

BEFORE THE  
RHODE ISLAND PUBLIC UTILITIES COMMISSION

PREPARED DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA  
PRINCIPAL  
AUS CONSULTANTS

RE: UNITED WATER RHODE ISLAND, INC.

AUGUST 2013

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Appendix A – Professional Qualifications of Pauline M. Ahern

1  
2 **Introduction**

3 **Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.**

4 A. My name is Pauline M. Ahern. I am a Principal of AUS Consultants. My business  
5 address is 155 Gaither Drive, Suite A, Mt. Laurel, New Jersey 08054.

6 **Q. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE AND**  
7 **EDUCATIONAL BACKGROUND.**

8 A. I have offered expert testimony on behalf of investor-owned utilities before  
9 twenty-nine state regulatory commissions as well as one provincial regulatory  
10 commission in Canada on rate of return issues, including but not limited to  
11 common equity cost rate, fair rate of return, capital structure issues, credit quality  
12 issues, etc. I am a graduate of Clark University, Worcester, MA, where I  
13 received a Bachelor of Arts degree with honors in Economics. I have also  
14 received a Master of Business Administration with high honors and a  
15 concentration in finance from Rutgers University. The details of my educational  
16 background, expert witness appearances, presentations I have given and articles  
17 I have co-authored are shown in Appendix A supplementing this testimony.

18 On behalf of the American Gas Association ("A.G.A."), I calculate the A.G.A.  
19 Gas Index, which serves as the benchmark against which the performance of the  
20 American Gas Index Fund ("AGIF") is measured monthly. The A.G.A. Gas Index  
21 and AGIF are a market capitalization weighted index and mutual fund,  
22 respectively, comprised of the common stocks of the publicly traded corporate  
23 members of the A.G.A.

24 I am also the Publisher of AUS Utility Reports, responsible for supervising  
25 the production, publication, distribution and marketing of its reports. I am also

1 responsible for overseeing the production of the annual Financial & Operating  
2 Statistics Report for the National Association of Water Companies ("NAWC").

3 I am a member of the Society of Utility and Regulatory Financial Analysts  
4 ("SURFA") where I serve on its Board of Directors, having served two terms as  
5 President, from 2006 – 2008 and 2008 – 2010. Previously, I held the position of  
6 Secretary/Treasurer from 2004 – 2006. In 1992, I was awarded the professional  
7 designation "Certified Rate of Return Analyst" ("CRR") by SURFA, which is  
8 based upon education, experience and the successful completion of a  
9 comprehensive written examination.

10 I am also an associate member of the National Association of Water  
11 Companies, serving on its Finance/Accounting/Taxation and Rates and  
12 Regulation Committees; a member of the Energy Association of Pennsylvania,  
13 formerly the Pennsylvania Gas Association; and a member of the American  
14 Finance, Financial Management and Energy Bar Associations. I am also a  
15 member of Edison Electric Institute's Cost of Capital Working Group and the  
16 Advisory Board of the Financial Research Institute of the University of Missouri.

17 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

18 A. The purpose is to provide testimony on behalf of United Water Rhode Island, Inc.  
19 Inc. ("UWRI" or "the Company") relative to the appropriate common equity cost  
20 rate which it should be afforded the opportunity to earn on the common equity  
21 portion its jurisdictional rate base.

22 **Q. WHAT IS YOUR RECOMMENDED COMMON EQUITY COST RATE RANGE?**

23 A. I recommend that the Rhode Island Public Utilities Commission ("RI PUC" or "the  
24 Commission") authorize the Company the opportunity to earn an overall rate of  
25 return of 8.75% based upon the consolidated capital structure at March 31, 2013

of United Waterworks, Inc. (UWW or the Parent), which consisted of 46.55% long-term debt and 53.45% common equity at a long-term debt cost rate of 6.05%, and my recommended common equity cost rate of 11.10%. The overall rate of return is summarized in Table 1 below:

Table 1

<u>Type of Capital</u>	<u>Ratios</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	46.55%	6.05%	2.82%
Common Equity	<u>53.45</u>	11.10	<u>5.93</u>
Total	<u>100.00%</u>		<u>8.75%</u>

**Q. HAVE YOU PREPARED AN EXHIBIT WHICH SUPPORTS YOUR RECOMMENDED COMMON EQUITY COST RATE?**

A. Yes. It has been designated as Exhibit No. \_\_\_ consisting of Schedules PMA-1 through PMA-10.

**Summary**

**Q. PLEASE SUMMARIZE YOUR RECOMMENDED COMMON EQUITY COST RATE.**

A. My recommended common equity cost rate of 11.10% is summarized on Schedule PMA-1. As a wholly-owned subsidiary of United Waterworks, Inc. ("UWW" or "the Parent"), UWRI's common stock is not publicly traded, hence a market-based common equity cost rate cannot be determined directly for UWRI. Therefore, in arriving at my recommended common equity cost rate of 11.10%, I have assessed the market-based common equity cost rates of companies of relatively similar, but not necessarily identical risk, i.e., a proxy group for insight into a recommended common equity cost rate applicable to UWRI. Using companies of relatively comparable similar risk as proxies is consistent with the

1 principles of fair rate of return established in the Hope<sup>1</sup> and Bluefield<sup>2</sup> cases,  
2 adding reliability to the informed expert judgment necessary to arrive at a  
3 recommended common equity cost rate. However, no proxy group can be  
4 selected to be identical in risk to UWRI. Therefore, the proxy group's results  
5 must be adjusted, if necessary, to reflect the unique relative financial (credit)  
6 and/or business risks of the Company.

7 Consistent with the Efficient Market Hypothesis ("EMH"), which will be  
8 discussed below, my recommendation results from the application of market-  
9 based cost of common equity models, the Discounted Cash Flow ("DCF")  
10 approach, the Risk Premium Model ("RPM") and the Capital Asset Pricing Model  
11 ("CAPM") to the market data of the proxy group of nine water companies whose  
12 selection will be discussed below. In addition, I also applied the DCF, RPM and  
13 CAPM to the market data of domestic, non-price regulated companies  
14 comparable in total risk to the nine water companies.

15 The results derived from each are as follows:

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<sup>1</sup> Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944).

<sup>2</sup> Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 262 U.S. 679 (1922).

Table 2

Proxy Group  
of Nine  
Water  
Companies

Discounted Cash Flow Model	8.91%
Risk Premium Model	11.46
Capital Asset Pricing Model	10.52
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	<u>10.85</u>
Indicated Common Equity Cost Rate Range	<u>10.55%</u>
Business Risk Adjustment	<u>0.55</u>
Recommended Common Equity Cost Rate	<u>11.10%</u>

After reviewing the cost rates based upon these models, I conclude that a common equity cost rate of 10.55% is indicated before any adjustment for UWRI's greater business risk relative to the proxy group of nine water companies which will be discussed below. The indicated common equity cost rate based upon the nine water companies needs to be adjusted upward by 0.55% to reflect UWRI's greater business risk as noted above. After adjustment, the business risk-adjusted common equity cost rate is 11.10%, which is my recommended common equity cost rate.

1 **General Principles**

2 **Q. WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN ARRIVING AT**  
3 **YOUR RANGE OF RECOMMENDED COMMON EQUITY COST RATE RANGE**  
4 **OF 11.10%?**

5 A. In unregulated industries, the competition of the marketplace is the principal  
6 determinant of the price of products or services. For regulated public utilities,  
7 regulation must act as a substitute for marketplace competition. Assuring that  
8 the utility can fulfill its obligations to the public while providing safe and reliable  
9 service at all times requires a level of earnings sufficient to maintain the integrity  
10 of presently invested capital as well as permitting the attraction of needed new  
11 capital at a reasonable cost in competition with other firms of comparable risk,  
12 consistent with the fair rate of return standards established by the U.S. Supreme  
13 Court in the previously cited Hope and Bluefield cases. Consequently,  
14 marketplace data must be relied upon in assessing a common equity cost rate  
15 appropriate for ratemaking purposes. Therefore, my recommended common  
16 equity cost rate range is based upon marketplace data for a proxy group of  
17 utilities as similar in risk as possible to UWRI, based upon selection criteria which  
18 will be discussed subsequently. Just as the use of the market data for the proxy  
19 group adds reliability to the informed expert judgment used in arriving at a  
20 recommended common equity cost rate, the use of multiple common equity cost  
21 rate models also adds reliability when arriving at a recommended common equity  
22 cost rate.



1 **Business Risk**

2 **Q. PLEASE DEFINE BUSINESS RISK AND EXPLAIN WHY IT IS IMPORTANT TO**  
3 **THE DETERMINATION OF A FAIR RATE OF RETURN.**

4 A. Business risk is the riskiness of a company's common stock without the use of  
5 debt and/or preferred capital. Examples of such general business risks to all  
6 utilities, i.e., electric, natural gas distribution and water, include the quality of  
7 management, the regulatory environment, customer mix and concentration of  
8 customers, service territory growth, capital intensity, size, and the like, which  
9 have a direct bearing on earnings.

10 Business risk is important to the determination of a fair rate of return  
11 because the greater the level of risk, the greater the rate of return investors  
12 demand, consistent with the basic financial principle of risk and return.

13 **Q. WHAT BUSINESS RISKS FACE THE WATER INDUSTRY IN GENERAL?**

14 A. Water is essential to life and unlike electricity or natural gas, water is the only  
15 utility product which is intended for customers to ingest. Consequently, water  
16 quality is of paramount importance to the health and well-being of customers and  
17 is therefore subject to additional strict health and safety regulations. Beyond  
18 health and safety concerns, water utility customers also have significant aesthetic  
19 concerns regarding the water delivered to them by utilities and regulators pay  
20 close attention to these concerns because of the strong feelings they arouse in  
21 consumers. Also, unlike many electric and natural gas utilities, water utilities  
22 serve a production function in addition to the delivery functions served by electric  
23 and gas utilities.

24 Water utilities obtain supply from wells, aquifers, surface water reservoirs  
25 or streams and rivers. Throughout the years, well supplies and aquifers have

1        been environmentally threatened, with historically minor purification treatment  
2        giving way to major well rehabilitation, treatment or replacement.  
3        Simultaneously, safe drinking water quality standards have tightened  
4        considerably, requiring multiple treatments. Supply availability is also limited by  
5        drought, water source overuse, runoff, threatened species/habitat protection and  
6        other operational, political and environmental factors. In addition, the  
7        Environmental Protection Agency (EPA), as well as individual state  
8        environmental agencies, are continually monitoring potential contaminants in the  
9        water supply and promulgating regulations for containment, tightening current  
10       regulations when necessary. Increasingly stringent environmental standards  
11       necessitate additional capital investment in the distribution and treatment of  
12       water, exacerbating the pressure on free cashflows which arises from increased  
13       capital expenditures for infrastructure repair and replacement. In the course of  
14       procuring water supplies and treating water so that it complies with Safe Drinking  
15       Water Act ("SDWA") standards, water utilities have an ever-increasing  
16       responsibility to be stewards of the environment from which supplies are drawn,  
17       in order to preserve and protect their essential natural resources of the United  
18       States.

19       Water utilities are typically vertically engaged in the entire process of  
20       acquiring supply, production, treatment and distribution of water. In contrast,  
21       electric and natural gas companies, where transmission and distribution is  
22       separate from generation, generally do not produce the electricity or natural gas  
23       which they transmit and distribute. Hence, water utilities require significant  
24       capital investment in not only sources of supply and production (wells and  
25       treatment facilities), but also in storage facilities as well as transmission and

1 distribution systems, both to serve additional customers and to replace aging  
2 systems, creating a major risk facing the water and wastewater utility industry.

3 *Value Line Investment Survey*<sup>3</sup> (“*Value Line*”) observes the following about  
4 the water utility industry:

5 ...we will have many concerns about the industry going forward.  
6 Much of the water infrastructure in the U.S. is aging and will require  
7 massive amounts of funds for repairs and modernization. No utility  
8 will be able to generate sufficient cash internally to cover these  
9 outlays. Hence, new issuances of debt and equity will be required  
10 to finance the difference. Moreover, plenty of rate cases will have  
11 to be filed to recover these investments, leaving utilities at the  
12 mercy of state regulators, whose final decisions can be politically  
13 motivated. On the whole, the regulatory climate has improved  
14 throughout the country, but that does not mean it can't change.

15 \* \* \*

16  
17  
18 In their quadrennial report on the status of the infrastructure in the  
19 U.S., the American Society of Civil Engineers (ASCE) found that  
20 the water/wastewater sector is perhaps the most underfunded part  
21 of the infrastructure system. According to ASCE, water systems  
22 are about 70% underfunded. Concurring with this opinion is the  
23 American Water Works Association (AWWA), which believes that  
24 America will have to spend \$1 trillion over the next 25 years to get  
25 the system up to par.

26  
27 Whether investor-owned or municipal, no water system has the  
28 funds on hand required to meet these projected costs. (We should  
29 point out that the higher the estimated funding needed, the more  
30 work for the engineers of ASCE). There are two important factors  
31 that investors should focus on when examining a water utility. One,  
32 how much capital spending will be required by the company relative  
33 to its size, and, two, how will that firm come up with the capital. An  
34 increase in shares will dilute current earnings, and the higher  
35 interest costs resulting from the added debt can eat away at profits.

36  
37 Upgrading their facilities and finding the funds to do so, is only the  
38 first hurdle that water utilities face. Second, and just as important,  
39 is the ability to recover their investment. And, to a large extent, this  
40 factor is out of their control. Directors on the state utility  
41 commissions are usually appointed by the governor. Since this is

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<sup>3</sup> *Value Line Investment Survey*, April 19, 2013.

1 an elective office, politicians from both parties are very aware that  
2 water users (i.e., citizens that vote) do not like having their water  
3 bills raised. So, a utility is always at risk of spending and operating  
4 prudently, and then being denied the right to recover costs by a  
5 state utility commission. Therefore, we advise all investors when  
6 reading each utility page, to note the analyst's view on the  
7 regulatory climate in each state. What's more, this risk will always  
8 be with regulated utilities until politicians can get elected on  
9 campaign platforms that are pro-utility, a seemingly unlikely  
10 scenario.

