2012 and RY1, the 12 months ending September 30, 2014. The "base" period is supposed to represent "water usage that is not affected by weather." Tr. 7/9/13, p. 1355. The OCC's expert witness, Mr. Rubin, stated that Aquarion's definition of the "base" period of quarterly bills issued during the months of January, February, and March captures usage as far back as the middle of October up through the end of March and is not reliable data from which to forecast "base" sales. The OCC's witness also reviewed Aquarion's monthly billing data provided in Late Filed Exhibit No. 45 from 2008 to 2012 and determined that the January billing period is not the lowest billing period of the year and, therefore, cannot represent a "base" level of consumption. Tr. 7/9/13, pp. 1359-1365; OCC Brief, pp. 58-61; Rubin PFT, p. 20, Schedule SJR-3. The OCC also reviewed Aquarion's sales data for the years 2003 to 2012 and concluded that the data do not support the Company's theory that there is a well-defined trend showing a significant decline in consumption specifically for the residential customers from 2008 through 2012. *Id.*

The OCC recommended that the Authority reject the Base Load analysis approach based on the lack of any meaningful trend in the data and use Aquarion's 2012 actual sales (plus projected customer growth) to determine sales for each of the rate years. The effect of using 2012 actual sales (plus growth) would be an increase to pro forma revenues under present rates by \$3,881,391 (\$2,284,723 Base Load + \$1,596,676 Weather Load). OCC Brief, p. 62, Late Filed Exhibit No. 40 Supplement.

The AG supported the OCC's use of test year sales for estimating future sales. The Company's weather normalization adjustment substantially underestimated its sales and revenues by a reduction of \$3,881,391 in consumption revenues. The AG recognized that the Authority previously had used the multi-year average approach of annual consumption to set future sales levels. However, Aquarion's sales have

remained stable since 2008 and the multi-year average approach would not appreciably change estimated consumption levels. Moreover, due to the passage of Public Act 13-78, the Company will implement a revenue adjustment mechanism to reconcile the difference between authorized sales and actual sales levels. The AG supported the OCC's proposal to adjust the pro forma revenues upwards by \$3,881,391. AG Brief, pp. 14 and 15; Late Filed Exhibit No. 40 Supplement.

## **b. Discussion**

Aquarion's Base Load Approach takes the form of that proposed in its last two rate cases and in the present proceeding. The foundation of the Base Load approach is the contention that quarterly billings for January, February and March would best represent non-weather related usage, or Base Load. The Company was asked if the Base Load methodology has been approved or adopted by any other state commissions. It responded that it has not proposed consumption adjustments using this approach in any other jurisdictions. Response to Interrogatory RA-1.

In response to Late Filed Exhibit No. 45, Aquarion provided five years of monthly billed usage figures for each customer class for each of its five divisions. Aquarion also provided ten years of monthly billed usage from 2003 through 2012 for each customer class and the average usage per customer in Late Filed Exhibit No. 3, Exhibit E, Schedule 5.4, p. 6. Had the data reasonably supported the Base Load contention, the Authority would have looked more favorably at the Base Load approach. Therefore, the Authority remains unconvinced that the 1<sup>st</sup> quarter billings would suitably establish Base Load and the fact that sales have been fairly constant over the last five or ten years with a few fluctuations. Late Filed Exhibit No. 3, Exhibit E, Schedule 5.4, p. 6; Late Filed Exhibit No. 45, Attachment 1.

The Company argued that the single largest cause of Base Load decline is conservation and water saving appliances and plumbing fixtures. Application, Dixon PFT, p. 11, Morrison PFT, pp. 17 and 18. The Authority continues to disagree that conservation impacts associated with the advent of water saving appliances and plumbing fixtures is the predominant reason for variation in non-weather related consumption. The Authority makes the same conclusion in this Decision and disallows the Company's Base Load and Weather Load adjustments.

The Authority also requested that Aquarion provide calculations based on the Authority's historical multi-year averaging approach based on three, four and five year periods in determining a weather normalization adjustment. Aquarion Response to Interrogatory RA-32; Late Filed Exhibit No. 42. The Authority historically has rejected the Base Load methodology and used the multi-year average approach in forecasting sales. With the passage of Public Act 13-78, it would lessen the significance by using either methodology in forecasting sales.

The Authority determined that it is not going to approve a multi-year averaging approach in this Decision and concurs with the OCC and the AG's methodology by using the Company's 2012 year-end sales plus its growth adjustments in determining its sales forecasting. Due to the passage of Pubic Act 13-78, a revenue adjustment

mechanism will be implemented to reconcile the difference between the Company's authorized sales levels and its actual sales levels. As a result of the new legislation, the Company will be guaranteed full recovery of revenues in the event its actual sales differ from those sales projected through the test year. The Authority will require the Company to provide a comparison of its Base Load Approach compared to the Authority's multi-year average methodology based on a 4-year averaging period, and the 2012 sales plus growth methodology to determine which methodology proved to be the closest in forecasting its actual sales.

Due to a correction to consumption made in response to Late Filed Exhibit No. 45, adjustments were made to the Base and Weather Load amounts from the original filing from \$2,284,723 to \$2,152,102 for Base Load and from \$1,596,676 to \$1,437,035 for Weather Load totaling \$3,589,137, instead of \$3,881,391. Late Filed Exhibit No. 45; Late Filed Exhibit No. 42, Attachment 1, Schedule WPC-3.1A. Therefore, based on the Authority's rejection of the Base Load methodology, the Authority finds it necessary to add in revenue adjustments of \$2,152,102 for Base Load and \$1,437,035 for Weather Load, totaling \$3,589,137. The Authority reviewed and accepts the adjustments made to operating revenues by Aquarion in Late Filed Exhibit 42, Schedule WPC-3.1A in the amount of \$2,204,362. Total revenue adjustments made by the Authority to the Test Year amount to \$3,589,137 plus the \$2,204,362 equaling \$5,793,499 (\$3,589,137 + \$2,204,362) to arrive at RY1 present rates of \$162,597,769. Due to the Authority adjustment increasing sales, the Authority increases variable costs by \$246,297 to account for increased costs associated with increased sales levels.

### **WICA Retail Water Revenues**

Excluding revenues from sales for resale and miscellaneous service charges, retail revenues amount to \$155,248,351 for the purposes of forthcoming SAFR applications. For future WICA proceedings, the table below is a breakdown of Aquarion's retail water revenues.

<b>Water System</b>	<b>Docket No.</b>	<b>Date Approved</b>	<b>Retail Revenues</b>
Reopener	10-02-13RE01	02/08/12	\$ 147,970,311
Topstone	10-04-07	08/31/11	252,325
Birchwood	11-05-06	12/01/11	54,600
Brookfield Water	11-06-07	12/20/11	143,509
Rural Water	11-06-17	12/29/11	575,900
Ron Black Systems	11-04-13	03/12/12	327,347
Meckauer	11-09-01	07/02/12	22,890
United Water CT	12-03-08	09/04/12	5,883,709
Dunham Pond	12-02-03	09/12/12	17,760
<b>Total Retail Revenues</b>			<b><u>155,248,351</u></b>

Aquarion Response to Interrogatory RA-19.

## **RATE DESIGN**

### **Current Rates and Rate Structure**

The Company increased its unique tariffs from 4 in 2010 to 10 in the Application as a result of adding 57 new water systems through 8 acquisitions. Today, the Company's rate structure is more complex than just two years ago, even though its goal continues to be that of system wide rate equalization to eliminate discrimination within any class of customers. Dixon PFT, p. 4.

### **Aquarion Rate Design Proposal**

The Company proposed a 3-year rate plan. In RY1, it made a number of rate design alterations to move toward equalization. Rate design for the remaining two years was accomplished by applying equal percentage increases across the board. For RY1, the Company proposed:

- a. to continue to take steps towards rate equalization;
- b. to apply the overall percentage increase to late payment fees and certain flat rate charges;
- c. an increase to revenues from sales of water to UWW by 22.7%;
- d. to limit the overall increase to its rates for public fire protection to 9.0%;
- e. to reduce rate gaps between meter charges by applying similar dollar increases to most divisions; and
- f. to equalize the volumetric charges between the Eastern and Southern division first tier volumetric rates with those of the Eastern-Rural, Eastern-Brookfield and certain rates for the former Ron Black systems.

The remaining volumetric charges were increased at the same overall percentage. No volumetric increases were proposed to Topstone and Eastern-Brookfield due to existing higher relative charges. Dixon PFT, pp. 4-6.

### **OCC Proposed Rate Design**

The OCC criticized the Company for making little RY1 progress toward single-tariff pricing, as supported by the Authority in recent rate increase applications. The OCC proposed that customer charges be standardized for all rate schedules since customer related services are already provided centrally by the Company. The OCC also proposed that consumption charges be standardized within the Eastern Division except for two smaller companies, which would experience too great a percentage increase if their rates were standardized immediately. Further, the OCC supported continued equalization efforts and stated that tariff-level cost of service studies (COSS) should be submitted in the Company's next rate application to assist equalization efforts. The OCC recommended increasing public fire charges by the same percentage as the overall revenue increase for each division. The OCC would also increase private fire rates in selective service areas by more than the average increase to accelerate overall equalization of fire rates. OCC Brief, pp. 62-66.

## **Attorney General Proposed Rate Design**

The Attorney General also supports rate equalization but contended that the Authority should move slowly to avoid rate shock. The AG agreed with the OCC concerning standardizing customer charges immediately but seeks complete equalization over a 12- to 15-year period. AG Brief, pp. 19-20.

### **Authority Proposed Rate Design**

#### **a. Rate Equalization**

The Authority's goal of rate equalization for Aquarian has a history of mixed results. As early as 2001, the Company began operating its multiple service areas on a centralized basis. Rate equalization among all service areas, a logical extension of the centralized operational theme, began in 2004 and had progressed to the point of four service area tariffs in the Company's last rate increase. Nonetheless, service area differences in volumetric rate structure and fire charges still remained. The situation has deteriorated in the Application because of the new acquisitions. Going forward, new acquisitions will always negate equalization accomplishments under the Company's present practice of retaining separate tariffs for newly acquired systems.

Equalized rates are required to support the Company's already centralized construction, financial and operation models. System investments and expenses are incurred as required across all service areas and are reflected in the Company's single revenue requirement, which is then collected from all customers through tariffs. As should be the case, no attempt is made to track service area investments into unique service area tariffs. All similar rate class customers pay their fair share of all costs proportional to their specific demand for water and services (cost causation for that class). Current service area unique tariffs exist because of local history and are inconsistent with the Public Utility rate making principal of non-discrimination within classes of customers.

Centralized or equalized tariffs introduce economies of scale for all existing service areas. While customers who experience short term bill increases under equalization may consider it inappropriate to pay for improvements made to a physically disconnected system, they will welcome the financial assistance when the situation is reversed.

#### **b. New Company Purchases**

The Company's present practice of selectively maintaining the tariffs of newly acquired water companies does not support the broader goal of system-wide tariff equalization. Consequently, the Company will be directed to bill all water companies acquired after the effective date of this Decision based on the Eastern Division tariff. The Company, at its discretion, may propose for Authority approval a bill surcharge for the acquired water company to, for example, satisfy purchase obligations or retain higher revenues or inject equity in the situation where the acquired water company did not charge or collect rates sufficient to maintain the system, thus leading to the

acquisition. The Company will provide an exhibit in all future rate increase applications listing and discussing the reason and nature of each surcharge implemented since its last rate increase application.

**c. United Water Westchester**

The Company provides up to 5MGD of water to the UWW located in New York. The wholesale rate methodology was approved by the Authority and the New York Public Service Commission in a 1998 Operations Agreement. The rate was based upon a standalone COSS formula. The COSS rate was used in several earlier Aquarian rate cases. Following the formula, Aquarian proposed a 22.7% rate increase for UWW in the instant case. Aquarian argued that the increase was clearly justified because the current UWW rate: (1) was not increased in Docket No. 10-02-13 or its reopening; (2) does not reflect the last six years of WICA increases; (3) nor does it reflect tens of millions of dollars spent on upgrading its Putnam Water Treatment Facility, which directly benefits UWW. Although the agreement expired, the Company employed expert consultants to work with UWW to submit an updated COSS and pricing agreement for regulatory approval in both states sometime in 2013. Dixon PFT, pp. 6 and 7.

UWW contends that the Company failed to support the proposed increase in this case because no independent analysis was conducted to identify the infrastructure and operating costs involved in serving New York. UWW Brief, pp. 2 and 3. UWW contended that since the agreement has expired, no agreed to costing methodology exists that can be relied upon in this case. UWW Brief, p. 5.

The Authority disagrees with the UWW arguments. The underlying plant and operating costs have not disappeared because an expiration date on an agreed to pricing methodology elapsed. Water is still flowing and, in general, expenses shared by all customers on a common system increase with time. The Authority reviewed the original COSS methodology and finds that it is not unique. The new COSS structure will undoubtedly be similar, if not identical, and updated to reflect current area investments and expenses. The allocation factors may be altered due to a change in relative water demands, but this impact on the ultimate rate should be minor at best. The largest impact on rates should result from the update in area investments and overall cost of operations. Given the Company's large investment in area plant utilized by UWW since its last rate increase, coupled with the fact that the rate was not increased in Docket No. 10-02-13, the Authority concludes that a 33%<sup>4</sup> difference over the overall increase granted in this case is justified. This is especially true since the Company's proposed overall increase has been scaled back substantially. The Authority notes that if UWW and Aquarian believed there was any validity to using the average rate increase as their allocation, for simplicity alone, that would have been adopted long ago.

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<sup>4</sup> UWW's proposed increase of 22.7% is 33% greater than the proposed overall revenue increase of 17.1%.

**d. Miscellaneous Charges**

Aquarion has an existing schedule of miscellaneous service charges that is applied on a company-wide basis. The Company was requested to provide a cost justification breakdown for all of its miscellaneous service charges and fees whether an increase was proposed or not. Miscellaneous revenues are primarily comprised of antenna rental income and utility property rental income in which increases were based on known contractual increases. Increases to miscellaneous revenues have been adjusted to reflect increases to Tapping fees and Turn-On charges stemming from the Company's increased costs associated with labor, equipment, material and overhead. Application, Section E, Schedule E-1.0 A, B & C; pp. 35 and 36; Dixon PFT, pp. 5, 17 and 18.

The Company introduced the manual meter reading fee for \$25.00 as a newly proposed miscellaneous service fee for those customers that refuse to allow the installation of a meter equipped with a Radio Reading Device. Application, Schedule H -2.0, Rules and Regulations for Service, p. 19, Section I – 13; Responses to Interrogatories RA-11 and CS-30.

Upon review of the Company's cost justifications regarding its existing proposed miscellaneous service charges, the Authority finds that the proposed rate levels fairly approximate their costs and approves these charges.

**e. Specific Tariff Design**

The Authority will direct the Company to submit new schedules of tariffs for approval that are designed in accordance with the following guidelines:

- 1) Apply the overall increase in total revenue allowed to the late payment fee and flat rate charges, which were increased originally.
- 2) Increase the rate charged UWW by 1.33 times the overall percentage increase in revenue (overall increase) allowed in the instant case.
- 3) Increase the miscellaneous charges and sundry fees as originally proposed.
- 4) Implement the manual meter reading fee as proposed.
- 5) Increase public fire charges as originally proposed.
- 6) Increase private fire charges as originally proposed.
- 7) The remaining revenue increase should be applied to metered rates to simultaneously satisfy the following goals:
  - a) Metered revenue in the Northern and Western Divisions should each be increased two times the overall increase;

- b) Eastern Division volumetric charges should be equalized without increasing volumetric rates for any company by more than two times the overall increase; and
- c) Common meter charges will be implemented across all metered tariffs.

When implementing the three goals discussed in guideline No. 7, the Company will need to establish completely new meter and volumetric charges. Since meter charges will be common, volumetric charges in all but the Eastern Division will be different to balance to the overall revenue requirement. Throughout this process, the Authority is more concerned with implementing common system-wide charges than attempting to control overall revenue increases at the divisional level. The limitations on divisional revenue increases should protect customers from experiencing excessive bill increases. Nonetheless, it is possible that several of the present meter and volumetric charges within the smaller divisions are so low that the rate increases anticipated here may result in disruptive bill increases for select customer groups. Consequently, the Company may use its discretion to design meter rates outside of the above guidelines for individual divisions to preclude customers from experiencing bill increases that exceed two to two and one-half times the overall revenue increase. That being said, the Authority emphasizes the importance of developing common, system-wide meter charges. In addition to filing compliance tariffs, the Company should submit the same supporting exhibits submitted in its response to Late Filed Exhibit No. 43.

Going forward, the Company should seek rate equalization in its next rate increase application. The Company should perform its next COSS when the average bills of metered customers within the Northern and Western division approach 70% to 75% of metered bills in the Eastern Division. The one COSS should be system-wide and clearly delineate system-wide unit rates, even though proposed rates may deviate from 100% COSS rates.

#### **REVENUE ADJUSTMENT MECHANISM**

The Company discussed implementation of a revenue adjustment mechanism (RAM) that was pending before the legislature at the time of the Company's filing. Dixon PFT, p. 18. The Company also shared the Authority's opinion that the mechanics of a new RAM procedure could be worked out through a generic application following a Decision in this proceeding. Tr. 6/17/13, p. 738.

Public Act No. 13-78 directed the Authority to approve a RAM for any water utility currently involved in a pending rate increase application at the time of passage. Sec. 3(b)(1). The Act also gave the Authority the option of implementing the RAM in the form of a rate surcharge, balance sheet deferral or by altering unit rates. Sec. 3(d)(2). Based on the above, the Authority approves a rate surcharge RAM in the instant case. The Company will be directed to submit its first RAM adjustment calculation to the Authority for approval.

## **EXPENSES AND AUTHORITY ADJUSTMENTS**

### **Directors and Officers Liability Insurance**

The Company has included \$29,113 for Directors and Officers Liability insurance (DOL) as part of corporate expenses for the test year. Late Filed Exhibit No. 8. This expense is allocated to Aquarion at 86.13%, which is based on the Massachusetts formula. Id. The Company stated it had included the total premium cost for DOL in the Application because it believes that it is a necessary cost to provide service and that it should be recoverable in the rate-setting process. Tr. 6/17/13, pp. 122 and 123.

The OCC stated that the primary beneficiaries of DOL are the directors and officers who are protected by the insurance and the shareholders who would be the recipients of any payouts. The OCC further stated that the ratepayers have very little involvement or influence in this matter and that it would not be appropriate for them to bear the cost of DOL. OCC Brief, p. 16. The OCC recommended that 100% of the DOL costs allocable to Aquarion be disallowed. Id.

The AG stated that the Authority should reject Aquarion's request to have ratepayers fund 100% of DOL and consistent with the Company's past two rate Decisions, allow no more than 30% of this cost to be allocated to ratepayers. AG Brief, p. 15. The AG stated that the Authority should disallow at least \$17,526 from Aquarion's revenue requirements. Id.

The Authority disagrees with the OCC's position that ratepayers do not benefit from DOL and that 100% of DOL should be paid for by shareholders. The Authority, in its two previous Aquarion Decisions, disallowed 70% of DOL and allowed the Company to recover 30% of its DOL expense. The Authority concurs with the AG that 30% of DOL be allowed and paid for by ratepayers. The Authority reduces the test year DOL by \$17,553 [(\$29,113 x 86.13%) x 70%].

### **Outside Services – Pensions**

The Company included an adjustment to increase pro forma outside services-pension expense by \$16,191. Schedule WPC-3.11A

The OCC stated that the invoices for the actuarial costs show \$153,000 for 2013 recurring professional fees for Aquarion's retirement programs and "nonrecurring charges" of \$56,250, for a total of \$209,250. OCC Brief, p. 20. The OCC stated that based on the description of the charges as being "nonrecurring," they should be removed. Id., p. 21. In addition, the OCC stated that the Company had updated the Pension Benefit Guarantee Corporation (PBGC) amount for fewer participants so the outside services-pension expense should be reduced by \$52,463 which is a combination of those two adjustments. Id.

The Authority disagrees with the OCC that outside services-pensions should be reduced by \$52,463 because of "nonrecurring charges." Additionally, the Authority disagrees with the OCC that "nonrecurring charges" are nonessential expenses. The

Authority found no supporting calculations for the OCC's reduction of \$52,463 and therefore does not accept OCC's recommendation for that reduction.

### **Donations**

The Company included \$112,088 for Contributions and Donations in RY1. Schedule G-2.9. The Company also had \$187,841 of contributions and donations that are charged to Account 426 and are considered "below-the-line" expenses for which ratepayers are not responsible. Tr. 6/4/2013, p. 225. The Company stated that there was some degree of judgment as to which donations are shown above-the-line and those that are accounted for below-the-line. Tr. 6/4/2013, p. 226.

The OCC stated that charitable contributions should not be recoverable from ratepayers for the reason that ratepayers do not receive any benefit from these costs. OCC Brief, p. 18. Also, the OCC stated that the Authority has a long history of disallowing such expenses. Id., p. 19. The OCC recommended that the entire amount of donations be disallowed for a reduction of \$112,088.

The Authority maintains its position taken in Aquarion's 2010, 2007 and 2004 rate cases and disallows the entire donations expense of \$112,088. The Company should record its charitable donations as below-the-line expenses which are funded by shareholders and not ratepayers.

### **Employee Bonus Expense**

The Company initially proposed an employee bonus expense of \$1,405,660 (80.3 percent Connecticut allocation of total incentive compensation of \$1,750,510). Schedule WPC-3.2A. Subsequently, the Company revised the employee bonus expense to \$1,339,551 (80.3 percent Connecticut allocation of the revised total of \$1,668,183). Late Filed Exhibit No. 3, Schedule WPC-3.2A.

The Company stated that its incentive compensation structure requires its staff to achieve superior customer service in order to receive the at-risk components of their compensation. Tr. 6/3/2013, p. 12. In addition, the Company stated that its total compensation levels in most instances are below the rest of the industry and that its total salary structure is more heavily weighted than its peers toward incentive or at-risk compensation. The Company indicated that it is only when employees meet their goals that their compensation will meet industry levels. Id.

The Company testified that in Docket No. 10-02-13, the entire amount of employee bonus expense was disallowed and that in the prior two rate cases, 25 percent of the requested amount was recoverable from ratepayers. Tr. 6/5/2013, p. 383.

The OCC recommended that 100% of the employee bonus expense be removed as was done in Docket No. 10-02-13. The OCC stated that a question arises as to the effectiveness of the bonus program when the Company testified that between 2008 and 2013 only four of those eligible to receive a bonus did not receive one. The OCC contends that when a bonus program rewards practically every employee that it is

apparent that it is not a reward for high performance. The OCC claimed that the bonuses are not compensation at risk, but more of a guaranteed payment to all employees. OCC Brief, p. 11.

The AG concurred with the OCC and recommended that 100% of the employee bonus expense be disallowed. AG Brief, p. 16.

The employee bonus expense should be recognized as part of the Company's overall compensation plan which targets market-based compensation of employees. The Authority concludes that the employee bonus expense be a shared expense between ratepayers and shareholders. Therefore, the Authority will allow 50% of the requested Connecticut allocation of employee bonus expense for a total of \$669,776 (\$1,339,551 x 50%).

### **Vehicles**

The Company has included in its rate base, the cost of five luxury passenger vehicles which are for the benefit of its officers. The Company stated that in the cases of Mr. Firlotte and Mr. Morrissey, the vehicles are part of their compensation package. Tr. 6/3/2013, p. 117. Also, the Company acknowledged that it earns a rate of return on those items that are a part of rate base. Id., p. 114. The Company testified that certain expenses associated with the five vehicles, including taxes, insurance and fuel are included in the Company's total expenses requested for recovery. The Company also noted that the officers keep track of their business mileage versus their personal mileage. Tr. 7/10/2013, p. 1629. In addition the IRS mileage rate is applied to the officers' business miles travelled and that amount is reported as income on the officers' W-2s. Id., pp. 1629 and 1630.

It is not appropriate for ratepayers to be funding the purchase of these vehicles nor is it appropriate for ratepayers to be paying the expenses associated with the vehicles. Therefore, the Authority reduces rate base by the cost of the vehicles, \$194,898 and adjusts the associated depreciation expense for the vehicles by \$38,980. Additionally, the Authority reduces expenses by \$26,794 which is the total of \$4,922 for taxes, plus \$2,130 for insurance and \$19,742 for fuel.

The Company included \$450,000 for vehicle replacements for RY1. Response to Interrogatory AC-10, Attachment 1. Currently, the Company owns approximately 180 passenger vehicles. Response to Interrogatory OCC-160. The Company stated that the \$450,000 expenditure would be used to replace approximately 18 vehicles or roughly 10 percent of its fleet. Tr. 6/3/2013, p.113. In addition, the Company stated that it expects to replace vehicles approximately every 10 years. Id. Since Docket No. 10-02-13, 46 vehicles have been placed in service for a value of \$1.214 million. Response to Interrogatory OCC-160.

With a total of 180 vehicles and a total of approximately 282 employees, the ratio of vehicles to employees is approximately 2:3. Roughly 120 of the 180 passenger vehicles are less than 10 years old. Response to Interrogatory OCC-160. The Authority considers the number of vehicles to be excessive in comparison to the size of

the Company's workforce. The Authority will not reduce the quantity of vehicles in this proceeding other than what was previously discussed. The Authority expects the Company to address the issue of unnecessary additions to its fleet of vehicles in its next rate filing, and should include a detailed listing of its vehicles with the vehicle purchase date, mileage per year and function of the vehicle. In addition, the report should include a listing of vehicle retirements with the dates of retirement.

Vehicle Driver	Vehicle Model	Original Cost	Business Miles	Taxes	Insurance	Fuel	
Firlotte	2011 Audi A6	\$52,974	23,256	\$1,193.70	\$426.11	\$6,744.24	
Morrissey	2013 Lexus RS350	\$44,682	12,687	\$1,377.86	\$426.11	\$3,679.23	
Silverstone	2007 Lexus ES350	\$29,914	15,306	\$654.06	\$426.11	\$5,794.49	
Teixeira	2010 Lexus GS 350	\$35,674	8,122	\$848.29	\$426.11	\$1,540.19	
Kniffin	2009 BMW 528i	\$31,654	10,876	\$848.29	\$426.11	\$1,983.60	
Total		\$194,898		\$4,922.19	\$2,130.55	\$19,741.75	

Late Filed Exhibit No. 18 Supplemental

### **Inflation Adjusted Expenses**

The Company requested recovery of inflation adjusted expenses of \$18.706 million. Schedule WPC-3.24A. Subsequently, the Company revised the total inflation adjusted expenses to \$18.032 million. Late Filed Exhibit No. 3. The Company used an inflation factor of 3.075% which was based on the February 10, 2013 Blue Chip Economic indicators. Schedule WPC-3.24A. The Company also proposed a pro forma adjustment to inflation adjusted expenses of \$554,492 for RY1. Late Filed Exhibit No. 3.

The Authority determines that there are expenses which should not be increased for inflation. Of the proposed \$18.032 million inflation adjusted expenses, the Authority determines that \$12,122,255 of expenses should not be adjusted for inflation. The Authority reduces the pro forma adjustment for inflation adjusted expenses by \$372,757 ( $\$12,122,255 \times 3.075\%$ ).

### **Insurance Expense**

Aquarion initially requested total insurance expense of \$1,586,887 for RY1 and reported \$1,585,861 as the test year amount. Schedule WPC-3.14 A. The Company revised its request and proposed a total insurance expense of \$1,862,756 for RY1 and revised its total test year insurance expense to be \$1,992,987. Late Filed Exhibit No. 3, Schedule WPC-3.0 A; Aquarion Response to Interrogatory AC-14, p. 2.

#### **a. Self-Insured Reserve Expense**

Aquarion proposed a self-insured reserve expense of \$297,000 in RY1. Schedule WPC-3.14 A.

The OCC referenced Aquarion's testimony that it is self-insured for a predetermined level of general claims' liability and that the rate year expense is the estimated amount for claims that might be paid in the future, as opposed to those actually paid. The OCC stated that a more representative estimate for this expense is

the actual claims paid rather than the estimated accruals which may be higher or lower than the actual payouts. Based on the actual claims that the Company paid in 2008 through 2012, the OCC derived a five-year average of \$279,438. Hence, the OCC recommended that the self-insured reserve expense be reduced by \$17,562. OCC Brief, pp. 27 and 28

The Authority agrees with the OCC that self-insurance expenses recoverable in rates should reflect the amounts of potential claims to be incurred by the Company. The Authority will reduce the Company's proposed self-insured reserve expense by \$17,562.

#### **b. Workers' Compensation Insurance Expense**

Aquarion originally proposed self-insured workers' compensation insurance expense of \$192,627 for RY1. Schedule WPC-3.14 A. The Company revised its schedules and reported self-insured workers' compensation insurance expense of \$210,979 for the test year and increased its request for RY1 to \$387,510. Aquarion Response to Interrogatory AC-14, p. 2.

The OCC referenced Aquarion's response to OCC ADR-9 that stated the test year workers' compensation insurance expense includes a \$160,000 favorable adjustment due to the fact that the Company's claims experience was more favorable than expected. The OCC stated the actual claims paid instead of the estimated accruals provide reasonable estimates for the workers' compensation expenses. Based on the actual claims that the Company paid in 2010 through 2012, the OCC derived a three-year average of \$198,365. Hence, the OCC recommended that the self-insured workers' compensation insurance expense be reduced by \$189,145. OCC Brief, pp. 28 and 29.

Similar to the Authority's determination regarding self-insured reserve expense, in principle, the Authority agrees with the OCC as it pertains to the Company's proposed self-insured workers' compensation insurance expense. However, the Authority finds that the 2012 self-insured workers' compensation insurance expense is atypical when compared to amounts for other years. The OCC's inclusion of the 2012 claim amount significantly distorted the 3-year average recommended. The 2-year average of actual claims paid in 2010 and 2011, derives a 2-year average of \$266,425. Hence, the Authority disallows self-insured workers' compensation insurance expense of \$121,085 in RY1.

#### **c. Automobile Insurance Expense**

Aquarion originally proposed a self-insured automobile insurance expense of \$81,627 for RY1. Application, Schedule WPC-3.14 A. The Company revised its schedules and a requested self-insured automobile insurance expense of \$137,954 for RY1. Aquarion Response to Interrogatory AC-14, p. 2.