11  
12 Because the water and wastewater industry is much more capital-  
13 intensive than the electric, combination electric and gas or natural gas utilities,  
14 the investment required to produce a dollar of revenue is greater. For example,  
15 as shown on page 1 of Schedule PMA-2, it took \$3.75 of net utility plant on  
16 average to produce \$1.00 in operating revenues in 2012 for the water utility  
17 industry as a whole. For UWRI, it took an even greater \$4.54 of net utility plant  
18 to produce \$1.00 of operating revenues. In contrast, for the electric, combination  
19 electric and gas and natural gas utility industries, on average it took only \$2.58,  
20 \$2.13 and \$1.56, respectively, to produce \$1.00 in operating revenues in 2012.  
21 The greater capital intensity of water utilities is not a new phenomenon either as  
22 water utilities have exhibited a consistently and significantly greater capital  
23 intensity relative to electric, combination electric and gas and natural gas utilities  
24 during the ten years ended 2012, as shown on page 2 of Schedule PMA-2. As  
25 financing needs have increased over the last decade, the competition for capital  
26 from traditional sources has increased, making the need to maintain financial  
27 integrity and the ability to attract needed new capital increasingly important.

28 The National Association of Regulatory Commissioners ("NARUC") also  
29 highlighted the challenges facing the water and wastewater industry stemming

1 from its capital intensity. NARUC's Board of Directors adopted the following  
2 resolution in July 2005:<sup>4</sup>

3 WHEREAS, To meet the challenges of the water and wastewater industry  
4 which may face a combined capital investment requirement nearing one trillion  
5 dollars over a 20-year period, the following policies and mechanisms were  
6 identified to help ensure sustainable practices in promoting needed capital  
7 investment and cost-effective rates: a) the use of prospectively relevant test  
8 years; b) the distribution system improvement charge; c) construction work in  
9 progress; d) pass-through adjustments; e) staff-assisted rate cases; f)  
10 consolidation to achieve economies of scale; g) acquisition adjustment policies to  
11 promote consolidation and elimination of non-viable systems; h) a streamlined  
12 rate case process; i) mediation and settlement procedures; j) defined timeframes  
13 for rate cases; k) integrated water resource management; l) a fair return on  
14 capital investment; *and* m) improved communications with ratepayers and  
15 stakeholders; *and*  
16

17 WHEREAS, Due to the massive capital investment required to meet  
18 current and future water quality and infrastructure requirements, adequately  
19 adjusting allowed equity returns to recognize industry risk in order to provide a  
20 fair return on invested capital was recognized as crucial...  
21

22 RESOLVED, That the National Association of Regulatory Utility  
23 Commissions, convened in its July 2006 Summer Meetings in Austin, Texas,  
24 conceptually supports review and consideration of the innovative regulatory  
25 policies and practices identified herein as "best practices;" *and be it further*  
26

27 RESOLVED, That NARUC recommends that economic regulators  
28 consider and adopt as many as appropriate of the regulatory mechanisms  
29 identified herein as best practices...  
30

31 The water utility industry also experiences lower relative depreciation  
32 rates. Lower depreciation rates, as one of the principal sources of internal cash  
33 flows for all utilities, mean that water utility depreciation as a source of internally-  
34 generated cash is far less than for electric, combination electric and gas or  
35 natural gas. Water utilities' assets have longer lives and, hence, longer capital  
36 recovery periods. As such, water utilities face greater risk due to inflation which

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<sup>4</sup> "Resolution Supporting Consideration of Regulatory Policies Deemed as 'Best Practices'",  
Sponsored by the Committee on Water. Adopted by the NARUC Board of Directors, July 27,  
2005.

1 results in a higher replacement cost per dollar of net plant than for other types of  
2 utilities. As shown on page 3 of Schedule PMA-2, water utilities experienced an  
3 average depreciation rate of 3.1% for 2012 with UWRI experiencing a slightly  
4 lower 2.7%. In contrast, in 2012, the electric, combination electric and gas and  
5 natural gas utilities experienced average depreciation rates of 3.2%, 3.5% and  
6 4.1%, respectively.

7 As with capital intensity, the lower relative depreciation rates of water and  
8 wastewater utilities is not a new phenomenon. As shown on page 4 of Schedule  
9 PMA-2, water utility depreciation rates have been consistently and significantly  
10 lower than those of the electric, combination electric and gas as well as natural  
11 gas utilities. Low depreciation rates signify that the pressure on cash flows  
12 remains significantly greater for water utilities than for other types of utilities.

13 Not only is the water utility industry historically capital intensive, it is  
14 expected to incur significant capital expenditure needs over the next 20 years.  
15 Prior to the recent economic and capital market turmoil, Standard & Poor's  
16 noted<sup>5</sup>:

17 Standard & Poor's expects the already capital-intensive water utility  
18 industry to become even more so over the next several years. Due  
19 to the aging pipeline infrastructure and more stringent quality  
20 standards, the U.S. Environmental Protection Agency's [sic] (EPA)  
21 foresees a need for \$277 billion to upgrade and maintain U.S. water  
22 utilities through 2022, with about \$185 billion going toward  
23 infrastructure improvements. In addition, about \$200 billion will be  
24 needed for wastewater applications, which suggests increased  
25 capital spending to be a long-term trend in this industry.

26  
27 In line with these trends, many companies have announced  
28 aggressive capital spending programs. Forecast capital spending  
29 primarily focuses on infrastructure replacements and growth

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<sup>5</sup> Standard & Poor's, Credit Outlook For U.S. Investor-Owned Water Utilities Should Remain Stable in 2008 (January 31, 2008) 2, 4.

1 initiatives. Over the past five years, capital spending has been  
2 equivalent to about three times its depreciation expense. However,  
3 companies are now forecasting spending to be at or above four  
4 times depreciation expense over the intermediate term. For  
5 companies in regulatory jurisdictions that provide timely cost  
6 recovery for capital expenditures, the increased spending is likely to  
7 have a minimal effect on financial metrics and ratings. However,  
8 companies in areas without these mechanisms, earnings, and cash  
9 flow could be negatively affected by the increased spending levels,  
10 which over the longer term could harm a company's overall credit  
11 profile.

12  
13 Specifically, the EPA states the following<sup>6</sup>:

14 The survey found that the total nationwide infrastructure need is  
15 \$334.8 billion for the 20-year period from January 2007 through  
16 December 2026. With \$200.8 billion in needs over the next 20  
17 years, transmission and distribution projects represent the largest  
18 category of need. This result is consistent with the fact that  
19 transmission and distribution mains account for most of the nation's  
20 water infrastructure. The other categories, in descending order of  
21 need are: treatment, storage, source and a miscellaneous category  
22 of needs called "other". The large magnitude of the national need  
23 reflects the challenges confronting water systems as they deal with  
24 an infrastructure network that has aged considerably since these  
25 systems were constructed, in many cases, 50 to 100 years ago.

26  
27 Water utility capital expenditures as large as those projected by the EPA  
28 and ASCE will require significant financing. The three sources typically used for  
29 financing are debt, equity (common and preferred) and cash flow. All three are  
30 intricately linked to the opportunity to earn a sufficient rate of return as well as the  
31 ability to achieve that return. Consistent with the Hope and Bluefield, the return  
32 must be sufficient enough to maintain credit quality as well as enable the  
33 attraction of necessary new capital, be it debt or equity capital. If unable to raise

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<sup>6</sup> "Fact Sheet: "EPA's 2007 Drinking Water Infrastructure Needs Survey and Assessment", United States Environmental Protection Agency, Office of Water, February 2009, 1 (the most recently available).

1 debt or equity capital, the utility must turn to either retained earnings or free cash  
2 flow (operating cash flow (funds from operations) minus capital expenditures),  
3 both of which are directly linked to earning a sufficient rate of return. The level of  
4 free cash flows represents the financial flexibility of a company or a company's  
5 ability to meet the needs of its debt and equity holders. If either retained earnings  
6 or free cashflows is inadequate, it will be nearly impossible for the utility to attract  
7 the needed new capital to invest in needed new infrastructure. It is clear then  
8 that an insufficient rate of return can be financially devastating for utilities and for  
9 their customers, the ratepayers. Magnifying the impact of water utilities'  
10 potentially inadequate cashflow position is a general inability to achieve their  
11 authorized rate of return on common equity.

12 Consequently, coupled with the previously discussed greater capital  
13 intensity of water utilities, their lower depreciation rates indicate greater  
14 investment risk for water utilities relative to electric, combination electric and gas  
15 and natural gas utilities.

16 In view of the foregoing, it is clear that the water utility industry's high  
17 degree of capital intensity and low depreciation rates, coupled with the need for  
18 substantial infrastructure capital spending, require regulatory support in the form  
19 of adequate and timely rate relief, including sufficient authorized returns on  
20 common equity as recognized by NARUC and *Value Line*, so water utilities will  
21 be able to successfully meet the challenges they face.

22 **Q. PLEASE EXPLAIN WHY SIZE HAS A BEARING ON BUSINESS RISK.**

23 A. Company size is a significant element of business risk for which investors expect  
24 to be compensated through greater returns. Smaller companies are simply less  
25 able to cope with significant events which affect sales, revenues and earnings.



1 For example, smaller companies face more risk exposure to business cycles and  
2 economic conditions, both nationally and locally. Additionally, the loss of  
3 revenues from a few larger customers would have a greater effect on a small  
4 company than on a much larger company with a larger, more diverse, customer  
5 base. Moreover, smaller companies are generally less diverse in their operations  
6 and have less financial flexibility.

7 Further evidence of the risk effects of size include the fact that investors  
8 demand greater returns to compensate for the lack of marketability and liquidity  
9 of the securities of smaller firms. That it is the use of funds invested and not the  
10 source of those funds which gives rise to the risk of any investment is a basic  
11 financial principle<sup>7</sup>. Therefore, the Commission should authorize a cost of  
12 common equity in this proceeding that reflects UWRI's relevant risk, including the  
13 impact of its small size. As noted above, UWRI is smaller than the average  
14 proxy group company based upon total capitalization.

15 Consistent with the financial principle of risk and return discussed above,  
16 such increased risk due to small size must be taken into account in the allowed  
17 rate of return on common equity.

18 **Q. PLEASE DISCUSS HOW UWRI'S SIZE INCREASES ITS BUSINESS RISK**  
19 **RELATIVE TO THE PROXY GROUP.**

20 A. UWRI is smaller than the average company in the proxy group of nine water  
21 companies based upon estimated market capitalization. As shown on Schedule  
22 PMA-10, page 1, UWRI's estimated market capitalization of \$11.888 million is  
23 lower than the average market capitalization of the water proxy group, \$1.699

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<sup>7</sup> Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance (McGraw-Hill Book Company, 1996) 204-205, 229.

1 billion on April 30, 2013. Consequently, UWRI has greater relative business risk  
2 because, all else equal, size has a bearing on risk.

### 3 **Financial Risk**

4 **Q. PLEASE DEFINE FINANCIAL RISK AND EXPLAIN WHY IT IS IMPORTANT**  
5 **TO THE DETERMINATION OF A FAIR RATE OF RETURN.**

6 A. Financial risk is the additional risk created by the introduction of senior capital,  
7 i.e., debt and preferred stock, into the capital structure. The higher the proportion  
8 of senior capital in the capital structure, the higher the financial risk which must  
9 be factored into the common equity cost rate, consistent with the previously  
10 mentioned basic financial principle of risk and return, i.e., investors demand a  
11 higher common equity return as compensation for bearing higher investment risk.  
12 S&P initially published its electric, gas, and water utility ratings rankings in a  
13 framework consistent with the manner in which it presents its rating conclusions  
14 across all other corporate sectors in November 2007. S&P then stated<sup>8</sup>:

15 Incorporating utility ratings into a shared framework to  
16 communicate the fundamental credit analysis of a company furthers  
17 the goals of transparency and comparability in the ratings process.

18 \* \* \*

19  
20  
21 The utilities rating methodology remains unchanged, and the use of  
22 the corporate risk matrix has not resulted in any changes to ratings  
23 or outlooks. The same five factors that we analyzed to produce a  
24 business risk score in the familiar 10-point scale are used in  
25 determining whether a utility possesses an "Excellent," "Strong,"  
26 "Satisfactory," "Weak," or "Vulnerable" business risk profile.

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27  
<sup>8</sup> Standard & Poor's – Ratings Direct – "U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix" (November, 30, 2007) 2.

1 In May 2009, S&P expanded and revised its Business Risk / Financial  
2 Risk Matrix in an effort to augment its independence, strengthen the rating  
3 process and increase S&P's transparency to better serve its markets (see Table  
4 2, page 4 of Schedule PMA-3). Notwithstanding the metrics published in Table  
5 2, S&P stated:

6 The rating matrix indicative outcomes are what we typically observe  
7 – but are not meant to be precise indications or guarantees of  
8 future rating opinions. Positive and negative nuances in our  
9 analysis may lead to a notch higher or lower than the outcomes  
10 indicated in the various cells of the matrix.  
11

12 As shown on Schedule PMA-7, page 4, the average S&P bond rating  
13 (issuer credit rating), business risk profile and financial risk profile of the nine  
14 water companies are split A+/A (A), Excellent and Significant. While UWW does  
15 not have an S&P bond rating, S&P has assigned it an issuer credit rating of A-  
16 (equivalent to a Moody's bond rating of A3) and an Excellent business and  
17 Significant financial risk profiles, as also shown on page 4 of Schedule PMA-10.

18 **Q. NEVERTHELESS, CAN THE COMBINED BUSINESS RISKS, I.E.,**  
19 **INVESTMENT RISK OF AN ENTERPRISE, BE PROXIED BY BOND AND**  
20 **CREDIT RATINGS?**

21 **A.** Yes, similar bond ratings/issuer credit (bond/credit) ratings reflect and are  
22 representative of similar combined business and financial risks, i.e., total risk  
23 faced by bond investors. Although specific business or financial risks may differ  
24 between companies, the same bond/credit rating indicates that the combined  
25 risks are similar, albeit not necessarily equal, as the purpose of the bond/credit  
26 rating process is to assess credit quality or credit risk and not common equity  
27 risk. Risk distinctions within S&P's bond rating categories are recognized by a  
28 plus or minus, i.e., within the A category, an S&P rating can be at A+, A, or A-.

1 Similarly, risk distinctions for Moody's ratings are distinguished by numerical  
2 rating gradations, i.e., within the A category, a Moody's rating can be A1, A2 and  
3 A3. For S&P, additional risk distinctions are reflected in the assignment of one of  
4 the six business risk profiles and six financial risk profiles, shown in Tables 1 and  
5 2 on pages 2 and 4 of Schedule PMA-3.

6 In summary, it is clear that S&P's bond/credit rating process encompasses  
7 a qualitative analysis of business and financial risks (see page 3 of Schedule  
8 PMA-3). While not a means by which one can specifically quantify the differential  
9 in common equity risk between companies, bond/credit ratings provide a useful  
10 means with which to compare/differentiate investment risk between companies  
11 because they are the result of a thorough and comprehensive analysis of all  
12 diversifiable business risks, i.e., investment risk.

13 **United Water Rhode Island, Inc.**

14 **Q. HAVE YOU REVIEWED FINANCIAL DATA FOR UWRI?**

15 A. Yes. UWRI provides water service to approximately 19,000 customers in the  
16 towns of South Kingstown and Narragansett, Rhode Island. UWRI is a wholly-  
17 owned subsidiary of UWW, which in turn is a wholly-owned subsidiary of United  
18 Water Resources, Inc. ("UWR"). Thus, the Company's common stock is not  
19 publicly traded.

20 **Proxy Group**

21 **Q. PLEASE EXPLAIN HOW YOU CHOSE THE PROXY GROUP OF NINE WATER**  
22 **COMPANIES.**

23 A. The basis of selection for the proxy group was to select those companies which  
24 meet the following criteria: 1) they are included in the Water Company Group of  
25 AUS Utility Reports (May 2013); 2) they have 70% or greater of 2012 total

1 operating income derived from and 70% or greater of 2012 total assets devoted  
2 to regulated water operations; 3) at the time of the preparation of this testimony,  
3 they had not publicly announced that they were involved in any major merger or  
4 acquisition activity, i.e., one publicly-traded utility merging with or acquiring  
5 another; 4) they have not cut or omitted their common dividends during the five  
6 years ending 2012 or through the time of the preparation of this testimony; 5)  
7 they have a *Value Line* adjusted beta; 6) they have a positive *Value Line* five-  
8 year dividends per share (DPS) growth rate projection; and 7) they have *Value*  
9 *Line*, Reuters, Zacks or Yahoo! Finance, consensus five-year earnings per share  
10 (EPS) growth rate projections.

11 The following nine companies met these criteria: American States Water  
12 Co., American Water Works Co., Inc., Aqua America, Inc., Artesian Resources  
13 Corp., California Water Service Corp., Connecticut Water Service, Inc.,  
14 Middlesex Water Co., SJW Corp. and York Water Co.

15 **Q. PLEASE DESCRIBE SCHEDULE PMA-4.**

16 A. Schedule PMA-4 contains comparative capitalization and financial statistics for  
17 the nine water companies for the years 2008-2012.

18 As shown on page 1, during the five-year period ending 2011, the  
19 historically achieved average earnings rate on book common equity for the group  
20 averaged 8.26%. The average common equity ratio based upon permanent  
21 capital (excluding short-term debt) was 49.42%, and the average dividend payout  
22 ratio was 64.06%.

23 Total debt as a percent of EBITDA for the years 2008-2012 ranged  
24 between 3.84 and 9.07 times, averaging 5.51 times, while funds from operations  
25 relative to total debt ranged from 16.14% to 20.65%, averaging 17.82%.

## Common Equity Cost Rate Models

### The Efficient Market Hypothesis (EMH)

**Q. PLEASE DESCRIBE THE CONCEPTUAL BASIS OF THE EMH.**

A. The EMH, which is the foundation of modern investment theory, was pioneered by Eugene F. Fama<sup>9</sup> in 1970. An efficient market is one in which security prices reflect all relevant information all the time, with the implication that prices adjust instantaneously to new information, thus reflecting the intrinsic fundamental economic value of a security.<sup>10</sup>

The generally-accepted “semistrong” form of the EMH asserts that all publicly available information is fully reflected in securities prices, i.e., that fundamental analysis cannot enable an investor to “out-perform the market” in the long-run as noted by Brealey and Myers<sup>11</sup>. The “semistrong” form of the EMH is generally held to be true because the use of insider information often enables investors to earn excessive returns by “outperforming the market” in the short-run. This means that all perceived risks and publicly-available information are taken into account by investors in the prices they pay for securities, such as bond/credit ratings, discussions about companies by bond/credit rating agencies and investment analysts, security analysts’ forecasts of earnings per share growth and interest rate forecasts as well as the discussions of the various common equity cost rate methodologies (models) in the financial literature. In an

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<sup>9</sup> Eugene F. Fama, “Efficient Capital Markets: A Review of Theory and Empirical Work” (Journal of Finance, May 1970) 383-417.

<sup>10</sup> Roger A. Morin, New Regulatory Finance (Public Utility Reports, Inc., 2006) 279-281.

<sup>11</sup> Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, First Edition (McGraw-Hill, 1996) 329.

attempt to emulate investor behavior, a limited number of common equity cost rate models, such as one or two, should not be relied upon exclusively in determining a cost rate of common equity and the results of multiple cost of common equity models should be taken into account. In addition, the academic literature provides substantial support for the need to rely upon multiple cost of common equity model in arriving at a recommended common equity cost rate.<sup>12</sup>

**Q. ARE THE COST OF COMMON EQUITY MODELS YOU USE MARKET-BASED MODELS, AND HENCE BASED UPON THE EMH?**

A. Yes. The DCF model is market-based in that market prices are utilized in developing the dividend yield component of the model. The RPM is market-based in that the bond ratings and expected bond yields used in the application of the RPM reflect the market's assessment of bond/credit risk. In addition, the use of betas to determine the equity risk premium also reflects the market's assessment of market/systematic risk as betas are derived from regression analyses of market prices. The CAPM is market-based for many of the same reasons that the RPM is market-based i.e., the use of expected bond (Treasury bond) yields and betas. The process of selecting the comparable risk non-price regulated companies is market-based in that it is based upon statistics which result from regression analyses of market prices and reflect the market's assessment of total risk. Therefore, all the cost of common equity models I utilize are market-based models, and hence based upon the EMH.

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<sup>12</sup> Morin 428-431.  
Brigham, Eugene F. and Gapenski, Louis C., Financial Management – Theory and Practice Fourth Edition, (The Dryden Press, 1985) 256.  
Brigham, Eugene F. and Daves, Phillip R., Intermediate Financial Management, (Thomson-Southwestern, 2007) 332-333.

1 **Discounted Cash Flow Model (DCF)**

2 **Q. WHAT IS THE THEORETICAL BASIS OF THE DCF MODEL?**

3 A. The theory underlying the DCF model is that the present value of an expected  
4 future stream of net cash flows during the investment holding period can be  
5 determined by discounting those cash flows at the cost of capital, or the  
6 investors' capitalization rate. DCF theory indicates that an investor buys a stock  
7 for an expected total return rate which is derived from cash flows received in the  
8 form of dividends plus appreciation in market price (the expected growth rate).  
9 Mathematically, the dividend yield on market price plus a growth rate equals the  
10 capitalization rate, i.e., the total common equity return rate expected by investors.

11 **Q. WHICH VERSION OF THE DCF MODEL DO YOU USE?**

12 A. I utilize the single-stage constant growth DCF model because, in my experience,  
13 it is the most widely utilized version of the DCF used in public utility rate  
14 regulation. In my opinion, it is widely utilized because utilities are generally in the  
15 mature stage of their lifecycles and not transitioning from one growth stage to  
16 another.

17 All companies, including utilities, go through typical life cycles in their  
18 development, initially progressing through a growth stage, moving onto a  
19 transition stage and finally assuming a steady-state or constant growth state.  
20 However, the U.S. public utility industry is a long-standing industry, dating back  
21 to approximately 1882. The standards of rate of return regulation of public utilities  
22 date back to the previously discussed principles of fair rate of return established  
23 in the Hope and Bluefield decisions of 1944 and 1923, respectively. Hence, the  
24 public utility industry in the U.S. is a stable and mature industry characterized by  
25 the steady-state or constant-growth stage of a multi-stage DCF model. The



1 regulated economics of the utility industry further reflect the features of this  
2 relative stability and demand maturity. Their returns on capital investment, i.e.,  
3 rate base, are set through a ratemaking process and not determined in the  
4 competitive markets. This characteristic, taken together with the longevity of the  
5 public utility industry at large, all contribute to the stability and maturity of the  
6 industry, including the water industry.

7 Since there is no basis for applying multi-stage growth versions of the  
8 DCF model to determine the common equity cost rates of mature public utility  
9 companies, the constant growth model is most appropriate.

10 **Q. PLEASE DESCRIBE THE DIVIDEND YIELD YOU USED IN YOUR**  
11 **APPLICATION OF THE DCF MODEL.**

12 A. The unadjusted dividend yields are based upon a recent (April 30, 2013)  
13 indicated dividend divided by the average of closing market prices for the 60  
14 days ending April 30, 2013 as shown in Column 1 on page 1 of Schedule PMA-5.

15 **Q. PLEASE EXPLAIN THE ADJUSTED DIVIDEND YIELD SHOWN ON PAGE 1**  
16 **OF SCHEDULE PMA-5, COLUMN 6.**

17 A. Because dividends are paid periodically (quarterly), as opposed to continuously  
18 (daily), an adjustment must be made to the dividend yield. This is often referred  
19 to as the discrete, or the Gordon Periodic, version of the DCF model.

20 DCF theory calls for the use of the full growth rate, or  $D_1$ , in calculating the  
21 dividend yield component of the model. However, since the various companies  
22 in the proxy group increase their quarterly dividend at various times during the  
23 year, a reasonable assumption is to reflect one-half the annual dividend growth  
24 rate in the dividend yield component, or  $D_{1/2}$ . This is a conservative approach  
25 which does not overstate the dividend yield which should be representative of the

1 next twelve-month period. Therefore, the actual average dividend yields in  
2 Column 1 on page 1 of Schedule PMA-5 have been adjusted upward to reflect  
3 one-half the average projected growth rate shown in Column 6.

4 **Q. PLEASE EXPLAIN THE BASIS OF THE GROWTH RATES OF THE PROXY**  
5 **GROUP WHICH YOU USE IN YOUR APPLICATION OF THE DCF MODEL.**

6 A. Schedule PMA-6 shows that approximately 51% of the common shares of the  
7 nine water companies are held by individuals as opposed to institutional  
8 investors. Institutional investors tend to have more extensive informational  
9 resources than most individual investors. Individual investors, with more limited  
10 resources, are therefore likely to place great significance on the opinions  
11 expressed by financial information services, such as *Value Line*, Reuters, Zacks  
12 and Yahoo! Finance, which are easily accessible and/or available on the Internet  
13 and through public libraries. Investors realize that analysts have significant  
14 insight into the dynamics of the industries and individual companies they analyze,  
15 as well as company's abilities to effectively manage the effects of changing laws  
16 and regulations and ever changing economic and market conditions.

17 Over the long run, there can be no growth in DPS without growth in EPS.  
18 Security analysts' earnings expectations have a more significant, but not sole,  
19 influence on market prices than dividend expectations. Thus, the use of earnings  
20 growth rates in a DCF analysis provides a better matching between investors'  
21 market price appreciation expectations and the growth rate component of the  
22 DCF. Earnings expectations have a significant influence on market prices and  
23 their appreciation or "growth" experienced by investors.<sup>13</sup> This should be evident

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<sup>13</sup> Morin 298 - 303.

1 even to relatively unsophisticated investors just by listening to financial news  
2 reports on radio, TV or reading the newspapers.

3 **Q. PLEASE SUMMARIZE THE DCF MODEL RESULTS.**

4 A. As shown on page 1 of Schedule PMA-5, the average result of the application of  
5 the single-stage DCF model is 9.30% while the median result is 8.91% for the  
6 nine water companies. In arriving at a conclusion of a DCF-indicated common  
7 equity cost rate for the proxy group, I have relied upon the median of the results  
8 of the DCF, due to the wide range of DCF results as well as the continuing  
9 volatile capital market conditions in light of the continuing fragile economic  
10 recovery, and to not give undue weight to outliers on either the high or the low  
11 side. In my opinion, the median is a more accurate and reliable measure of  
12 central tendency, and provides recognition of all the DCF results.

13 **The Risk Premium Model (RPM)**

14 **Q. PLEASE DESCRIBE THE THEORETICAL BASIS OF THE RPM.**

15 A. The RPM is based upon the basic financial principle of risk and return, namely,  
16 that investors require greater returns for bearing greater risk. The RPM  
17 recognizes that common equity capital has greater investment risk than debt  
18 capital, as common equity shareholders are last in line in any claim on a  
19 company's assets and earnings, with debt holders being first in line. Therefore,  
20 investors require higher returns from common stocks than from investment in  
21 bonds, to compensate them for bearing the additional risk.

22 While the investors' required common equity return cannot be directly  
23 determined or observed, it is possible to directly observe bond returns and yields.  
24 According to RPM theory, one can assess a common equity risk premium over

1 bonds, either historically or prospectively, and then use that premium to derive a  
2 cost rate of common equity.

3 In summary, according to RPM theory, the cost of common equity equals  
4 the expected cost rate for long-term debt capital plus a risk premium over that  
5 cost rate to compensate common shareholders for the added risk of being  
6 unsecured and last-in-line for any claim on the corporation's assets and earnings.

7 **Q. PLEASE EXPLAIN HOW YOU DERIVED YOUR INDICATED COST OF**  
8 **COMMON EQUITY BASED UPON THE RPM.**

9 A. I relied upon the results from the application of two risk premium methods. The  
10 first method is the Predictive Risk Premium Model<sup>TM</sup> (PRPM<sup>TM</sup>), while the second  
11 method is a risk premium model using a total market approach.