The OCC claimed the actual auto claim payments were not identified in the discovery responses or workpapers in this proceeding. Based on the Company's

responses to Interrogatories OCC-58 and OCC-28, Attachments 1 to 5, the OCC computed the annual payouts based on the accrual amounts and reserve balances for the automobile self-insurance for 2008 through 2012. Based on its calculations, the OCC derived a 5-year average of \$80,561 for automobile insurance claim payments. However, the OCC recommended \$100,000 be the allowed automobile insurance expense because the annual increases shown in its calculations are not expected to continue in every rate year. Thus, the OCC recommended that \$37,954 of the proposed automobile insurance expense for RY1 be disallowed. OCC Brief, p. 31.

The Authority concludes that the OCC had ample opportunities to request the actual historical claim payments the Company made during the periods indicated in its Brief. The \$100,000 recommended by the OCC is not supported by the record in this proceeding. Therefore, the Authority will allow \$137,954 as the automobile insurance expense for RY1.

## **Amortization Expense**

### **a. Acquisition Adjustments**

Aquarion proposed \$1,408,347 of acquisition adjustments to RY1 in Late Filed Exhibit No. 3, Schedule C-3.27. The Company proposed amortizing certain acquisition costs over 3 years while amortizing others over 10 years.

The OCC suggested that the 3-year amortization period sought on some acquisitions by the Company be rejected and that a 10 year amortization period for all the systems acquired by Aquarion be used in its place. The OCC also recommended a reduction of \$522,826 to the acquisition expenses. OCC Brief, pp. 23 and 24.

The Company disagreed with the OCC's suggestion for a 10-year period for amortization costs. Also, the Company believes the improvement of Timber Trails known as the Bridge, should be treated as an acquisition premium; therefore, it should be treated as an amortization expense and qualified to be in the rate base when it is used and useful. The Company believes the Bridge will be used and useful by the end of June. Aquarion Brief, pp. 18 and 19.

In response to Interrogatory AC-1 (b), the Company provided schedules that detailed the test year acquisition expenses. The schedule is comprised of 7 systems that totaled \$124,638. One item in the schedule was from Timber Trails for \$106,154. The remainder of the systems were from United prior to its acquisition by Aquarion. These 6 items totaled \$18,484 (\$124,638-\$106,154).

The Authority believes the \$18,484 of acquisition expense from United had already been accounted for and was part of the acquisition premium amount paid to United when acquired by Aquarion. Therefore, the Authority will adjust and remove the test year amount of \$18,484 that Aquarion included in its filing.

In Late Filed Exhibit No. 3, Schedule C-3.27 A, the Company requested a pro forma amount of \$1,408,347 for its acquisition expenses for RY1. Previously included

in Docket No. 10-09-08, Application of United Water Connecticut, Inc. to amend Rate Schedules, were Bethel, Carmen Hills, Forest Hills, Greenridge and Indianridge in the amounts of \$20,856, \$7,956, \$3,780, \$9,192, \$2,940 respectively for a total of \$44,724. The amount of \$44,724 was already included in the acquisition of United Water by Aquarion in the Docket No. 12-03-08, Aquarion Acquisition of United Aquarion Water. Late Filed Exhibit No. 3, Schedule WPC-3-27 A.

The following acquisition costs should be removed from the pro forma amounts. They are Carmen Hills part 2, Bedrock, Litchfield Hills and Timber Trails Bridge amortization in the amounts of \$41,371, \$7,486, \$8,634 and \$147,087 respectively for the overall total of \$204,578. Late Filed Exhibit No. 3, Schedule WPC-3.27 A, B & C. Timber Trails Bridge is not an acquisition premium, but an improvement to be capitalized. Tr. 6/4/13, p. 424 and 425; Late Filed Exhibit No. 20. Bedrock and Litchfield are yet to be decided by PURA; therefore, inclusion of them as pro forma amounts is not justifiable and prudent. Therefore, the Authority will reduce acquisition expense by \$267,786 ( $\$18,484 + \$44,724 + \$204,578$ ) and will allow \$1,140,561 ( $\$1,408,347 - \$267,786$ ).

#### **b. Storage Tank Painting Costs**

In the Application, Aquarion reflected Tank Painting Amortization Expense of \$376,658 and \$335,730 for the total expense of \$712,388 for the test year and pro-forma amounts respectively. Application, Schedule C-3.13. In Final Late Filed Exhibit No. 3, filed on July 12, 2013, Aquarion reduced the storage expense by \$46,658 to the pro forma amount of \$665,730 ( $\$712,388 - \$46,658$ ). There was no explanation or analysis for the reduction. Final Late Filed Exhibit No. 3, Schedule C-3.13.

The OCC expressed its concern for the tanks that are yet to be painted and which did not meet the Authority's standard of known and measurable. The OCC identified the four tanks yet to be painted as follows—Canterbury, Putnam Heights, Monroe Center and Pequotsepos for a total of \$141,865 and recommended a reduction adjustment. OCC Brief, p. 14.

The Company did not object to the OCC recommendation of disallowing the four tanks yet to be painted; rather, Aquarion stated that tank painting is no different than utility plant, which should be projected to the mid-point of the rate year. Aquarion Reply Brief, p. 13.

As with rate base treatment for tank painting costs, the Authority disallows projects yet to be completed.

The tanks are Weed Hill for \$38,301; Canterbury (formerly UWCT) for \$21,799; Putnam Heights for \$21,668; Monroe Center for \$70,000 and Pequotsepos for \$23,400 for the total of \$175,168. Late Filed Exhibit No. 3 filed June 27, 2013, Schedule C-3.13.

Therefore, the Authority reduces the tank painting amortization expense by \$175,168 and allows \$490,562 ( $\$665,730 - \$175,168$ ). The necessary related adjustments will be made to the rate base under Deferred Tank Painting Debits.

## **Bad Debts**

Aquarion proposed bad debt expenses of \$1,085,604 for RY1. Schedules WPC-3.20 A. The bad debt expense for RY1 based on revenues at present rates was \$925,000. Schedule WPC-3.20 A. For calculating its proposed gross revenue conversion factor of 1.701, Aquarion applied an uncollectible ratio of 0.59%. Schedule A-2.0 A.

The OCC stated that the Company's proposed bad debt expense is an estimate of revenues that will not be collected instead of actual accounts written off. According to the OCC, in the Decision dated December 12, 2007, in Docket No. 07-05-19, Application of Aquarion Water Company of Connecticut for Amended Water Service Rate Schedules – Rate Base Adjustments (2007 Aquarion Rate Case Decision), the Company was directed to calculate bad debt ratio based on net write-offs and not the provision for uncollectibles divided by revenues. OCC Brief, p. 21. The OCC calculated an uncollectible ratio of 0.54%, which was based on 2008 through 2011 average net write-offs divided by the average revenues. OCC Brief, p. 22. The OCC stated that large net write-offs in 2012, which included amounts from companies recently acquired by Aquarion, is not likely to recur during the rate years. Hence, for the RY1 revenues at current rates, the OCC recommended that the bad debt expense be reduced by \$61,381. Id.

The Authority agrees with the OCC that the uncollectible ratio should be calculated based on the average of the net write-offs divided by average revenues. The Authority similarly derived an uncollectible ratio of 0.54%. However, its calculation was based on 2010 through 2012 average net write-offs divided by the corresponding average revenues. These three years appropriately encompass not only Aquarion's operations but also those of the water systems the Company acquired in 2011 and 2012. Also, the Authority noted that the Company reported \$159,008,632 as its updated revenues at current rates for RY1. Late Filed Exhibit No. 3 Supplemental Schedule C-3.0 A. Thus, the revised bad debt expense for rate year revenues at current rates is \$858,647 (0.54% x \$159,008,632). Consequently, the disallowed bad debt expense is \$66,353 (\$925,000 - \$858,647).

## **Load Response Program**

Aquarion stated that in the 2007 Aquarion Rate Case Decision, the Authority allowed it to track the actual annual rebate received for the Load Response Program and defer any amounts over or under from the 2006 test year amount for review in future rate proceedings. Furthermore, Aquarion stated that in the 2010 Aquarion Rate Case Decision, it was authorized an annual net credit of \$139,522, which is \$159,000 in authorized rebates less the one-third amortization of the deferred under-collection of \$58,435. Unger PFT, p. 4. In the instant proceeding, Aquarion also reported load response credit of \$139,522 for the test year. For each of the proposed rate years, the Company calculated a load response credit of \$36,580. Schedule WPC-3.10 A, B and C. Aquarion determined this amount by subtracting from the pro forma rebate amount of \$113,073 the pro forma amortization expense of \$76,493, which represents the accumulated under-collection of \$229,478 amortized over three years. Id. The annual

deferred amortization and estimated future payments result in a pro forma expense increase of \$102,942 over the Test Year. Id.; Unger PFT, p. 4.

<b>Categories</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
186047 Electric Rebate Regulatory Asset	88,652		
623205 Purchased Fuel-Electric Rebates	-338,073	-159,000	-159,000
623207 Load Response Amortization	6,493	19,478	19,478
Total Load Response Program Credit	-331,580	-139,522	-139,522

Per OCC-28 Attachments 3, 4 and 5

The Authority reviewed data provided in this proceeding and determined that the load response rebate credit of \$36,580 for each of the proposed rate years was understated. The electric rebate regulatory asset for which the Company seeks amortization expense was created through the accumulation of rebates earned since the 2010 Aquarion Rate Case Decision. In the 2007 Aquarion Rate Case Decision, the Authority indicated that if the load response program continues, ratepayers should see some immediate benefit as the rates that they pay support the Company's purchased power expense. Also, the Authority included the test year rebate amount and reduced expenses by \$427,610. Finally, the Authority directed the Company to track the yearly rebate actually received and defer over- or under-collections for review in its next rate proceeding. 2007 Aquarion Rate Case Decision, p. 69. Aquarion testified that under-collection of \$58,435 was allowed to be amortized over three years in the 2010 Aquarion Rate Case Decision. Unger PFT, p. 4. In this proceeding, the Authority discovered that in 2009, the monthly regulatory asset recorded in Account 186047 was being increased by a rebate credit of approximately \$35,634 each month and reduced by amortization expense of approximately \$19,484 per month, except in December, which showed a reduction of approximately \$248,217. Response to Interrogatory OCC-28 Attachment 2, pp. 3 and 7. For instance, the November 2009 electric rebate regulatory asset amount was \$272,903. Id. This amount was increased by \$35,634 and reduced by \$248,217 to determine the \$60,320 ( $\$272,903 + \$35,634 - \$248,217$ ) regulatory asset for December 2009. Id. For 2010, the beginning and ending rebate regulatory asset amounts in Account 186047 were \$60,320 and \$88,652, respectively. For months September 2010 through December 2012, the Company continued the pattern of increasing the electric rebate regulatory asset amounts by the monthly rebate credits and reducing it by one-twelfth of the amortization expense allowed in the 2010 Aquarion Rate Case Decision. Response to Interrogatory OCC-28 Attachments 3, 4 and 5.

Energy cost savings achieved by the Company should be passed through to its customers. The Authority is concerned that the Company created additional regulatory assets using electric rebates earned subsequent to the 2010 Aquarion Rate Case Decision. As stated above, in the 2007 Aquarion Rate Decision the Company was directed to use electric rebates to reduce expenses. There is no directive in the 2007 Aquarion Rate Case Decision that set the 2006 rebate amount as a threshold upon which the Company can create additional regulatory assets for the load response rebates. There is no directive in the 2010 Aquarion Rate Case Decision that instructed the Company to create an additional electric rebate regulatory asset above the allowed

amount. The amortization of the allowed electric rebate regulatory asset amount from the 2010 Aquarion Rate Case Decision would be exhausted by the start of RY1 on the instant proceeding. Based on the above, the Authority determines that the appropriate load response credit to reduce expenses is the \$159,000 of electric rebates reported in Account 623205 in both 2011 and 2012. Hence, the load response credit amount for the proposed rate year is increased by \$122,420 (\$159,000 - \$36,580). Consequently the Authority will reduce expenses by \$122,420.

### **Group Life and Hospitalization**

The Company's total group life and hospitalization cost in 2012 was approximately \$2.924 million. Schedule C-3.0. This amount consisted of \$2.844 (\$3.542 x 80.3%) million for medical and dental expenses, \$35,731 (\$44,479 x 80.3%) for life insurance and \$44,420 (\$55,317 x 80.3%) for long-term disability insurance. Schedule WPC-3.7 A. For RY1, Aquarion proposed total medical and dental expenses of \$3.23 (\$4.023 x 80.3%) million and life insurance expense of \$56,710 (\$70,623 x 80.3%). Id.

#### **a. Healthcare costs – Medical/Dental Expense**

Aquarion testified that the architecture of its healthcare plan is consistent with those plans provided by other water utilities and for state employees in Connecticut. Since 2008, the overall employee contribution requirements have increased between 89-115%. In 2011, the Company made several architectural changes to the medical plan, which included increased deductibles and co-pays, and the introduction of a Health Reimbursement Account (HRA). These changes resulted in less than a 2% increase to the healthcare cost in 2011. If these changes were not made, the healthcare costs would have increased by approximately 7% or an additional \$414,000. Teixeira PFT, p. 8.

Furthermore, the Company stated that it provides medical, dental and prescription benefits to all regular full-time employees through a self-insured arrangement with CIGNA Health Care. The healthcare expenses are derived with the assistance of Mercer Consulting. Also, Aquarion stated that the projected expenses are based on trend rates for its healthcare plan based on demographics, geographic location and comparative information and supported by survey data. Response to Interrogatory AC-17. The Company attached a survey it claimed fully supports assumptions underlying the proposed healthcare expenses. Response to Interrogatory AC-17 Attachment 1.

The Authority reviewed the survey that Aquarion relied upon for the proposed escalations of medical and dental expenses. Beginning in 2014, this survey indicated a result of the Affordable Care Act (ACA); health plan sponsors may revisit some aspects of their benefits and take advantage of new healthcare market place in order to "maximize the value of benefits for their workforce." Response to Interrogatory AC-17 Attachment 1, p. 6. The medical open access plans with prescription benefits for active workers and retirees under the age of 65 are projected to escalate by 9.5% in 2012 and 8.3% in 2013. Id., p. 1. The Authority noted there are no projected escalations for 2014

through 2016 in this survey. Also, the escalation factors for dental benefits range from 3.5% to 4.1%. Id. The Authority finds that Aquarion applied the same 8.3% escalation to both medical and dental expenses. Furthermore, in its assessment of the accuracy of healthcare cost projections the survey indicated that the 2011 actual rates were significantly lower than projections. The 2011 actual trend rate for active workers and retirees under the age of 65 was 7.5%, or 46% less than the projected trend rate of 11%. Id., p. 3. “Similar to previous survey findings, comparing past projections to actual increases reveals that insurers and PBMs [Pharmacy Benefits Managers] tend to make conservative projections for cost increases. Historically, forecasts have been generally higher than actual experience.” Id. Additionally, the survey stated that the deceleration in medical plan costs is likely the result of factors such as the use of lower cost providers, more shifts to generic drugs and less intensive treatment, and improved medical managements. Id., p. 5. The determination in the medical cost trend survey that the Company relied upon is that forecasted rates are significantly in excess of actual medical cost rates. The Company escalated the combined medical and dental expenses using the same escalation rate although the survey indicated that the escalation rates for dental expenses are much lower than those of medical expenses. Based on the above, the Authority finds it is appropriate to assume that the actual cost rate achievable is 6.64%, which is 80% of the proposed escalation rate of 8.3%. As a result, the Authority calculates the allowed medical expense for RY1 as \$3.184 (\$2.844 x 1.0498 x 1.0664). 4.98% represents nine-twelfths of 6.64% and is the allowed escalation rate for the nine-month pro forma period. Consequently, the Authority disallows medical expenses of \$46,000 (\$3.23 -\$3.184) in RY1.

**b. Life Insurance**

The Authority finds the pro forma increase of \$20,979 (\$56,710 - \$35,731) or 58.71% for the life insurance expense excessive and unsupported. Based on the combined escalation factor of 3.5% proposed for RY2, the Authority determines that the allowed life insurance expense for RY1 is \$37,952. The allowed amount is determined by escalating the test year life insurance expense of \$35,731 by 2.625% (3.5% x 75%) for the 9 months between the test year and the beginning of the rate year and 3.5% for the rate year. Hence, the Authority disallows life insurance expense of \$18,758 (\$56,710 - \$37,952).

**Interest Expense**

The Authority analyzed the Company’s interest expense to insure its accuracy with the uniform system of accounts and basic finance and accounting principles. The Company’s proposed interest expense of \$16,310,730 is calculated by multiplying the total projected long-term debt outstanding by the composite cost of long-term debt and adding a similar amount calculated for short-term borrowings. Schedule C-3.3. These amounts are detailed on Schedules D-3.0 A for the composite cost of long-term debt and D-2.0A for the composite cost of short-term debt. Dixon PFT, p. 29. The Authority audited the Company’s test year interest expense of \$14,724,583 using general ledger activity showing the following:

Category	Debt Description	Current Year to Date
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427000	Interest on Long-Term Debt	\$343.75
427001	Interest Expense – 2002 CDA	\$336,937.50
427002	Interest Expense – 2002 Senior Note	\$822,500.00
427003	Interest Expense – 2012 Series	\$1,385,583.33
427004	Interest Expense – 2007 CDA	\$1,500,165.00
427005	Interest Expense – 2003 CDA	\$900,000.00
427006	Interest Expense – 2005A CDA	\$703,162.50
427007	Interest Expense – 2005B CDA	\$929,257.09
427008	Interest Expense – 2005C CDA	\$420,438.96
427009	Interest Expense – State Rev	\$7,531.36
427012	Interest Expense – 6.43% Series	\$546,550.00
427013	Interest Expense – 7.33% Series	\$1,026,200.04
427014	Interest Expense – 8.04% Series	\$281,400.00
427015	Interest Expense – 9.29% Series	\$418,050.00
427016	Interest Expense – 2006 CDA	\$1,175,000.00
427017	Interest Expense – 2011 CDA	\$2,199,999.96
427018	Interest Expense – 2012 Note	\$965,250.00
428000	Amortization of Debt Discount Expense	\$611,121.15
430000	Intercompany Interest Expense	\$238,828.83
431000	Interest Expense - Other	\$255,277.94
431002	Interest on Tax Assessments	\$986.45
	Total Interest Charges	\$14,724,583.86

Response to Interrogatory FI-118.

The Authority finds the test year interest calculation to be accurate and approves test year interest expense of \$14,724,583.86.

The RY1 pro forma interest expense is calculated through an adjustment of \$1,586,147 derived by the difference of the RY1 interest expense of \$16,310,730 and the test year interest expense of \$14,724,583. Schedule WPC-3.33 A. The RY1 interest expense is a combination of short-term and long-term interest expense on the short-term debt and the long-term debt. The interest expense for the short-term debt is referenced on Schedule D-2.0 A and the interest expense for the long-term debt is referenced on Schedule D-3.0 A. Interest expense is recorded to account 427 of the uniform system of accounts. Response to Interrogatory FI-119. The Authority has rejected the Company's proposed multi-year rate plan and therefore RY1 is the pro forma rate year for rate making purposes. The Authority finds the interest calculation of \$16,310,730 to be accurate and it is approved.

## **Pensions**

### **a. Introduction**

The Parent of the Company sponsors a qualified pension plan to which Aquarion contributes and receives benefits from. The pension expense is calculated on the basis of the accounting rules set forth in Accounting Standards Codification 715-30 (ASC 715-30). The Company's allocation of the Parent's pension cost of 80.3% is based upon the

amount of time during the test year that employees charged to expense activities as opposed to those related to capital work or work done on behalf of subsidiaries. The specific calculation is as follows:

- A. Total Payroll Paid in Test Year   \$21,339,841
- B. Total Payroll to CT Expense           17,137,992
- C. B / A = 80.3%

Response to Interrogatory FI-45.

Therefore, if 80.3% of employee wages is charged to Connecticut expense, it follows that employee benefits should be charged in a consistent manner. The Authority accepts the 80.3% allocation factor for the pension expense.

### **b. Qualified Pension Plans**

The Company requested pension expense is shown by the following:

Test Year Expense 12/31/12	Adjustments	Pro Forma Rate Year
\$5,235,432	(\$18,341)	\$5,217,091

Application, Schedules C-3.0A and WPC-3.6 A.

Under ASC 715-30, yearly pension cost is calculated using the following formula:

$$\begin{array}{l}
 \text{Service cost} \\
 + \text{ Interest cost} \\
 - \text{ Expected return on assets} \\
 + \text{ or - Amortization} \\
 \hline
 \text{Net Periodic Pension Cost}
 \end{array}$$

The service cost is the value of benefits earned during the year for each employee. Interest cost is defined as the increase in plan liabilities resulting from the passage of the year. The expected return on assets is the projected return on market related value of the invested assets for the year. Amortization refers to the cost for the year attributable to events from prior years such as plan amendments, gains and losses.

The Company's qualified pension expense is calculated using the above formula through the use of the actuarial assumptions of expected return on plan assets, discount rate, and salary increase assumption. The expected return is a long-term projection of the probable return on pension plan assets, which is influenced by the particular asset mix and expected returns on that asset mix. The higher the assumption for future returns on plan assets, the lower the pension expense. The discount rate is the rate at which projected benefits are discounted back to a present value. It is used to evaluate the present value of the pension plan liabilities. The higher the discount rate, the lower the present value of pension plan liabilities resulting in lower pension

expense. The salary increase assumption is the long-term assumption of salary increase for all the employees in the pension plan.

The actuarial assumptions used to calculate the pension expense are the following:

Discount Rate	2012 Expense – 4.60% 2013 Expense – 4.00%
Return on Assets	7.50%
Salary Increase	4.00%

Response to Interrogatory FI-174.

The Company reported that pension expense has increased since the 2010 Aquarion Rate Case Decision despite a recovery in the equities markets, which have had a positive effect on market securities. However, the discount rate used to value pension liabilities continues to decline which has resulted in a significant increase to pension expense. The plan's assets are comprised of 55% equity and 45% bonds. Morrissey PFT, pp. 16 and 17. The pension plan assets at a mix of 55% and 45% debt compares favorably to other pension plans of comparable size. Tr. 6/4/13, p. 320.

Historically, the Company has recognized an increase in pension expense over a number of years and has instituted cost containment measures to control this cost. Historically, the Company provided all employees with a pension benefit through a defined benefit plan. Due to market conditions, the Company realized a significant increase in pension expense as a result of a decline in market returns in 2008 in addition to the continued decline in the interest rate assumption of the discount rate. To mitigate future pension expense, the Company closed the pension plan through the mechanism of a soft freeze for all non-union employees hired after October 1, 2009, and union employees hired after January 1, 2011. The Company estimated that the closing of the pension plan resulted in annual savings of approximately \$250,000 in 2010 and projected annual savings in each subsequent year, culminating in excess of \$500,000 reduced annual pension expense by 2024. The Company reported that over time pension expense may decline due to employees leaving the plan. Teixeira PFT, p. 7.

The pension plan expense is calculated on a calendar year basis, which is the Company's fiscal year. The Authority determines that the discount rate of 4.00% is not unreasonable since it is set on future expectations of rates at which projected benefits are discounted back to a present value. The Authority finds the salary assumption of 4.00% to be reasonable given the salary history of the Company. The Authority also finds that the rate of return on plan assets assumption of 7.50% is low based on the most recent annual return of 13.76% in 2012 which is substantially above the 7.50% assumption. The actual 2011 asset return was low at 1.4% while the 2010 actual return on assets was high at 14.5%. The actual return on assets for 2009, was at 27.3% when the return on plan asset assumption was at 8.00%. This 8.00% assumption was reduced to 7.5% in 2010. The Authority notes that there is fluctuation in the actual returns on plan assets, but considers a 7.50% assumption to be low given it was

historically at 8.00% and that the most recent annual return for 2012 was at 13.76%. Response to Interrogatory FI-50. These returns give support to the testimony that recovery in the equities markets has had a positive effect on market securities. Morrissey PFT, pp. 16 and 17. Given the fluctuations in returns, the Authority took a simple average of the last three years of actual returns for an actual return of 9.89%. Thus, going back to the 8.00% return on plan assets set in 2009 is not unreasonable. The Authority finds, for rate making purposes, the assumption for the pension plans return on plan assets should be set at 8.00%.

The following calculation shows the decrease in pension expense for a 10 basis point increase:

	2012 Expense (Test Year)	10 Basis Increase in Earned Return on Assets
Expected Return on Assets	7.50%	7.60%
Service Cost	\$2,425,000	\$2,425,000
Interest Cost	\$4,485,000	\$4,485,000
Expected Return on Assets	(\$4,017,000)	(\$4,017,000)
Amortization of Unrecognized Prior Service Cost	\$309,000	\$309,000
Amortization of Unrecognized (Gain)/Loss	\$3,318,000	\$3,318,000
2012 Net Periodic Pension Expense	\$6,520,000	\$6,466,000
Net Impact	\$0	(\$54,000)

Response to Interrogatory FI-47.

For every 10 basis point increase in the return on plan asset assumption, pension expense decreases by \$54,000 which equates to a decrease of \$270,000 ( $\$54,000 * 5$ ) based on an 8.00% return on assets. The Authority finds an adjustment should be made in the Company's requested pension expense, taking into account the allocation factor of 80.3%, of \$216,810 ( $\$270,000 * 80.3\%$ ).

### **Post Retirement Benefit Plan (PRBP)**

The Parent of the Company sponsors a PRBP to which Aquarion contributes to and receives benefits from. The PRBP expense is calculated on the basis of the accounting rules set forth in Accounting Standards Codification 715-60 (ASC 715-60). The Company's allocation of the Parent's PRBP cost of 80.3% is based upon the amount of time during the test year that employees charged to expense activities as opposed to those related to capital work or work done on behalf of subsidiaries. The specific calculation is as follows:

- A. Total Payroll Paid in Test Year   \$21,339,841
- B. Total Payroll to CT Expense           17,137,992
- C. B / A = 80.3%

Response to Interrogatory FI-45 and FI-53.

Therefore, if 80.3% of employee wages is charged to Connecticut expense, it follows that employee benefits should be charged in a consistent manner. The Authority accepts the 80.3% allocation factor for the PRBP expense.

The Company is required to recognize PRBP benefits during the working career of employees, not after they retire. Costs accrue from the date an employee is hired to the date of retirement when an employee is fully eligible to receive PRBP benefits. The present value of future benefits is determined by employee retiree demographics. The Company proposed the following for the PRBP expense:

Test Year Expense 12/31/12	Adjustments	Pro Forma Rate Year
\$2,904,570	(\$332,561)	\$2,572,009

Application, Schedules C-3.0A and WPC-3.4 A.

The rate year expense is based on the actuarial assumptions for a discount rate, salary assumption rate for life insurance, expected return on plan assets, and a medical trend rate. The PRBP assumptions are selected each December 31 for the following calendar year expense. The discount rate was set at 4.55%. The rate of compensation increase was assumed at 4.00% for life insurance valuations. Expected return on plan assets is based on the target allocations of the Voluntary Employee Benefit Association (VEBA)s' investments. The long-term rate of return is developed based on a capital markets model that was developed by the plans' investment consultants. This model considers expectations of future returns for the VEBAs' investments and historical returns on comparable equity, debt and other investments. The resulting weighted average expected long-term rate of return on VEBA assets is 7.50% (net of expenses) for Union VEBA assets and 4.75% (net of expenses) for Nonunion and Life Insurance VEBA assets for 2011 and 2012. The health care cost trend rate was set at 8.00% grading down to an ultimate rate of 5.00% with an ultimate rate achievement in 2017. Response to Interrogatory FI-52, Attachment 1.

The discount rate, defined as the rate of interest under which the PRBP obligations could be settled, is intended to reflect market interest rates at the time of valuation. The salary increase assumption is the long-term assumption of salary increase for all the employees in the PRBP. The expected rate of return (ROR) is a long-term assumption used to calculate the expected investment income on the fair value of PRBP assets. These assets are determined at the beginning of the year and adjusted for benefit payments and contributions expected to be made during the year. The health care cost trend rate assumption is formulated based on past and current health care cost trends which implicitly consider estimates of health care inflation, changes in health care utilization or delivery patterns, technological advances, and changes in the health status of plan participants.

On an annual basis, the Company engages its actuary to determine the maximum tax deductible funding for post-retirement health care through a 501(C)(9), trust (VEBA). The contribution that is developed reflects the healthcare and life insurance benefit obligations for non-key retirees and beneficiaries. Under IRS Code Section 419A, the maximum tax deductible contribution is an actuarially determined amount reflecting current health care costs for non-union participants and anticipates future increases for union participants, and other assumptions which are reasonable in the aggregate, which will amortize the unfunded liability for benefits on a level basis over the working lifetime of covered employees. Historically, the Company funded the maximum tax deductible contribution as per the actuary's calculation. Response to Interrogatory FI-182.

In order to control PRBP costs, in July 1996, the Company eliminated retiree medical for new hires. This has resulted in annual savings of approximately \$4.2 million. This estimated \$4.2 million in annual savings is based on the average eligible employee cost of retiree medical of \$29,635 multiplied by the 144 employees hired after July 1, 1996 who are ineligible for retiree medical insurance. Teixeira PFT, p. 7.

The Authority analyzed the actuarial assumptions for the discount rate, salary assumption rate for life insurance, expected return on assets, and a medical trend rate. The Authority finds the discount rate, salary assumption rate for life insurance, expected return on assets and the medical trend rate to be acceptable. The Authority will not adjust the return on plan asset assumption as it did in the pension expense since the VEBA assets already include a 4.75% assumption. The Authority accepts the Company's requested PRBP expense of \$2,572,009.

### **Inflation Adjustment**

The Authority typically allows utilities to apply a general inflation factor to operation and maintenance (O&M) expenses not specifically adjusted elsewhere. Without an inflation adjustment, the Company would not be made whole for increases in its O&M expenses not adjusted for elsewhere. The Company adjusted test year expenses, which were not specifically adjusted elsewhere, by an inflation factor of 3.075%. With this adjustment, the Company intended to represent inflation from the mid-point of the test year to the mid-point of the rate year. The 3.075% inflator is derived from the Gross Domestic Product (GDP) price index taken from the February 10, 2013 Blue Chip Economic Indicators. Dixon PFT, pp. 26 and 27; Schedule C-3.24.

The GDP price index measures the prices paid for goods and services produced by the U.S. economy and is derived from the prices of personal consumption expenditures (PCE), gross private domestic investment, net exports of goods and services, and government consumption expenditures and gross investment. The formula for the GDP is as follows:

$$Y = C + I + E + G$$

Where:

Y = GDP

C = Consumer Spending

I = Investment made by industry

E = Excess of Exports over Imports

G = Government Spending

Response to Interrogatory FI-115.