12 **Q. PLEASE EXPLAIN THE PRPM<sup>TM</sup>.**

13 A. The PRPM<sup>TM</sup>, published in the *Journal of Regulatory Economics (JRE)*<sup>14</sup>, was  
14 developed from the work of Robert F. Engle who shared the Nobel Prize in  
15 Economics in 2003 “for methods of analyzing economic time series with time-  
16 varying volatility (ARCH)<sup>15</sup>” with “ARCH” standing for autoregressive conditional  
17 heteroskedasticity. In other words, volatility changes over time and is related  
18 from one period to the next, especially in financial markets. Engle discovered  
19 that the volatility in prices and returns also clusters over time, is therefore highly  
20 predictable and can be used to predict future levels of risk and risk premiums.  
21 The PRPM<sup>TM</sup> estimates the risk / return relationship directly, as the predicted  
22 equity risk premium is generated by the prediction of volatility, i.e., risk. In

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<sup>14</sup> “A New Approach for Estimating the Equity Risk Premium for Public Utilities”, Pauline M. Ahern, Frank J. Hanley and Richard A. Michelfelder, Ph.D. *The Journal of Regulatory Economics* (December 2011), 40:261-278.

<sup>15</sup> [www.nobelprize.org](http://www.nobelprize.org)

1 addition, the PRPM<sup>TM</sup> is not based upon an estimate of investor behavior, but  
2 rather upon the evaluation of the results of that behavior, i.e., the variance of  
3 historical equity risk premiums. Also, in the derivation of the premiums, greater  
4 weight is given to more recent time periods, in contrast to reliance upon the  
5 arithmetic mean premium which gives equal weight to each observed premium.

6 The inputs to the model are the historical returns on the common shares  
7 of each company in the proxy group minus the historical monthly yield on long-  
8 term U.S. Treasury securities through March 2013. Using a generalized form of  
9 ARCH, known as GARCH, each water company's projected equity risk premium  
10 was determined using Eviews<sup>®</sup> statistical software. The forecasted 30-year U.S.  
11 Treasury Bond (Note) yield based upon the consensus forecast derived from the  
12 May 1, 2013 Blue Chip Financial Forecasts (Blue Chip), or 3.35%, was averaged  
13 with the historical income return on long-term government bonds of 5.28% to  
14 derive a risk-free rate of 4.32%, as discussed below, which was then added to  
15 each company's PRPM<sup>TM</sup>-derived equity risk premium to arrive at a PRPM<sup>TM</sup>  
16 derived cost of common equity as shown on page 2 of Schedule PMA-7 which  
17 presents the results for each proxy company as well as the average and median  
18 results. As shown on page 2, the average PRPM<sup>TM</sup> indicated common equity  
19 cost rate is 14.97% and the median is 12.02% for the nine water companies.  
20 Consistent with my reliance upon the median DCF result discussed above, I rely  
21 upon the median result of the PRPM<sup>TM</sup>, 12.02% for the proxy group.

22 **Q. PLEASE EXPLAIN THE TOTAL MARKET APPROACH RPM.**

23 A. The total market approach RPM adds a prospective public utility bond yield to an  
24 equity risk premium which is derived from a beta-adjusted total market equity risk  
25 premium and an equity risk premium based upon the S&P Utilities Index.

1 **Q. PLEASE EXPLAIN THE BASIS OF THE EXPECTED BOND YIELD OF 4.56%**  
2 **APPLICABLE TO THE NINE WATER COMPANIES SHOWN ON PAGE 3 OF**  
3 **SCHEDULE PMA-7.**

4 A. The first step in the total market approach RPM analysis is to determine the  
5 expected bond yield. Because both ratemaking and the cost of capital, including  
6 common equity cost rate, are prospective in nature, a prospective yield on  
7 similarly-rated long-term debt is essential. Hence, I rely upon a consensus  
8 forecast of about 50 economists of the expected yield on Aaa rated corporate  
9 bonds for the six calendar quarters ending with the third calendar quarter of 2014  
10 as derived from the May 1, 2013 *Blue Chip* (shown on page 9 of Schedule PMA-  
11 7). As shown on Line No. 1 of page 3 of Schedule PMA-7, the average expected  
12 yield on Moody's Aaa rated corporate bonds is 4.05%. An adjustment of 0.33%  
13 is necessary to adjust that average Aaa corporate bond yield to be equivalent to  
14 a Moody's A2 rated public utility bond, as shown on Line No. 2 and explained in  
15 Note 2 resulting in an expected bond yield applicable to a Moody's A rated public  
16 utility bond of 4.30% as shown on Line No. 3.

17 Since the nine water companies' average Moody's bond rating is A3, an  
18 adjustment of 0.18% is necessary to make the prospective bond yield applicable  
19 to an A3 public utility bond, as detailed in Note 3 on page 3 of Schedule PMA-7.  
20 Therefore, the expected specific bond yield is 4.56% for the nine water  
21 companies as shown on Line No. 5.

22 **Q. PLEASE EXPLAIN THE METHOD UTILIZED TO ESTIMATE THE EQUITY**  
23 **RISK PREMIUM.**

24 A. I evaluated the results of two different market equity risk premium studies based  
25 upon Ibbotson Associates' data, *Value Line's* forecasted total annual market

1 return in excess of the prospective yield on Moody's Aaa corporate bonds, as  
2 well as two different studies of the equity risk premium for public utilities with  
3 Moody's A rated bonds as detailed on pages 8 and 10 of Schedule PMA-7. As  
4 shown on Line No. 3, page 7, the mean equity risk premium is 5.21% applicable  
5 to the nine water companies. This estimate is the result of an average of a beta-  
6 derived equity risk premium as well as the average public utility equity risk  
7 premium relative to bonds rated A by Moody's based upon holding period  
8 returns.

9 **Q. PLEASE EXPLAIN THE BASIS OF THE BETA-DERIVED EQUITY RISK**  
10 **PREMIUM.**

11 A. The basis of the beta-derived equity risk premium applicable to the proxy group  
12 is shown on page 8 of Schedule PMA-7. The beta-determined equity risk  
13 premium should receive substantial weight because betas are derived from the  
14 market prices of common stocks over a recent five-year period. Beta is a  
15 meaningful measure of prospective relative risk to the market as a whole and a  
16 logical means by which to allocate a company's/proxy group's share of the  
17 market's total equity risk premium relative to corporate bond yields.

18 The total market equity risk premium utilized is 7.80%, based upon an  
19 average of the long-term arithmetic mean historical market equity risk premium, a  
20 predicted market equity risk premium based upon the PRPM<sup>TM</sup> and a forecasted  
21 market risk premium based upon *Value Line's* projected market appreciation and  
22 dividend yield.

23 **Q. HOW DID YOU DERIVE THE LONG-TERM HISTORICAL MARKET EQUITY**  
24 **RISK PREMIUM?**

1 A. To derive the historical (expectational) market equity risk premium, I used the  
2 most recent Morningstar data on holding period returns for the large company  
3 common stocks from the Ibbotson® SBBI® 2013 Valuation Yearbook – Market  
4 Results for Stocks, Bonds, Bills and Inflation (SBBI – 2013)<sup>16</sup> and the average  
5 historical yield on Moody's Aaa and Aa rated corporate bonds for the period  
6 1926-2012. The use of holding period returns over a very long period of time is  
7 useful because it is consistent with the long-term investment horizon presumed  
8 by the DCF model.

9 Consequently, as explained in note 1 on page 8 of Schedule PMA-7, the  
10 long-term arithmetic mean monthly total return rate on large company common  
11 stocks of 11.83% and the long-term arithmetic mean monthly yield on Moody's  
12 Aaa and Aa rated corporate bonds of 6.23% were used. As shown on Line No.  
13 1, the resultant long-term historical equity risk premium on the market as a whole  
14 is 5.60%.

15 I used arithmetic mean monthly total return rates for the large company  
16 stocks and yields (income returns) for the Moody's Aaa/Aa corporate bonds,  
17 because they are appropriate for cost of capital purposes as noted in the SBBI –  
18 2013. Arithmetic mean return rates and yields are appropriate because ex-post  
19 (historical) total returns and equity risk premiums differ in size and direction over  
20 time, providing insight into the variance and standard deviation of returns.  
21 Because the arithmetic mean captures the prospect for variance in returns and  
22 equity risk premiums, it provides the valuable insight needed by investors in  
23 estimating future risk when making a current investment. Absent such valuable

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<sup>16</sup> Ibbotson® SBBI® 2013 Valuation Yearbook – Market Results for Stocks, Bonds, Bills and Inflation,  
Morningstar, Inc., 2013, Chicago, IL.



1 insight into the potential variance of returns, investors cannot meaningfully  
2 evaluate prospective risk. If investors alternatively relied upon the geometric  
3 mean of ex-post equity risk premiums, they would have no insight into the  
4 potential variance of future returns because the geometric mean relates the  
5 change over many periods to a constant rate of change, thereby obviating the  
6 year-to-year fluctuations, or variance, *critical to risk analysis*.

7 Only the arithmetic mean takes into account all of the returns / premiums,  
8 hence, providing meaningful insight into the variance and standard deviation of  
9 those returns / premiums.

10 **Q. PLEASE EXPLAIN THE DERIVATION OF PRPM<sup>TM</sup> MARKET EQUITY RISK**  
11 **PREMIUM.**

12 A. The inputs to the model are the historical monthly returns on large company  
13 common stocks from minus the monthly yields on Aaa corporate bonds during the  
14 period from January 1928 through March 2013 (the latest available at the time of  
15 the preparation of this testimony). Using the previously discussed generalized  
16 form of ARCH, known as GARCH, the market's projected equity risk premium was  
17 determined using Eviews<sup>®</sup> statistical software. The resulting predicted market  
18 equity risk premium based upon the PRPM<sup>TM</sup> of 9.17% is shown on Line No. 2 on  
19 page 8 of Schedule PMA-7.

20 **Q. PLEASE EXPLAIN HOW YOU INCORPORATED VALUE LINE'S**  
21 **FORECASTED TOTAL ANNUAL MARKET RETURN MINUS THE**  
22 **PROSPECTIVE YIELD ON AAA RATED CORPORATE BONDS IN YOUR**  
23 **DEVELOPMENT OF AN EQUITY RISK PREMIUM FOR YOUR RPM**  
24 **ANALYSIS?**

1 A. Once again, because both ratemaking and the cost of capital, including the cost  
2 rate of common equity are prospective, a prospective market equity risk premium  
3 is essential. The derivation of the forecasted or prospective market equity risk  
4 premium can be found in note 3 on page 8 of Schedule PMA-7. Consistent with  
5 the development of the dividend yield component of my DCF analysis, it is  
6 derived from an average of the most recent thirteen weeks ending May 3, 2013  
7 3-5 year median market price appreciation potential by *Value Line* plus an  
8 average of the median estimated dividend yield for the common stocks of the  
9 1,700 firms covered in *Value Line's* Standard Edition as explained in detail in  
10 Note 1 on page 2 of Schedule PMA-8.

11 The average median expected price appreciation is 49% which translates  
12 to a 10.48% annual appreciation and, when added to the average (similarly  
13 calculated) median dividend yield of 2.21% equates to a forecasted annual total  
14 return rate on the market as a whole of 12.69%. The forecasted total market  
15 equity risk premium of 8.64%, shown on page 8 of Schedule PMA-7, is derived  
16 by deducting the May 1, 2013 *Blue Chip* consensus estimate of about 50  
17 economists of the expected yield on Moody's Aaa rated corporate bonds for the  
18 six calendar quarters ending with the third calendar quarter 2014 of 4.05%  
19  $(8.64\% = 12.69\% - 4.05\%)$ .

20 In arriving at my conclusion of equity risk premium of 7.80% on Line No. 4  
21 on page 8, I have given equal weight to the historical market equity risk premium  
22 of 5.60%, the PRPM<sup>TM</sup> based market equity risk premium of 9.17% and the  
23 forecasted market equity risk premium of 8.64% shown on Line Nos. 2 and 3,  
24 respectively  $(7.80\% = (5.60\% + 9.17\% + 8.64\%)/3)$ .

1 **Q. WHAT IS YOUR CONCLUSION OF A BETA-DERIVED EQUITY RISK**  
2 **PREMIUM FOR USE IN YOUR RPM ANALYSIS?**

3 A. As shown on page 1 of Schedule PMA-8, the most current median *Value Line*  
4 beta for the nine water companies is 0.70. Applying the median beta of the proxy  
5 group of 0.70 (consistent with my reliance upon the median DCF results as  
6 previously discussed), to the market equity risk premium of 7.80% results in a  
7 beta adjusted equity risk premium of 5.46% for the nine water companies.

8 **Q. HOW DID YOU DERIVE THE 4.95% EQUITY RISK PREMIUM BASED UPON**  
9 **THE S&P UTILITY INDEX AND MOODY'S A RATED PUBLIC UTILITY**  
10 **BONDS?**

11 A. First, I derived the long-term monthly arithmetic mean equity risk premium  
12 between the S&P Utility Index total returns of 10.69% and monthly A rated public  
13 utility bond yields of 6.53% from 1928-2012 to arrive at an equity risk premium of  
14 4.16% as shown on Line No. 3 on page 10 of Schedule PMA-7. I then performed  
15 the PRPM<sup>TM</sup> using the same historical monthly equity risk premiums to arrive at  
16 the PRPM<sup>TM</sup> derived equity risk premium of 5.73% for the S&P Utility Index  
17 shown on Line No. 4, on page 10. The average of these equity risk premiums is  
18 4.95%, shown on Line No. 5 ( $4.95\% = (4.16\% + 5.73\%)/2$ ).

19 **Q. WHAT IS YOUR CONCLUSION OF AN EQUITY RISK PREMIUM FOR USE IN**  
20 **YOUR TOTAL MARKET APPROACH RPM ANALYSIS?**

21 A. The equity risk premium applicable to the proxy group of nine water companies is  
22 the average of the beta-derived premium, 5.46%, and that based upon the  
23 holding period returns of public utilities with A rated bonds, 4.95%, as  
24 summarized on Line No. 3 on Schedule PMA-8, page 7, i.e., 5.21% ( $5.21\% =$   
25  $(5.46\% + 4.95\%)/2$ ).

1 Q. WHAT IS THE INDICATED RPM COMMON EQUITY COST RATE BASED  
2 UPON THE TOTAL MARKET APPROACH?

3 A. It is 9.77% for the nine water companies as shown on Line No. 7 on Schedule  
4 PMA-7, page 3.

5 Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE PRPM™ AND  
6 THE TOTAL MARKET APPROACH RPM?

7 A. As shown on page 1 of Schedule PMA-7, the indicated RPM-derived common  
8 equity cost rate is 11.46%, derived by giving greater weight to the PRPM™  
9 results because the PRPM™ is based upon a minimum of restrictive  
10 assumptions.<sup>17</sup> In addition, the PRPM™ is “not based upon an estimate of  
11 investor behavior, but rather, upon a statistical analysis of actual investor  
12 behavior” because it evaluates the results of that behavior, i.e., the volatility of  
13 historical equity risk premiums<sup>18</sup>.

14 **The Capital Asset Pricing Model (CAPM)**

15 Q. PLEASE EXPLAIN THE THEORETICAL BASIS OF THE CAPM.

16 A. CAPM theory defines risk as the covariability of a security's returns with the  
17 market's returns as measured by beta ( $\beta$ ). A beta less than 1.0 indicates lower  
18 variability while a beta greater than 1.0 indicates greater variability than the  
19 market.

20 The CAPM assumes that all other risk, i.e., all non-market or unsystematic  
21 risk, can be eliminated through diversification. The risk that cannot be eliminated  
22 through diversification is called market, or systematic, risk. In addition, the

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<sup>17</sup> Ahern, Hanley, Michelfelder, 277.

<sup>18</sup> “Comparative Evaluation of the Predictive Risk Premium Model™, the Discounted Cash Flow Model and the Capital Asset Pricing Model; co-authored with Richard A. Michelfelder, Ph.D., Rutgers University, Dylan W. D’Ascendis, Frank J. Hanley, *The Electricity Journal*, May 2013.

CAPM presumes that investors require compensation only for these systematic risks which are the result of macroeconomic and other events that affect the returns on all assets. The model is applied by adding a risk-free rate of return to a market risk premium, which is adjusted proportionately to reflect the systematic risk of the individual security relative to the total market as measured by beta. The traditional CAPM model is expressed as:

$$R_s = R_f + \beta(R_m - R_f)$$

Where:  $R_s$  = Return rate on the common stock

$R_f$  = Risk-free rate of return

$R_m$  = Return rate on the market as a whole

$\beta$  = Adjusted beta (volatility of the security relative to the market as a whole)

Numerous tests of the CAPM have measured the extent to which security returns and betas are related as predicted by the CAPM confirming its validity. The empirical CAPM (ECAPM) reflects the reality that while the results of these tests support the notion that beta is related to security returns, the empirical Security Market Line (SML) described by the CAPM formula is not as steeply sloped as the predicted SML.<sup>19</sup>

In view of theory and practical research, I have applied both the traditional CAPM and the ECAPM to the companies in the proxy group and averaged the results.

**Q. PLEASE DESCRIBE YOUR SELECTION OF A RISK-FREE RATE OF RETURN.**

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<sup>19</sup> Morin 175.

1 A. As shown in column 3 on page 1 of Schedule PMA-8, the risk-free rate adopted  
2 for both applications of the CAPM is 4.32%. The risk-free rate for my CAPM  
3 analysis is based upon the average of the consensus forecast of the reporting  
4 economists in the May 1, 2013 *Blue Chip* of the expected yields on 30-year U.S.  
5 Treasury bonds for the six quarters ending with the third calendar quarter of 2014  
6 of 3.35% averaged with the historical arithmetic mean income return on long-  
7 term U.S. Treasury Bonds of 5.28% as shown in note 2, page 2 of Schedule  
8 PMA-8 ( $4.32\% = (3.35\% + 5.28\%)/2$ ).

9 **Q. WHY HAVE YOU AVERAGED THE PROSPECTIVE AND HISTORICAL**  
10 **YIELDS ON U.S. TREASURY SECURITIES?**

11 A. I have averaged the prospective and historical yields on U.S. Treasury Securities  
12 because in the current U.S. Treasury securities market, the Federal Reserve  
13 Bank is artificially and indefinitely keeping interest rates low until certain  
14 economic thresholds are met; i.e., unemployment falls to 6.5% and inflation rises  
15 to 2.5%, amid concerns over the struggling U.S. economy. As a result, current  
16 30-year U.S. Treasury Bond yields and the consensus forecasted yields are near  
17 historical and unprecedented lows. As such, they are not currently  
18 representative of the long-term cost of capital.

19 **Q. WHY IS THE YIELD ON LONG-TERM U.S. TREASURY BONDS**  
20 **APPROPRIATE FOR USE AS THE RISK-FREE RATE?**

21 A. The yield on long-term U.S. Treasury T-Bonds is almost risk-free and its term is  
22 consistent with the long-term cost of capital to public utilities measured by the  
23 yields on A rated public utility bonds, the long-term investment horizon inherent in  
24 utilities' common stocks, the long-term investment horizon presumed in the  
25 standard DCF model employed in regulatory ratemaking, and the long-term life of

1 the jurisdictional rate base to which the allowed fair rate of return, i.e., cost of  
2 capital will be applied. In contrast, short-term U.S. Treasury yields are more  
3 volatile and largely a function of Federal Reserve monetary policy.

4 **Q. PLEASE EXPLAIN THE ESTIMATION OF THE EXPECTED EQUITY RISK**  
5 **PREMIUM FOR THE MARKET.**

6 A. The basis of the market equity risk premium is explained in detail in Note 1 on  
7 page 2 of Schedule PMA-8. It is derived from an average of the most recent  
8 thirteen weeks ending May 3, 2013 3-5 year median total market price  
9 appreciation projections from *Value Line*; the PRPM<sup>TM</sup> predicted market equity  
10 risk premium using monthly equity risk premiums for large company common  
11 stocks relative to long-term U.S. Treasury securities from January 1926 through  
12 March 2013; and, the arithmetic mean monthly equity risk premiums of large  
13 company common stocks relative to long-term U.S. Treasury bond income yields  
14 from SBBI-2013 from 1926-2012.

15 The *Value Line*-derived forecasted total market equity risk premium is  
16 derived by deducting the 4.32% average of the May 1, 2013 *Blue Chip*  
17 consensus estimate of the expected yield on U.S. Treasury Notes and the  
18 historical arithmetic mean income return on long-term government bonds  
19 discussed above from the *Value Line* projected total annual market return of  
20 12.69%, resulting in a forecasted total market equity risk premium of 8.37%. The  
21 PRPM<sup>TM</sup> market equity risk premium is 10.28%; derived using the PRPM<sup>TM</sup>,  
22 discussed above, relative to the yields on long-term U.S. Treasury securities from  
23 January 1926 through March 2013 (the latest available at the time of the  
24 preparation of this testimony). The long-term income return on U.S. Government  
25 Securities of 5.28% was deducted from the SBBI-2013 monthly historical total

1 market return of 11.83% resulting in an historical market equity risk premium of  
2 6.55%.

3 These three market equity risk premiums, when averaged, result in an  
4 average total market equity risk premium of 8.40% ( $8.40\% = (8.37\% + 10.28\% +$   
5  $6.55\%)/3$ ).

6 **Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE TRADITIONAL**  
7 **AND EMPIRICAL CAPM TO THE PROXY GROUP?**

8 A. As shown on Schedule PMA-8, page 1, the average traditional CAPM cost rate is  
9 10.11%, while the median is 10.20% for the nine water companies. The average  
10 ECAPM cost rate is 10.76%, while the median is 10.83%. Consistent with my  
11 reliance upon the median DCF results discussed above, I rely upon the median  
12 results of the traditional CAPM and ECAPM for the proxy group, 10.20% and  
13 10.83%, respectively. Thus, as shown on column 6 on page 1, the CAPM cost  
14 rate applicable to the proxy group is 10.52%<sup>20</sup> based upon an average of the  
15 traditional CAPM and ECAPM results for the proxy group.

16 **Common Equity Cost Rates For The Proxy Group Of Domestic, Non-Price**  
17 **Regulated Companies Based Upon the DCF, RPM and CAPM**

18 **Q. DID YOU CALCULATE COMMON EQUITY COST RATES USING THE DCF,**  
19 **RPM AND CAPM FOR THE PROXY GROUP OF DOMESTIC, NON-PRICE**  
20 **REGULATED COMPANIES THAT ARE COMPARABLE IN TOTAL RISK TO**  
21 **THE UTILITY PROXY GROUP?**

22 A. Yes. Because the DCF, RPM and CAPM have been applied in an identical  
23 manner as described above relative to the market data of the nine water

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<sup>20</sup>  $10.52\% = (10.20\% + 10.83\%)/2$ .



1 companies, I will not repeat the details of the rationale and application of each  
2 model shown on page 1 of Schedule PMA-9. An exception is that, in the  
3 application of the RPM, I did not use public utility-specific equity risk premiums nor  
4 applied the PRPM<sup>TM</sup> to the individual companies.

5 Page 5 of Schedule PMA-9 contains the derivation of the DCF cost rates. As  
6 shown, the median DCF cost rate for the proxy group of thirty non-price regulated  
7 companies comparable in total risk to the nine water companies, is 11.59%.

8 Pages 6 through 8 contain information relating to the 10.44% RPM cost rate  
9 for the proxy group of thirty non-price regulated companies summarized on page  
10 6. As shown on Line No. 1 of page 6 of Schedule PMA-9, the consensus  
11 prospective yield on Moody's Baa rated corporate bonds for the six quarters  
12 ending with the third quarter of 2014 from the May 1, 2013 *Blue Chip* is 4.98%.  
13 Since the thirty non-price regulated companies comparable in total risk to the nine  
14 water companies have an average Moody's bond rating of Baa2 as shown on  
15 page 7 of Schedule PMA-9, no adjustment is necessary to make the prospective  
16 bond yield applicable to the Baa corporate bond yield. Thus, the expected  
17 specific bond yield is 4.98% for the thirty non-price regulated companies as shown  
18 on Line No. 1 on page 6 of Schedule PMA-9.

19 When the beta-adjusted risk premium of 5.46% relative to the proxy group of  
20 non-price regulated companies, as derived on page 8, is added to the prospective  
21 Baa rated corporate bond yields of 4.98% and the indicated RPM cost rate is  
22 10.44%.

23 Page 9 contains the details of the application of the traditional CAPM and  
24 ECAPM to the proxy group of thirty non-price regulated companies comparable in  
25 total risk to the nine water companies. As shown, the median traditional CAPM

and ECAPM cost rates are 10.20% and 10.83%, respectively, for the thirty non-price regulated companies which, when averaged, result in an indicated CAPM cost rate of 10.52%<sup>21</sup>.

**Q. WHAT IS YOUR CONCLUSION OF THE COST RATE OF COMMON EQUITY BASED UPON THE PROXY GROUP OF NON-PRICE REGULATED COMPANIES COMPARABLE IN TOTAL RISK TO THE NINE WATER COMPANIES?**

A. As shown on page 1 of Schedule PMA-9, the results of the DCF, RPM and CAPM applied to the non-price regulated group comparable in total risk to the nine water companies are 11.59%, 10.44% and 10.52%, respectively. Based upon these results, I will rely upon the average DCF, RPM and CAPM result of 10.85% for the proxy group of non-price regulated companies as summarized on page 1 of Schedule PMA-9.

**Conclusion of Common Equity Cost Rate**

**Q. WHAT IS YOUR RECOMMENDED COMMON EQUITY COST RATE RANGE?**

A. It is 11.10% based upon the indicated common equity cost rate range resulting from the application of multiple cost of common equity models to the nine water companies adjusted for UWRI's business risk.

As discussed above, reliance upon multiple models is consistent with the EMH, upon which all of the models are premised. I employ multiple cost of common equity models as primary tools in arriving at my recommended common equity cost rate because; 1) no single model is so inherently precise that it can be relied upon solely to the exclusion of other theoretically sound models; 2) all

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<sup>21</sup> 10.52% = (10.20% + 10.83%)/2.

1 of the models are based upon the EMH; 3) the use of multiple models adds  
2 reliability to the estimation of the common equity cost rate; and, and 4) as  
3 demonstrated above, the prudence of using multiple cost of common equity  
4 models is supported in both the financial literature and regulatory precedent.  
5 Therefore, no single model should be relied upon exclusively to estimate  
6 investors' required rate of return on common equity.

7 The results of the cost of common equity models applied to the nine water  
8 companies are shown on Schedule PMA-1, page 2 and summarized below:

9 Table 3

	Proxy Group of Nine Water Companies
10	
11	
12	
13	
14	
15	Discounted Cash Flow Model 8.91%
16	Risk Premium Model 11.46
17	Capital Asset Pricing Model 10.52
18	
19	Cost of Equity Models Applied to
20	Comparable Risk, Non-Price
21	Regulated Companies <u>10.85</u>
22	
23	Indicated Common Equity
24	Cost Rate Range <u>10.55%</u>
25	
26	Business Risk Adjustment <u>0.55</u>
27	
28	Recommended Common Equity
29	Cost Rate <u>11.10%</u>

30  
31 Based upon these common equity cost rate results, I conclude that a common  
32 equity cost rate of 10.55% is indicated for the nine water companies before the  
33 business risk adjustment previously discussed and shown on Line No. 6 on  
34 Schedule PMA-1.

**Business Risk Adjustment**

**Q. IS THERE A WAY TO QUANTIFY A BUSINESS RISK ADJUSTMENT DUE TO UWRI'S SMALL SIZE RELATIVE TO THE PROXY GROUP?**

A. Yes. As discussed above, the Company has greater business risk than the average company in the proxy group because of its smaller size relative to the group, measured by the estimated market capitalization of common equity for UWRI, whose common stock is not traded.

Table 4

	<u>Market Capitalization(1)</u> (\$ Millions)	<u>Times Greater than the Company</u>
UWRI	\$11.888	
Proxy Group of Nine Water Companies	1,698.784	142.9x

(1) From page 1 of Schedule PMA-10.

Because the Company's common stock is not publicly traded, I have 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, 201.0%, on April 30, 2013 as shown on page 2 of Schedule PMA-10. Since my recommended common equity cost rate is based upon the market data of the proxy group, it is reasonable to use the market-to-book ratios of the proxy group to estimate UWRI's market capitalization. Hence, the Company's market capitalization is estimated at \$11.888 million based upon the average market-to-book ratio of the proxy group. In contrast, the market capitalization of the

1 average water company was \$1.699 billion on April 30, 2013, or 142.9 times the  
2 size of UWRI's estimated market capitalization.