The Authority reviewed the calculations for the inflation factor of 3.075% found in Schedule WPC-3.24 A. Specifically, the Company utilized the GDP Chained Price Index through the following calculations:

Mid-Point of Rate Year = Avg of 1Q & 2Q 2014  $(118.7+119.3)/2 = 119.0$

Mid-Point of Test Year = Avg of 2Q & 3Q 2012  $(115.1+115.8)/2 = 115.45$

Increase =  $119.0-115.45 = 3.55$

Increase % =  $3.55/115.45 = 3.075\%$

Response to Interrogatory FI-33.

This 3.075% represents inflation for 21 months (July 2012 through March 31, 2014). Response to Interrogatory FI-33. The Authority approves the use of the GDP Price Deflator at a rate of 3.075% for the 21 months July 2012 through March 31, 2014.

The Company applied this general inflation factor to expenses not adjusted for elsewhere of \$18,706,451. The inflation adjustment for rate year one was \$575,223. Schedule WPC-3.24 A.

The Authority examined the group of accounts totaling \$18,706,451 for the pro forma rate year. The Authority's analysis centered on what was included in each individual account, whether the expenses were adjusted elsewhere in the Application, and the probability that inflation in the general economy would affect that account.

The Authority finds certain O&M expenses included in the \$18,706,451 are more appropriately paid for by shareholders not ratepayers. Ratepayers should only fund those expenses that they receive a benefit from albeit no matter how good of a reason for the expenses. The following accounts and dollar amounts should be excluded in whole or partially from the base of expenses not adjusted elsewhere and dropped below the line as a shareholder expense:

**a. Acct. No. 930221 – Silliam Scholarship**

The Silliam Scholarship is a scholarship “. . . named after one of our - the company's past-presidents in which a child of one of our employees is eligible to participate for a scholarship and is awarded on - on behalf of the company.” Tr. 6/4/13,

p. 303. The Authority finds this expense to be of no direct benefit to ratepayers and therefore should not be funded with ratepayer money. The Authority disallows this expense of \$2,577.

**b. Acct. Nos. 926202 and 926203 – Supplemental Employee Retirement Plan**

The Parent of the Company sponsors a non-qualified pension plan for employees which are the supplemental executive retirement plan (SERP). This consists of two components, the first relates to the unqualified defined contribution plan (SERP 401k) and the second relates to the unqualified defined benefit plan (SERP). The SERP benefit plan expense and SERP 401k expense for 2012 amounted to \$19,600 and \$118,769, respectively for a total of \$138,369. Response to Interrogatory FI-146. The SERP expense is calculated on the basis of the accounting rules set forth in Accounting Standards Codification 715-30 (ASC 715-30). The discount rate used was 3.5% with a rate of compensation increase of 4.0%. Response to Interrogatory FI-52, Attachment 1.

The Company offers employees a savings plan called the Aquarion Savings and Investment Plan (Plan) which is administered by T. Rowe Price. Participation in the plan begins on the first of the month following 90 days of employment. New hires are automatically enrolled in the plan unless the employee chooses to decline participation. There are 12 investment options available for employees to select from, including a Retirement Date Fund. Employees can contribute on a pre-tax (401k) basis, after-tax basis and after-tax Roth basis. Contribution parameters are up to 20% of eligible wages. However, highly compensated employees are limited to 8% of eligible wages on amounts above the IRS rules which is known as the 401k SERP. Matching contributions are provided by the Company where non-union employees hired prior to October 1, 2009, and union employees hired prior to January 1, 2011, receive a \$0.75 match on the first 6% of contributions. Non-union employees hired on or after October 1, 2009, and union employees hired on or after January 1, 2011, receive a \$1.00 match on the first 6% of contributions. Vesting is at 100% for all actual employee contributions and for employer contributions vesting is for the first year 20%, the second year 40%, third year 60%, fourth year 80%, and the fifth year 100%. Response to Interrogatory FI-82.

Eligibility requirements to take part in the SERP is that an employee must be a member of a "select group of management or highly compensated employees," as that phrase is used in Sections 201, 301, and 401 of the employee retirement income security act (ERISA). The employee must be a participant of the retirement plan or savings plan and is designated by the board of directors. Response to Interrogatory FI-149. The Company employees covered under the SERP 401k and the SERP are the president and chief executive officer and the executive vice president and chief financial officer. Response to Interrogatory FI-148.

The Authority considers this expense, by its very definition, to be an additional retirement benefit offered to a highly compensated group of employees that provides post-retirement benefits above limits set by the IRS for qualified plans. Since these retirement benefits are above limits set by the IRS, the Authority considers them to be

excessive. Therefore, the Authority disallows the SERP expense for ratemaking purposes. The Authority notes that in Docket No. 10-02-13, the SERP expense was removed by the Company and accepted by the Authority. The OCC argued against including the SERP stating that it is an excessive expense for a select group of employees. OCC Brief, pp. 13 and 14. The AG also argued that the SERP expense not be approved since these are excessive benefits. AG Brief, p. 17. The Authority disallows this SERP expense of \$20,204. The Authority also disallows the SERP 401(k) expense of \$118,769.

**c. Acct. No. 926218 – Benefits Service Awards**

Benefits and service awards are explained by the Company as:

(t)hat's an employee recognition where we provide awards to employees once they reach service milestones. So if you're with the company five years ten years, 15 years, you effectively get a pin and a -- an award, and a gift selection booklet that you can choose a gift form.

Tr. 6/4/13, p. 291.

The Authority considered the \$23,564 to be an excessive amount considering the Company has only 272 employees. The OCC recommended an adjustment of a decrease by 50% for this expense. OCC Brief, pp. 14 and 15. The Authority finds ratepayers do not receive a tangible benefit from this service award expense. Employee morale and how it affects productivity is difficult to measure and without any evidence relating morale to productivity, the Authority would not be acting responsibly to ratepayers if this expense were allowed. The Authority disallows this expense for an adjustment of \$24,289.

**d. Acct. No. 930205 – Employee Recruiting**

Within this account that was included in residual expenses not adjusted for elsewhere are recruiting fees of \$25,926. Response to Interrogatory OCC-161. The Company has adjusted this amount for inflation. The Authority finds that these costs are not necessarily recurring since it did not have any recruiting expenses in the years prior to 2011. Since the Company did not have any recruiting fees from 2008 through 2011, the Authority reasons that Aquarion was able to staff vacant positions without incurring such fees which demonstrates that these expenses do not simply increase at a predictable rate. Due to the conclusion by the Authority that these recruiting expenses are not recurring, the Authority removes this expense for a reduction of \$32,185. The Authority notes that this is consistent with rulings in the Decision dated October 26, 2004 in Docket No. 04-02-14, Application For An Increase in Rates For The Aquarion Water Company of Connecticut and in the 2007 Aquarion Rate Case Decision. The OCC asserted that employee recruiting expenses should not be paid by ratepayers. OCC Brief, pp. 16 and 17.

**e. Acct. No. 930201 – Company Dues and Memberships**

These are expenses for dues and memberships which the Company maintains. The major amounts within the account are: NAWC \$92,956, Bridgeport Regional Business Counsel \$34,225, CT Water Works Association \$28,544, American Water Works Association \$19,774, Water Research Foundation \$13,224, NAWC New England \$5,556, and Miscellaneous organization dues \$2,885. Late Filed Exhibit No. 24. The Company has included \$60,570 in the test year for non-industry dues which can be classified as membership dues in organizations other than within the water industry. These dues represent membership in economic development organizations and chambers of commerce. The Company has included 100% of its costs for these non-industry memberships with the exception for an adjustment of the Bridgeport Regional Business Council (BRBC) which was reduced by 18% to remove lobbying expenses. Response to Interrogatory OCC-106.

The Company's membership in non-industry organizations and payment of these non-industry dues provides some benefits to ratepayers, but not 100% and as such, ratepayers should not bear responsibility for 100% of the costs of these membership dues. The Authority determines that ratepayers should only be responsible for 50% of these dues and membership expense as was done in the 2007 Aquarion Rate Case Decision and the 2010 Aquarion Rate Case Decision. The OCC recommended such an adjustment. OCC Brief, pp. 17 and 18. The Authority adjusts dues and memberships by 50% of these costs for an adjustment of \$30,285 ( $\$60,570 * 50\%$ ).

**f. Acct. No. 920101 – Contract Labor**

The Company included \$68,086.81 in the test year for contract labor which can be thought of as temporary help. Response to Interrogatory OCC-159. This temporary help expense is included in the unadjusted expenses and is adjusted for inflation in each rate year. The Company stated that, “[t]emporary help is utilized to manage workforce demands in place of hiring new individuals.” Response to Interrogatory OCC-159. Therefore, the amount of temporary help needed for each year is unpredictable. The Company's use of temporary help fluctuates from year to year as can be seen from the following:

Year	Contract/Temp Labor Expense
2012	\$68,086.81
2011	\$82,435.31
2010	\$59,515.13
2009	\$147,652.13
2008	\$88,569.15

Response to Interrogatory OCC-159.

Due to these fluctuations, the Authority finds that the Company is not able to predict with any certainty the amount of temporary help necessary which negates the appropriateness of adjusting this expense for inflation each year. The removal of this expense is consistent with the Authority's Decision dated October 26, 2004 in Docket No. 04-02-14, Application of Aquarion Water Company of Connecticut to Amend Rates. In addition, the Authority stated "[a]lthough it is difficult for a Company to foresee its hiring needs each year as employees may or may not leave their jobs, the Department believes that the hiring of temporary employees is not a definite recurring expense." Docket No. 04-02-14 Decision, p. 59. The Authority finds that this expense should be removed and disallows contract labor expense of \$70,180.

#### **g. Health Club Dues**

The Authority found \$36,971 expensed by the Company in health club fees in the rate year. Response to Interrogatory OCC-162. The Company stated that limited reimbursement of health club fees is a benefit given to employees. The Company believes that there is a benefit to this since a focus on wellness has a direct correlation to fewer accidents and also fewer workers' compensation claims. Teixeira PFT, pp. 9 and 10; Response to Interrogatory OCC-162. The Authority finds that ratepayers do not benefit from this expense but employees do. The Authority ruled in a similar manner in the Company's 2007 rate case:

The Department understands the Company wanting its employees to remain healthy; however, this type of expense should not be the responsibility of ratepayers as it of no direct benefit to them and is not directly related to the production of water.

2007 Aquarion Rate Case Decision, p. 58.

The OCC advocates that ratepayers not be held responsible for this expense. OCC Brief, p. 18. Thus, the Authority disallows this expense of \$38,108.

#### **h. Conclusion**

The following is a summary of the Authority's adjustments:

<b>Account No. and Title</b>	<b>Test Year Expense</b>	<b>Pro Form Rate Year</b>
Acct No. 930221 - Silliam Scholarship	\$2,500	\$2,577
Acct. 926203 – SERP	\$19,601	\$20,204
Acct No. 926202 Thrift/401 (k) Plan (SERP 401k only)	\$118,769	\$118,769
Acct No. 926218 Benefits – Service Awards	\$23,564	\$24,289
Acct No. 930205 Employee Recruiting	\$31,225	\$32,185

Acct. No. 930201 Company Dues and Memberships	\$30,285	\$31,216
Account No. 920101 – Contract Labor	\$68,087	\$70,180
Account No. 926000 – Health Club Dues	\$36,971	\$38,108
Total	\$331,002	\$337,528

Responses to Interrogatories FI-34 and FI-172; Late Filed Exhibit No. 25, Attachment 1, pp. 1-3.

Based on the above the Authority finds the Company's inflation adjustment should be decreased by \$337,528.

### **OCC/AG IRS RULE CHANGE PETITION**

On July 1, 2013, the OCC and the AG filed a petition requesting that the Authority commence an investigation into Connecticut public service companies' responses to certain changes in the IRS accounting regulations. The OCC and AG also requested that the Authority reopen the evidentiary record and hold additional hearings in the instant proceeding in order to reflect the impact these rule changes would have on Aquarion. Specifically, they were concerned with the impact these changes would have on the Company's tax refunds, future reduced liability, and recovery of costs associated with the 2011 and 2012 major storms.

In a ruling dated July 15, 2013, the Authority granted the OCC and AG request and opened Docket No. 13-07-06, Joint Petition of George Jepsen, Attorney General for the State of Connecticut, and Elin Swanson Katz, Consumer Counsel, for an Investigation into the Response of Connecticut's Public Service Companies to Certain Changes to IRS Accounting Regulations (IRS Rule Change Proceeding). In the IRS Rule Change Proceeding, the Authority expects to review the responses of the public service companies to these new IRS tax regulations and make appropriate determinations. In the interim, Aquarion is directed to create a regulatory liability account for any tax benefits resulting from any election made under the IRS Rule Change for federal tax filings for years beginning with the return for tax year 2012.

**SUMMARY – TABLE II****RY1 OPERATING INCOME**

TABLE II				
		COMPANY PRO FORMA	AUTHORITY ADJUSTMENTS	AS ADJUSTED BY AUTHORITY
OPERATING REVENUES	\$	159,008,632	\$ 3,589,137	\$ 162,597,769
OPERATING REVENUES - OTHER		0	0	0
RATE REQUEST		26,924,424	0	26,924,424
		-----	-----	-----
TOTAL REVENUES	\$	185,933,056	\$ 3,589,137	\$ 189,522,193
		-----	-----	-----
OPERATION & MAINTENANCE EXPENSE	\$	44,944,798	\$ (1,338,580)	\$ 43,606,218
OTHER O&M		20,000,000	(682,305)	19,317,695
JOBGING INCOME, NET		(864,442)	0	(864,442)
DEPRECIATION EXPENSE		33,499,954	(38,980)	33,460,974
AMORTIZATION EXPENSE		1,602,916	(442,954)	1,159,962
MISC. EXPENSE		0	0	0
TAXES, SALES & PAYROLL		1,492,897	0	1,492,897
GROSS EARNINGS TAXES		0	0	0
PROPERTY TAXES		11,947,966	(4,922)	11,943,044
PROVISION FOR DEF. INCOME TAXES, NET		(187,547)	13,643	(173,904)
STATE TAXES		3,734,163	578,220	4,312,383
FEDERAL TAXES (CURRENT)		19,883,165	2,046,256	21,929,421
INVESTMENT TAX CREDIT		0	0	0
		-----	-----	-----
TOTAL OPERATING EXPENSES	\$	136,053,870	\$ 130,377	\$ 136,184,247
		-----	-----	-----
MISCELLANEOUS OTHER	\$	0	\$ 0	\$ 0
		-----	-----	-----
OPERATING INCOME	\$	49,879,186	\$ 3,458,760	\$ 53,337,946
		=====	=====	=====

## **RATE OF RETURN**

### **Introduction**

In Federal Power Commission v. Hope Natural Gas Company, 320 US 591 (1944) (Hope Decision), the Court established criteria to determine cost of capital allowances. In its decision, the Court determined that companies need to be allowed to earn a level of revenues sufficient to enable them to operate successfully, maintain their financial integrity and to attract capital and compensate their investors for their risk.

Connecticut law requires that in determining the appropriate cost of capital to allow a utility, the Authority under Conn. Gen. Stat. §16-19e(a), must consider the following:

[T]he level and structure of rates be sufficient, but no more than sufficient, to allow public service companies to cover their operating costs including, but not limited to, appropriate staffing levels, and capital costs, to attract needed capital and to maintain their financial integrity, and yet provide appropriate protection to the relevant public interests, both existing and foreseeable . . . .

To determine a rate of return on rate base that is appropriate for Aquarion's overall cost of capital, the Authority first identifies the components of the Company's capital structure. The cost of each capital component is then estimated and weighted according to its proportion of total capitalization. These weighted costs are summed to determine the Company's overall cost of capital, which becomes the allowed rate of return on rate base (ROR).

### **Financial Condition**

The Company asserts that its current financial condition is affected by its infrastructure improvements. Since its last rate case, by the mid-point of the new rate year, the Company will have invested \$143 million in infrastructure improvements. The funding for these improvements has come from internally generated funds, additional equity contributions, and from the issuance of debt. The Company's capital budget will remain considerable for a water utility of Aquarion's size. Ongoing capital needs will continue to increase reliance on internally generated funds and the ability to access external financing. Morrissey PFT, p. 5.

The Company's analysis of its financial condition at present rates, through its income statement is shown below:

In \$000s	2010	2011	Test Year 2012	Pro Forma 2012
Revenue	142,976	147,719	156,804	158,770
Expenses	53,581	53,702	59,784	63,238
Other Taxes	10,768	10,947	11,679	12,586
Earnings Before Interest Taxes and Amortization (EBITA)	78,627	83,070	85,341	82,946
Depreciation & Amortization	26,905	28,379	30,180	35,318
Earnings Before Income Taxes (EBIT)	51,722	54,691	55,161	47,269
Interest Expense	12,810	14,141	14,725	16,311
Earnings Before Taxes (EBT)	38,912	40,550	40,436	31,381
Income Taxes	16,962	16,711	16,210	12,439
Net Income	21,950	23,839	24,227	18,825
Return on Equity	7.5%	7.7%	7.3%	5.6%

Morrissey PFT, p. 5.

The Company stated that without reasonable rate relief, the financial results displayed in the column labeled pro forma 2012 are financially unsustainable.

The Authority made a more in depth financial analysis of the Company's financial condition through ratio analysis which is shown below:

	2009	2010	2011	2012	With Rate Relief 3/31/2014	Without Rate Relief 3/31/2014
Total Asset Turnover	0.16	0.17	0.17	0.16	0.19	0.16
Current Ratio	1.00	0.70	0.83	2.18	2.06	2.06
Cash Flow from Operations Ratio	1.47	1.03	1.33	2.61	2.69	2.69
Total Debt to Total Capitalization	45.06%	47.08%	47.50%	48.47%	48.47%	48.47%
Times Interest Earned	3.27	4.04	3.87	3.75	4.58	2.92

Fixed Coverage Ratio	1.45	1.59	1.60	1.54	1.71	1.38
Cash Flow Coverage Ratio	5.29	6.01	5.63%	2.47	2.81	2.12
Operating Margin	19.46%	23.87%	25.19%	23.96%	26.75%	21.26%
Profit Margin	10.60%	15.35%	16.14%	15.45%	18.73%	11.86%
Contribution Margin	91.08%	91.82%	92.18%	92.29%	93.48%	92.36%
Return on Total Assets	1.65%	2.61%	2.69%	2.47%	3.51%	1.90%
Return on Total Capital	2.68%	4.24%	4.50%	4.11%	5.42%	2.93%

Response to Interrogatory FI-26; Late Filed Exhibit No. 51.

These financial ratios were calculated from data from the audited financial statements of the Company for the years 2009 through 2012. The March 31, 2014 financial ratios are based on data from unaudited financial information from the Company's rate year one schedules. Specifically, the times interest earned ratio has decreased from 2010 to 2012 and shows a low number without rate relief of 2.92. However, with the requested rate relief this ratio rebounds to 4.58. The fixed coverage ratio shows a low of 1.54 in 2012 and is bolstered under the scenario of rate relief to 1.71 and without rate relief drops to 1.38. The cash flow coverage ratio is at 2.47 in 2012 and drops to 2.12 without rate relief scenario. With rate relief the cash flow ratio is brought up to 2.81. The operating margin and profit margin show a large decline from 2012 without rate relief to 21.26% and 11.86%, respectively. The rate relief scenario brings the operating margin to 26.75% and the profit margin up to 18.73%. The return on total assets has declined to 2.47% in 2012 and without rate relief is negatively affected to a 1.90% measurement. However, with rate relief, the return on total assets rebounds to 3.51%. The return on total capital has decreased to 4.11% in 2012 and without rate relief decreases to 2.93%. The with rate relief scenario shows a return on total capital of 5.42%. The Authority concludes that the Company's financial ratios will decline to levels that show financial weakness without rate relief. Based on the above financial data and income statement the Authority concludes that some amount of rate relief needs to be given to the Company to keep it financially viable and to attract new investors for its capital expenditures. The Company reiterated its need for a rate increase to remain financially viable. Brief, pp. 3-6.

### **Capital Structure**

The Company's current capital structure is comprised of 48.5% debt and 51.5% equity. Schedule D-1.0. The equity ratio has decreased since Docket No. 10-02-13 at 55% and since the 2007 Aquarion Rate Case Decision at 58%. These reductions in the common equity ratio are in line with the Company's estimates in both the 2007 and 2010 rate cases. The Company stated that the need to maintain and replace water infrastructure requires the continuous raising of capital. Capital expenditures in 2012 were \$48.0 million, in 2011 \$42.6 million, and in 2010 \$36.3 million. The required funding for these capital improvements came from internally generated funds and from

the issuance of new debt. The larger amount of this funding came from the issuance of new debt. Morrissey PFT, p. 8. The reduction in equity capitalization is a result of using debt to finance the Company's construction program from 2007. The following is the test year capital structure for the test year ended December 31, 2012:

Class of Capital	Amount	% of Total	Cost	Weighted Cost
Short-Term Debt	\$0	0.00%	2.99%	0.00
Long-Term Debt	\$285,731,847	48.47%	5.46%	2.65%
Common Equity	\$303,802,530	51.53%	10.60%	5.46%
Total	\$589,534,377	100.00%		8.11%

Schedule D-1.0, p. 1.

The above equity capitalization of \$303,802,530 is adjusted to exclude \$43.6 million of goodwill associated with the acquisitions of the Connecticut American Water Company, Village Water Company and United Water of Connecticut. Morrissey PFT, p. 8.

The Company projected the multi-year rate plan capital structures for each of the three respective rate years as flows:

RY1

Class of Capital	Amount	% of Total	Cost	Weighted Cost
Short-Term Debt	\$685,781	0.11%	2.99%	0.00%
Long-Term Debt	\$311,011,847	48.36%	5.24%	2.53%
Common Equity	\$331,410,478	51.53%	10.60%	5.46%
Total	\$643,108,105	100.00%		8.00%

Schedule D-1.0 A, p. 1.

RY2

Class of Capital	Amount	% of Total	Cost	Weighted Cost
Short-Term Debt	\$11,442,635	1.72%	2.99%	0.05%
Long-Term Debt	\$311,011,847	46.75%	5.24%	2.45%
Common Equity	\$342,847,634	51.53%	10.60%	5.46%
Total	\$665,302,116	100.00%		7.96%

Schedule D-1.0 B, p. 1.

## RY3

Class of Capital	Amount	% of Total	Cost	Weighted Cost
Short-Term Debt	\$20,705,833	3.03%	2.99%	0.09%
Long-Term Debt	\$311,011,847	45.44%	5.24%	2.38%
Common Equity	\$352,696,669	51.53%	10.60%	5.46%
Total	\$684,414,349	100.00%		7.93%

Schedule D-1.0 C, p. 1.

The Company states that the above capital structures will be maintained over the next three years such that rate base growth will be funded using equity and debt in the same percentage as the capital structure that exists at the end of the test year. The Company also included in the RY1 capital structure approximately \$25.3 million of new debt needed to fund the growth in rate base and to refinance two old debt issuances of approximately \$18.0 million and \$6.7 million. Morrissey PFT, p. 8. The \$25.3 million in new debt was approved by the Authority in the Decision dated March 27, 2013, in Docket No. 13-02-11, Application of Aquarion Water Company of Connecticut for Approval of the Issuance of Unsecured Notes in the Principal Amount of up to \$50,000,000.

For each of the three rate years the Company has formulated a projected capital structure. The Company retained its 51.5% equity ratio. The debt structure included the issuance of \$25.3 million of long-term debt in 2013 and additional financings required to support the capital expenditure program over the course of the three rate years. Growth in rate base will be financed using equity and debt in the same proportion as the structure that exists at the end of the test year. Morrissey PFT, p. 10.

The OCC, through its expert witness, Dr. J. Randall Woolridge asserted that, for ratemaking purposes the Authority should use a capital structure with a common equity ratio of 50.0% and 50.0% long term debt. Dr. Woolridge bases this on his water utility proxy group's capital structure of 49.5% of equity. Woolridge PFT, p. 13, Exhibit JRW-4, p. 1.

The AG urges the Authority to reject the Company's proposed capital structure because it is "economically inefficient and does not effectively balance the interests of the Company and its ratepayers." The AG argues that a 50% equity and 50% debt capital structure is optimal since equity is less expensive than debt and as such an increase in equity raises the overall cost of capital and therefore is unnecessarily expensive for ratepayers. Brief, pp. 6 and 7.

The Company has brought down its capital structure equity percentage from 58.0% in 2007 to 55.0% in 2010 to the test year, in the instant proceeding, of 51.53%. The Company did this at the directive of the Authority that its capital ratios should be in line with the regulated water industry. Response to Interrogatory FI-24. The equity ratio

for the water utility proxy group ranges from 43.5% to 57.5%. Id., Attachment 1, p. 11. The Authority finds that the Company's equity ratio is in line with the regulated water utility industry and therefore, the actual capital structure from the test year ending December 31, 2012, should be used in setting rates.

The Authority rejects the Company's multi-year capital structures. Consistent with the denial of Aquarion's request for a multi-year rate plan as discussed in Section II – B. The Authority finds that these capital structures are projections which are difficult to produce with accuracy. The Authority must insure that ratepayers are being charged rates that are fair and reasonable. The projected capital structures although done by the Company in good faith are not actual numbers. The Authority recognizes the rate making process always uses projected numbers; however, the farther the projection into the future the less accurate the projection becomes. Therefore, rate years two and three will not be utilized for ratemaking purposes. Rate year one will serve as the pro forma rate year and that capital structure will be used to establish an overall rate of return on rate base.

### **Cost of Short-term Debt**

The Company provided a 2.99% cost of short-term debt. This short-term debt comes from Aquarion intercompany notes which are provided by the parent, Aquarion Holdings LLC. The Company in turn borrows these funds from Aquarion Holdings LLC which maintains a credit facility for such purposes. The credit facility at \$70 million is available to provide financing to the Company, as necessary. The Parent Facility bears interest at London Inter-Bank Offer Rate (LIBOR) plus 2.75% percent. Response to Interrogatory FI-151. The Company views short-term debt as not a permanent source of capital but rather to bridge longer term financing requirements such as its capital expenditures. Response to Interrogatory FI-153. The Authority accepts the Company's cost of short-term debt at 2.99%.

### **Cost of Long-term Debt**

Since 2010, the Company has reduced its overall cost of debt to 5.24% from 6.13% through refinancing approximately \$75.0 million in debt. In addition, the Company has issued approximately \$105.3 million in new debt to finance its on-going capital expenditures program and for the acquisition of United. Morrissey PFT, p. 9. The Company has used an embedded cost of long-term debt rate of 5.24% which was calculated using the cost rate to maturity methodology. The cost rate, or yield to maturity, is the rate of discount that equates the present value of all future interest payments with the net proceeds of the bond. Morrissey PFT, p. 10. The OCC's expert witness accepted the Company's cost of long-term debt at 5.24%. Woolridge PFT, p. 15. After analysis of the Company's cost of long-term debt calculations, the Authority finds the 5.24% to be accurate and as such approves the 5.24% cost of long-term debt.

## **Cost of Equity**

### **a. Introduction**

The Company's cost of equity testimony was prepared by Pauline M. Ahern, who calculated a range of reasonableness of 10.50% to 11.20% for an equity cost rate. Ms. Ahern used the median of this range to provide for a 10.85% allowed ROE. The Company elected to use an ROE of 10.60% which is below the median. The Company asserts that the requested ROE of 10.60% is prudent based on its business risk analysis as well as actual performance related to (i) customer service in achieving the lowest number of complaints among all major regulated utilities in Connecticut since 2005, (ii) water quality and reliability, (iii) cost efficiency, and (iiii) willingness to acquire and refurbish many small troubled, undercapitalized water systems. Morrissey PFT, p. 12.

The Company asserts that taking into account its business risk together with its excellent and efficient record over the last ten years warrants a ROE at the higher end of Ms. Ahern's range of reasonableness. However, the Company has elected not to request a ROE at the higher end of the range due to current economic circumstances and to further minimize the rate increase in order to keep rates affordable. Morrissey PFT, p. 12.

The OCC's analysis indicated an equity cost rate in the range of 7.3% to 8.60% for the Company. Within this range Dr. Woolridge used 8.35% as an equity cost rate for the Company. He accepted the Company's credit risk premium of 18 basis points as determined by Ms. Ahern. This credit risk premium is based on the difference in credit ratings between the Company and the 9-member proxy group of water utilities. As such, Dr. Woolridge's determination of the allowed cost of equity for the Company is 8.53% (8.35% + 0.18%). Woolridge PFT, p. 2.

The AG supports the 8.53% cost of equity as determined by the OCC. The AG urges the Authority to reject the Company's cost of capital expert witness calculations for the discounted cash flow (DCF) analysis, risk premium analysis, and capital asset pricing model analysis. Brief, pp. 7-10.

The expert witnesses used the standard methodologies employed by cost of capital expert witnesses in one manner or another of the discounted cash flow (DCF), capital asset pricing model (CAPM), and risk premium methodology (RPM). The following are short explanations of these cost of capital methodologies.