3 Therefore, it is necessary to upwardly adjust the common equity cost rate  
4 of 10.55% based upon the nine water companies to reflect UWRI's greater risk  
5 due to its smaller relative size. The determination is based upon the size  
6 premiums for decile portfolios of New York Stock Exchange (NYSE), American  
7 Stock Exchange (AMEX) and NASDAQ listed companies for the 1926-2012  
8 period and related data from SBBI® – 2013. The average size premium for the  
9 6<sup>th</sup> decile which the nine water companies fall has been compared with the  
10 average size premium for the 10<sup>th</sup> decile in which the market capitalization of  
11 UWRI would fall if its stock were traded and sold at the April 30, 2013 average  
12 market/book ratio of 201.0% experienced by the nine water companies. As  
13 shown on page 1, the size premium spread between the 10<sup>th</sup> decile and the 6<sup>th</sup>  
14 decile is 4.31%. In view of the foregoing, an upward adjustment of 0.55% to  
15 reflect UWRI's greater relative business risk due to its smaller size is both  
16 reasonable and conservative.

17 A business risk adjustment of 0.55%, when added to the 10.55% indicated  
18 common equity cost rate based upon the nine water companies before  
19 adjustment, results in a business risk-adjusted common equity cost rate of  
20 11.10%<sup>22</sup>.

21 In my opinion, a common equity cost rate of 11.10% is both reasonable  
22 and conservative, providing UWRI with sufficient earnings to enable it to attract  
23 necessary new capital.

---

<sup>22</sup> 11.19% = 10.65% + 0.14% + 0.40%.

1 Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

2 A. Yes.

APPENDIX A

PROFESSIONAL QUALIFICATIONS

OF

PAULINE M. AHERN, CRRA  
PRINCIPAL

AUS CONSULTANTS

**PROFESSIONAL QUALIFICATIONS  
OF  
PAULINE M. AHERN, CRRA  
PRINCIPAL  
AUS CONSULTANTS**

PROFESSIONAL EXPERIENCE

1994-Present

In 1996, I became a Principal of AUS Consultants, continuing to offer testimony as an expert witness on the subjects of fair rate of return, cost of capital and related issues before state public utility commissions. I provide assistance and support to clients throughout the entire ratemaking litigation process. In addition, I supervise the financial analyst and administrative staff in the preparation of fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. The team also assists in the preparation of interrogatory responses, as well as rebuttal exhibits.

As the Publisher of AUS Utility Reports (formerly C. A. Turner Utility Reports), I am responsible for the production, publishing, and distribution of the reports. AUS Utility Reports provides financial data and related ratios for about 80 public utilities, i.e., electric, combination gas and electric, natural gas distribution, natural gas transmission, telephone, and water utilities, on a monthly, quarterly and annual basis. Among the subscribers of AUS Utility Reports are utilities, many state regulatory commissions, federal agencies, individuals, brokerage firms, attorneys, as well as public and academic libraries. The publication has continuously provided financial statistics on the utility industry since 1930.

I am also responsible for maintaining and calculating the performance of the AGA Index, a market capitalization weighted index of the common stocks of the approximately 70 corporate members of the AGA, which serves as the benchmark for the AGA Gas Utility Index Fund.

As an Assistant Vice President from 1994 - 1996, I prepared fair rate of return and cost of capital exhibits which were filed along with expert testimony before various state and federal public utility regulatory bodies. These supporting exhibits include the determination of an appropriate ratemaking capital structure and the development of embedded cost rates of senior capital. The exhibits also support the determination of a recommended return on common equity through the use of various market models, such as, but not limited to, Discounted Cash Flow analysis, Capital Asset Pricing Model and Risk Premium Methodology, as well as an assessment of the risk characteristics of the client utility. I also assisted in the preparation of responses to any interrogatories received regarding such testimonies filed on behalf of client utilities. Following the filing of fair rate of return testimonies, I assisted in the evaluation of opposition testimony in order to prepare interrogatory questions, areas of cross-examination, and rebuttal testimony. I also evaluated and assisted in the preparation of briefs and exceptions following the hearing process. I also submitted testimony before state public utility commissions regarding appropriate capital structure ratios and fixed capital cost rates.

1990-1994

As a Senior Financial Analyst, I supervised two analysts and assisted in the preparation of fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. The team also assisted in the preparation of interrogatory responses.

I evaluated the final orders and decisions of various commissions to determine whether further actions were warranted and to gain insight which assisted in the preparation of future rate of return studies.



I assisted in the preparation of an article authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of Public Utilities Fortnightly.

In 1992, I was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the National Society of Rate of Return Analysts (now the Society of Utility and Regulatory Financial Analysts (SURFA)). This designation is based upon education, experience and the successful completion of a comprehensive examination.

As Administrator of Financial Analysis for AUS Utility Reports, which then reported financial data for over 200 utility companies with approximately 1,000 subscribers, I oversaw the preparation of this monthly publication, as well as the accompanying annual publication, Financial Statistics - Public Utilities.

#### 1988-1990

As a Financial Analyst, I assisted in the preparation of fair rate of return studies including capital structure determination, development of senior capital cost rates, as well as the determination of an appropriate rate of return on equity. I also assisted in the preparation of interrogatory responses, interrogatory questions of the opposition, areas of cross-examination and rebuttal testimony. I also assisted in the preparation of the annual publication C. A. Turner Utility Reports - Financial Statistics - Public Utilities.

#### 1973-1975

As a Research Assistant in the Research Department of the Regional Economics Division of the Federal Reserve Bank of Boston, I was involved in the development and maintenance of econometric models to simulate regional economic conditions in New England in order to study the effects of, among other things, the energy crisis of the early 1970's and property tax revaluations on the economy of New England. I was also involved in the statistical analysis and preparation of articles for the New England Economic Review. Also, I was Assistant Editor of New England Business Indicators.

#### 1972

As a Research Assistant in the Office of the Assistant Secretary for International Affairs, U.S. Treasury Department, Washington, D.C., I developed and maintained econometric models which simulated the economy of the United States in order to study the results of various alternate foreign trade policies so that national trade policy could be formulated and recommended.

#### Clients Served

I have offered expert testimony before the following commissions:

Arkansas	Maine
Arizona	Maryland
British Columbia	Michigan
California	Missouri
Canada	Nevada
Connecticut	New Hampshire
Delaware	New Jersey
Florida	New York
Hawaii	North Carolina
Idaho	Ohio
Illinois	Pennsylvania
Indiana	Rhode Island
Iowa	South Carolina
Kentucky	Virginia
Louisiana	Washington

I have sponsored testimony on fair rate of return and related issues for:

Alpena Power Company  
Apple Canyon Utility Company  
Applied Wastewater Management, Inc.  
Aqua Illinois, Inc.  
Aqua New Jersey, Inc.  
Aqua North Carolina, Inc.  
Aqua Ohio, Inc.  
Aqua Virginia, Inc.  
Aquarion Water Company  
Aquarion Water Co. of New Hampshire, Inc.  
Arizona Water Company  
Artesian Water Company  
Bermuda Water Company  
The Atlantic City Sewerage Company  
Audubon Water Company  
The Borough of Hanover, PA  
Carolina Pines Utilities, Inc.  
Carolina Water Service, Inc. of NC  
Carolina Water Service, Inc. of SC  
The Columbia Water Company  
The Connecticut Water Company  
Consumers Illinois Water Company  
Consumers Maine Water Company  
Consumers New Jersey Water Company  
City of DuBois, Pennsylvania  
Elizabethtown Water Company  
Emporium Water Company  
GTE Hawaiian Telephone Inc.  
Greenridge Utilities, Inc.  
Illinois American Water Company  
Iowa American Water Company  
Jersey Central Power & Light Co.  
Water Services Corp. of Kentucky  
Lake Wildwood Utilities Corp.  
Land'Or Utility Company  
Long Island American Water Company  
Long Neck Water Company  
Louisiana Water Service, Inc.  
Massanutten Public Service Company  
Middlesex Water Company  
Missouri-American Water Company  
Mt. Holly Water Company  
Nero Utility Services, Inc.  
New Jersey Utilities Association  
The Newtown Artesian Water Company  
NRG Energy Center Pittsburgh LLC  
NRG Energy Center Harrisburg LLC  
Ohio-American Water Company  
Penn Estates Utilities  
Pinelands Water Company

Pinelands Waste Water Company  
Pittsburgh Thermal  
San Gabriel Valley Water Company  
San Jose Water Company  
Southland Utilities, Inc.  
Spring Creek Utilities, Inc.  
Sussex Shores Water Company  
Tega Cay Water Services, Inc.  
Total Environmental Services, Inc. –  
Treasure Lake Water & Sewer Divisions  
Thames Water Americas  
Tidewater Utilities, Inc.  
Transylvania Utilities, Inc.  
Trigen – Philadelphia Energy Corporation  
Twin Lakes Utilities, Inc.  
United Utility Companies  
United Water Arkansas, Inc.  
United Water Arlington Hills Sewerage, Inc.  
United Water Connecticut, Inc.  
United Water Delaware, Inc.  
United Water Great Gorge Inc. / United Water  
Vernon Transmission, Inc.  
United Water Idaho, Inc.  
United Water Indiana, Inc.  
United Water New Jersey, Inc.  
United Water New Rochelle, Inc.  
United Water New York, Inc.  
United Water Owego / Nichols, Inc.  
United Water Pennsylvania, Inc.  
United Water Rhode Island, Inc.  
United Water South County, Inc.  
United Water Toms River, Inc.  
United Water Vernon Sewage Inc.  
United Water Virginia, Inc.  
United Water Westchester, Inc.  
United Water West Lafayette, Inc.  
United Water West Milford, Inc.  
Utilities, Inc.  
Utilities Inc. of Central Nevada  
Utilities, Inc. of Florida  
Utilities, Inc. of Louisiana  
Utilities, Inc. of Nevada  
Utilities, Inc. of Pennsylvania  
Utilities, Inc. - Westgate  
Utilities Services of South Carolina  
Utility Center, Inc.  
Valley Energy, Inc.  
Wellsboro Electric Company  
Western Utilities, Inc.

I have sponsored testimony on generic/uniform methodologies for determining the return on common equity for:

Aquarion Water Company  
The Connecticut Water Company  
Corix Multi-Utility Services, Inc.

United Water Connecticut, Inc.  
Utilities, Inc.

I have sponsored testimony on the rate of return and capital structure effects of merger and acquisition issues for:

California-American Water Company

New Jersey-American Water Company

I have sponsored testimony on capital structure and senior capital cost rates for the following clients:

Alpena Power Company  
Arkansas-Western Gas Company  
Associated Natural Gas Company

PG Energy Inc.  
United Water Delaware, Inc.  
Washington Natural Gas Company

I have sponsored testimony on Distribution System Improvement Charges (DSIC):

Arizona Water Company

I have assisted in the preparation of rate of return studies on behalf of the following clients:

Algonquin Gas Transmission Company  
Anadarko Petroleum Corporation  
Arizona Water Company  
Arkansas-Louisiana Gas Company  
Arkansas Western Gas Company  
Artesian Water Company  
Associated Natural Gas Company  
Atlantic City Electric Company  
Bridgeport-Hydraulic Company  
Cambridge Electric Light Company  
Carolina Power & Light Company  
Citizens Gas and Coke Utility  
City of Vernon, CA  
Columbia Gas/Gulf Transmission Cos.  
Commonwealth Electric Company  
Commonwealth Telephone Company  
Conestoga Telephone & Telegraph Co.  
Connecticut Natural Gas Corporation  
Consolidated Gas Transmission Company  
Consumers Power Company  
CWS Systems, Inc.  
Delmarva Power & Light Company  
East Honolulu Community Services, Inc.  
Equitable Gas Company  
Equitrans, Inc.  
Florida Power & Light Company  
Gary Hobart Water Company  
Gasco, Inc.  
GTE Arkansas, Inc.  
GTE California, Inc.  
GTE Florida, Inc.  
GTE Hawaiian Telephone

GTE North, Inc.  
GTE Northwest, Inc.  
GTE Southwest, Inc.  
Great Lakes Gas Transmission L.P.  
Hawaiian Electric Company  
Hawaiian Electric Light Company  
IES Utilities Inc.  
Illinois Power Company  
Interstate Power Company  
Interstate Power & Light Co.  
Iowa Electric Light and Power Company  
Iowa Southern Utilities Company  
Kentucky-West Virginia Gas Company  
Lockhart Power Company  
Middlesex Water Company  
Milwaukee Metropolitan Sewer District  
Mountaineer Gas Company  
National Fuel Gas Distribution Corp.  
National Fuel Gas Supply Corp.  
Newco Waste Systems of NJ, Inc.  
New Jersey Natural Gas Company  
New Jersey-American Water Company  
New York-American Water Company  
North Carolina Natural Gas Corp.  
Northumbrian Water Company  
Ohio-American Water Company  
Oklahoma Natural Gas Company  
Orange and Rockland Utilities  
Paiute Pipeline Company  
PECO Energy Company  
Penn Estates Utilities, Inc.  
Penn-York Energy Corporation

(Rate of Return Study Clients Continued)

Pennsylvania-American Water Co.  
PG Energy Inc.  
Philadelphia Electric Company  
Providence Gas Company  
South Carolina Pipeline Company  
Southwest Gas Corporation  
Stamford Water Company  
Tesoro Alaska Petroleum Company  
Tesoro Refining & Marketing Co.  
United Telephone of New Jersey  
United Utility Companies  
United Water Arkansas, Inc.  
United Water Delaware, Inc.  
United Water Idaho, Inc.  
United Water Indiana, Inc.  
United Water New Jersey, Inc.