### **b. Methodologies Used by Expert Witnesses**

#### **Discounted Cash Flow**

The DCF model assumes that an investor in the common stock of a company expects returns in the form of periodic dividend payments plus capital gains from the sale of the investment (higher dividend payments will cause an increase in stock price, other factors being equal). The model equates the market price of the investment to the

present value of the investor's anticipated cash flows at the investor's required rate of return or the cost of equity. The cost of equity can be thought of as the discount rate that will equate the current price of a share of stock with the present value of future expected cash flows from the stock.

$$k = D_1/P_0 + g$$

Where:

k = the investor's required return

D<sub>1</sub> = the next period's dividend

P<sub>0</sub> = the market price of common stock

g = the investor's expected growth rate

### **Capital Asset Pricing Model**

The CAPM is based on the theory that the relevant risk of any asset is its relative contribution to the total variability of the market portfolio held by all investors. That is to say, investors are able to invest in a variety of portfolios of different risks and made up of various combinations of assets including a risk free asset. This risk free asset has no chance of default and has a guaranteed real rate of return. Under these parameters, a rational investor would only invest in market portfolios yielding a return comparable to a similar risky combination of a perfectly diversified market portfolio and the risk free asset. In this situation, an investor would only need to be compensated for a company's non-diversifiable risk since any other risk could be eliminated in a properly balanced portfolio. The formula for the CAPM is as follows:

$$K = R_f + B (R_m - R_f)$$

Where:

K = required return on equity

R<sub>f</sub> = return required on the risk free asset

R<sub>m</sub> = return on the perfectly diversified portfolio

B = common equity beta risk measure or the non-diversifiable risk relative to the perfectly diversified portfolio

### **Risk Premium**

The RP methodology is based on the principal that investors have historically earned a total return premium on common stock investments over those earned on bond investments. This observed premium compensates investors for bearing the higher degree of risk on common stocks as compared to bonds given the priority of claim on a firm's assets that bond holders have over common stock holders. Assuming that investor expectations are realized on the average over the long run, it follows that the premium observed over historical periods provides an estimate to investor's current risk premium on common stock investments. Looking at the RP model in a formula it becomes:

$$k = D_r + R_p$$

Where:

k = the required return on equity

$D_r$  = the required return on an investment in debt

$R_p$  = the premium over investment in debt required by an equity investor

Thus, if the premium can be determined for a given period, than equity costs for that period are determined by adding the premium on to the yield of debt costs. A formula for the risk premium  $R_p$  is shown in the following:

$$\begin{array}{l} \text{Historic} \\ \text{Risk} \\ \text{Premium} \end{array} = \begin{array}{l} \text{(Average of the} \\ \text{annual returns on} \\ \text{a stock index for a} \\ \text{particular holding period)} \end{array} - \begin{array}{l} \text{(Average of the} \\ \text{annual returns on} \\ \text{a bond index for a} \\ \text{particular holding period)} \end{array}$$

## Summary of Ms. Ahern's Testimony

### a. Overview

Ms. Ahern evaluated Aquarion's cost of equity and determined a fair rate of return on common equity for the Company to be 10.85%. This was based on applying the DCF methodology, the CAPM, the empirical capital asset pricing model (ECAPM), RP methodology and an analysis using non-price regulated companies. This fair rate of return lies within the broad range of 10.50% to 11.20%. The lower and upper bounds are based on her calculations for DCF and CAPM analyses of a proxy group of U.S. water utilities.

### b. Selection of a Proxy Group

To determine the Company's cost of equity, Ms. Ahern used a proxy group of nine U.S. water utilities that in her estimation are comparable to Aquarion's regulated water operations. The basis of selection for her proxy group was to select those companies which meet the following criteria: 1) included in the water company group of AUS Utility Reports (March 2013); 2) all have Value Line, Reuters, Zacks or Yahoo Finance, consensus five-year earnings per share (EPS) growth rate projections; 3) a positive Value Line five-year dividends per share (DPS) growth rate projection; 4) a Value Line adjusted beta; 5) not cut or omitted their common dividends during the five years ending 2011 or through the time of the preparation of her testimony; 6) all have 70% or greater of 2011 total operating income derived from regulated water operations and 70% or greater of 2011 total assets devoted to regulated water operations; and 7) at the time of the preparation of her testimony, they had not publicly announced that they were involved in any major merger or acquisition activity, (i.e., one publicly-traded utility merging with or acquiring another). The following nine companies met the criteria set forth by Ms. Ahern: American States Water Co.; American Water Works Co., Inc.; Aqua America, Inc.; Artesian Resources Corp.; California Water Service Corp.; Connecticut Water Service, Inc.; Middlesex Water Co.; SJW Corp. and York Water Co. Ahern PFT, pp. 16 and 17.

### c. DCF Model

Ms. Ahern utilized the single stage constant growth DCF model because it is the most extensively employed version of the DCF used in public utility rate regulation. In Ms. Ahern's opinion, the single stage DCF methodology is widely utilized for the reason that utilities are generally in the mature stage of their lifecycles and not transitioning from one growth stage to another. A utilities return on capital investment is set through a ratemaking process and not left up to the competitive markets. The ratemaking process together with the longevity of the public utility industry contributes to the stability and maturity of the industry which includes water utilities. Ahern PFT, p. 20.

Ms. Ahern's DCF analysis used three data inputs of current stock prices  $P_0$ , the current annual dividends  $D_0$ , and estimated earnings growth rates  $g$  for each of the utilities in her proxy group. Specifically for the unadjusted dividend yields, Ms. Ahern used a recent March 4, 2013, indicated dividend divided by the average of closing market prices for the 60 days ending March 4, 2013. In addition, because dividends are paid quarterly, or periodically, as opposed to continuously, an adjustment must be made to the dividend yield because DCF theory calls for the use of the full growth rate or  $D_1$  in calculating the dividend yield component of the model. Due to the fact that the nine water utilities in the proxy group increase their quarterly dividend at various times during the course of the year, a reasonable assumption is to reflect one-half of the annual dividend growth rate in the dividend yield component which is  $D_{1/2}$ . Ms. Ahern believes this is a conservative approach that does not overstate the dividend yield which should be representative of the next 12-month period. Ahern PFT, p. 21; Tr. 6/20/13, p. 1102. The adjusted dividend yields ranged from 2.70% to 4.02% with a simple average of 3.21%. Ahern PFT, Schedule 6, p. 1.

The growth rates used by Ms. Ahern in her DCF model were projected earnings per share (EPS) growth rates from Value Line, Reuters, Zacks and Yahoo Finance all given the same weight. Ms. Ahern determined that approximately 51.4% of the common shares of the nine company proxy group are held by individuals and not institutional investors. Ahern PFT, p. 21, Schedule 7. Ms. Ahern used these financial information services based on the reasoning that individual investors with more limited resources than institutional investors are more likely to place greater significance on the opinions expressed by financial information services such as Value Line, Reuters, Zacks, and Yahoo Finance. These sources are easily accessible since they are on the Internet and in public libraries. Ms. Ahern believes that investors understand analysts have substantial insight into the dynamics of the industries and individual companies they analyze which includes a companies' ability to effectively manage the effects of changing laws, regulations, economic conditions, and market conditions. Ahern PFT, pp. 21 and 22. The range of five-year projected growth rates of earnings for the nine member proxy group ranged from 4.00% to 11.00% with a simple average of 6.48%. Ahern PFT, Schedule 6, p. 1.

In Ms. Ahern's opinion earnings per share should be the measure used in the DCF model rather than dividends per share (DPS). She reasons that; over the long run, without growth in EPS, there can be no growth in DPS. Further, Ms. Ahern asserted that securities analysts' earnings have a more significant, but not sole, influence on

market prices than dividend expectations. Ms. Ahern concludes that the use of earnings per share growth rates as an input in the DCF model provides a better matching between investors' expectations for market price appreciation and the growth rate component of the DCF. Earnings expectations have a substantial influence on market prices and their appreciation or growth experienced by investors. Ahern PFT, p. 22.

Ms. Ahern provided the calculations and summary of her DCF methodology on Schedule 6, page 1 which showed the mean result of her, nine water company, DCF analysis of 9.69% and the median result of 8.95% which she used in her final determination of an allowed ROE for the Company. Ms. Ahern considers the median not the mean to be a more accurate and reliable measure of central tendency and provides recognition of all the DCF results. Ahern PFT, p. 22.

#### **d. Risk Premium Methodology (RPM)**

Ms. Ahern relied on the results of two risk premium methodologies of the predictive risk premium model (PRPM) and a risk premium model using a total market approach. The PRPM is based on the premise that volatility changes over time and is related from one period to the next particularly in financial markets. Volatility in prices and returns cluster over time which makes this highly predictable and therefore can be used to predict future levels of risk and risk premiums. Ahern PFT, pp. 23 and 24.

Ms. Ahern reported that the PRPM estimates the risk/return relationship directly since the predicted equity risk premium is generated by the prediction of volatility which is synonymous with risk. Further, the PRPM is based on the evaluation of the results of investor behavior. In the derivation of the premiums greater weight is given to more recent time periods. This is in contrast to the use of the arithmetic mean premium which gives equal weight to each observed premium. The PRPM inputs are the historical returns on each of the proxy group common shares minus the historical monthly yield on long-term US Treasury securities through February 2013. Ms. Ahern used a generalized form of auto regressive conditional hetroskedasticity (ARCH), known as generalized auto regressive conditional hetroskedasticity (GARCH), on each of the proxy groups projected equity risk premium which was determined using Eviews statistical software. The forecasted 30-year U.S. Treasury Bond yield based upon the consensus forecast derived from the March 1, 2013 Blue Chip Financial Forecast was at 3.30% which Ms. Ahern averaged with the historical income return on long-term government bonds of 5.28% to derive a risk free rate of 4.29%. This 4.29% was added to each proxy group's PRPM derived equity risk premium to calculate the PRPM for each of the proxy group companies. Ahern PFT, p. 25. Ms. Ahern's results for using the PRPM indicates a mean common equity cost rate of 14.59% for the nine member proxy group and a median of 11.80%. Ahern PFT, Schedule 8, p. 2. Ms. Ahern choose the median of 11.80% to incorporate into her analysis.

A second risk premium model used by Ms. Ahern's, was the total market approach. Under this approach, a prospective public utility bond yield is added to an equity risk premium. This equity risk premium is derived from a beta adjusted total

market equity risk premium and an equity risk premium based upon the Standard & Poor's (S&P) Utilities Index. Ahern PFT, p. 25.

Specifically, Ms. Ahern used the consensus forecast of approximately 50 economists of the expected yield on Aaa rated corporate bonds for the six calendar quarters ending with the second calendar quarter of 2014 as taken from the March 1, 2013, Blue Chip Financial Forecast when determining the expected bond yield. The average expected yield on Moody's Aaa rated corporate bonds is 4.02%. Ms. Ahern found it necessary to make an adjustment of 0.33% to adjust the average Aaa corporate bond yield to be equivalent to a Moody's A2 rated public utility bond resulting in an expected bond yield applicable to a Moody's A rated public utility bond of 4.35%. Ahern PFT, p. 25. Ms. Ahern's adjustment came in the calculation of the average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.35% for December 2012, January 2013 and February 2013. Ahern PFT, Schedule 8, p. 6. Ms. Ahern performed another adjustment of 0.18% since the proxy group's average Moody's bond rating is A3 this adjustment is necessary to make the prospective bond yield applicable to an A3 public utility bond. Mechanically, the 18-basis point adjustment is derived by taking 1/3 of the spread between Baa and A public utility bonds ( $1/3 * 0.55\% = 0.18\%$ ). Therefore, the adjusted prospective bond yield is 4.45% ( $3.92\% + .35\% + .18\%$ ). Ahern PFT, Schedule 8, p. 3.

Ms. Ahern evaluated the results of several market equity risk premium studies based upon Ibbotson Associates' data, Value Line's forecasted total annual market return in excess of the prospective yield on Moody's Aaa corporate bonds, and two different studies of the equity risk premium for public utilities with Moody's A rated bonds. Ahern PFT, Schedule 8, pp. 8-10. Ms. Ahern calculated the mean equity risk premium as 5.75% which is applicable to the proxy group of nine water utilities. Ahern PFT, Schedule 8, p. 8. This estimate is a result of an average of a beta derived equity risk premium as well as the average public utility equity risk premium relative to bonds rated A by Moody's based upon holding period returns. Ahern PFT, p. 26.

Ms. Ahern provides the rationale for a beta-derived equity risk premium since betas are derived from the market prices of common stocks over a recent five-year period. She reasons that beta is a meaningful measure of prospective relative risk to the market as a whole and a reasonable means by which to allocate a the proxy group's share of the market's total equity risk premium relative to corporate bond yields. Ms. Ahern calculated a 8.00% total market equity risk premium based on an average of the long-term arithmetic mean historical market equity risk premium, a predicted market equity risk premium utilizing the PRPM, and a forecasted market risk premium based on Value Line's projected market appreciation and dividend yield. Ahern PFT, p. 26.

Ms. Ahern used the most recent Morning star data on holding period returns for the large company common stocks from the 2013 Ibbotson<sup>®</sup> SBBI<sup>®</sup> Market Report (SBBI – 2013) and the average historical yield on Moody's Aaa and Aa rated corporate bonds for the period 1926-2012 to derive the historical/expectational market equity risk premium. Ahern PFT, pp. 26 and 27. The result of her calculations was a long-term historical equity risk premium on the market as a whole of 5.60% ( $11.83\% - 6.23\%$ ) based on the long-term arithmetic mean monthly total return rate on large company

common stocks of 11.83% and the long-term arithmetic mean monthly yield of Moody's Aaa and Aa rated corporate bonds of 6.23%. Ahern PFT, p. 27.

The arithmetic mean was used for the monthly total return rates for the large company stocks and yields for the Moody's Aaa/Aa corporate bonds. Ms. Ahern believes the arithmetic return is appropriate for cost of capital purposes which is recommended in the SBBI – 2013. Her reasoning is that the arithmetic mean return rates and yields are appropriate because ex-post (historical) total returns and equity risk premiums differ in size and direction over time, which gives insight into the variance and standard deviation of returns. Since the arithmetic mean captures the prospect for variance in returns and equity risk premiums, investors make use of this information in estimating future risk when making a current investment. Ms. Ahern asserts that without the arithmetic mean measurement of potential variance of returns, investors cannot meaningfully evaluate prospective risk. Alternatively, if investors relied on the geometric mean of ex-post equity risk premiums, they would not have insight into the potential variance of future returns. This is because the geometric mean relates the change over many periods to a constant rate of change thereby masking the year to year fluctuations or variance critical to an investor's risk analysis. Ahern PFT, p. 27.

The inputs into the PRPM are the historical monthly returns on large company common stocks minus the monthly yields on Aaa corporate bonds during the time period from January 1928 through January 2013. Using GARCH, the market's projected equity risk premium was determined using Eviews statistical software. This calculated a predicted market equity risk premium based upon the PRPM of 9.12%. Ahern PFT, p. 28; Schedule 8, p. 8.

The derivation of the forecasted or prospective market equity risk premium is from an average of 13 weeks of stock prices ending March 8, 2013, the 3-5 year median market price appreciation potential by Value Line plus an average of the median estimated dividend yield for the common stocks of the 1,700 firms covered in Value Line's Standard Edition. The average median expected price appreciation is 52% which translates to a 11.04% annual appreciation which when added to the average median dividend yield of 2.25% equates to a forecasted annual total return rate on the market as a whole of 13.29%. Ahern PFT, p. 28.

The forecasted total market equity risk premium of 9.00% is calculated by deducting the March 1, 2013 Blue Chip consensus estimate of approximately 50 economists of the expected yield on Moody's Aaa rated corporate bonds for the 6 calendar quarters ending with the second calendar quarter 2014 of 4.02% ( $9.72\% = 13.29\% - 4.02\%$ ). Ms. Ahern, in arriving at a conclusion of 8.00% gave equal weight to the historical market equity risk premium of 5.60%, the PRPM-based market equity risk premium of 9.12%, and the forecasted market equity risk premium of 9.27% [ $8.00\% = (5.60\% + 9.12\% + 9.27\%)/3$ ]. Ahern PFT, pp. 28 and 29; Schedule 8, p. 8.

Ms. Ahern also used a beta derived equity risk premium. She used the most current median Value Line beta for the 9-member proxy group of 0.70 and applied this to the market equity risk premium of 8.00%. This resulted in a beta adjusted equity risk

premium of 5.60% ( $8.00\% \times .70$ ) for the 9-member water company proxy group. Ahern PFT, p. 29; Schedule 9, p. 1.

In addition, Ms. Ahern derived a 4.57% equity risk premium based upon the S&P utility index and Moody's A rated public utility bonds. This was done by subtracting the S&P Utility Index total returns of 10.56% and monthly A rated public utility bond yields of 6.75% from 1928 to 2011 to arrive at an equity risk premium of 3.81%. She then implemented the PRPM using the same historical monthly equity risk premiums to calculate the PRPM derived equity risk premium of 5.33% for the S&P Utility Index. The average of these equity risk premiums is 4.57%  $[(3.81\% + 5.33\%) / 2]$ . The risk premium model common equity cost rate based on the total market approach is 9.62%. Ahern PFT, p. 29; Schedule 8, p. 3.

Ms. Ahern concluded that together using the PRPM with the total market approach, the indicated RPM-derived common equity cost rate is 11.26% which was derived by giving greater weight to the PRPM results. Ms. Ahern asserts that this is reasonable since the PRPM is based on a minimum of restrictive assumptions. Further, the PRPM is not based on an estimate of investor behavior but is based on a statistical analysis of actual investor behavior because it evaluates the results of that behavior which is the volatility of historical equity risk premiums. Ahern PFT, p. 30; Schedule 8, p. 1.

**e. Capital Asset Pricing Model and Empirical Capital Asset Pricing Model (ECAPM)**

Ms. Ahern applied both the traditional CAPM and the ECAPM to the nine water utilities in the proxy group and averaged the results. The risk free rate she adopted for both applications of the CAPM is 4.29%. This risk free rate is based on the average of the consensus forecast of the reporting economists in the March 1, 2013 Blue Chip of the expected yields on 30-year U.S. Treasury bonds for the 6 quarters ending with the second calendar quarter of 2014 of 3.30% averaged with the historical arithmetic mean income return on long-term U.S. Treasury Bonds of 5.28%  $[4.29\% = (3.30\% + 5.28\%) / 2]$ . Ahern PFT, pp. 31 and 32; Schedule 9, p. 2.

Ms. Ahern stated that she averaged the prospective and historical yields on U.S. Treasury Securities believing that in the current U.S. Treasury securities market, the Federal Reserve Bank is artificially and indefinitely keeping interest rates low through mid-2015 due to concerns over the struggling U.S. economy. Due to this, the current 30-year U.S. Treasury Bond yields and the consensus forecasted yields are at historical and unprecedented lows. As such, Ms. Ahern believes that these rates are not currently representative of the long-term cost of capital. Ahern PFT, p. 32.

It is Ms. Ahern's opinion that the yield on long-term U. S. Treasury Bonds is almost risk free and its term is consistent with the long-term cost of capital that should be measured for public utilities. This long-term nature is made apparent through yields on A rated public utility bonds, the long-term investment horizon inherent in utilities' common stocks, the long-term investment horizon inherent in the DCF model used in regulatory cost of capital estimates, and the long-term life of the jurisdictional rate base

which the cost of capital will be applied to in rate making. Dissimilarly, short-term U.S. Treasury yields are more volatile and essentially a function of Federal Reserve monetary policy. Ahern PFT, p. 32.

For her estimation of the expected equity risk premium for the market, Ms. Ahern used the average of the most recent 13 weeks ending March 8, 2013, and 3- to 5-year median total market price appreciation projections from Value Line resulting in a total annual return of 13.29%. In addition, she used the PRPM using monthly equity risk premiums for large company common stocks relative to long-term U.S. Treasury securities from January 1926 through December 2012 and the arithmetic mean monthly equity risk premiums of large company common stocks relative to long-term U.S. Treasury bond income yields from 1926-2012 as taken from SBBI-2013. Ahern PFT, p. 33.

The Value Line derived forecasted total market equity risk premium is calculated by deducting the 4.29% average of the March 1, 2013 Blue Chip consensus estimate of the expected yield on U. S. Treasury Notes and the historical arithmetic mean income return on long-term government bonds from the Value Line projected total annual market return of 13.29% which makes for a forecasted total market equity risk premium of 9.00%. Ms. Ahern calculated a market equity risk premium of 10.23% using the PRPM as discussed above, that considered the yields on long-term U.S. Treasury securities from January 1926 through January 2013 which was the latest available at the time of the preparation of her testimony. The long-term income return on U.S. Government Securities of 5.28% was deducted from the SBBI monthly historical total market return of 11.83% resulting in an historical market equity risk premium of 6.55%. Ms. Ahern averaged these three market equity risk premiums to derive an equity market risk premium of 8.59%  $[(9.00\% + 10.23\% + 6.55\%)/3]$ . Ahern PFT, p. 33.

Using the traditional CAPM the average is 10.16% while the median is 10.30% for the 9 water companies. The average ECAPM cost rate is 10.84% while the median is 10.95%. Ms. Ahern relied on the median of the traditional CAPM and the ECAPM for the proxy group of 10.30% and 10.95% respectively. As such the CAPM cost rate is 10.63%  $[(10.30\% + 10.95\%)/2]$ . Ahern PFT, p. 34.

#### **f. Equity Cost Rate for the Non-Price Regulated Companies**

Ms. Ahern calculated the common equity cost rates for the domestic, non-price regulated companies that she believes are risk comparable to the nine member water utility proxy group. Ms. Ahern calculated the equity cost rates using the DCF, risk premium, and CAPM methodologies in an identical manner relative to the market data of the nine member water utility proxy group. The only exception is that in the application of the risk premium methodology, she did not use public utility specific equity risk premiums and did not apply the PRPM to the individual companies. Ahern PFT, p. 34.

Ms. Ahern derived the median DCF cost rate for the proxy group of 34 non-price regulated companies comparable in total risk to the 9 water utilities as 11.91%. Ahern PFT, Schedule PMA-10, p. 5. She calculated a 10.58% RPM cost rate for the proxy

group of 34 non-price regulated. Data for this calculation came from the consensus prospective yield on Moody's Baa rated corporate bonds for the six quarters ending with the second quarter of 2014 from the March 1, 2013 Blue Chip which was 4.98%. Ms. Ahern reasoned that since the 34 non-price regulated companies, comparable in total risk to the 9 member water utility proxy group have an average Moody's bond rating of Baa2, no adjustment is necessary to make the prospective bond yield applicable to the Baa corporate bond yield. She added the beta adjusted risk premium of 5.60% relative to the proxy group of non-price regulated companies to the prospective Baa rated corporate bond yields of 4.98% for an indicated RPM cost rate of 10.58%. Ahern PFT, Schedule PMA-10, p. 6. Ms. Ahern applied the traditional CAPM and ECAPM to the proxy group of 34 non-price regulated companies with the result of a 10.30% median cost rate for the traditional CAPM and a median cost rate of 10.95% for the ECAPM. These averaged together result in an indicated CAPM cost rate of 10.63%  $[(10.30\% + 10.95\%)/2]$ . Ahern PFT, Schedule PMA-10, p. 9.

Ms. Ahern concluded that for the cost rate of common equity based upon the 34-member non-price regulated companies comparable in total risk to the 9 member water utility proxy group, were medians 11.91% for the DCF, 10.58% for the RPM, and 10.63% for the CAPM. She averaged these medians for a cost rate of 11.04%  $[(11.91\% + 10.58\% + 10.63\%)/3]$ . Ms. Ahern concluded that based upon her analysis, a range of common equity cost rate of 10.28% - 10.98% is indicated for the 9 water companies before credit and business risk adjustments. Ahern PFT, pp. 35-37.

#### **g. Business Risk Adjustment**

Ms. Ahern provided a business risk adjustment due to the Company's small size relative to the proxy group. She measured this by the market capitalization of common equity. The market capitalization for the Company was estimated since its common stock is not traded. Since the Company's common stock is not traded, Ms. Ahern assumed that if it were, the common shares would be selling at the same market-to-book ratio as the average market-to-book ratio for the proxy group of 214.5% on March 4, 2013. Ahern PFT, Schedule 11, p. 2. Since her recommended common equity cost rate is based upon the market data of the proxy group, she asserts that it is reasonable to use the market-to-book ratios of the proxy group to estimate the Company's market capitalization. As such, the Company's market capitalization is estimated at \$596.730 million based upon the average market-to-book ratio of the proxy group. In contrast, the market capitalization of the average water company was \$1.623 billion on March 4, 2013, or 2.7 times the size of the Company's estimated market capitalization. Ahern PFT, pp. 38 and 39.

Due to this, Ms. Ahern believes it is necessary to upwardly adjust the common equity cost rate range of 10.28% - 10.98%, based upon the 9 water companies, to reflect the Company's greater risk due to its smaller relative size. The determination is based upon the size premiums for decile portfolios of New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and NASDAQ listed companies for the 1926-2012 period and related data from 2013 Ibbotson SBBI – Risk Premium Over Time Report – Estimates for 1926 – 2012 (SBBI-2013 Risk Premium).

The average size premium for the 6<sup>th</sup> decile which the proxy group of 9 water companies fall has been compared with the average size premium for the 8<sup>th</sup> decile in which the market capitalization of the Company would fall if its stock were traded and sold at the March 4, 2013 average market/book ratio of 214.5% experienced by the 9 water companies. The size premium spread between the 8<sup>th</sup> decile and the 6<sup>th</sup> decile is 0.74%. Due to this, Ms. Ahern made an upward adjustment of 0.05% to reflect the Company's greater relative business risk due to its smaller size and believes this is both reasonable and conservative.

#### **h. Credit Risk Adjustment**

Ms. Ahern calculated a credit risk adjustment based on Moody's bond rating of the Company and the proxy group. Ahern PFT, pp. 37 and 38. The Company is assigned a bond rating of Baa1 compared to the average Moody's bond rating of the nine water companies of A3. Ahern PFT, Schedule 8, p. 2. Ms. Ahern believes that, the proxy group of nine water companies is considered a lower credit risk than the Company. As such, she made an upward adjustment to the common equity cost rate based upon the nine water companies. This adjustment was accomplished by taking one-third of a recent 3-month average spread of 0.54% between Moody's A and Baa rated public utility bond yields, or 0.18% [0.18% = 0.54% \* (1/3)]. Ahern PFT, Schedule 8, p. 6.

#### **i. Conclusion on Ms. Ahern's Cost of Equity**

A summary of Ms. Ahern's cost of equity analysis is as follows:

Methodology	Proxy Group of 9 Water Utilities
Discounted Cash Flow Methodology	8.95%
Risk Premium Model	11.26%
Capital Asset Pricing Model	10.63%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	11.04%
Indicated Common Equity Cost Rate Range	10.28% - 10.98%
Financial Risk Adjustment	0.18
Business Risk Adjustment	0.05
Indicated Common Equity Cost Rate Range	10.51% - 11.21%
Recommended Common Equity Cost Rate Range	10.50% - 11.20%

Ahern PFT, p. 37.

Ms. Ahern believes that a common equity cost rate range of 10.70% - 11.20% is reasonable as well as conservative and will provide the Company with sufficient earnings to enable it to attract necessary new capital. Ahern PFT, p. 40.

## Summary of Dr. Woolridge's ROE Testimony

### a. Overview

Dr. Woolridge applied the DCF and the CAPM to two proxy groups of publicly-held water utilities and gas distribution companies. His analysis indicated an equity cost rate in the range of 7.3% to 8.6%. Within this range, he used 8.35% as the equity cost rate for a water company at this time. For the Company, he accepted the Company's proposed credit risk premium of 18 basis points which is based on the difference in credit ratings for the Company and the proxy group of water companies. As such, Dr. Woolridge used an equity cost rate for the Company of 8.53% ( $8.35\% + 0.18\% = 8.53\%$ ).

### b. Selection of Proxy Group

To determine the Company's cost of equity, Dr. Woolridge evaluated the return requirements of investors using two sets of proxy groups of publicly-held water utility companies (Water Proxy Group) and a proxy group of publicly-held gas distribution companies (Gas Proxy Group). Dr. Woolridge's Water Proxy Group consisted of nine water utility companies which are covered by the Value Line Investment Survey and AUS Utility Reports. These water utilities are American States Water Company; American Water Works Company; Aqua American, Inc.; Artesian Resources Corporation; California Water Service Group; Connecticut Water Service, Inc.; Middlesex Water Company; SJW Corporation; and York Water Company. Woolridge PFT, pp. 12 and 13.

Overall the water utility proxy group shows a median operating revenues and net plant of \$261.5M and \$816.0M, respectively. The group receives 96% of revenues from regulated water operations, has an 'A' bond rating, a common equity ratio of 49.5%, and an earned return on common equity of 9.1%. Woolridge PFT, p. 13, Exhibit JRW-4.

Dr. Woolridge's gas proxy group consisted of eight natural gas distribution companies. These companies meet the following selection criteria: (a) listed as a Natural Gas Distribution, Transmission, and/or Integrated Gas Company in AUS Utility Reports; (b) listed as a Natural Gas Utility in the Standard Edition of the Value Line Investment Survey; and (c) an investment grade bond rating by Moody's and Standard & Poor's. The gas utilities meeting these criteria include AGL Resources, Atmos Energy Corporation, Laclede Group, Northwest Natural Gas Company, Piedmont Natural Gas Company, South Jersey Industries, Southwest Gas, and WGL Holdings. The only companies that met these criteria and were not included in the group were New Jersey Resources and UGI. These companies were excluded due to their low percentage of revenues from regulated gas operations. Woolridge PFT, pp. 13 and 14.

For the gas proxy group, the median operating revenues and net plant are \$1,547.3M and \$2,960.8M, respectively. The group receives 70% of revenues from regulated gas operations, has an A2/A3 Moody's bond rating and an A/A- bond rating from S&P, a current common equity ratio of 46.0%, and an earned return on common equity of 10.5%. Woolridge PFT, p. 14 and Exhibit JRW-4, p. 1.

Dr. Woolridge assessed the riskiness of the two groups using five different risk measures published by Value Line. These measures include Beta, Safety, Financial Strength, Earnings Predictability, and Stock Price Stability. All five of the risk measures suggest that the Gas Proxy Group is a little less risky than the Water Proxy Group. Dr. Woolridge concluded that the magnitude of the differences in the risk metrics is not large. Woolridge PFT, p. 14, Exhibit JRW-4, p. 2.

### c. DCF Model

Dr. Woolridge relied primarily on the DCF model to estimate the cost of equity for the Company. He believes the DCF model provides the best measure of equity cost rates for public utilities given the investment valuation process and the relative stability of the utility industry. Woolridge PFT, p. 22. Dr. Woolridge used the constant growth DCF model since economics of the public utility business indicate that the industry is in the steady state or constant growth stage.

Dr. Woolridge's DCF analysis employed three data inputs of stock price  $P_0$ , the current annual dividends  $D_0$ , and estimated dividend growth rates for each of the utilities in his comparable group. He calculated the dividend yield for his proxy groups by dividing stock price by dividends, using the 6-month period ending May 2013 and the yield for May 2013. This is shown in the table below:

	May 2013 Dividend Yield	6-Month Median Dividend yield	DCF Dividend Yield
Water Proxy Group	3.1%	3.0%	3.05%
Gas Proxy Group	3.7%	3.8%	3.75%

Woolridge PFT, Exhibit JRW-10, p. 2.

This dividend yields of 3.05% for the water proxy group and the dividend yield of the gas proxy group of 3.75% were then adjusted since under the traditional DCF model the dividend yield term relates to the dividend yield over the coming period. This is calculated by multiplying the expected dividend over the coming quarter by four and dividing this dividend by the current stock price to determine the appropriate dividend yield for a company that pays dividends on a quarterly basis. Dr. Woolridge reports that some analysts adjust the current dividend over the coming year as opposed to the coming quarter. The complication in this is that companies announce changes in dividends at different times during the year. Considering these differences in methodology, the dividend yield, computed based on presumed growth over the coming quarter as opposed to the coming year, can be quite different. As a result, it is common for analysts to adjust the dividend yield by some fraction of the long-term expected growth rate. In his analysis, Dr. Woolridge adjusted the dividend yield by one-half of the expected growth rate to reflect growth over the coming year. Woolridge PFT, pp. 28 and 29. This for the water proxy group equates to an adjusted dividend yield of 3.13% [3.05% dividend yield \* adjustment factor (1 + .5g) of 1.025]. For the gas proxy group, this equates to an adjusted dividend yield of 3.84% [dividend yield 3.75% \* adjustment factor (1 + .5g) of 1.02375]. Woolridge PFT, Exhibit JRW-10, p. 1.

For the growth rate used in the DCF, Dr. Woolridge states that “[t]here is much debate as to the proper methodology to employ in estimating the growth component of the DCF model.” Woolridge PFT, p. 29. Investors use a combination of historical and/or projected growth rates of EPS, DPS, and internal or book value growth to assess the long-term prospective of a company. Woolridge PFT, p. 29.

Dr. Woolridge analyzed an array of measures of growth for each of the utilities in his two proxy groups. He reviewed Value Line’s historical and projected growth rate estimates for EPS, DPS, and book value per share (BVPS). He also considered the average EPS growth rate forecasts of Wall Street analysts as provided by Yahoo, Reuters, and Zacks, which are services that solicit five-year earnings growth rate projections from securities analysts. These services compile and publish the means and medians of these forecasts. In addition, Dr. Woolridge evaluated prospective growth as measured by prospective earnings retention growth rates and earned returns on common equity. Woolridge PFT, pp. 30.

Dr. Woolridge states that historical growth rates for EPS, DPS, and BVPS are easily obtainable by investors and seemingly a significant component in determining expectations in relation to future growth for a company. However, he warns that the use of historical growth numbers as measures of investors’ expectations must be used with caution. There are some cases where past growth may not reflect probable future growth potential. In addition, using a single growth rate number such as five or ten years is unlikely to accurately measure investors’ expectations. This is due to the sensitivity of a single growth rate figure to fluctuations in individual company performance as well as overall economic fluctuations such as business cycles. However, it is necessary to evaluate the background in which the growth rate is being employed. Based on the conventional DCF model, the expected return on a security is equal to the sum of the dividend yield and the expected long-term growth in dividends. For that reason, the optimal estimate of the cost of common equity using the conventional DCF model requires the analyst to evaluate long-term growth rate expectations. Woolridge PFT, pp. 30 and 31.

Dr. Woolridge asserts that the importance of internally generated growth is recognized by investors who pay premiums for stocks of companies that retain earnings and earn high returns on internal investments. Internally generated growth is a function of the percentage of earnings within the firm known as the earnings retention rate and the rate of return earned on those earnings known as the return on equity. Internal growth is calculated as the retention rate times the return on equity. Internal growth is significant in determining long-run earnings and therefore dividends. Woolridge PFT, p. 31.

Dr. Woolridge recognized a number of investment information services that provide analysts’ EPS forecasts such as Institutional Brokers Estimate System (IBES), Bloomberg, FactSet, Zacks, First Call, and Reuters. Thomas Reuters Company publishes analysts’ EPS forecasts under different product names which are IBES, First Call and Reuters. Bloomberg, FactSet, and Zacks publish their own set of analysts’ EPS forecasts for companies. These services do not disclose the analysts that are solicited for their forecasts and those analysts that are chosen to provide their EPS

forecasts in the services compilation. IBES, Bloomberg, FactSet, and First Call are fee-based services which typically provide detailed reports and other data in addition to analysts' EPS forecasts. Two services that provide free of charge EPS forecasts via the Internet are Thomas Reuters Company and Zacks. Woolridge PFT, pp. 31 and 32.

Dr. Woolridge asserts that the DCF growth rate should be the long-term projected growth rate in EPS, DPS and BVPS. As such, Dr. Woolridge enumerates several issues he has with using EPS growth forecasts of Wall Street analysts as DCF growth rates. First, Dr. Woolridge argues that the appropriate growth rate, in the DCF model, is the dividend growth rate not the earnings growth rate. However, over the very long-term dividend and earnings will have to grow at a similar growth rate and as such consideration must be given to other growth indicators. These other growth indicators are prospective dividend growth, internal growth, as well as projected earnings growth. Dr. Woolridge cites a recent study by Lacina, Lee, and Xu (2011) that has shown that analysts' long-term earnings growth rate forecasts are not more accurate at forecasting future earnings than naïve random walk forecasts of future earnings.

Using data over a 20-year period, Lacina, Lee, and Xu demonstrate that using the most recent year's EPS figure to forecast EPS in the next 3-5 years is just as accurate as using analysts' long-term earnings growth rate forecasts. In Dr. Woolridge's opinion, these results indicate that analysts' long-term earnings growth rate forecasts should be used with caution as inputs for cost of capital purposes. In addition, Dr. Woolridge contends that long-term EPS growth rate forecasts of Wall Street securities analysts are well-known to be overly optimistic and upwardly biased. He contends that employing these growth rates in a DCF model will produce an overstated equity cost rate. Dr. Woolridge cites a study by Easton and Sommers (2007) that found optimism in analysts' earnings growth rate forecasts produces an upward bias in estimates of the cost of equity capital of almost 3.0%. Woolridge PFT, pp. 34 and 35.

Dr. Woolridge considered historical growth and projected growth as published by Value Line for both the water utility water companies and the gas companies. Historical growth measures in EPS, DPS and BVPS for the Water Proxy Group, as measured by the medians, range from 2.3% to 5.0%, with an average of 3.9%. For the Gas Proxy Group, the historical growth measures in EPS, DPS and BVPS, as measured by the medians, range from 2.5% to 5.5%, with an average of 4.3%. Woolridge PFT, p. 36, Exhibit JRW-10, p. 3. Value Line projections in EPS, DPS and BVPS for the water proxy group, showed the medians ranged from 5.5% to 7.5%, with an average of 6.3%. For the Gas Proxy Group, the medians range from 2.8% to 5.5%, with an average of 4.4%. Woolridge PFT, p. 36 and Exhibit JRW-10, p. 4.

The prospective sustainable growth for the two proxy groups as measured by Value Line's average projected retention rate and return on shareholders' equity was also used by Dr. Woolridge. He believes that sustainable growth is significant and a primary driver of long-run earnings growth. For the water proxy group, the median prospective sustainable growth rate is 3.7%. The median prospective sustainable growth rate for the gas proxy group is 4.4%. Woolridge PFT, p. 36, Exhibit JRW-10, p. 4.

Dr. Woolridge also considered long-term EPS growth rate forecasts for the companies in the two proxy groups which came from Yahoo, Zacks and Reuters. The median of analysts' projected EPS growth rates for the water proxy group is 4.9%. The median of analysts' projected EPS growth rates for the gas proxy group is 5.0%. Woolridge PFT, p. 37, Exhibit JRW-10, p. 5.

Overall, Dr. Woolridge's analysis shows that the historical growth rate indicators for the water proxy group imply a baseline growth rate in the range of 3.9%. The high end of the range for the water proxy group is 6.3% which is the projected DPS, EPS and BVPS growth rates of Value Line. The median of the projected EPS growth rates from Wall Street analysts is 4.9%. However, these EPS growth rates for the water proxy group are limited in number and variable. The average of the historic, sustainable and projected growth rate indicators is 4.7%, and the average of the sustainable and projected EPS growth rates is 5.0%. Focusing primarily on the sustainable and projected growth rate measures, Dr. Woolridge found that an expected growth rate of 5.0% is appropriate for the water proxy group. Woolridge PFT, pp. 37 and 38, Exhibit JRW-10, pp. 5 and 6.

Dr. Woolridge found that historical growth rate figures for the gas proxy group suggested a baseline growth rate of 4.3% for these companies. The projected and sustainable growth rates from Value Line are 4.4% and 4.4% for the group. Analysts projected EPS growth is 5.0%. The average of sustainable and projected EPS growth rate indicators is 4.6%. Giving more weight to the projected growth rate figures, Dr. Woolridge judged that an expected growth rate in the 4.5% to 5.0% range is appropriate for the gas proxy group. Given these figures, he used the mid-point of this range, 4.75%, as the DCF growth rate for the gas proxy group. Woolridge PFT, pp. 38 and 39.

A summary of Dr. Woolridge's data to determine growth in the DCF model is as follows:

Growth Rate Indicator	Water Proxy Group	Gas Proxy Group
Historic <u>Value Line</u> Growth in EPS, DPS, and BVPS	3.9%	4.3%
Projected <u>Value Line</u> Growth in EPS, DPS, and BVPS	6.3%	4.4%
Sustainable Growth (ROE * Retention Rate)	3.7%	4.4%
Projected EPS Growth from Yahoo, Zacks, and Reuters	4.9%	5.1%
Average of Historic and Projected Growth Rates	4.7%	4.5%
Average of Sustainable and Projected Growth Rates	5.0%	4.6%

Woolridge PFT, Exhibit JRW-10.

Dr. Woolridge calculated the DCF equity cost rate as shown below:

	Dividend Yield	1 + ½ Growth Adjustment	DCF Growth Rate	Equity Cost Rate
Water Proxy Group	3.05%	1.02500	5.00%	8.10%
Gas Proxy Group	3.75%	1.02375	4.75%	8.60%

Woolridge PFT, p. 39.

#### d. Capital Asset Pricing Model

Dr. Woolridge used the CAPM as a risk premium approach to calculate his two proxy groups cost of equity. He stated that the CAPM is a theory of the risk and expected returns of common stocks. The CAPM theory states that there is two types of risk associated with a stock which are firm specific risk or unsystematic and market or systematic risk, which is measured by a company's beta. Woolridge PFT, pp. 39 and 40.

To estimate the investor required cost of equity, using the CAPM, Dr. Woolridge used three inputs of (a) the risk free rate of interest, (b) beta, and (c) the expected equity or market risk premium. For his risk free rate, Dr. Woolridge used the yield on U.S. Treasury bonds which he found to be in the 2.5% to 4.0% range over the 2011-2013 time period. Dr. Woolridge reported that these rates are currently in the middle of this range. Dr. Woolridge used 4.00% as the risk free rate in the CAPM due to the recent range of yields, and the prospect of higher rates in the future. Woolridge PFT, p. 41.

For the beta input into the CAPM, Dr. Woolridge noted that there are several online sources of investment information services, such as Yahoo and Reuters that provide estimates of stock betas. He notes that usually, these services report different betas for the same stock. He attributes these differences to (a) the time period over which beta is measured; and (b) adjustments made to reflect that betas tend to regress to one over time. Dr. Woolridge employed the betas for each of his proxy group of gas and water utilities as published in the Value Line Investment Survey. Woolridge PFT, p. 42. The median beta for Dr. Woolridge's utilities in the water and gas proxy groups are .70 and .65, respectively. Woolridge PFT, p. 65.

For the last input into the CAPM of the equity or market risk premium, Dr. Woolridge used several approaches. Traditional measurement of the equity risk premium is the difference between historical average stock and bond returns. In such a case, the historical stock and bond returns called ex post returns were used as a measure of the markets expected returns known as ex ante or forward looking expected returns. Dr. Woolridge research indicates that most historical assessments of the equity risk premium show a premium of 5% to 7% above the rate on long-term U.S. Treasury bonds. Challenges to ex post equity risk premiums are (a) ex post returns are not the same as ex ante expectations, (b) market risk premiums can change over time, increasing when investors become more risk-averse and decreasing when investors become less risk-averse, and (c) market conditions can change such that ex post

historical returns are poor estimates of ex ante expectations. Woolridge PFT, pp. 43 and 44; JRW-11, pp. 4 and 6.

The use of historical returns as market expectations has been criticized in numerous academic studies. The general theme of these studies is that the large equity risk premium discovered in historical stock and bond returns cannot be justified by the fundamental data. These studies, which fall under the category Ex Ante Models and Market Data, compute ex ante expected returns using market data to arrive at an expected equity risk premium. These studies have also been called Puzzle Research after the study by Mehra and Prescott in which the authors first questioned the magnitude of historical equity risk premiums relative to fundamentals. A recent ex ante study done by Damodoran in 2013 using projected data showed the equity risk premium at 5.50%. Woolridge PFT, p. 44, Exhibit JRW-11, pp. 4 and 6.

Another risk premium methodology Dr. Woolridge used were surveys. This methodology estimates equity risk premium through the use of surveys of investors and financial professionals. Surveys used were Survey of Financial Forecasters, Duke – CFO Magazine Survey, Fernandez – Academics, Fernandez – Analysts, and Fernandez – Companies. Challenges concerning the survey method are questions regarding survey histories, responses, and representativeness. Surveys may also be subject to biases such as extrapolation. The survey methodology showed an equity risk premium of 5.00%. Woolridge PFT, pp. 44 and 45, Exhibit JRW-11, pp. 4 and 6.

The building block methodology was also used by Dr. Woolridge. This ex ante methodology combined variables which include inflation, real EPS and DPS growth, ROE and book value growth, and price earnings ratios. Dr. Woolridge combined a historic supply model building block done by Ibbotson and Chan and also developed his own current building block supply model to calculate a simple average of 4.76% equity risk premium. Woolridge PFT, Appendix C, pp. C-1 – C-5, Exhibit JRW-11, pp. 4 and 6.

The following is a summary of the equity risk premium methodologies and their results used by Dr. Woolridge:

Category	Study Authors	Publication Date	Time Period of Study	Methodology	Return Measure	Midpoint of Range	Mean	Average
Historical Risk Premium								
	Ibbotson	2013	1926-2012	Historical Stock Returns – Bond Returns	Arithmetic Geometric		5.70% 4.10%	
	Median							4.90%
							5.50%	
Ex ante (Puzzle Research)								
	Damodoran	2013	Projection	Fundamentals – Implied from FCF to Equity Model			5.50%	
	Median							5.50%
Survey								
	Survey of Financial Forecasts	2013	10-year projection	Approximately 50 financial forecasters			2.30%	
	Duke – CFO Magazine Survey	2013	10-year projection	Approximately 350 CFOs			4.50%	
	Fernandez – Academics	2012	Long-Term	Survey of Academics			5.60%	
	Fernandez – Analysts	2012	Long-Term	Survey of Analysts			5.00%	
	Fernandez - Companies	2012	Long-Term	Survey of Companies			5.50%	5.00%
Building Block								
	Ibbotson and Chen	2013	1926-2012	Historical Supply Model (D/P & Earnings Growth)	Arithmetic Geometric	6.13% 4.09%		
	Woolridge		2013	Current Supply Model (D/P & Earnings Growth)				
	Median							4.76%
Mean								5.04%
Median								4.95%

Dr. Woolridge concludes that, based on the above studies, a 5.00% equity risk premium is appropriate.

The results of Dr. Woolridge's CAPM result are as follows:

	Risk-Free Rate	Beta	Equity Risk Premium	Equity Cost Rate
Water Proxy Group	4.00%	0.70	5.0%	7.5%
Gas Proxy Group	4.00%	0.65	5.0%	7.3%

Woolridge, PFT, p. 49.

Dr. Woolridge concluded that the appropriate equity cost for the water and gas proxy groups is in the 7.3% to 8.6% range. However, Dr. Woolridge gave greater weight to the DCF model because the gas utility proxy group is relevant and as such the equity cost rate range is 8.15% to 8.6%. For his current estimate of his equity cost rate he used the midpoint of this range of 8.35%. However, Dr. Woolridge adopted Ms. Ahern's credit risk adjustment 0.18%. This premium is due to the fact that Moody's bond rating of Baa1 for the Company is below that of the water utilities. Dr. Woolridge concludes that the appropriate cost rate for the Company is 8.53% (8.35% + 0.18% = 8.53%). Woolridge PFT, p. 50.

Dr. Woolridge considers that the equity cost rate for the gas utility proxy group as an indicator for an appropriate equity cost rate for water companies. Specific to the Company, he believes that an 8.53% return on equity is appropriate at this time. Water utilities are the lowest risk industry as determined by beta in Value Line. Consequently, he concludes water utilities have the lowest cost of equity of any industry based on the CAPM. In addition, capital costs for utilities, as indicated by long-term bond yields, are at historically low levels with the current yield on 30-year, A-rated utility bonds at 4.00%. Dr. Woolridge also states that while the financial markets have recovered over the past four years, the economy has not. This assessment is bolstered by the fact of 7.50% unemployment together with interest rates and inflation at low levels produce an expectation of low returns on financial assets from savings accounts, Treasury Bonds, and common stocks. Therefore, an 8.53% return is fair and reasonable for a regulated water utility. Woolridge PFT, pp. 50 and 51.

In addition, Dr. Woolridge believes his recommended 8.53% cost of equity is consistent with the authorized returns on equity for water companies as reported from AUS Utilities Reports. The range from the AUS Utilities Reports in authorized ROEs is 9.61% to 10.33% with a median of 9.99%. Dr. Woolridge's analysis indicates that since these reported authorized ROEs are dated, and adjusting for the lower capital costs indicated by the lower yields on utility bonds, his 8.53% ROE recommendation is consistent with the reported authorized ROEs for water companies. Woolridge PFT, pp. 50 and 51, Exhibit JRW-12, p. 1.

Dr. Woolridge also performed an analysis of the authorized and earned returns for publicly traded water utilities and their associated market to book ratios over the past decade. The median authorized ROE was 10.45% in 2002 and he reports this has

consistently declined over the past ten years with a median figure, as of 2012, of 9.99%. Earned ROEs also show a decline over the decade and have been below authorized ROEs for 9 of the past ten years. Overall, earned ROEs have been approximately 100 basis points below authorized ROEs with a median earned ROE of 8.40% as of 2012. Woolridge PFT, p. 52, Exhibit JRW-12, p. 2.

Dr. Woolridge also studied earned returns of water utilities relative to their adequacy to meet investor return requirements. To accomplish this he reviewed the average market to book ratios for publicly traded water utility companies as well as their authorized and earned ROEs. Dr. Woolridge found that the annual market-to-book ratios have declined over the decade, but with considerable variability. The peak was in 2004 at 2.36X. Over the past four years, the market-to-book ratios, for publicly traded water utilities have been in the 1.70X to 1.80X range. This indicates that the earned ROEs have been more than adequate to meet investors' return requirements. The market-to-book ratios for publicly traded water utilities have been above the market-to-book ratios for gas distribution and electric utility companies. Woolridge PFT, pp. 52 and 53, Exhibit JRW-12, p. 2.

### **Authority Analysis of Cost of Equity**

#### **a. Overview: Economic Changes and Survey of Allowed Returns**

The analyses undertaken by Ms. Ahern and Dr. Woolridge to determine the investor required return on equity contained differences within the accepted methodologies. The principal issues between their studies were the selection of a proxy group, the growth factor in the DCF calculation, and the determination of an equity risk premium. The Company's common stock is not publicly traded and as such, a market-based common equity cost rate cannot be determined directly for the Company. Therefore, the Authority has assessed the market-based common equity cost rates of water utilities of similar risk in order to derive a recommended common equity cost rate applicable to the Company. The Authority has carefully reviewed and considered the testimony of the two cost of capital witnesses, noting the compelling testimony of each, and performed its own cost of capital calculations using data from the instant proceeding.

The Company provided the following financial and economic statistics related to Gross Domestic Product (GDP), Consumer Price Index (CPI), U.S. Treasury rates and other relevant information covering the changes in these indices from the time of its last rate case through the most recent quarter. This information is contained in the table below:

Financial/Economic Indicator	2010 (3 <sup>rd</sup> Qtr)	2010 (4 <sup>th</sup> Qtr.)	2013 (1 <sup>st</sup> Qtr.)	Change 2010to 2013
Gross Domestic Product (GDP) (Trillions)	14.576	14.736	16.010	1.43
Consumer Price Index (CPI)	1.140	1.500		(1.14)
US Treasury Bills (90-day)	0.150	0.140	0.090	(0.06)

US Treasury Bills (180-day)	0.190	0.190	0.110	(0.08)
US Treasury Bonds (10-year)	2.650	3.290	1.960	(0.69)
US Treasury Bonds (20-year/30-year)	3.470	4.170	2.780	(0.69)
State Allowed ROEs for utilities	N/A	N/A	N/A	N/A
Market-to-book ratios for the Company	N/A	N/A	N/A	N/A
Market -to-book ratios for the Water Utility Industry	201.0	185.4	203.9	2.90

Response to Interrogatory FI-23.

The Authority notes that in the 2010 Aquarion Rate Case Decision an allowed ROE of 9.95% was approved. Recent approved water utility allowed ROE's are as follows:

Water Utility	ROE	Decision Date
Arizona Water – Eastern Group	10.55%	February 20, 2013
Middlesex Water	10.15%	July 18, 2012
Cal Water/SJW/Cal AWW/Golden State	9.99%	July 12, 2012
New Jersey American	10.15%	May 1, 2012
Aqua New Jersey	10.15%	April 11, 2012
AWC - Massachusetts	10.25%	March 30, 2012
Average	10.20%	

Morrissey PFT, p. 13.

The Authority considered the above economic statistics and recently approved water utility allowed ROEs in its own ROE calculations for the Company.

#### **b. Selection of Proxy Group**

In choosing a proxy group, for a cost of equity analysis, the Authority considered the criteria that assess the risk and overall comparability to the Company for the nine member water proxy group. The Authority notes that the Company is not publicly traded and as such, no stock market data exists. The Authority developed criteria for the selection of a proxy group, which are: 1) being a water utility subject to regulation from a state utility commission; 2) publicly traded; 3) not involved in any acquisition or merger activity; 4) they have 70% or greater of 2011 total operating income derived from and 70% or greater of 2011 total assets devoted to regulated water operations; 5) Value Line beta; and 6) they had not publicly announced that they were involved in any major merger or acquisition activity. The following table shows some of these criteria:

Water Utility	Operating Revenue	% Water Revenues	Net Plant (\$mil)	S&P Bond Rating	Common Equity Ratio	Beta
American States Water Co.	466.9	59	908.9	A+	57.5%	.70
American	2,876.9	89	11,584.9	A	44.3%	.65

Water Works Co.						
Aqua America	770.5	96	3,936.2	AA-	45.4%	.60
Artesian Resources Corp.	70.6	90	366.6	NR	49.9%	.60
California Water Service Group	560.0	100	1,438.4	AA-	45.4%	.65
Connecticut Water Service	83.8	100	447.9	A	49.5%	.75
Middlesex Water Company	110.4	89	435.2	A	51.1%	.70
SJW Corporation	261.5	96	816.0	A	43.5%	.85
York Water Company	41.4	100	239.5	A-	54.0%	.70
Mean	582.4	91.0	2,241.5	A	49.0%	.69

Both cost of capital expert witnesses used the above nine member proxy group of water utilities in their analysis of the Company's cost of equity. However, Dr. Wooldridge used a second proxy group of gas utilities. The Authority considered the gas utility group of Dr. Woolridge, but rejected that group as being non-comparable to the Company since these utilities are in the local gas distribution industry. By Dr. Woolridge's own admission, "It should be highlighted, however, that gas distribution companies do face the risk of substitution whereas water companies do not." Wooldridge PFT, p. 12. The Authority finds that the above nine member water utility group is comparable to the Company. For the purposes of the Authority's analysis, it is more important that this proxy group as a whole be a suitable proxy for the Company than for each and every one of the 9 water utilities, in the group, to be a perfect proxy. This is because the results of the Authority's group stem from an average of that group and are not distorted if less suitable members of the group cancel each other out. In support of this non-risk comparability of water utilities versus gas utilities Ms. Ahern stated:

I've conducted a study of the relative risk of gas companies, water companies, electric and combination companies, and the results of that study indicate that gas companies no longer -- you know, I no longer consider them comparable in risk to water utilities. They tend to earn relative to their authorized ROEs much better than the water companies do. They're in better cash flow positions. They're less capital-intensive. The depreciation rates are much lower.

Tr. 6/20/13, pp.1088 and 1089.

Differences in beta show that water utilities at a .70 beta are riskier than gas utilities at a .65 beta. Woolridge PFT, p. 42, Exhibit JRW-11. In addition, the Authority considered further evidence from Ms. Ahern who stated:

A final indication of the relative investment risk of water utilities compared with electric, combination electric and gas and natural gas utilities, are trends in earned ROEs. As shown on page 6 of Schedule PMA-3, earned returns on average for water utilities are generally below those of electric, combination electric and gas and natural gas utilities during the ten years ended 2011.

Late Filed No. 55, Attachment 1, p. 14.

In addition, Dr. Woolridge's gas proxy group has a mean percentage of gas revenues of 73% which indicates a substantial amount of their revenues are derived from nonutility operations and therefore, not comparable to another regulated utility with a higher percentage of regulated operations such as the Company or the water proxy group at 91.0%. In addition, the gas proxy group used by Dr. Woolridge has a common equity ratio of 46.0% which is less than the Company's common equity ratio of 51.53% and less than the water proxy group of 49.0%. This the Authority translates to greater financial risk of the gas proxy group compared to the Company and the water proxy group and as such, not risk comparable. Due to these factors the Authority accepts the nine member water utility group, used by both Ms. Ahern and Dr. Woolridge as the proxy group that is most close in risk to the Company.

### **c. DCF Model**

The Authority finds the DCF model is market-based since market prices are utilized in developing the dividend yield component of the model. The Authority performed its own DCF calculation using the traditional DCF methodology. To develop the dividend yield of  $D_1/P_0$ , the PURA used the dividend yields for the period December 2012 through May 2013 using the Authority's adopted proxy group of the nine water utilities used by Ms. Ahern and Dr. Woolridge. In a DCF calculation, the Authority finds an average 60-trading day period, or 90-calendar day (assuming 20 trading days per month) dividend yield to be preferable since it a long enough period to smooth out any stock aberrations but short enough to bring current information into the calculation. The Authority finds a spot or 30-day average dividend yield could be subject to volatility due to the economic and capital market conditions. In addition, if a longer than 60-day trading period is used this data could become stale due to economic and capital market conditions and as such not representative of current market conditions. The Authority used the dividend yields developed by Ms. Ahern which are 2.86% American States Water Co., 2.62% American Water Works Co., 2.62% Aqua America, 3.68% Artesian Resources Corp., 3.33% California Water Service Group, 3.28% Connecticut Water Service, 3.92% Middlesex Water Company, 2.69% SJW Corporation, and 2.97% York Water Company. The simple average of these is 3.11%. Specifically, the inputs to these dividend yields are an indicated dividend at March 4, 2013, divided by the

average closing price of the last 60 trading days ending March 4, 2013, for each water utility. Ahern PFT, Schedule 6, p. 1.

In choosing the growth rate for the DCF model, the Authority used projections from multiple sources found in the record which are Value Line, Reuters, Zacks, and Yahoo. The Authority finds these sources to be used by investors to formulate investment decisions. There was debate between the use of historic growth rates and projections. Ms. Ahern used projections exclusively while Dr. Woolridge used historic growth rates and projections. These projected growth rates use historic information to formulate the projection and as such historic information is included in these projections. Tr. 6/20/13, p. 999. In addition, regarding analysts' EPS projections, Ms. Ahern stated that, "They are generally their best estimate based on their look at historical growth rates, so they're already counted in there. You don't – That's why I don't think you need to look at historical growth rates, because you'd be double counting." Tr. 6/20/13, p. 1104. In the opinion of the Authority, what is most important is that these projections influence investor behavior when purchasing stocks and therefore using analysts' forecasts are a good source to measure investor expectations. Tr. 6/20/13, p. 1060.

Consistent with the requirements of the Hope Decision, returns must be sufficient to attract capital and as such, growth levels must be based upon investors' expectations of growth, rather than historical growth. The Authority used growth in earnings exclusively based on the record of this docket showing that financial literature supports security analysts' EPS growth rate projections as superior for use in a DCF analysis. Response to Interrogatory FI-106. The Authority takes note that long-term, there is not growth in DPS without growth in EPS. Market prices are more highly influenced by security analyst's earnings expectations than expectations in dividends. The Authority agrees with Ms. Ahern that "the use of earnings growth rates in a DCF analysis provides a better matching between investors' market price appreciation expectations and the growth rate component of the DCF." Ahern PFT, p. 22.

The Authority, for each of the nine water utilities in the proxy group, used the average dividend yield and adjusted it by the average growth factor to calculate next period's dividend yield as prescribed in the DCF model. The dividend adjustment was done using the (1+.5g) methodology. This adjusted dividend yield was added to the average projected growth in EPS to obtain the equity cost rate. The following is the Authority's determination of the DCF equity cost rate for the Company:

Water Utility	Avg. Div. Yield	<u>Value Line</u> Projected 5 Year Growth in EPS	Analysts Projected 5 Year Growth in EPS from Reuters	Analysts Projected 5 year Growth in EPS from Zacks	Analysts Projected 5 Year Growth in EPS from Yahoo	Average Projected 5 Year EPS Growth	Adj. Div. Yield	Equity Cost Rate
American States Water Co.	2.86%	5.50%	6.00%	6.00%	6.00%	5.88%	2.94%	8.82%

American Water Works Co.	2.62%	9.00%	9.60%	8.50%	8.50%	8.90%	2.74%	11.64%
Aqua America	2.62%	7.00%	6.20%	6.90%	4.90%	6.25%	2.70%	8.95%
Artesian Resources Corp.	3.68%	NA	NA	NA	4.00%	4.00%	3.75%	7.75%
California Water Service Group	3.33%	6.00%	6.00	5.00%	6.00%	5.75%	3.43%	9.18%
Connecticut Water Service	3.28%	7.50%	NA	NA	6.10%	6.80%	3.39%	10.19%
Middlesex Water Company	3.92%	7.00%	NA	NA	2.70%	4.85%	4.02%	8.87%
SJW Corporation	2.69%	8.00%	NA	NA	14.00%	11.00%	2.84%	13.84%
York Water Company	2.97%	NA	NA	NA	4.90%	4.90%	3.04%	7.94%
Mean								9.69%
Median								8.95%

Ahern PFT, Schedule 6, p. 1.

The Authority's DCF analysis showed a mean of 9.69% and a median of 8.95% for the proxy group. The mean is defined as the quotient of the sum of the values divided by the number of values in the given set of data. The median is defined as given a set of values it is the value of the middle data point when the values are arranged in order of magnitude.

Ms. Ahern used the median of the proxy group as the DCF result for the Company stating that:

In arriving at a conclusion of a DCF-indicated common equity cost rate for the proxy group, I have relied upon the median of the results of the DCF, due to the wide range of DCF results as well as the continuing volatile capital market conditions in light of the continuing fragile economic recovery, and to not give undue weight to outliers on either the high or the low side. In my opinion, the median is a more accurate and reliable measure of central tendency, and provides recognition of all the DCF results.

Ahern PFT, p. 22.