United Water New York, Inc.  
United Water Pennsylvania, Inc.  
United Water Virginia, Inc.  
United Water West Lafayette, Inc.  
Utilities, Inc. of Pennsylvania  
Utilities, Inc. - Westgate  
Vista-United Telecommunications Corp.  
Washington Gas Light Company  
Washington Natural Gas Company  
Washington Water Power Corporation  
Waste Management of New Jersey –  
Transfer Station A  
Wellsboro Electric Company  
Western Reserve Telephone Company  
Western Utilities, Inc.  
Wisconsin Power and Light Company

EDUCATION:

1973 – Clark University – B.A. – Honors in Economics (Concentration: Econometrics and Regional/International Economics)  
1991 – Rutgers University – M.B.A. – High Honors (Concentration: Corporate Finance)

PROFESSIONAL AFFILIATIONS:

Advisory Board – Financial Research Institute – University of Missouri's Trulaske School of Business  
Edison Electric Institute – Cost of Capital Working Group  
National Association of Water Companies – Member of the Finance/Accounting/Taxation and Rates and Regulation Committees  
Society of Utility and Regulatory Financial Analysts  
Member, Board of Directors – 2010-2014  
President – 2006-2008 and 2008-2010  
Secretary/Treasurer – 2004-2006  
American Finance Association  
Financial Management Association  
Energy Bar Association  
Energy Association of Pennsylvania

SPEAKING ENGAGEMENTS:

"Decoupling: Impact on the Risk and Cost of Common Equity of Public Utility Stocks", before the Society of Utility and Regulatory Financial Analysts: 45<sup>th</sup> Financial Forum, April 17-18, 2013, Indianapolis, IN.

"Issues Surrounding the Determination of the Allowed Rate of Return", before the Staff Subcommittee on Electricity of the National Association of Regulatory Utility Commissioners, Winter 2013 Committee Meetings, February 3, 2013, Washington, DC.

"Leadership in the Financial Services Sector", Guest Professor – Cost of Capital, Business Leader Development Program, Rutgers University School of Business, February 1, 2013, Camden, NJ.

"Analyst Training in the Power and Gas Sectors", SNL Center for Financial Education, Downtown Conference Center at Pace University, New York City, December 12, 2012, Instructor (Financial Statement Analysis).

"Regulatory Training in Financing Planning, Strategies and Accounting Issues for Publicly and Privately Owned Water and Wastewater Utilities", New Mexico State University Center for Public Utilities, October 14-19, 2012, Instructor (Cost of Financial Capital).

"Application of a New Risk Premium Model for Estimating the Cost of Common Equity", Co-Presenter with Dylan W. D'Ascendis, CRRA, AUS Consultants, Edison Electric Institute Cost of Capital Working Group, October 3, 2012, Webinar.

"Application of a New Risk Premium Model for Estimating the Cost of Common Equity", Co-Presenter with Dylan W. D'Ascendis, CRRA, AUS Consultants, Staff Subcommittee on Accounting and Finance of the National Association of Regulatory Commissioners, September 10, 2012, St. Paul, MN.

"Analyst Training in the Power and Gas Sectors", SNL Center for Financial Education, Downtown Conference Center at Pace University, New York City, August 7, 2012, Instructor (Financial Statement Analysis).

"Advanced Regulatory Training in Financing Planning, Strategies and Accounting Issues for Publicly and Privately Owned Water and Wastewater Utilities", New Mexico State University Center for Public Utilities, May 13-17, 2012, Instructor (Cost of Financial Capital).

"A New Approach for Estimating the Equity Risk Premium Applied to Public Utilities", before the Finance and Regulatory Committees of the National Association of Water Companies, March 29, 2012, Telephonic Conference.

"A New Approach for Estimating the Equity Risk Premium Applied to Public Utilities", (co-presenter with Frank J. Hanley, Principal and Director, AUS Consultants) before the Water Committee of the National Association of Regulatory Utility Commissioners' Winter Committee Meetings, February 7, 2012, Washington, DC.

"A New Approach for Estimating the Equity Risk Premium Applied to Public Utilities", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University and Frank J. Hanley, Principal and Director, AUS Consultants) before the Wall Street Utility Group, December 19, 2011, New York City, NY.

"Advanced Cost and Finance Issues for Water", (co-presenter with Gary D. Shambaugh, Principal & Director, AUS Consultants), 2011 Advanced Regulatory Studies Program – Ratemaking, Accounting and Economics, September 29, 2011, Kellogg Center at Michigan State University – Institute for Public Utilities, East Lansing, MI.

"Public Utility Betas and the Cost of Capital", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) – Advanced Workshop in Regulation and Competition, 30<sup>th</sup> Annual Eastern Conference of the Center for Research in Regulated Industries (CRRI), May 20, 2011, Rutgers University, Skytop, PA.

Moderator: Society of Utility and Regulatory Financial Analysts: 43<sup>rd</sup> Financial Forum – "Impact of Cost Recovery Mechanisms on the Perception of Public Utility Risk", April 14-15, 2011, Washington, DC.

"A New Approach for Estimating the Equity Risk Premium for Public Utilities", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) – Hot Topic Hotline Webinar, December 3, 2010, Financial Research Institute of the University of Missouri.

"A New Approach for Estimating the Equity Risk Premium for Public Utilities", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) before the Indiana Utility Regulatory Commission Cost of Capital Task Force, September 28, 2010, Indianapolis, IN

Tomorrow's Cost of Capital: Cost of Capital Issues 2010, Deloitte Center for Energy Solutions, 2010 Deloitte Energy Conference, "Changing the Great Game: Climate, Customers and Capital", June 7-8, 2010, Washington, DC.

"A New Approach for Estimating the Equity Risk Premium for Public Utilities", (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) – Advanced Workshop in Regulation and Competition, 29<sup>th</sup> Annual Eastern Conference of the Center for Research in Regulated Industries (CRRI), May 20, 2010, Rutgers University, Skytop, PA

Moderator: Society of Utility and Regulatory Financial Analysts: 42<sup>nd</sup> Financial Forum – "The Changing Economic and Capital Market Environment and the Utility Industry", April 29-30, 2010, Washington, DC

"A New Model for Estimating the Equity Risk Premium for Public Utilities" (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) – Spring 2010 Meeting of the Staff Subcommittee on Accounting and Finance of the National Association of Regulatory Utility Commissioners, March 17, 2010, Charleston, SC

"New Approach to Estimating the Cost of Common Equity Capital for Public Utilities" (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) - Advanced Workshop in Regulation and Competition, 28<sup>th</sup> Annual Eastern Conference of the Center for Research in Regulated Industries (CRRI), May 14, 2009, Rutgers University, Skytop, PA

Moderator: Society of Utility and Regulatory Financial Analysts: 41<sup>st</sup> Financial Forum – "Estimating the Cost of Capital in Today's Economic and Capital Market Environment", April 16-17, 2009, Washington, DC

"Water Utility Financing: Where Does All That Cash Come From?", AWWA Pre-Conference Workshop: Water Utility Ratemaking, March 25, 2008, Atlantic City, NJ

#### PAPERS:

"Comparative Evaluation of the Predictive Risk Premium Model<sup>TM</sup>, the Discounted Cash Flow Model and the Capital Asset Pricing Model", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University, Dylan W. D'Ascendis, and Frank J. Hanley, The Electricity Journal, May, 2013 (forthcoming).

"A New Approach for Estimating the Equity Risk Premium for Public Utilities", co-authored with Frank J. Hanley and Richard A. Michelfelder, Ph.D., Rutgers University, The Journal of Regulatory Economics (December 2011), 40:261-278.

"Comparable Earnings: New Life for Old Precept" co-authored with Frank J. Hanley, Financial Quarterly Review, (American Gas Association), Summer 1994.

BEFORE THE  
RHODE ISLAND PUBLIC UTILITIES COMMISSION

EXHIBIT  
TO ACCOMPANY THE  
PREPARED DIRECT TESTIMONY  
OF

PAULINE M. AHERN, CRRA  
PRINCIPAL  
AUS CONSULTANTS

RE: UNITED WATER RHODE ISLAND INC.

AUGUST 2013

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to the Exhibit  
of Pauline M. Ahern, CRR

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United Water Rhode Island, Inc.  
Summary of Cost of Capital and Fair Rate of Return  
Based upon the Consolidated Capital Structure of  
United Waterworks, Inc. at March 31, 2013

<u>Type of Capital</u>	<u>Ratios (1)</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	46.55%	6.05% (1)	2.82%
Common Equity	<u>53.45%</u>	11.10% (2)	<u>5.93%</u>
Total	<u>100.00%</u>		<u>8.75%</u>

Notes:

(1) Company-Provided.

(2) Based upon informed judgment from the entire study, the principal results of which are summarized on page 2.

United Water Rhode Island, Inc.  
Brief Summary of Common Equity Cost Rate

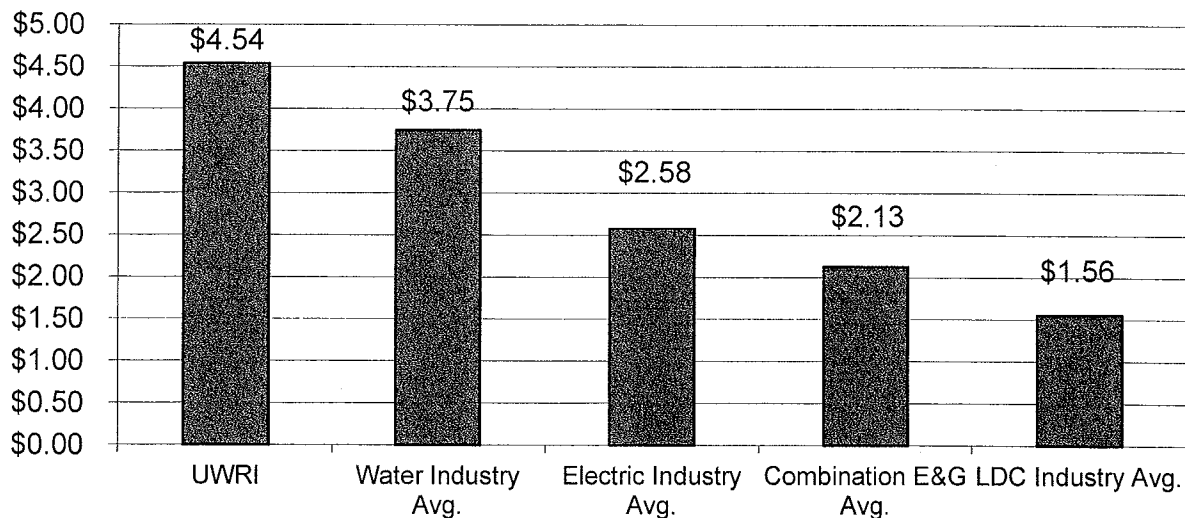
No.	Principal Methods	Proxy Group of Nine Water Companies
1.	Discounted Cash Flow Model (DCF) (1)	8.91 %
2.	Risk Premium Model (RPM) (2)	11.46
3.	Capital Asset Pricing Model (CAPM) (3)	10.52
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	<u>10.85</u>
5.	Indicated Common Equity Cost Rate before Adjustment for Business Risks	10.55 %
6.	Business Risk Adjustment (5)	<u>0.55</u>
7.	Recommended Common Equity Cost Rate	<u><u>11.10 %</u></u>

Notes: (1) From Schedule PMA-5.  
(2) From page 1 of Schedule PMA-7.  
(3) From page 1 of Schedule PMA-8.  
(4) From page 1 of Schedule PMA-9.  
(5) Business risk adjustment to reflect UWRI's greater business risk due to its small size relative to the proxy group as detailed in Ms. Ahern's accompanying direct testimony.

United Water Rhode Island, Inc.  
2012 Capital Intensity of United Water Rhode Island, Inc. and  
AUS Utility Reports Utility Companies Industry Averages

	Average Net Plant (\$ mill)	Average Operating Revenue (\$ mill)	Capital Intensity (\$)	Capital Intensity UWRI v. Other Industries ( times )
United Water Rhode Island, Inc.	\$ 16.74	\$ 3.69	\$ 4.54	--
Water Industry Average	\$ 2,176.28	\$ 581.03	\$ 3.75	121.07%
Electric Industry Average	\$ 15,827.38	\$ 6,137.19	\$ 2.58	175.97%
Combination Elec. & Gas Industry Average	\$ 12,857.91	\$ 6,036.43	\$ 2.13	213.15%
Gas Distribution Average	\$ 3,348.51	\$ 2,149.69	\$ 1.56	291.03%

## 2012 Capital Intensity



**Notes:**

Capital intensity is equal to average net plant divided by total operating revenue.

**Source of Information:**

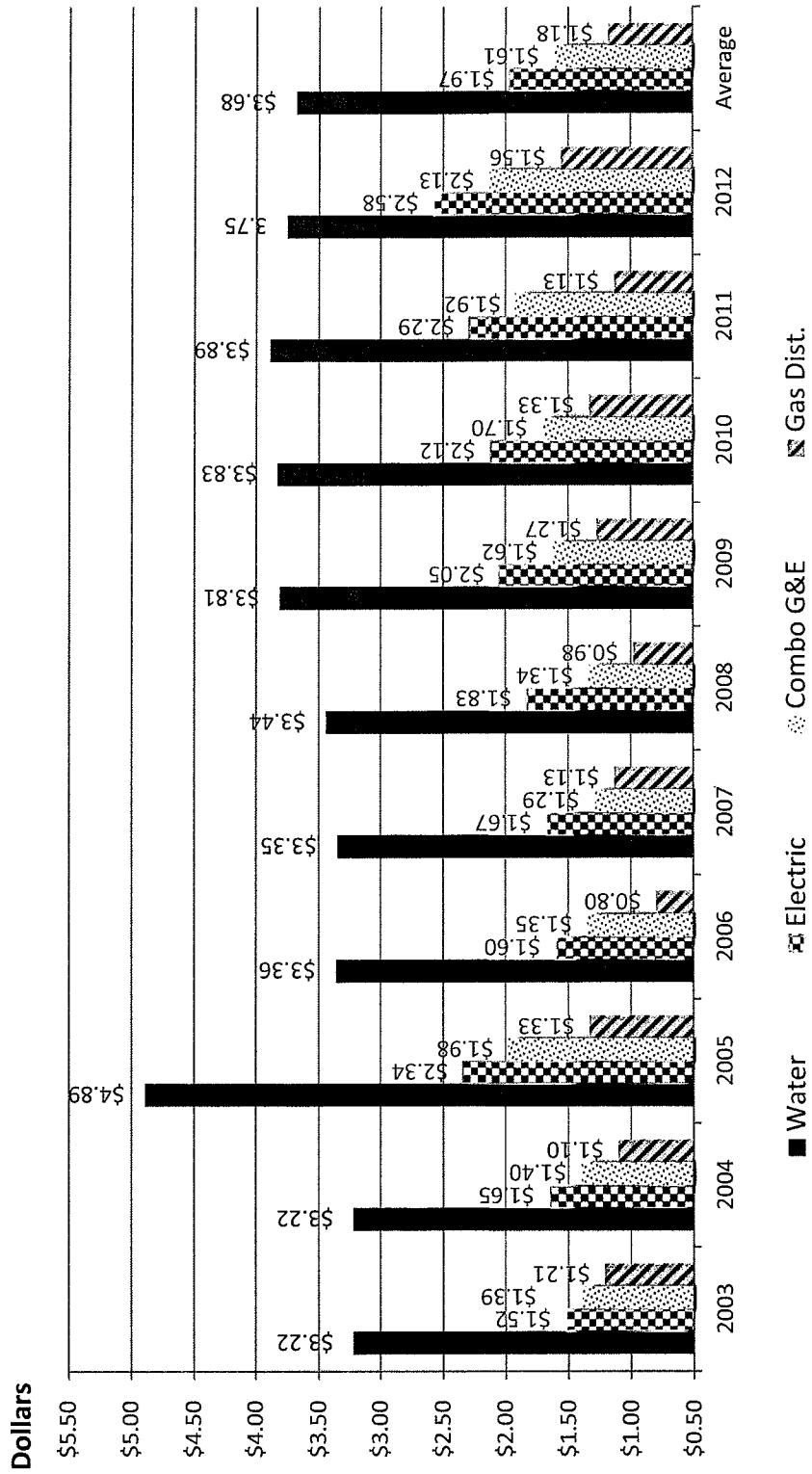
EDGAR Online's I-Metrix Database  
Company Annual Forms 10-K