The Authority agrees with Ms. Ahern that the median should be used since it does "not give undue weight to outliers on either the high or the low side." Ahern PFT, p. 22. The Authority finds a median DCF developed equity cost rate of 8.95% to be fair and reasonable for the Company.

**d. CAPM**

The CAPM is based on the theory that the relevant risk of any asset is its relative contribution to the total variability of the market portfolio held by all investors. That is to say, investors are able to invest in a variety of portfolios of different risks and made up of various combinations of assets including a risk free asset. This risk free asset has no chance of default and so no default risk and has a guaranteed real rate of return. Under these parameters, a rational investor would only invest in market portfolios yielding a return comparable to a similar risky combination of a perfectly diversified market portfolio and the risk free asset. In this situation, an investor would only need to be compensated for a company's non-diversifiable risk since any other risk could be eliminated in a properly balanced portfolio.

The Authority applied the CAPM to its proxy group using the standard formula of  $K = R_f + B (R_m - R_f)$ . The Authority determines Treasury Bonds should be the risk-free rate proxy. The Authority used a forward risk free rate since ratemaking is prospective in nature and investors investing horizon is long-term. The Authority used the risk free rate developed by Ms. Ahern of 4.29%. This risk free rate is based on the average of the consensus forecast of the reporting economists in the March 1, 2013 Blue Chip of the expected yields on 30-year U.S. Treasury bonds for the 6 quarters ending with the second calendar quarter of 2014 of 3.30% averaged with the historical arithmetic mean income return on long-term U.S. Treasury Bonds of 5.28%. The Authority agrees that for this particular time period, averaging the prospective and historical yields on U.S. Treasury Securities is acceptable in that in the current U.S. Treasury securities market the Federal Reserve Bank is artificially and indefinitely keeping interest rates low through mid-2015 due to concerns over the struggling U. S economy. Due to this the current 30-year U.S. Treasury Bond yields and the consensus forecasted yields are at historical and unprecedented lows and as such not representative of the long-term cost of capital. Tr. 6/20/13, pp. 1056-1060. Testimony was given by Ms. Ahern quoting reputable sources such as Value Line that interest rates are forecasted to increase in the future stating, "On May 24, 2013 Value Line published its quarterly forecast for the U.S. economy, and in it, they said that the feds funds rate, ten year Treasury, long-term Treasury's, triple A corporate and prime rate were expected to rise between 36 percent and 650 percent by 2016 . . ." Tr. 6/20/13, p. 1056. The Authority since interest rates are projected to rise in the future used prospective interest rates to determine the risk free rate of 4.29%.

The beta for anyone stock is the average variability of the stock's return ( $R_s$ ) relative to the market rate of return ( $R_m$ ). Beta measures the non-diversifiable risk relative to the perfectly diversified portfolio. For the exact measure, the Authority used the Value Line beta for each member of the 9 member water utility proxy group. The beta in the CAPM formula for each of the 9 member water utility proxy group is American States Water Company .70; American Water Works Company, Inc. .65; Aqua America, Inc. .60; Artesian Resources Corporation .60; California Water Service Group .65, Connecticut Water Service, Inc. .75; Middlesex Water Company .70; SJW Corporation .85; and York Water Company .70. Combining these creates a mean of .69 and a median of .70.

The  $(R_m - R_f)$  part, or equity risk premium, of the CAPM formula is the hardest to measure. This variable represents the difference between the required rate of return on a particular risky asset and the rate of return on a riskless asset. This is known as the market risk premium. The Authority used an equity risk premium based on data of equity risk premiums in the record. The Authority chose its equity risk premium from studies provided from Dr. Woolridge. The Authority chose the Ibbotson study on historical returns from 1926 through 2012 based on an arithmetic calculation of 5.70%, ex ante research from Damodaran using projections published in 2013 of 5.50%, the Duke University CFO magazine survey of 350 CFOs of 4.50%, and the Ibbotson and Chen historic supply model using an arithmetic calculation of 6.13%. The simple average of these is 5.46%. This 5.46% already represents the  $(R_m - R_f)$  calculation.

The Authority also considered Ms. Ahern's equity risk premium calculations to add the most diverse group considered for the equity risk premium. The Authority looked to Value Line as a source for an equity risk premium. The Authority used Ms. Ahern's methodology for a forecasted equity risk premium since ratemaking is prospective in nature. The Authority used the Value Line derived forecasted total market equity risk premium as calculated by deducting the 4.29% average of the March 1, 2013 Blue Chip consensus estimate of the expected yield on U. S. Treasury Notes and the historical arithmetic mean income return on long-term government bonds from the Value Line projected total annual market return of 13.29% which makes for a forecasted total market equity risk premium of 9.00% which is the  $(R_m - R_f)$  calculation. The Authority finds that Value Line is used extensively by investors and therefore, should represent investor expectations which are precisely what is attempting to be measured. Combining data from Dr. Woolridge showing a 5.46% equity risk premium with data from Ms. Ahern showing a 9.00% equity risk premium using a simple average, the Authority judges an equity risk premium of 7.23% (9.00% + 5.46%) is appropriate.

The calculation of the CAPM is shown in the following:

Water Utility	Risk Free Rate	Beta	Equity Risk premium	CAPM Cost of Equity
American States Water Company	4.29%	.70	7.23%	9.35%
American Water Works Company, Inc.	4.29%	.65	7.23%	8.99%
Aqua America, Inc.	4.29%	.60	7.23%	8.63%
Artesian Resources Corp.	4.29%	.60	7.23%	8.63%
California Water Service Group	4.29%	.65	7.23%	8.99%
Connecticut Water Service, Inc.	4.29%	.75	7.23%	9.71%
Middlesex Water Company	4.29%	.70	7.23%	9.35%
SJW Corporation	4.29%	.85	7.23%	10.44%
York Water Company	4.29%	.70	7.23%	9.35%
Mean				9.27%

**e. Business Risk Adjustment**

Ms. Ahern calculated a business risk adjustment due to the Company's small size relative to the proxy group. Her determination was based upon the size premiums for decile portfolios of New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and NASDAQ listed companies for the 1926-2012 period and related data from SBBI-2013 Risk Premium. She calculated this by using the average size premium for the 6<sup>th</sup> decile which the proxy group of 9 water companies fall compared with the average size premium for the 8<sup>th</sup> decile in which the market capitalization of the Company would fall if its stock were traded and sold at the March 4, 2013 average market/book ratio of 214.5% experienced by the 9 water companies. The size premium spread between the 8<sup>th</sup> decile and the 6<sup>th</sup> decile is 0.74%. Due to this, Ms. Ahern made an upward adjustment of 0.05% to reflect the Company's greater relative business risk due to its smaller size.

Dr. Woolridge asserted that a business risk adjustment for the Company is not necessary. He cited an article from Standard & Poors that addressed the issue of water company size and risk. The Standard & Poor's publication indicated the following:

Our criteria revision reflects our view that for general obligation ratings, a small and/or rural issuer does not necessarily have what we consider weaker credit quality than a larger or more-urban issuer. Although we assess these factors in our credit analysis for some revenue bond ratings, we believe many municipal systems still exhibit, in our view, strong and stable credit quality despite size or location constraints. While we believe that smaller or rural utility systems may not necessarily benefit from the economies of scale that can lead to more-efficient operations or lower costs, in our view, they can still have affordable rates, even in places with less-than-favorable household income and wealth levels.

Woolridge PFT, p. 53.

The Authority concludes that a business risk adjustment is not necessary.

**f. Credit Risk Adjustment**

The Authority takes note of Ms. Ahern's credit risk adjustment of 18 basis points. Credit risk is the potential loss of principal due to a borrower's inability to repay. This is brought about by the borrower expectations to use future cash flows to pay a debt. Compensation for this risk assumed by the investor is through interest payments. Returns on investments are dependent on credit risk such that the yields on bonds correlate strongly to their perceived credit risk. To assess credit risk rating agencies such as S&P, Moody's and Fitch evaluate the credit risks of thousands of corporate issuers on an ongoing basis taking into consideration the borrowers' collateral assets, revenue-generating ability, and management. These rating agencies assign credit

ratings to individual borrowings that reflect credit risk. The higher the rating the lower the credit risk and conversely the lower the rating the higher the credit risk. This lower credit risk bears a lower cost of borrowing. Response to Interrogatory FI-102.

Ms. Ahern recognized the difference in credit risk between the Company and the nine member water utility proxy group based on Moody's bond rating. Ahern PFT, pp. 37 and 38; Tr. 6/20/13, p. 1136. The Company is assigned a bond rating of Baa1 compared to the average Moody's bond rating of the nine water companies of A3. Ahern PFT, Schedule 8, p. 2. Ms. Ahern believes that, the proxy group of nine water companies is considered a lower credit risk than the Company. The Authority concurs with this assessment. The OCC's cost of equity witness Dr. Woolridge accepted this 18 basis point increase for credit risk and incorporated this into his cost of equity recommendation.

The Authority accepts the calculation of a credit risk adjustment based on Moody's bond rating of the Company and the proxy group. As Ms. Ahern did the Authority made an upward adjustment to the common equity cost rate based upon the nine water companies. This adjustment was accomplished by taking one-third of a recent three-month average spread of 0.54% between Moody's A and Baa rated public utility bond yields, or 0.18% [ $0.18\% = 0.54\% * (1/3)$ ]. This methodology was the same used by Ms. Ahern and adopted by Dr. Woolridge.

#### **g. Revenue Adjustment Mechanism**

Public Act 13-78 in Section 3 provides for a revenue adjustment mechanism that reconciles in rates the difference between actual revenues and allowed revenues. The Company proposed a revenue adjustment mechanism comporting to this legislation. Dixon PFT, pp. 18 and 19. The Authority considered the effect on the investor perceived risk of the Company due to this new revenue adjustment mechanism.

Aquarion does not believe that a revenue adjustment mechanism would lower investor perception of the Company's business risk and therefore, decrease the allowed ROE granted by the Authority. The Company asserts that this revenue adjustment mechanism is risk neutral in as much as it would remove both the downside as well as the upside of achieving allowed revenues. The Company further stated that this revenue adjustment mechanism should act as a secondary measure to properly developed rates that best match revenues to costs. It is the Company's position that if it is accurate in projected and recognizing customer demands, the revenue adjustment mechanism proposed in Public Act 13-78 will have no effect on the risk of not achieving allowed revenues or the return on equity. Response to Interrogatory FI-138. Ms. Ahern provided evidence from various studies one of which indicated that:

1. Theoretically and practically, decoupling reduces investment risk of public utility stocks.
2. The impact of decoupling stock returns, risk and cost of capital cannot be isolated nor measured (to date) due to the myriad of other risk drivers impacting the investment risk of stocks.

Late Filed Exhibit No. 54, p. 32.

The OCC contends that a revenue conservation adjustment clause that removes the risk of not achieving allowed revenues should lower the business risk of the Company. This lower business risk associated with a revenue conservation adjustment clause should produce a lower allowed return on equity. Response to Interrogatory FI-207. The OCC was unable to place a basis point decrease due to this reduction in risk from a revenue adjustment mechanism. It is Dr. Woolridge's opinion that it is ". . . very difficult to quantify the reduction in ROE associated with a lower risk level due to a revenue conservation adjustment clause that removes the risk of not achieving allowed revenues." Response to Interrogatory FI-208. The first reason for this is that since this is a prospective change there is a lack of history of data to analyze the impact of a revenue conservation adjustment clause. A second reason is that other water utilities have various adjustment clauses for different factors such as conservation, investments and expenses and as such comparable empirical analyses are not straight forward. Response to Interrogatory FI-208.

The AG asserts that "[t]he Authority should substantially reduce Aquarion's ROE to account for risk reducing effects of the water revenue decoupling effects of the water revenue decoupling approved in Public Act 13-78." The AG believes a reduction of 50 basis points is necessary since this revenue adjustment mechanism has a profound impact on a water utilities' cash flow, revenue stability, and financial risk. Brief, pp. 10 and 11.

The Authority finds there must be a reduction in risk from the revenue adjustment mechanism as found in Section 3 of Public Act 13-78 when the Company has argued that historically, allowed revenues have been lower than actuals. The Authority takes into consideration the evidence that this reduction in risk cannot be measured and as such finds that only a nominal reduction of 10 basis points should be made to recognize this reduction in risk.

### **Earning Sharing Mechanism**

Under Public Act 13-78 Section 2(f) the Authority is directed to

(f) Concurrent with implementation of a revenue adjustment mechanism pursuant to subsection (b), (c) or (d) of this section, the authority shall establish an earnings sharing mechanism that provides for any earnings in excess of the allowed return on equity to be shared equally between ratepayers and shareholders.

With the implementation of the revenue adjustment mechanism, the Authority implements an earnings sharing mechanism to be measured on a cost of capital basis. Financial information should be used from the current financial filing made by the Company ordered in the March 3, 1987 Decision in Docket No. 86-09-06, DPUC Review of the Financial and Operational Results of the Connecticut Public Service Companies. Measurement of earnings shall be done on an annual basis from their

quarterly filing dated year end December 31. The calculation shall be completed no later than 30 days after the Company's filing of their December 31 financial information and based on any earnings in excess of the allowed return on equity to be shared equally between customers and shareholders. All customers should receive this earnings sharing on a proportional charge basis on the level of the charges over the last year. The Company should submit this earnings sharing mechanism filing to the Authority for its approval. The proportional charge credit shall be calculated using a forecast of sales for the upcoming recovery year. The amount credited shall be tallied and reported to the Authority following completion of the recovery year. Once approval is obtained, the Company should credit customer's bills over the next year if an earnings sharing is available. Tr. 7/9/13, pp. 1426 and 1427.

### Premium Rate of Return

Public Act 13-78 in Section 8 provides that the Authority may award a premium rate of return to a water company that has acquired non-viable systems. Although the Company did not propose a specific rate of return premium in the Application before Public Act 13-78 was passed, Aquarion now believes that a 25- to 50-basis point premium is deserved due to the need to consolidate the state's many under-funded water systems. The acquired companies did not have the economic viability to solve the area wide water problems in this region. These acquisitions were approved by the Authority. The Company stated that these approvals were determined by the Authority to have benefits that will accrue to the customers of the acquired systems as well as the region as a whole. Late Filed Exhibit No. 4. The requested 25- to 50-basis points produces a range of approximately \$1.4 million to \$2.73 million in revenues. Tr. 7/9/13, p. 1424.

The AG opposes any premium rate of return be given to the Company stating that Public Act 13-78 makes awarding a premium ROE discretionary. The AG believes that the award of a premium ROE to the Company places additional unfair burdens on the Company's existing ratepayers who are already paying higher rates to support the acquisition of the 57 new water systems. Brief, pp. 11 and 12.

The Authority recognizes the following acquisitions by the Company:

Acquisition	Systems	Customers	Acquisition Date
Topstone	3	355	August 2011
Brookfield Water Company	2	210	December 2011
Rural Water Company	21	1,246	December 2011
Birchwood Water Company	1	91	December 2011
R.J. Black	14	926	March 2012
Meckauer Water Company	1	49	July 2012
United Water – CT	14	7,300	September 2012
Dunham Pond	1	37	December 2012

Subtotal Closed Acquisitions	57	10,214	
West Service Corporation	2	273	Pending
Indian Fields	1	55	Pending
Total	60	10,542	

Dunn PFT, p. 5.

Based on the subtotal of 57 closed acquisitions the non-viable systems were identified by Aquarion as United with 14 systems, Rural with 21 systems, and Brookfield Water with two systems. Tr. 7/9/13, p. 1425.

The Authority placed a dollar amount to the above acquisitions which is the following:

Water Utility	Docket No.	Purchase Price
United Water Company	12-03-08	\$38,932,000
Rural Water Company	11-06-17	\$800,000
Brookfield Water	11-06-07	\$1,300,000
Total		41,032,000

Late Filed Exhibit No. 4.

The Company notes that the state has encouraged larger more sophisticated water utilities such as the Company to acquire and consolidate operations of smaller water systems in Connecticut. These smaller systems are many times under-funded and as such, it proves difficult for these smaller companies to maintain the necessary capital replacement programs to meet regulatory requirements. The Company, to assist the state in these objectives, has started an acquisition program to help address water supply and operational issues that are common in the smaller water systems. The Company believes these smaller systems lack the capital and operational resources to remain viable over the long-term at rates that will be affordable. The Company's position is that by acquiring small water systems such as those recently acquired in the Danbury and Brookfield corridor, provides support for connecting many of the smaller water systems in that region. The Company asserted that this area offers the chance to develop a regional water resource planning solution that would address issues relating to water quality, quantity, and customer service. In addition, developing a long term water supply solution for this area will assist economic development which has stalled since these smaller water systems are not able to individually deliver the needed water resources. The Company foresees that its financial and operating expertise will translate to lower costs for customers over the short and long-term as a result of

operating efficiencies, a high level of customer service, and the beneficial coordination among other small systems in the area. Dunn PFT, pp. 5 and 6.

Public Act 13-78, Sec. 8, which modifies Section 16-262s of the general statutes indicates that:

(a)(1) In the case of a proposed acquisition of a water company that is not economically viable, as determined by the Public Utilities Regulatory Authority, in accordance with the criteria provided in subsection (b) of section 16-262n, by a water company that is economically viable, as determined by the authority in accordance with said criteria, upon petition of the acquiring water company and after notice and hearing, the authority may allow the acquiring water company to implement, and revise quarterly thereafter, a rate surcharge applied to the rates of the acquired water company or of both the acquiring water company and the acquired water company, as determined by the authority, that would recover on a current basis those costs of such acquisition, including a reasonable acquisition premium, and of needed improvements to the acquired water company's system, to the extent the authority deems such costs appropriate. The regulations adopted by the authority pursuant to section 16-262o shall apply for purposes of this section.

(2) The Public Utilities Regulatory Authority may allow the recovery of such reasonable acquisition premium when it is demonstrated that such proposed acquisition shall provide benefits to customers by (A) enhancing system viability, or (B) avoiding capital costs or savings in operating costs, or as otherwise determined by the authority. If an acquisition premium is authorized, the excess of the acquisition cost over the depreciated original cost shall be added to the rate base to be amortized as an addition to expenses over a reasonable period of time with corresponding reductions in the rate base.

(b) In the case of a proposed acquisition of a water company that is not economically viable, as determined by the Public Utilities Regulatory Authority in accordance with the criteria provided in subsection (b) of section 16-262n, by a water company that is economically viable, as determined by the authority in accordance with said criteria, the authority may, as part of the acquiring water company's next general rate case, award a premium rate of return to such acquiring water company when it is demonstrated that such proposed acquisition will provide benefits to customers by (1) enhancing system viability, or (2) avoiding capital costs or saving in operating costs, or as otherwise determined by the authority.

(c) In lieu of all or part of a rate surcharge, the authority may allow the acquiring water company to defer such costs of such acquisition for subsequent collection as part of its next general rate case.

The Authority has always had wide discretion to allow ROE's within a range of reasonableness and to recognize superior performance. The Legislative changes noted above have sent a clear message to incent larger, better capitalized water companies to

help resolve state-wide water issues. Recognition of extraordinary effort can be an incentive.

In this case, Acquarion didn't just acquire systems in the Broodfield/Litchfield area, it coordinated a master plan whereby the capital improvements for each acquisition incorporated, to the extent possible, engineering design that could be used to resolve problems at other water systems in the area that has required a solution to water quality and quantity issue for decades.

As noted on page seven of this Decision, Acquarion purchased 57 separate systems from eight different companies adding approximately 10,214 customers in roughly two years, resulting in the Company having 79 different systems to operate.

All of what Acquarion accomplished is unprecedented and likely never to be required again considering all of the consolidation that has occurred.

The Authority and the Department of Public Health (DPH) recognized the benefits of the Company acquiring nonviable water systems which provided for regional customer benefits. This was stated in the Decision dated December 28, 2011 in Docket No. 11-06-17, DPUC and DPH Joint Review of the Application of the Rural Water Company, Inc. for Aquarion Water Company of Connecticut to Acquire the Assets of the Rural Water Company, Inc.:

The Departments acknowledge water quality and quantity problems in this region of Connecticut that stretch back upwards of 20 years. Up until now, these problems seemed incapable of resolution due to the piecemeal approaches that were taken to deal with these issues. The Departments believe that Aquarion, with its resources and industry expertise, is suited to move this region's water situation in a positive direction with a more comprehensive and long term plan for water service.

Decision in Docket No. 11-06-07, p. 23.

The Authority recognizes and finds that the Company's claims that the state has encouraged larger more sophisticated water utilities such as the Company to acquire and consolidate operations of smaller water systems in Connecticut to be accurate. The Authority finds that several of the smaller underfunded systems that were acquired by the Company qualify as non-viable although this exact language was not used in the Dockets that approved the Company acquiring these systems. Non-viability is not only based on financial strength but also managerial and technological ability as well as the physical plant available to service customers.

The Company's acquisition of non-viable water systems the Authority finds has provided for a solution for water supply and operational issues that are common in the smaller water systems. The Authority agrees with the Company that the smaller systems of United Water, Rural Water, and Brookfield Water lacked the capital and

operational resources to remain viable over the long-term at rates that will be affordable. The Authority finds that by acquiring small water systems such as those recently acquired in the Danbury and Brookfield corridor provides support for connecting many of the smaller water systems in that region to be accurate. The Authority finds that the acquisition of the above discussed small water systems to be in the public interest.

Public Act 17-38 calls for the Authority to determine whether a premium ROE is warranted in the next general rate case which for the Company is the instant proceeding. In considering the total purchase price of \$41,032,000 from the above table the Authority finds that the Company's investment has been significant enough for a 50 basis point premium rate of return under Public Act 13-78, Section 8. The Authority finds a 50-basis point addition to the allowed ROE is warranted due to the acquisition of nonviable systems.

#### **h. Weights Given to ROE Methodologies**

The Authority finds that a weighting of the DCF and CAPM methodologies should be at a 70% DCF and 30% CAPM. The Authority has set this weighting in this particular instance, due to market and economic conditions and fluctuations. At this time, the Authority finds that market interest rates are stressed and as such, the DCF model is more appropriate. On the other hand, if interest rates are stable and earnings are stressed that affect dividend increases, earnings, and market prices then a risk premium approach such as the CAPM should be weighted more heavily. Therefore, the Authority finds a 70% weighting for the DCF and a 30% weighting for the CAPM is appropriate at this time. The weighting calculation is as follows:

Methodology	Result	Weight	Weighted Average
DCF	8.95%	70%	6.27%
CAPM	9.27%	30%	2.78%
			9.05%

#### **i. Conclusion on Allowed Roe**

The Authority took the 70%/30% weighted average of the DCF methodology of 8.95% and the CAPM average of 9.27% which equates to 9.05%. To this, the Authority added the credit risk adjustment of 18 basis and the 50 basis point premium rate of return, based on Section 8 of Public Act 13-78, for a total cost of equity of 9.73%. From this, the Authority subtracted 10 basis points for a reduction in risk as a result of the revenue adjustment mechanism. The allowed ROE for the Company is set at 9.63%. The Authority notes that this 9.63% is in the range of reasonableness established by the OCC cost of capital witness of 8.53%, the Company's requested ROE of 10.60%, and the ROE developed by the Company's expert witness of 10.85%. The Authority also notes that AUS Utilities Reports show a range of authorized ROEs for water utilities of 9.61% to 10.33% with a median of 9.99%. The Authority finds that the 9.63% authorized ROE for the Company is in line with other water utilities as reported in AUS Utilities Reports.

### Overall Rate of Return

Consistent with the legal guidelines defined in Conn. Gen. Stat. §16-19e(a)(4), the Authority identified a rate of return on the rate base that is deemed appropriate for the Company's overall capital structure. The Authority has identified the key components of the Company's capital structure, estimated the cost of each component of capital, and then calculated its overall cost of capital by weighting each component cost by its proportionate share of the overall capital structure. The capital structure which the Authority approves for rate making purposes is as follows:

Class of Capital	Amount	% of Total	Cost	Weighted Cost
Short-Term Debt	\$1,501,136	0.23%	2.99%	0.01%
Long-Term Debt	\$311,011,847	48.23%	5.24%	2.53%
Common Equity	\$332,277,399	51.53%	9.63%	4.96%
Total	\$644,790,382	100.00%		7.50%

Late Filed Exhibit No. 3, Schedule D-1.0 A, p. 1.

The Authority accepts the Company's rate year one capital structure as the pro forma capital structure used in the instant proceeding for rate making purposes. The Authority finds an allowed return on equity of 9.63% is fair and reasonable.

The Authority also finds that these rates, when applied to the rate base found reasonable for the Company, should produce operating income sufficient for Aquarion to operate successfully and serve its ratepayers, maintain its financial integrity, and compensate its investors for the risk assumed. For purposes of Conn. Gen. Stat. § 16-19(g), the Authority will monitor the Company's quarterly filed ROEs for overearnings based on the allowed ROE of 9.63% since this is the return on which revenue requirements are calculated.



## **CONSUMER SERVICE REVIEW**

### **Standard Bill Form and Termination Notice**

Aquarion's standard bill form, termination notice and customer rights notice were reviewed and found to be in compliance with applicable regulations. Application, Schedule H-2.0, pp. 2-6; Response to Interrogatory CS-20. Besides written notification of a pending termination, Aquarion will also contact the delinquent customer via outbound telephone calls various times during the delinquency period. Response to Interrogatory CS-18. Aquarion has also affirmed that unregulated charges are never included in a termination notice in compliance with applicable regulations. Response to Interrogatory CS-19. Aquarion has stated that it has made two changes in its procedures to encourage customers to pay their bills in a timelier manner. According to the Company, it initiated an automated outbound telephone call to customer with outstanding balances greater than \$100.00 on the 34<sup>th</sup> day of delinquency as a reminder that the bill is due. Also, Aquarion stated that it initiated an automated process in which correspondence is issued to customers who have defaulted on a payment arrangement. Previously, this was a manual process. Response to Interrogatory CS-34. Finally, Aquarion has indicated that it does not report delinquent customers to credit bureaus. Response to Interrogatory CS-32.

### **Policies and Procedures for Estimated Billing**

Aquarion submitted its policies and procedures for generating an estimated bill. Aquarion's system allows for either a manual calculation or its automated system to produce the estimated bill. For example, if no meter reading is submitted for billing, the automated system will automatically calculate a consumption estimate based upon a seasonal comparison based on the same billing period for the prior year. Application, Schedule H-2.0, p. 7. These estimated billing procedures have been reviewed and found to be in compliance with applicable regulations. Application, Schedule H-2.0, p.7; Response to Interrogatory CS-22. Aquarion's bill form and associated customer notices were also reviewed and found acceptable with one minor exception. Response to Interrogatory CS-21. Conn. Agencies Regs. §16-3-102 C 2 states:

When a company is unable to obtain a company reading during any billing period for which such company reading was scheduled to be made, the company shall provide the residential customer with a card requesting an immediate customer reading, instructing the customer that he may provide such customer reading to the company, and warning the customer that if no customer reading is received by the company in time to be used in preparing the bill (such time limit to be specified on the notice), an estimated bill will be issued. The company shall provide the customer with instructions for furnishing the customer reading to the company. The company may provide for customer readings by mail or by telephone or by both methods.

According to Aquarion, there are instances where meters that must be manually read are not provided a card requesting an immediate customer reading nor instructions

on how to provide a meter reading. Tr. 6/3/13, pp. 34-36; Late Filed Exhibit No. 5. Aquarion provides notification to customers after a second consecutive estimated bill. Response to Interrogatory CS-21. Aquarion stated that previously, it had left notification at the customer's premises. However the Company began to receiving complaints about this procedure as customers did not like passers-by to know that no one was home. Aquarion indicated that this practice of not leaving notification at the customer's premises has been in place for at least five years. Tr. 7/9/13, pp. 1458-1460. Aquarion's records also indicate that the issuance of estimated bills to customers happens very infrequently:

<b>Year</b>	<b>1 to 3 Months</b>	<b>4 to 6 Months</b>	<b>7 to 11 Months</b>	<b>12+ Months</b>
<b>2010</b>	1.68%	.28%	.10%	.08%
<b>2011</b>	3.61%	.45%	.13%	.09%
<b>2012</b>	.96%	.21%	.07%	.07%

### Response to Interrogatory CS-23

The extremely low percentage of estimated bills issued by the Company would appear to indicate that this matter is not a critical problem. However, the intent of Conn. Agencies Regs. §16-3-102 C. 2. was to permit a customer the opportunity to provide an actual meter reading and not an estimate. By not providing customers the immediate notification at the time of the first estimated bill, customers will not have the rights as expressed in the aforementioned regulation. Accordingly, the Authority will order Aquarion to revise its estimated billing policies and procedures so as to comply with all of the provisions of Conn. Agencies Regs. §16-3-102 C. 2. Furthermore, Aquarion will also be required to discuss any changes to its estimated billing policies and procedures that may be necessary for customers with meters that do not require manual meter reading (i.e., radio reading device) to insure compliance with §16-3-102 C. 2.

### **Customer Security Deposits**

The Authority has reviewed the current policies and procedures Aquarion utilizes to administer customer security deposits and finds them to be in compliance with Conn. Agencies Regs. §16-11-68 and §16-262-1. Application, Schedule H-2.0, p. 9; Responses to Interrogatories 24 and 25; Late Filed Exhibit No. 6.

### **Service Appointments**

Aquarion schedules service appointments for all of its Connecticut divisions between 8:00 a.m. and 4:00 p.m., Monday through Friday. Application, Schedule H-2.0, p. 9. The appointments are scheduled within two four-hour time blocks, between 8:00 a.m. and 12:00 p.m. or 12:00 p.m. and 4:00 p.m. However, if a customer desires, Aquarion can schedule service appointments for two-hour time blocks. If necessary, special arrangements can be made with a customer should an appointment be needed outside of the normal appointment window. Aquarion states that it will respond to emergency situations typically within the hour. Response to Interrogatory CS-26. In the event that a scheduled service appointment cannot be kept, Aquarion will contact the customer to reschedule. In the event that the Company does not arrive at the

scheduled appointment time, or fails to contact the customer to reschedule, Aquarion will issue a \$52.00 credit. Over the last three years, Aquarion has been able to keep 99.9% of its scheduled appointments. Response to Interrogatory CS-27.

### Customer Call Center

Aquarion maintains a customer call center to address customer complaints and inquiries. The operating hours are 8:00 a.m. to 5:30 p.m., Monday through Friday. Response to Interrogatory CS-37. Aquarion employs 13 full time customer service representatives to answer customer calls on a regular basis. If necessary, the Company can supplement this staff with other employees during times of high call volume or unplanned absences. Response to Interrogatory CS-38. Aquarion has established internal metrics for its customer call center. The Company's goal is to maintain an average speed of answer (ASA) of 50 seconds, an abandoned call rate (ACR) of 5%, and a first call resolution rate (FCR) of 90%. Response to Interrogatory CS-5. Statistics below submitted by Aquarion demonstrate its call center's performance against the Company's internal goals:

#### 2011

Month	ASA	ACR	FCR	Month	ASA	ACR	FCR
January	29	2.0%	97.6%	July	45	3.0%	97.3%
February	27	2.2%	97.1%	August	36	2.2%	96.9%
March	31	2.1%	96.8%	September	49	3.0%	95.9%
April	42	2.8%	97.4%	October	37	2.2%	97.9%
May	41	3.1%	96.8%	November	35	1.9%	97.9%
June	47	2.7%	97.1%	December	38	2.5%	97.7%

#### 2012

Month	ASA	ACR	FCR	Month	ASA	ACR	FCR
January	44	2.6%	97.2%	July	53	3.3%	97.2%
February	55	3.3%	96.7%	August	52	3.2%	97.2%
March	40	2.3%	97.3%	September	68	3.7%	97.2%
April	47	2.7%	96.9%	October	45	2.7%	96.8%
May	36	1.7%	97.5%	November	35	2.2%	97.1%
June	45	2.8%	97.4%	December	37	2.2%	97.2%

#### 2013

Month	ASA	ACR	FCR
January	42	2.6%	96.8%
February	34	1.9%	97.3%
March	47	2.7%	97.2%

Late Filed Exhibit No. 7.

As evidenced by the statistics above, Aquarion's call center has been able to meet or exceed the established Company goals.

## **Monthly Billing**

Aquarion stated that during 2013 the Company would begin transitioning to a monthly billing system from its present system of quarterly billing. This transition will begin with approximately 23,400 customers from Aquarion's Southern Division (Greenwich and Darien). Aquarion indicated that its customers would be better served if they were to receive their water bill on a monthly basis, similar to utility bills for other services (i.e. electric, gas, telephone). Some of the benefits that Aquarion expressed that customers would receive include greater flexibility for budgeting purposes and a means for customers to better gauge their own usage and conservation efforts. Aquarion stated that it too would benefit as the Company would be in a better position to monitor customer's usage and discover system leaks in a more timely fashion. Teixeira PFT, p. 19.

Aquarion intends to utilize the same standard billing format for monthly bills as is currently being utilized for quarterly billing. Response to Interrogatory CS-10. Further, Aquarion's procedures for collections activities specific to monthly billing will be similar to the procedures currently in place for the quarterly billing, except for the timing of telephone calls and notices to customers with delinquent accounts. Response to Interrogatory CS-7. In anticipation of the transition to the monthly billing system, Aquarion plans to provide multiple notices to customers advising them of this change. The notices will be in the form of a direct letter mailed to customers, a bill insert in the first monthly bill and an explanation included in the notes section of the first monthly bill. Response to Interrogatory CS-11.

Aquarion anticipates an increase in the call volume to its customer call center related to the transition to monthly billing. According to the Company, it expects to see an increase of approximately 20% in call volume. Responses to Interrogatories CS-9 and CS-14. Aquarion expects that when the transition of its Western Division customers occurs in 2014, the Company will require three additional full-time positions to manage the increase in call volume and billing inquiries. Aquarion also expects that it will require an additional three positions in 2015 in response to the transition of its Eastern Division customers. Response to Interrogatory CS-15. Aquarion expects that the full-time positions would be permanent additions. However, Aquarion plans on evaluating the impact of the monthly billing transition and could possibly reduce the number of additional full-time positions that are needed. Tr. 6/3/13, pp. 31 and 32.

As demonstrated in the section above, Aquarion's call center has been very effective in meeting the Company's internal performance goals. The Authority expects that Aquarion's call center is capable of continuing this level of work, but will order the Company to report, on a quarterly basis, its call center's performance so as to monitor any potential impact given the transition to the monthly billing system.

## **Manual Meter Reading Fee**

According to Aquarion, the Company had received several customer complaints regarding the replacement of its analog meters to meters that included a radio reading device. The complaints centered around two basic issues – a perceived threat to health

by radio frequency signals, and an invasion of the customer's privacy. Those customers with these complaints were refusing Aquarion access to their homes in order to change out the analog meter. Response to Interrogatory CS-28. Aquarion spoke with the customers who had concerns about the radio reading devices and those customers asked if the Company could provide them with options. Aquarion responded by recommending two options. The first option was to allow the customers to retain the analog meter and be assessed a manual meter reading fee. The second option was to install a meter pit at their home and relocate the meter from inside the home to the meter pit. Most of the customers who were provided these options selected the first as they did not want the radio reading device anywhere on their property. Response to Interrogatory CS-29. In response to these concerns, Aquarion has proposed a Manual Meter Reading Fee of \$25.00 per month for those customers who refuse to allow the installation of a radio reading meter or request that the Company install a manually read meter (analog meter). Application, Schedule H-2.0, Rules and Regulations for Service, Section I-13; Response to Interrogatory RA-11. For those customers who choose to have this option, Aquarion intends to provide a notification explaining the manual meter reading fee. The fee will be included separately on the bill. Aquarion also intends to note the account related to the customer's refusal to install the radio reading device. Aquarion's would then arrange for a replacement of the analog meter with a radio reading device at the time the customer moves out of the premise. Response to Interrogatory CS-29.

Aquarion stated it was aware of other utilities offering a manual meter reading fee, though none of these companies were operating within Connecticut. According to the Company, utility companies in California, Maine and Nevada were assessing fees similar to what Aquarion proposes. Aquarion noted that in these states, there were one-time set up fees which varied from \$20.00 to \$75.00 and monthly recurring charges that varied from approximately \$9.00 to \$12.00. Response to Interrogatory CS-30. As discussed earlier in this Decision, Aquarion's proposed manual meter reading fee structure of \$25.00 was deemed to be acceptable by the Authority.

Aquarion has stated that the Company has not yet had the opportunity to discuss with those customers concerned about radio reading devices the proposed fee for this service. However, those customers the Company did speak to regarding this issue were willing to pay an additional charge so as to avoid having the radio reading device installed at their premises. Tr. 6/3/13, pp. 39 and 40. Aquarion recognizes that providing this option provides an alternative to terminating service to customers who refuse the Company access to their meters. Recognizing that those customers that have complained about the radio reading devices have been individuals who were elderly or ill, Aquarion indicated that the proposed fee is a valuable alternative to offer. Tr. 6/3/13, p. 41. Aquarion also indicated that in the event that customers fail to pay the manual meter reading fee, those charges should be included in any termination notice or collection action. The Company argued that if customers are passionate about not having the radio reading device installed on their meter, Aquarion is offering an alternative. Tr. 6/3/13, pp. 41 and 42. The Authority agrees with this position. There is no requirement for Aquarion to offer its customers the manual meter reading fee. By doing so, the Company is recognizing a customer concern with the radio reading devices and providing an alternative. Any customer who refuses a utility company

reasonable access to their meter is subject to service termination pursuant to Conn. Agencies Regs. §16-3-100(b)(2)(G). Failure by the customer to pay for this particular service should be treated similarly as failure by the customer to pay for other regulated charges.

### **Customer Service Conclusion**

Overall, the Authority found Aquarion's customer service policies and procedures to be in compliance with applicable statutes and regulations, excluding those exceptions discussed previously in this section. The Authority also notes that Aquarion's customer service policies and procedures should insure that high-quality service is provided to its customer base.

### **FINDINGS OF FACT**

1. The Company has established the test year to be the twelve months ending December 31, 2012.
2. The Company proposed RY1 as the time period from October 1, 2013 through September 30, 2014.
3. The Company proposed RY2 as the time period from October 1, 2014 through September 30, 2015.
4. The Company proposed RY3 as the time period from October 1, 2015 through September 30, 2016.
5. The Company projected computed revenue requirements based on projections of revenues, rate base, expenses, and capitalization.
6. Aquarion is a Connecticut regulated water company as defined by Conn. Gen. Stat. §16-1(10).
7. Aquarion serves over 193,000 customers and an estimated population of 625,000 in 47 Connecticut cities, towns and municipalities.
8. The Company will not file another WICA application until April 2014, for WICA-eligible projects completed in late 2013 and 2014.
9. Pipeline replacement program investment for WICA-eligible water main replacement work ranges from \$18M in 2013 to \$25.5M in 2016 and 2017.
10. The Company's current depreciation rates are uniform across all divisions and consistent with the 2007 Aquarion Rate Case Decision.
11. The Company plans to spend approximately \$286.5M on future capital improvements between 2013 and 2017.

12. Most Aquarion systems have adequate supply to meet current and projected demands over a 50-year planning period. Deficiencies that exist typically involve newly acquired systems and the Company is actively addressing those issues.
13. The Company has acquired 57 systems since the 2010 Aquarion Rate Case Decision.
14. Major capital improvements to reduce water quality complaints implemented by the Company since the 2010 Aquarion Rate Case Decision, include pipe lining and replacement, pump station and treatment improvements, and reservoir aeration.
15. Pro forma gross additions completed and used and useful by September 30, 2013, amount to \$56,835,843.
16. The 2013 pro forma gross additions of \$56,835,843 are contributing \$3,444,363 to pro forma depreciation expense.
17. NRW percentages for each of the Eastern, Northern, Western and Southern Divisions are above the maximum allowable level of 15%.
18. The Company tests meters in sizes of 5/8-inch, 3/4-inch and 1-inch meters for each of its divisions every 12 years.
19. The Company's proposed Base Load approach is primarily premised on the Company's contention that billings for the first quarter (i.e., January, February and March) exhibit the least impact from weather-related use.
20. The Company's weather normalization adjustment (for each residential, commercial and public authority class in each division) is based on a four-year average of Weather Load (annual consumption less Base Load) per customer, instead of annual consumption per customer.
21. 2012 is the most recent year for which annual consumption and year-end customer count data is available.
22. Miscellaneous revenues are primarily comprised of antenna rental income and utility property rental income.
23. The Company has ten unique tariffs.
24. The Company added 57 new water systems through 8 acquisitions since its last rate increase application.
25. Differences in volumetric rate structures and fire charges exist among Company tariffs.
26. The Company provides up to 5MGD of water to the UWWC, located in New York.

27. The UWWC wholesale rate methodology was approved by the PURA and the New York Public Service Commission in a 1998 Operations Agreement.
28. The UWWC rate was based upon a standalone COSS formula.
29. The COSS rate was used in several earlier Aquarion rate cases.
30. The Company adjusted test year expenses, which were not specifically adjusted elsewhere, with an inflation factor of 3.075%.
31. The Company's inflation adjustment is intended to represent inflation from the mid-point of the test year to the mid-point of the rate year.
32. The 3.075% inflator is derived from the GDP price index taken from the February 10, 2013 Blue Chip Economic Indicators.
33. The 3.075% represents inflation for 21 months of July 2012 through March 31, 2014.
34. The Company applied a general inflation factor to expenses not adjusted for elsewhere of \$18,706,451.
35. The Company's inflation adjustment was \$575,223.
36. The GDP price index measures the prices paid for goods and services produced by the U.S. economy and is derived from the prices of PCE, gross private domestic investment, net exports of goods and services, and government consumption expenditures and gross investment.
37. The Company calculated interest expense by multiplying the total projected long-term debt outstanding by the composite cost of long term debt and added a similar amount calculated for short-term borrowings.
38. The RY1 pro forma interest expense adjustment of \$1,586,147 is derived by the difference of the rate year one interest expense of \$16,310,730 and the test year interest expense of \$14,724,583.
39. The test year interest expense is \$14,724,583.
40. The rate year one interest expense is a combination of short-term and long-term interest expense on the short-term debt and the long-term debt.
41. The Parent of the Company sponsors a qualified pension plan that Aquarion receives benefits from and contributes to.
42. The pension expense is calculated on the basis of the accounting rules set forth in ASC 715-30.

43. The discount rate was set at 4.60% for 2012 and 4.00% for 2013.
44. The return on asset assumption was set at 7.50%.
45. The salary increase assumption was set at 4.00%.
46. The return on plan asset assumption was set at 8.00% in 2009.
47. The pension plan assets are comprised of 55% equity and 45% bonds.
48. The Company closed the pension plan through the mechanism of a soft freeze for all non-union employees hired after October 1, 2009, and union employees hired after January 1, 2011.
49. The closing of the pension plan resulted in annual savings of approximately \$250,000 in 2010 and projected annual savings in each subsequent year, culminating in excess of \$500,000 reduced annual pension expense by 2024.
50. The pension plan expense is calculated on a calendar year basis which is the Company's fiscal year.
51. The Parent of the Company sponsors a PRBP to which Aquarion contributes and receives benefits from.
52. The PRBP expense is calculated on the basis of the accounting rules set forth in ASC 715-60.
53. The Company's allocation is 80.3% of the parents PRBP cost based upon the amount of time during the test year that employees charged to expense activities as opposed to those related to capital work or work done on behalf of subsidiaries.
54. The Company requested PRBP expense was \$2,572,009.
55. The Company is required to recognize PRBP benefits during the working career of employees, not after they retire.
56. Costs accrue from the date an employee is hired to the date of retirement when an employee is fully eligible to receive PRBP benefits.
57. The present value of future benefits would be determined by employee retiree demographics.
58. The discount rate assumption is set at 4.55%.
59. The rate of compensation increase assumption was set at 4.00% for life insurance valuations.

60. The expected return on plan assets assumption was set at 7.50% (net of expenses) for Union VEBA assets and 4.75% (net of expenses) for Nonunion and Life Insurance VEBA assets for 2011 and 2012.
61. In July 1996, the Company eliminated retiree medical benefits for new hires which resulted in annual savings of approximately \$4.2 million.
62. The discount rate, defined as the rate of interest under which the PRBP obligations could be settled, is intended to reflect market interest rates at the time of valuation.
63. The salary increase assumption is the long-term assumption of salary increase for all the employees in the PRBP.
64. The ROR is a long-term assumption used to calculate the expected investment income on the fair value of PRBP assets.
65. The health care cost trend rate assumption is formulated based on past and current health care cost trends which implicitly consider estimates of health care inflation, changes in health care utilization or delivery patterns, technological advances, and changes in the health status of plan participants.
66. Since its last rate case, by the mid-point of the new rate year the Company will have invested \$143 million in infrastructure improvements.
67. The Company's times interest earned ratio has decreased from 2010 to 2012 and is at 2.92% without rate relief.
68. The Company's fixed coverage ratio shows a low of 1.54 in 2012 and is bolstered under the scenario of rate relief to 1.71 and without rate relief drops to 1.38.
69. The Company's cash flow coverage ratio is at 2.47 in 2012 and decreases further without rate relief scenario to 2.12.
70. The Company's fixed coverage ratio is at 1.54 in 2012 and is bolstered under the scenario of rate relief to 1.71 and without rate relief drops to 1.38.
71. The Company's cash flow coverage ratio is 2.47 in 2012 and decreases further without rate relief scenario to 2.12.
72. The Company's current capital structure is comprised of 48.5% debt and 51.53% equity.
73. The equity ratio has decreased since issuance of the 2010 Aquarion Rate Case Decision 55% and the 2007 Aquarion Rate Case Decision rate case 58%.

74. Requested and approved capital structure for is 0.23% short-term debt, 48.23% long-term debt, and 51.53% common equity.
75. The debt structure is made up of the issuance of \$25.3 million of long-term debt in 2013 and additional financings required to support the capital expenditure program over the course of the three rate years.
76. Growth in rate base will be financed using equity and debt in the same proportion as the structure that exists at the end of the test year.
77. The Company calculated a range of reasonableness of 10.50% to 11.20% for an equity cost rate.
78. For a final ROE determination the company used the median of this range to provide for a 10.85% allowed ROE.
79. The DCF model assumes that an investor in the common stock of a company expects returns in the form of periodic dividend payments plus capital gains from the sale of the investment.
80. The DCF model equates the market price of the investment to the present value of the investor's anticipated cash flows at the investor's required rate of return or the cost of equity.
81. Using a DCF methodology, the cost of equity can be thought of as the discount rate that will equate the current price of a share of stock with the present value of future expected cash flows from the stock.
82. The CAPM is based on the theory that the relevant risk of any asset is its relative contribution to the total variability of the market portfolio held by all investors.
83. Under the CAPM theory, investors are able to invest in a variety of portfolios of different risks and made up of various combinations of assets including a risk free asset.
84. This risk free asset, under the CAPM, has no chance of default and has a guaranteed real rate of return.
85. The RP methodology is based on the principal that investors have historically earned a total return premium on common stock investments over those earned on bond investments.
86. Under the RP methodology, the observed premium compensates investors for bearing the higher degree of risk on common stocks as compared to bonds given the priority of claim on a firm's assets that bond holders have over common stock holders.

87. Assuming that investor expectations are realized on the average over the long run, it follows that the premium observed over historical periods provides an estimate to investor's current risk premium on common stock investments.
88. Ms. Ahern used a proxy group of nine U.S. water utilities that in her estimation are comparable to the Company's regulated water operations.
89. Both cost of capital expert witnesses used the same nine member proxy group of water utilities in their analysis of the Company's cost of equity.
90. The OCC used a second proxy group of seven local gas distribution companies as a second proxy group.
91. The Company utilized the single stage constant growth DCF model to determine the allowed ROE.
92. Ms. Ahern's DCF analysis used three data inputs of current stock prices  $P_0$ , the current annual dividends  $D_0$ , and estimated dividend growth rates  $g$  for each of the utilities in her proxy group.
93. For the unadjusted dividend yields, Ms. Ahern used a recent March 4, 2013 indicated dividend divided by the average of closing market prices for the 60 days ending March 4, 2013.
94. Ms. Ahern adjusted her dividend yields since DCF theory calls for the use of the full growth rate.
95. The growth rates used by Ms. Ahern in her DCF model were projected EPS growth rates from Value Line, Reuters, Zacks and Yahoo Finance and were all given the same weight.
96. Ms. Ahern's five year projected growth rates of earnings for the nine member proxy group ranged from 4.00% to 11.00% with a simple average of 6.48%.
97. Ms. Ahern relied on the results of two risk premium methodologies of the PRPM and a risk premium model using a total market approach.
98. The PRPM is based on the premise that volatility changes over time and is related from one period to the next particularly in financial markets.
99. The PRPM estimates the risk/return relationship directly since the predicted equity risk premium is generated by the prediction of volatility which is synonymous with risk.
100. Ms. Ahern's total market approach used a prospective public utility bond yield added to an equity risk premium.

101. Using the total market approach this equity risk premium is derived from a beta adjusted total market equity risk premium and an equity risk premium based upon the S&P Utilities Index.
102. Ms. Ahern determined the average expected yield on Moody's Aaa rated corporate bonds to be 4.02%.
103. Ms. Ahern made an adjustment of 0.33% to adjust for the average Aaa corporate bond yield to be equivalent to a Moody's A2 rated public utility bond resulting in an expected bond yield applicable to a Moody's A rated public utility bond of 4.35%.
104. Ms. Ahern evaluated the results of several market equity risk premium studies based upon Ibbotson Associates' data, Value Line's forecasted total annual market return in excess of the prospective yield on Moody's Aaa corporate bonds, and two different studies of the equity risk premium for public utilities with Moody's A rated bonds.
105. Ms. Ahern calculated the mean equity risk premium as 5.75% which is applicable to the proxy group of nine water utilities.
106. Ms. Ahern calculated a beta-adjusted equity risk premium of 5.60% for the nine member water company proxy group.
107. Ms. Ahern derived a 4.57% equity risk premium based upon the S&P utility index and Moody's A rated public utility bonds which was done by subtracting the S&P Utility Index total returns of 10.56% and monthly A rated public utility bond yields of 6.75% from 1928 to 2011 to arrive at an equity risk premium of 3.81%.
108. Ms. Ahern concluded that together using the PRPM with the total market approach the indicated RPM derived common equity cost rate is 11.26% was derived by giving greater weight to the PRPM results.
109. Ms. Ahern concluded that together using the PRPM with the total market approach the indicated RPM derived common equity cost rate is 11.26%.
110. Ms. Ahern applied both the traditional CAPM and the ECAPM to the nine water utilities in the proxy group and averaged the results.
111. The risk free rate Ms. Ahern adopted for both applications of the CAPM is 4.29%.
112. The 4.29% risk free rate is based on the average of the consensus forecast of the reporting economists in the March 1, 2013 Blue Chip of the expected yields on 30-year U.S. Treasury bonds for the six quarters ending with the second calendar quarter of 2014 of 3.30% averaged with the historical arithmetic mean income return on long-term U.S. Treasury Bonds of 5.28%.

113. Ms. Ahern used the average of the most recent thirteen weeks ending March 8, 2013, three to five year median total market price appreciation projections from Value Line for her estimation of the expected equity risk premium for the market resulting in a total annual return of 13.29%.
114. The Value Line derived forecasted total market equity risk premium is calculated by deducting the 4.29% average of the March 1, 2013 Blue Chip consensus estimate of the expected yield on U. S. Treasury Notes and the historical arithmetic mean income return on long-term government bonds from the Value Line projected total annual market return of 13.29% which makes for a forecasted total market equity risk premium of 9.00%.
115. The long-term income return on U.S. Government Securities of 5.28% was deducted from the SBBI monthly historical total market return of 11.83% resulting in an historical market equity risk premium of 6.55%.
116. Ms. Ahern relied on the median of the traditional CAPM and the ECAPM for the proxy group of 10.30% and 10.95%, respectively.
117. Ms. Ahern calculated the common equity cost rates for the domestic, non-price regulated companies that she believes are risk comparable to the nine member water utility proxy group.
118. For the non-price regulated companies, Ms. Ahern calculated the equity cost rates using the DCF, risk premium and CAPM methodologies in an identical manner relative to the market data of the nine member water utility proxy group.
119. Ms. Ahern provided a business risk adjustment of 0.05% due to the Company's small size relative to the proxy group.
120. Ms. Ahern calculated a credit risk adjustment based on Moody's bond rating of the Company and the proxy group.
121. Ms. Ahern believes that the proxy group of nine water companies is considered a lower credit risk than the Company.
122. Ms. Ahern made an upward adjustment to the common equity cost rate based upon the nine water companies by taking one-third of a recent three-month average spread of 0.54% between Moody's A and Baa rated public utility bond yields, or 0.18% ( $0.18\% = 0.54\% * (1/3)$ ).
123. Ms. Ahern believes that a common equity cost rate range of 10.70% - 11.20% is reasonable as well as conservative and will provide the Company with sufficient earnings to enable it to attract necessary new capital.
124. Dr. Woolridge applied the DCF and the CAPM to two proxy groups of publicly-held water utilities and gas distribution companies to produce an equity cost rate in the range of 7.3% to 8.6%.

125. Within the range of 7.3% to 8.6%, Dr. Woolridge used 8.35% as the equity cost rate for a water company at this time.
126. Dr. Woolridge relied primarily on the DCF model to estimate the cost of equity for the Company.
127. Dr. Woolridge believes the DCF model provides the best measure of equity cost rates for public utilities given the investment valuation process and the relative stability of the utility industry.
128. Dr. Woolridge used the constant growth DCF model since economics of the public utility business indicate that the industry is in the steady state or constant growth stage growth.
129. Dr. Woolridge's DCF analysis employed three data inputs of stock price, the current annual dividends, and estimated dividend growth rates for each of the utilities in his comparable group.
130. Dr. Woolridge calculated the dividend yield for his proxy groups by dividing stock price by dividends using the 6-month period ending May 2013 and the yield for May 2013.
131. Dr. Woolridge adjusted the dividend yield by one-half of the expected growth rate to reflect growth over the coming year in his DCF analysis.
132. Dr. Woolridge analyzed an array of measures of growth for each of the utilities in his two proxy groups.
133. Dr. Woolridge asserted that the DCF growth rate is the long-term projected growth rate in EPS, DPS and BVPS.
134. Dr. Woolridge calculated the DCF equity cost rate for his water proxy group at 8.10% and his gas utility proxy group at 8.60%.
135. Dr. Woolridge used the CAPM as a risk premium approach to calculate his two proxy groups cost of equity.
136. To estimate the investor required cost of equity, using the CAPM, Dr. Woolridge used three inputs of (a) the risk free rate of interest, (b) beta, and (c) the expected equity or market risk premium.
137. For the risk free rate Dr. Woolridge used the yield on US Treasury bonds which he found to be in the 2.5% to 4.0% range over the 2011-2013 time period.
138. Dr. Woolridge employed the betas for each of his proxy group of gas and water utilities as published in the Value Line Investment Survey.

139. The median beta for the utilities used by Dr. Woolridge's in his analysis utilities in his water and gas proxy groups are .70 and .65, respectively.
140. For the market equity risk premium of the CAPM, Dr. Woolridge used the methodologies of historical risk premiums, Ex ante (Puzzle Research), surveys, and building block theory.
141. Dr. Woolridge used a 5.00% equity risk premium in his CAPM.
142. Dr. Woolridge performed an analysis of the authorized and earned returns for publicly traded water utilities and their associated market to book ratios over the past decade.
143. The median authorized ROE for publicly traded water utilities was 10.45% in 2002 that has consistently declined over the past 10 years with a median figure, as of 2012, of 9.99%.
144. Earned ROEs for water utilities show a decline over the decade and have been below authorized ROEs for nine of the past 10 years.
145. Dr. Woolridge accepted Ms. Ahern's the credit rate adjustment of 0.18.
146. The Authority adopted the nine member proxy group of water utilities used by both Ms. Ahern and Dr. Woolridge as being risk comparable to the Company.
147. The Authority performed its own DCF calculation using the traditional DCF methodology.
148. To develop the dividend yield for the DCF, the Authority used the dividend yields for the period December 2012 through May 2013.
149. The Authority adjusted the dividend yield by one-half the growth rate to obtain the next period's dividend yield.
150. For the growth factor in the DCF, the Authority used the five year growth rate in earnings as projected by Value Line, Reuters, Zacks, and Yahoo Finance with an average of 6.48%.
151. The Authority applied the CAPM to its comparable group using the standard formula of  $K = R_f + B (R_m - R_f)$ .
152. For the CAPM, the Authority used a forward risk free rate of 4.29% since ratemaking is prospective in nature and investors investing horizon is long-term.
153. In its CAPM analysis, the Authority used the Value Line beta for each member of the nine member water utility proxy group.
154. The Authority used an equity risk premium of 7.23% in the CAPM calculation.

155. The Authority adopted Ms. Ahern's credit risk adjustment of .18%.
156. Based on Public Act 13-78 Section 8, the Authority awarded the Company a premium rate of 50 basis points based on its acquisition of non-viable water companies in Connecticut.
157. The Authority took the 70%/30% weighted average of the DCF methodology of 8.95% and the CAPM average of 9.27% which equates to 9.05%.
158. The Authority added the credit risk adjustment of 18 basis and the 50 basis point premium rate of return based on Section 8 of Public Act 13-78 for a total cost of equity of 9.73%. From the 9.73%, Authority subtracted 10 basis points for a reduction in risk as a result of the revenue adjustment mechanism for an allowed ROE of 9.63%.
159. Aquarion's estimated billing procedures do not allow customers receiving an estimated bill with a means to provide the meter reading or instructions on how to read the meter, as required in Conn. Agencies Regs. §16-3-102.
160. For calendar year 2012, less than 1% of bills issued by Aquarion were estimated.
161. Aquarion's customer call center is available from 8:00 a.m. to 4:00 p.m., Monday through Friday, for customer complaints and inquiries.
162. Aquarion maintains an internal goal for its customer call center of an average speed of answer of 50 seconds, an abandoned call rate of 5%, and a first-call resolution rate of 90%.
163. For the twenty-seven month period from January 2011 through March of 2013, Aquarion was able to meet its 50-second average speed of answer metric on all but four months. During that same time period, the Company was able to meet its abandoned call and first-call resolution metrics on every month.

## **CONCLUSION AND ORDERS**

### **CONCLUSION**

The requested increase in pro forma annual revenues, the proposed amended rate schedules under a three-year plan, and the proposed Base and Weather Load adjustments, as filed in the Application, are hereby denied.

Total annual revenues of \$176,513,655 are hereby approved subject to the Company complying with the Orders set forth below. The total annual revenues approved herein result in an overall revenue increase of \$13,915,886 over adjusted pro forma test year revenues of \$162,597,769. New rates will become effective upon Authority approval of the rate design compliance filing.

## ORDERS

For the following Orders, submit an original of the required documentation to the Executive Secretary, 10 Franklin Square, New Britain, Connecticut 06051, and file an electronic version through the PURA's website at [www.ct.gov/pura](http://www.ct.gov/pura). Submissions filed in compliance with PURA Orders must be identified by all three of the following: Docket Number, Title and Order Number.

1. No later than October 2, 2013, Aquarion shall file with the Authority for approval, five complete sets of tariffs, scored and unscored, and supporting workpapers discussed in Section II.F.6.
2. No later than October 15, 2013, Aquarion shall provide confirmation that the pro forma plant additions scheduled for completion by September 30, 2013, were in service as of that date.
3. No later than October 30, 2013, Aquarion shall acknowledge in writing that it will submit for the Authority's approval, any changes to its customer service practices, procedures or policies in writing at least 15 business days prior to the effective date of such changes.
4. No later than October 31, 2013 and annually thereafter, Aquarion shall file with the Authority worksheet detailing the calculations of regulatory liability amounts recorded and resulting from the election made under the IRS Rule Change for federal tax filings.
5. No later than December 31, 2013, and quarterly thereafter until December 31, 2014, Aquarion shall submit a report that contains the following customer call center performance metrics: average speed of answer; abandoned call rate; and first call resolution rate. Aquarion shall also include in each report a summary of the impact on call center volume due to the transition to monthly billing. Aquarion shall also include in each report a summary of the impact on call center volume due to the transition to monthly billing.
6. No later than December 31, 2013, Aquarion shall submit revised estimated billing policies and procedures that comply with all of the requirements of Conn. Agencies Regs. §16-3-102.
7. No later than February 1, 2014, the Company shall submit its first annual revenue reconciliation calculation for the approved rate surcharge RAM to the Authority for approval.
8. New customers acquired through a utility purchase will be provided service under the Eastern Division tariff as discussed in Section II.F.6.
9. The Company shall perform its next COSS as discussed in Section II.F.5.e.

10. The Company shall file, within ten days of receipt, a letter from the DPH that contains a statement that the Company's water quality meets the standards of the Public Health Code.
11. No later than 30 days after filing its 2012 and subsequent years' Federal income tax returns until its next rate case, Aquarion shall annually file a copy with the Authority. This filing shall also include an exhibit detailing the calculation of accrued tax benefits resulting from any election made under the repair tax deduction pursuant the IRS Rule Change.
12. On an annual basis no later than 30 days after the Company's filing of their December 31 financial information the Company shall file with the Authority, the amount of earnings sharing for customers based on a proportional charge basis on the level of the charges over the last year.
13. In its next rate filing, the Company shall include a detailed listing of its vehicles with the vehicle purchase date, mileage per year and function of the vehicle. The report shall include a listing of vehicle retirements with the dates of retirement.

**APPENDIX A – FIVE YEAR CAPITAL BUDGET**

DESCRIPTION	CATE.	SYS.	DIV.	2013	2014	2015	2016	2017
Putnam & Mianus WTP Capital Improvement Programs	WTP	GRE	S	\$4,170,000	\$2,850,000	\$1,325,000	\$2,000,000	
				<b>\$4,170,000</b>	<b>\$2,850,000</b>	<b>\$1,325,000</b>	<b>\$2,000,000</b>	
Main Renewals - East	Mains	VAR	E	\$4,000,000	\$3,000,000	\$3,000,000	\$3,000,000	\$3,000,000
Main Renewals - Acquisitions	Mains	ACQ	E	\$800,750	\$687,234	\$687,234	\$687,234	\$687,234
Main Renewals - United	Mains	UNITED	E	\$2,799,250	\$3,750,000	\$2,750,000	\$2,750,000	\$2,750,000
Main Renewals - West	Mains	VAR	W	\$5,000,000	\$2,100,000	\$2,100,000	\$2,100,000	\$2,100,000
Main Renewals - South	Mains	VAR	S	\$2,500,000	\$3,200,000	\$3,200,000	\$3,200,000	\$3,200,000
Main Renewals - North	Mains	SIM	N	\$1,000,000	\$800,000	\$800,000	\$800,000	\$800,000
State & Municipal Relocations - East	Mains	VAR	E	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
State & Municipal Relocations - West	Mains	VAR	W	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
State & Municipal Relocations - South	Mains	VAR	S	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
State & Municipal Relocations - North	Mains	SIM	N	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Additional WICA	Mains	VAR	E		\$8,662,766	\$9,662,766	\$10,162,766	\$11,162,766
Miscellaneous Pipeline Projects (All Divisions)	Mains	All	E	\$200,000	\$100,000	\$100,000	\$100,000	\$100,000
Ridge Ave Pump Station Discharge Main Improvements	Mains	GRE	S			\$1,000,000	\$1,000,000	
Misc. Main Renewals/(Capitalized Main Breaks(All Divisions)	Mains	All	E	\$700,000	\$435,500	\$435,500	\$435,500	\$435,500
Miscellaneous Capital Extensions (PI)	Mains	All	E	\$50,000	\$100,000	\$100,000	\$100,000	\$100,000
Torrington Interconnection Diversion Permit Compliance	Mains	LIT	E	\$11,000				
Monroe/Newtown Interconnection (Route 25)	Mains	UNITED	E	\$425,000				
Litchfield Hills WS Interconnection	Mains	UNITED	E	\$300,000				
Bedrock System Interconnection	Mains	UNITED	E	\$500,000				
Bethel Chimney Heights and Berkshire Office Park Interconnection	Mains	ACQ	E	\$285,000				
Bethel Chimney Heights to Meckauer Interconnection	Mains	ACQ	E	\$312,500				
Berkshire Office Park to Federal Rd Interconnection	Mains	ACQ	E	\$50,000	\$1,415,000			
Brookwood-Brookfield Interconnection	Mains	ACQ	E	\$200,000				
Greenfield Hills 423 W.L. Improvements (Redundancy, Cap., Pres)	Mains	MAIN	E		\$250,000			
				<b>\$20,833,500</b>	<b>\$26,200,500</b>	<b>\$25,535,500</b>	<b>\$26,035,500</b>	<b>\$26,035,500</b>
North Stamford Dam & Gatehouse Repairs	Dam	STAM	W	\$1,764,300				
Means Brook Dam & Gatehouse Rehabilitation	Dam	MAIN	E	\$22,000	\$22,000	\$1,600,000	\$2,000,000	
Saugatuck Gatehouse and Concrete Rehabilitation	Dam	MAIN	E	\$18,000	\$1,800,000	\$1,700,000		
Dam Modification Required to Make New Streamflow Releases - East	Dam	VAR	E				\$150,000	\$1,000,000
Aspectuck Dam Streamflow Release (and eel migration)	Dam	VAR	E	\$50,000				
Lakeville No. 3 Dam Repairs	Dam	SAL	E	\$40,000	\$1,134,950			
Hemlocks Dam Concrete Repairs	Dam	MAIN	E			\$250,000	\$2,500,000	
Dam Modification Required to Make New Streamflow Releases - South	Dam	VAR	S			\$250,000		\$1,000,000
Brush Pond Dam Repairs	Dam	GRE	S			\$200,000	\$750,000	\$750,000
Rockwood Dam Improvements	Dam	GRE	S	\$100,000	\$14,425	\$150,000	\$1,500,000	
Rockwood Reservoir Circulation Project	Dam	GRE	S	\$89,930				
Dam Modification Required to Make New Streamflow Releases - West	Dam	STAM	W			\$250,000	\$50,000	\$1,000,000
Aspectuck Gatehouse and Concrete Rehabilitation	Dam	MAIN	E				\$250,000	\$2,500,000
				<b>\$2,084,230</b>	<b>\$2,971,375</b>	<b>\$4,400,000</b>	<b>\$7,200,000</b>	<b>\$6,250,000</b>

Asset Planning Tool Improvements	T&D	VAR	E	\$10,000				
KANEW	T&D	VAR	E	\$57,600				
Distribution Recurring Capital	T&D	VAR	E	\$48,300	\$100,000	\$50,000	\$50,000	\$100,000
Peaceable Hill Redundant Tank - Ridgfield	T&D	RID	W	\$75,000	\$150,000	\$900,000		
Replacement Hydrants - East	T&D	ED	E	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Replacement Hydrants - West	T&D	VAR	W	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Replacement Hydrants - South	T&D	VAR	S	\$130,000	\$100,000	\$100,000	\$100,000	\$100,000
Replacement Hydrants - North	T&D	SIM	N	\$5,000	\$10,000	\$10,000	\$10,000	\$10,000
Replacement Hydrants - United	T&D	UNITED	E	\$24,500	\$24,000	\$24,000	\$24,000	\$24,000
New Service Connections (AWC Portion) - East	T&D	VAR	E	\$125,000	\$125,000	\$200,000	\$200,000	\$200,000
New Service Connections (AWC Portion) - West	T&D	VAR	W	\$30,000	\$30,000	\$50,000	\$50,000	\$50,000
New Service Connections (AWC Portion) - South	T&D	VAR	S	\$95,000	\$75,000	\$100,000	\$100,000	\$100,000
New Service Connections (AWC Portion) - North	T&D	SIM	N	\$10,000	\$15,000	\$15,000	\$15,000	\$15,000
New Service Connections (AWC Portion) - United	T&D	UNITED	E	\$9,231	\$10,000	\$10,000	\$10,000	\$10,000
Service Connection Replacements - East	T&D	VAR	E	\$763,818	\$750,000	\$750,000	\$750,000	\$750,000
Service Connection Replacements - West	T&D	VAR	W	\$207,480	\$225,000	\$225,000	\$225,000	\$225,000
Service Connection Replacements - South	T&D	VAR	S	\$713,702	\$650,000	\$650,000	\$650,000	\$650,000
Service Connection Replacements - North	T&D	SIM	N	\$50,000	\$100,000	\$100,000	\$100,000	\$100,000
Service Connection Replacements - United	T&D	UNITED	E	\$98,040	\$100,000	\$100,000	\$100,000	\$100,000
Valve Replacements - East	T&D	VAR	E	\$358,110	\$350,000	\$350,000	\$350,000	\$350,000
Valve Replacements - West	T&D	VAR	W	\$150,890	\$175,000	\$175,000	\$175,000	\$175,000
Valve Replacements - South	T&D	VAR	S	\$386,000	\$350,000	\$350,000	\$350,000	\$350,000
Valve Replacements - North	T&D	SIM	N	\$10,000	\$25,000	\$25,000	\$25,000	\$25,000
Valve Replacements - United	T&D	UNITED	E	\$60,990	\$60,000	\$60,000	\$60,000	\$60,000
Hydrant Rig Meter Purchase	T&D	VAR	E	\$13,800				
Blow Offs/Air Vents - East	T&D	VAR	E	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Blow Offs/Air Vents -West	T&D	VAR	W	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Blow Offs/Air Vents - South	T&D	VAR	S	\$30,000	\$25,000	\$25,000	\$25,000	\$25,000
Blow Offs/Air Vents - North	T&D	SIM	N	\$5,000	\$25,000	\$25,000	\$25,000	\$25,000
Blow Offs/Air Vents - United	T&D	UNITED	E	\$24,000	\$20,000	\$20,000	\$20,000	\$20,000
Miscellaneous Sanitary Survey Improvements	T&D	VAR	E		\$100,000	\$50,000	\$50,000	\$100,000
Miscellaneous Sanitary Survey Improvements	T&D	ACQ	E		\$100,000	\$50,000	\$50,000	\$100,000
Transmission Line Valve Replacements	T&D	VAR	E		\$50,000	\$50,000	\$50,000	\$50,000
Mystic River Crossing	T&D	MYS	S					\$2,000,000
Village Dr. Regulator (520 WL)	T&D	MAIN	E	\$35,000				
Western Brookfield Interconnection	T&D	ACQ	E	\$47,125				
Monroe to Brookfield Diverison Permit	T&D	ACQ	E	\$100,000				
Rural Water - Oakwood/Scodon tank replacements	T&D	ACQ	E		\$200,000			
Brookfield Tank	T&D	ACQ	E	\$222,000				
New Unidentified Acquisitions	T&D	ACQ	E	\$363,812	\$770,439	\$778,118	\$937,400	\$1,252,891
				<b>\$4,489,398</b>	<b>\$4,944,439</b>	<b>\$5,472,118</b>	<b>\$4,731,400</b>	<b>\$7,196,891</b>
<b>Company Technical Platforms:</b>								
MS Office Upgrade	IT	ALL	E		\$200,000			
MS Exchange Email	IT	ALL	E		\$40,000			
Server and Related Structural Components	IT	ALL	E	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000
Replace Core Router/vpn/firewalls	IT	ALL	E	\$40,000	\$200,000		\$40,000	
SAP - Hardware Infrastructure	IT	ALL	E				\$50,000	\$700,000
Server Replacement and Consolidation	IT	ALL	E	\$200,000	\$100,000	\$100,000	\$200,000	\$100,000
DR and BC Infrastructure Implementation	IT	ALL	E	\$40,000		\$40,000		\$40,000
Upgrade Back-up & Restore	IT	ALL	E	\$25,000	\$25,000	\$100,000	\$25,000	\$25,000
Upgrade Storage/ Disk Storage Expansion	IT	ALL	E		\$200,000		\$300,000	
Voice Mail System	IT	ALL	E			\$150,000		
Connect IVR and SAP					\$40,000			
Citrix Operating System & Licensing Upgrade	IT	ALL	E		\$100,000			
Telephone Switch Upgrades	IT	ALL	E	\$50,000	\$100,000			
Security and Network Upgrades (Fix Security Gaps)	IT	ALL	E	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Phone Replacements - Recurring	IT	ALL	E	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Miscellaneous Peripheral Replacements - Recurring	IT	ALL	E	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Server Licensing Updates	IT	ALL	E	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
SQL DB Monitoring (recurring)	IT	ALL	E	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Support System Reporting	IT	ALL	E	\$25,000		\$25,000		\$25,000
Desktop/Notebook Replacements	IT	ALL	E	\$100,000		\$100,000		\$100,000
Document and Archiving System	IT	ALL	E	\$40,000	\$255,000	\$40,000		\$40,000
Other Infrastructure Projects	IT	ALL	E			\$100,000		
				<b>\$940,000</b>	<b>\$1,680,000</b>	<b>\$1,075,000</b>	<b>\$1,035,000</b>	<b>\$1,450,000</b>

<b>Business Operations Support:</b>								
Web Site & Portal - Customer Interactive	IT	ALL	E	\$200,000	\$40,000	\$40,000	\$40,000	\$40,000
Business Warehouse - Recurring	IT	ALL	E	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
ESS Benefits Enrollment/Portal	IT	ALL	E	\$40,000	\$10,000	\$10,000	\$10,000	\$10,000
Misc. SAP Work as Prescribed by Council (Recurring)	IT	ALL	E	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
SAP and Other Projects	IT	ALL	E	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
GIS Improvements - Business Council (recurring)	IT	ALL	E	\$175,000	\$175,000	\$175,000	\$175,000	\$175,000
SAP Mobile Re-engineering	IT	ALL	E	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
SAP Enhancement Packs	IT	ALL	E		\$300,000		\$300,000	
SAP Monthly Billing Reconfiguration	IT	ALL	E	\$30,000				
SAP Customer Service Module Upgrade	IT	ALL	E		\$50,000	\$300,000	\$100,000	
Print Bill Redesign	IT	ALL	E		\$25,000		\$25,000	
Intranet re-build	IT	ALL	E	\$20,000	\$10,000	\$10,000	\$10,000	\$10,000
Business Objects and Dashboard Tools	IT	ALL	E	\$150,000				
Customer Service - IVR Upgrades	IT	ALL	E	\$180,000	\$25,000	\$25,000	\$25,000	\$25,000
LIMS Mobile & Enhancements	IT	ALL	E	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
GIS Core	IT	ALL	E	\$43,000		\$45,000		\$45,000
GIS Hardware for QA and Testing	IT	ALL	E	\$30,000				\$30,000
Police Security Software Upgrade	IT	ALL	E	\$25,000			\$25,000	
New Scheduler for Service (ZW58 Enhancement)	IT	ALL	E	\$100,000				
WQ Remote Monitoring SW and Panels	IT	ALL	E	\$25,000				
Acquisitions HW & SW Upgrades	IT	ACQ	E	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Miscellaneous GIS Tools (E & P)	IT	ALL	E	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
GIS Upgrades/Enhancements (E & P)	IT	ACQ	E	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Hemlocks Pakscan Replacement (J. Olenski)	IT	MAIN	E	\$55,000				
				<b>\$1,573,000</b>	<b>\$1,135,000</b>	<b>\$1,105,000</b>	<b>\$1,210,000</b>	<b>\$835,000</b>
Periodic Meter Changes - East (Including Litchfield)	Meters	VAR	E	\$1,254,889	\$1,350,000	\$1,370,000	\$775,000	\$715,000
Periodic Meter Changes - United	Meters	UNITED	E	\$58,061	\$24,746	\$33,505	\$77,406	\$109,189
Periodic Meter Changes - New Acquisitions	Meters	ACQ	E	\$44,819	\$45,000	\$45,000	\$45,000	\$45,000
Periodic Meter Changes - West	Meters	VAR	W	\$806,250	\$590,000	\$205,000	\$274,478	\$205,983
Periodic Meter Changes -South (includes Mystic)	Meters	VAR	S	\$346,250	\$120,826	\$165,944	\$255,944	\$295,944
Periodic Meter Changes - North	Meters	SIM	N	\$30,000	\$31,670	\$149,162	\$149,162	\$149,162
New Meter Installations - East (Including Litchfield)	Meters	VAR	E	\$622,877	\$536,450	\$906,500	\$550,500	\$536,450
New Meter Installations - United	Meters	UNITED	E	\$24,963	\$25,000	\$25,000	\$25,000	\$25,000
New Meter Installations - New Acquisitions	Meters	ACQ	E	\$24,963	\$25,000	\$25,000	\$25,000	\$25,000
New Meter Installations - West	Meters	VAR	W	\$123,039	\$123,039	\$123,039	\$123,039	\$123,039
New Meter Installations - South (includes Mystic)	Meters	VAR	S	\$761,450	\$106,307	\$106,307	\$106,307	\$106,307
New Meter Installations - North	Meters	SIM	N	\$20,000	\$40,000	\$40,000	\$40,000	\$40,000
Meter Reading Equipment -East	Meters	VAR	E	\$48,777	\$15,000	\$15,000	\$15,000	\$15,000
Meter Reading Equipment - West	Meters	VAR	W	\$8,458	\$5,000	\$5,000	\$5,000	\$5,000
Meter Reading Equipment - South	Meters	VAR	S	\$6,877	\$5,000	\$5,000	\$5,000	\$5,000
Large Meter/ Confined Space Upgrades - East	Meters	VAR	E	\$73,392	\$100,000	\$100,000	\$100,000	\$100,000
Large Meter/ Confined Space Upgrades - West	Meters	VAR	W	\$102,628	\$78,000	\$78,000	\$78,000	\$78,000
Large Meter/ Confined Space Upgrades - South	Meters	VAR	S	\$10,902	\$15,000	\$15,000	\$15,000	\$15,000
Large Meter/ Confined Space Upgrades - United	Meters	UNITED	E	\$21,502	\$15,000	\$15,000	\$15,000	\$15,000
				<b>\$4,390,097</b>	<b>\$3,251,038</b>	<b>\$3,427,457</b>	<b>\$2,679,835</b>	<b>\$2,609,074</b>

Water Supply Plan Update (All Divisions)	SOS	All	E			\$150,000	\$150,000	\$150,000
Security Improvements - East	SOS	VAR	E			\$25,000	\$25,000	\$25,000
Security Improvements - West	SOS	VAR	W			\$25,000	\$25,000	\$25,000
Security Improvements - South	SOS	VAR	S			\$25,000	\$25,000	\$25,000
Security Improvements - North	SOS	SIM	N			\$25,000	\$25,000	\$25,000
Security Access Improv. (WEM.fencing, driveway repairs) - East	SOS	VAR	E	\$47,000	\$25,000	\$25,000	\$25,000	\$25,000
Security Fencing United Property	SOS	UNITED	E	\$25,000				
Means Brook Res. Aeration Enhancement Project	SOS	MAIN	E		\$31,855			
WEM - Miscellaneous - East	SOS	VAR	E		\$25,000	\$25,000	\$25,000	\$25,000
WEM - Miscellaneous - West	SOS	VAR	W		\$10,000	\$10,000	\$10,000	\$10,000
WEM - Miscellaneous - South	SOS	VAR	S		\$10,000	\$10,000	\$10,000	\$10,000
Remediation Projects	SOS	VAR	E	\$100,000				
Environmental Innovation	SOS	VAR	E	\$25,000				
Saugatuck Flow Management Plan	SOS	MAIN	E	\$74,000				
Torrington Diversion Permit	SOS	LIT	E	\$30,000				
Camondale Well Diversion Permit	SOS	VAR	E	\$25,000				
Camondale Well Treatment Plant Design	SOS	VAR	E	\$190,000	\$75,000	\$700,000		
Brook Acres Wells	SOS	ACQ	E	\$100,000				
Towne Brooke Diversion Permit	SOS	ACQ	E	\$5,000				
Trap Falls CIP	SOS	MAIN	E		\$215,000	\$250,000	\$1,250,000	\$2,500,000
Registered Diversion Metering	SOS	VAR	E				\$100,000	\$100,000
Oscadota Well No. 2 Replacement	SOS	RIID	W	\$100,000				
Scodon 2, 3 Supply Improvements	SOS	RIID	W	\$80,000				
Scodon 4 Supply Improvements	SOS	RIID	W	\$80,000				
Streamflow Regs Compliance Plan	SOS	VAR	E		\$50,000			
InfraPlan ARP Periodic (3-YR) Updates	SOS	VAR	E		\$25,000			\$25,000
Canal St. Well Improvements	SOS	MAIN	E			\$50,000	\$50,000	\$50,000
Eel Migration	SOS	MAIN	E	\$10,000				
Far Mill Reservoir Circulation Project	SOS	MAIN	E		\$29,210			
Generator Installation Program (D. Connors)	SOS	MAIN	E	\$300,000				
Generator Installation Program (United)	SOS	UNITED	E	\$200,000				
Ridgefield Knolls Diversion Permit	SOS	ACQ	E	\$50,000				
Brookfield System Diversion Permit	SOS	ACQ	E	\$36,000				
BWC New Well Development & GUDI Testing	SOS	ACQ	E	\$173,160				
Brookfield Water Supply Plan	SOS	ACQ	E	\$10,000				
Level A Mapping - Meadow Brook Wells	SOS	ACQ	E	\$50,000				
Candlewood Acres Diversion Permit	SOS	ACQ	E	\$50,000				
Indian Field Well 5a (UNITED)	SOS	UNITED	E	\$275,000				
Paegler Hill Well #3 (sanitary violation)	SOS	UNITED	E		\$150,000			
Misc. New Milford Additional SOS	SOS	UNITED	E		\$250,000	\$150,000	\$250,000	
Land Preservation Program	SOS	VAR	E	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
				<b>\$2,435,160</b>	<b>\$1,296,065</b>	<b>\$1,870,000</b>	<b>\$2,370,000</b>	<b>\$3,395,000</b>
Supply Operations - Recurring Budget - East	SOps	VAR	E	\$700,000	\$850,000	\$850,000	\$900,000	\$900,000
Supply Operations - Recurring Budget - West	SOps	VAR	W	\$400,000	\$400,000	\$500,000	\$550,000	\$600,000
Supply Operations - Recurring Budget - South	SOps	VAR	S	\$400,000	\$700,000	\$700,000	\$750,000	\$750,000
Supply Operations - Recurring Budget - North	SOps	SIM	N	\$100,000	\$200,000	\$200,000	\$250,000	\$250,000
Supply Ops - Recurring Budget - Aquisitions	SOps	ACQ	E	\$500,000	\$400,000	\$350,000	\$250,000	\$200,000
Supply Operations - Recurring Budget - United	SOps	UNITED	E	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
				<b>\$2,200,000</b>	<b>\$2,650,000</b>	<b>\$2,700,000</b>	<b>\$2,800,000</b>	<b>\$2,800,000</b>

Oxford Central Treatment	Treatment	VAL	E		\$310,000	\$2,001,100			
Lantern Hill Well Treatment Upgrades (Design & Constr.)	Treatment	MYS	S	\$2,076,468					
Coleytown Treat Plant Rehabilitation	Treatment	MAIN	E	\$1,740,000					
Canal Street Feed & Storage Improvements	Treatment	MAIN	E	\$1,940,000					
Putnam Lake Residuals Remediation	Treatment	MYS	S	\$595,000	\$10,000	\$1,000,000			
Ball Pond Wellfield - Gillotti Wellfield	Treatment	BP	E	\$20,000	\$10,000	\$10,000	\$1,000,000	\$1,000,000	
Taste & Odor Study	Treatment	VAR	E						
Housatonic Wellfield	Treatment	MAIN	E		\$250,000	\$1,600,000	\$2,000,000	\$2,000,000	
Big Trail Wells	Treatment	TT	E				\$100,000	\$350,000	
Trap Falls Filter Rehabilitation	Treatment	MAIN	E		\$115,000	\$1,500,000			
CT Execution Upgrades (Unidentified Facilities) & Durgy Well	Treatment	VAR	E	\$183,000	\$260,000	\$100,000	\$100,000	\$100,000	
Treatment Improvements/Disinfection Program (D. Connors)	Treatment	ACQ	E	\$200,000					
Energy Efficiency Projects (J. Schultz)	Treatment	VAR	E	\$200,000					
Canterbury Tank Painting - Capital Improve.	Treatment	UNITED	E	\$60,000					
Putnam High Service Tank Painting - Capital Improv.	Treatment	GRE	E	\$60,000					
Weed Hill Tank Painting - Capital Improv.	Treatment	STAM	W	\$50,000					
Acquisitions Misc.	Treatment	ACQ	E			\$80,000			
					<b>\$7,124,468</b>	<b>\$955,000</b>	<b>\$6,291,100</b>	<b>\$3,200,000</b>	<b>\$3,450,000</b>
Brookside Pump Station Improvements	Pumping	MAIN	E	\$1,398,995					
North Ave. Pump Station Improvements	Pumping	MAIN	E	\$4,879	\$180,000	\$1,500,000	\$750,000		
Hycliff Pump Station Improvements	Pumping	STAM	W			\$150,000	\$1,800,000		
White Hills Pump Station Improvements	Pumping	MAIN	E	\$16,822	\$1,250,000				
West Church Street Pump Station Improvements	Pumping	VAL	E	\$1,560,000					
Pettee Street Steel Wellfield Upgrades	Pumping	MAIN	E	\$1,000,000					
North Street PS Clearwell Replacement	Pumping	RID	W	\$200,000					
Anderson Rd (Mianus Booster) Improvements	Pumping	GRE	S			\$168,000	\$675,000		
Havemeyer Pump Station Improvements	Pumping	GRE	S				\$150,000	\$1,200,000	
Boston Post Rd PS & Park Lane Pump Station Improvements	Pumping	DAR	S	\$100,000					
Hemlocks 423'WL Pump Station Improvements	Pumping	MAIN	E			\$400,000			
Iliff P.S.	Pumping	STAM	W	\$655,000					
Littlebrook PS	Pumping	STAM	W			\$457,650			
Rural	Pumping	ACQ	E		\$190,000	\$190,000	\$190,000	\$190,000	
Hollandale Estates Booster PS	Pumping	ACQ	E	\$200,000					
Newtown PS - New (Monroe to Newtown)	Pumping	UNITED	E	\$250,000	\$1,000,000				
Newtown PS - Existing	Pumping	UNITED	E	\$250,000	\$1,400,000				
Hipp Road PS Improvements (UNITED)	Pumping	UNITED	E	\$113,500					
Crossbrook PS Improvements (UNITED)	Pumping	UNITED	E	\$85,000					
Treasure Road Pump Station	Pumping	MAIN	E	\$50,000	\$375,000				
Pumping - Other	Pumping	MAIN	E					\$1,940,270	
Renda & Biggs Pumping Improvements	Pumping	BP	E			\$75,000	\$500,000		
					<b>\$5,884,196</b>	<b>\$4,395,000</b>	<b>\$2,940,650</b>	<b>\$4,065,000</b>	<b>\$3,330,270</b>

Cross Connection Testing Equipment	A&G	VAR	E	\$14,375	\$7,500	\$7,500	\$7,500	\$7,500
WEM (Miscellaneous) - East	A&G	VAR	E	\$10,500	\$10,000	\$10,000	\$10,000	\$10,000
Compact track loader with attachments	A&G	VAR	E	\$126,000				
Replace Asphalt at AEC	A&G	VAR	E	\$80,500				
Renewable Energy Projects	A&G	VAR	E	\$40,000				
Security Surveillance Equipment	A&G	VAR	E	\$30,000				
Electric ATV & Trailer	A&G	VAR	E	\$22,000				
WQM (Miscellaneous) - East	A&G	VAR	E	\$19,000	\$10,000	\$10,000	\$10,000	\$10,000
Laboratory Expansion & Equipment/Autoclave Replac.	A&G	VAR	E	\$136,450				
WQ Monitoring Panels	A&G	ED	E	\$25,000				
Tools (Service) - East	A&G	VAR	E	\$28,750	\$25,000	\$25,000	\$25,000	\$25,000
Tools (Service) - West	A&G	VAR	W	\$11,500	\$12,000	\$12,000	\$12,000	\$12,000
Tools (Service) - South	A&G	VAR	S	\$11,500	\$12,000	\$12,000	\$12,000	\$12,000
Tools (Distribution) - East	A&G	VAR	E	\$28,750	\$25,000	\$25,000	\$25,000	\$25,000
Leak Detection Equipment - East	A&G	VAR	E	\$48,000				
Service Recurring Budget - West	A&G	VAR	W		\$25,000	\$25,000	\$25,000	\$25,000
Sampling Stations - East	A&G	VAR	E	\$71,000	\$45,000	\$45,000	\$45,000	\$45,000
Sampling Stations - Acquisitions	A&G	ACQ	E	\$48,500				
Purchase Safety Equipment	A&G	VAR	E	\$20,000	\$10,000	\$10,000	\$10,000	\$10,000
Company Houses - East	A&G	VAR	E	\$180,000	\$150,000	\$150,000	\$150,000	\$150,000
Company Houses - West	A&G	VAR	W	\$20,000	\$50,000	\$50,000	\$50,000	\$50,000
Indians Water Road, New Canaan (title issues)	A&G	NC	S	\$25,000				
Lindley Street Operations Center Building Modifications	A&G	MAIN	E	\$100,000	\$75,000	\$75,000	\$75,000	\$75,000
Main Street Corporate Office Building Modifications	A&G	MAIN	E	\$100,000	\$75,000	\$75,000	\$75,000	\$75,000
Monroe Tpke Miscellaneous Office Bldg Modifications	A&G	MAIN	E	\$100,000	\$50,000	\$50,000	\$50,000	\$50,000
Timber Trails, Big Trail	A&G	TT	E	\$25,000	\$0			
Scanner - Operations/HR Dept.	A&G	MAIN	E	\$1,500				
E&P Recurring Capital Budget	A&G	VAR	E	\$200,000	\$150,000	\$150,000	\$150,000	\$150,000
Putnam Video Monitoring	A&G	GRE	E	\$75,000				
Vehicle Replacements	A&G	VAR	E	\$430,000	\$500,000	\$500,000	\$500,000	\$500,000
Lindley St Fuel Storage & Dispensing Station	A&G	VAR	E	\$0				
Valley System SCADA Upgrades (J. Olenski)	A&G	MAIN	E	\$175,000				
Wellness - Fitness Equipment	A&G	MAIN	E	\$20,000				
Safety Equipment -	A&G	VAR	E		\$25,000		\$25,000	
				<b>\$2,223,325</b>	<b>\$1,256,500</b>	<b>\$1,231,500</b>	<b>\$1,256,500</b>	<b>\$1,231,500</b>
			<b>TOTAL:</b>	<b>\$58,347,374</b>	<b>\$53,584,917</b>	<b>\$57,373,325</b>	<b>\$58,583,235</b>	<b>\$58,583,235</b>

**DOCKET NO. 13-02-20 APPLICATION OF AQUARION WATER COMPANY OF  
CONNECTICUT TO AMEND ITS RATES**

This Decision is adopted by the following Commissioners:

John W. Betkoski, III

Michael A. Caron

Arthur H. House

CERTIFICATE OF SERVICE

The foregoing is a true and correct copy of the Decision issued by the Public Utilities Regulatory Authority, State of Connecticut, and was forwarded by Certified Mail to all parties of record in this proceeding on the date indicated.



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Nicholas E. Neeley  
Acting Executive Secretary  
Public Utilities Regulatory Authority

September 25, 2013

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Date