AUS Utility Reports - May 2013

Published By AUS Consultants

Company Provided Information

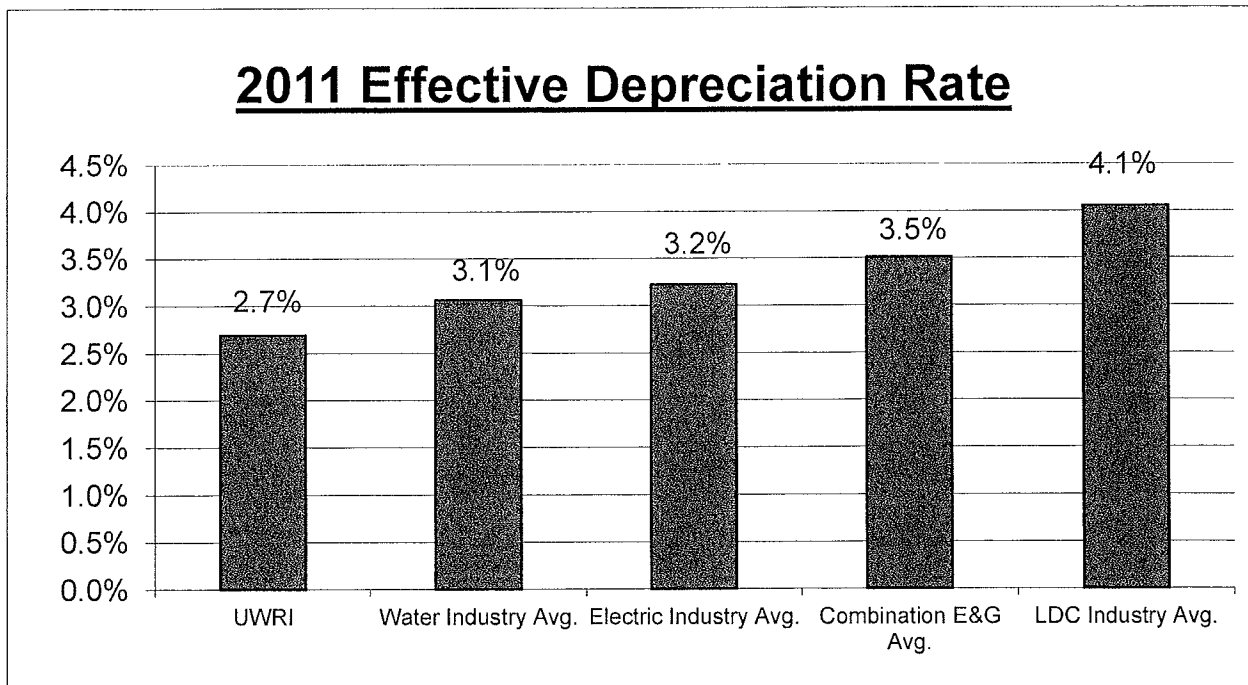
# Capital Intensity of the AUS Utility Reports Companies 2003 - 2012



Source of Information: SEC Edgar I-Metrix Online Database

United Water Rhode Island, Inc.  
2012 Depreciation Rate of United Water Rhode Island, Inc. and  
AUS Utility Reports Utility Companies Industry Averages

	Depreciation Depletion & Amort. Expense (\$ mill)	Average Total Gross Plant Less CWIP (\$ mill)	Depreciation Rate (%)	Depreciation Rate UWRI v. Other Industries ( times )
United Water Rhode Island, Inc.	\$ 0.49	\$ 18.28	2.7%	- -
Water Industry Average	\$ 73.48	\$ 2,397.71	3.1%	87.10%
Electric Industry Average	\$ 658.38	\$ 20,391.08	3.2%	84.38%
Combination Elec. & Gas Industry Average	\$ 625.25	\$ 17,796.66	3.5%	77.14%
LDC Gas Distribution Industry Average	\$ 175.22	\$ 4,318.74	4.1%	65.85%



**Notes:**

Effective Depreciation Rate is equal to Depreciation, Depletion and Amortization Expense divided by average beginning and ending year's Gross Plant minus Construction Work in Progress.

**Source of Information:**

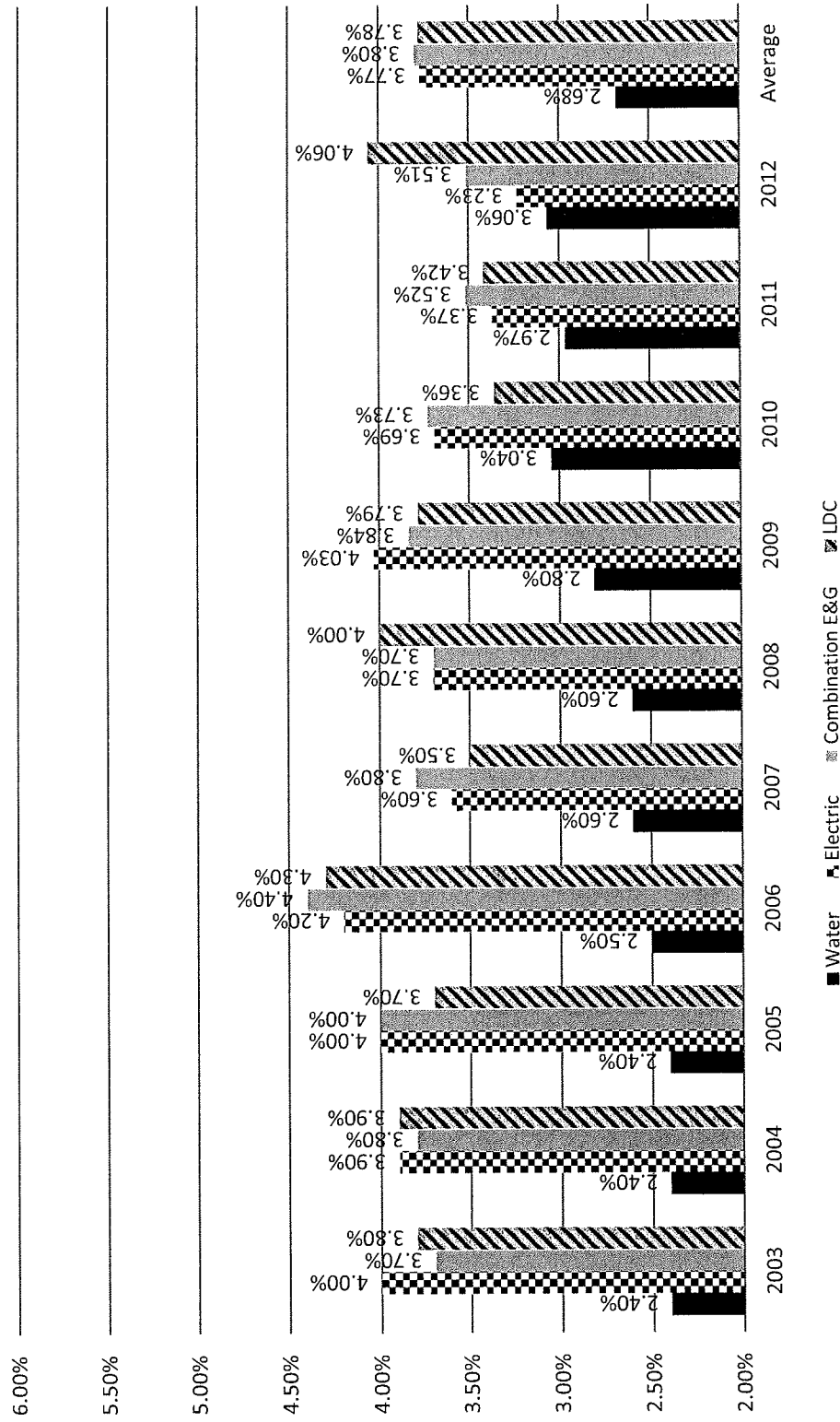
EDGAR Online's I-Matrix Database  
Company Annual Forms 10-K

AUS Utility Report - May 2013

Published by AUS Consultants

Company Provided Information

# Depreciation Rates for the AUS Utility Reports Companies 2003-2012



Source of Information: SEC Edgar I-Metrix Online

**STANDARD  
& POOR'S**

**RATINGSDIRECT®**

May 27, 2009

**Criteria | Corporates | General:**

# Criteria Methodology: Business Risk/Financial Risk Matrix Expanded

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[www.standardandpoors.com/ratingsdirect](http://www.standardandpoors.com/ratingsdirect)

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## Criteria | Corporates | General:

# Criteria Methodology: Business Risk/Financial Risk Matrix Expanded

*(Editor's Note: In the previous version of this article published on May 26, certain of the rating outcomes in the table 1 matrix were misspelled. A corrected version follows.)*

Standard & Poor's Ratings Services is refining its methodology for corporate ratings related to its business risk/financial risk matrix, which we published as part of 2008 Corporate Ratings Criteria on April 15, 2008, on RatingsDirect at [www.ratingsdirect.com](http://www.ratingsdirect.com) and Standard & Poor's Web site at [www.standardandpoors.com](http://www.standardandpoors.com).

This article amends and supersedes the criteria as published in Corporate Ratings Criteria, page 21, and the articles listed in the "Related Articles" section at the end of this report.

This article is part of a broad series of measures announced last year to enhance our governance, analytics, dissemination of information, and investor education initiatives. These initiatives are aimed at augmenting our independence, strengthening the rating process, and increasing our transparency to better serve the global markets.

We introduced the business risk/financial risk matrix four years ago. The relationships depicted in the matrix represent an essential element of our corporate analytical methodology.

We are now expanding the matrix, by adding one category to both business and financial risks (see table 1). As a result, the matrix allows for greater differentiation regarding companies rated lower than investment grade (i.e., 'BB' and below).

Table 1

Business And Financial Risk Profile Matrix						
Business Risk Profile	Financial Risk Profile					
	Minimal	Modest	Intermediate	Significant	Aggressive	Highly Leveraged
Excellent	AAA	AA	A	A-	BBB	--
Strong	AA	A	A-	BBB	BB	BB-
Satisfactory	A-	BBB+	BBB	BB+	BB-	B+
Fair	--	BBB-	BB+	BB	BB-	B
Weak	--	--	BB	BB-	B+	B-
Vulnerable	--	--	--	B+	B	CCC+

These rating outcomes are shown for guidance purposes only. Actual rating should be within one notch of indicated rating outcomes.

The rating outcomes refer to issuer credit ratings. The ratings indicated in each cell of the matrix are the midpoints of a range of likely rating possibilities. This range would ordinarily span one notch above and below the indicated rating.



*Criteria | Corporates | General: Criteria Methodology: Business Risk/Financial Risk Matrix Expanded*

## **Business Risk/Financial Risk Framework**

Our corporate analytical methodology organizes the analytical process according to a common framework, and it divides the task into several categories so that all salient issues are considered. The first categories involve fundamental business analysis; the financial analysis categories follow.

Our ratings analysis starts with the assessment of the business and competitive profile of the company. Two companies with identical financial metrics can be rated very differently, to the extent that their business challenges and prospects differ. The categories underlying our business and financial risk assessments are:

### **Business risk**

- Country risk
- Industry risk
- Competitive position
- Profitability/Peer group comparisons

### **Financial risk**

- Accounting
- Financial governance and policies/risk tolerance
- Cash flow adequacy
- Capital structure/asset protection
- Liquidity/short-term factors

We do not have any predetermined weights for these categories. The significance of specific factors varies from situation to situation.

## **Updated Matrix**

We developed the matrix to make explicit the rating outcomes that are typical for various business risk/financial risk combinations. It illustrates the relationship of business and financial risk profiles to the issuer credit rating.

We tend to weight business risk slightly more than financial risk when differentiating among investment-grade ratings. Conversely, we place slightly more weight on financial risk for speculative-grade issuers (see table 1, again). There also is a subtle compounding effect when both business risk and financial risk are aligned at extremes (i.e., excellent/minimal and vulnerable/highly leveraged.)

The new, more granular version of the matrix represents a refinement--not any change in rating criteria or standards--and, consequently, holds no implications for any changes to existing ratings. However, the expanded matrix should enhance the transparency of the analytical process.

## **Financial Benchmarks**

*Criteria | Corporates | General: Criteria Methodology: Business Risk/Financial Risk Matrix Expanded*

**Table 2**

<b>Financial Risk Indicative Ratios (Corporates)</b>			
	<b>FFO/Debt (%)</b>	<b>Debt/EBITDA (x)</b>	<b>Debt/Capital (%)</b>
Minimal	greater than 60	less than 1.5	less than 25
Modest	45-60	1.5-2	25-35
Intermediate	30-45	2-3	35-45
Significant	20-30	3-4	45-50
Aggressive	12-20	4-5	50-60
Highly Leveraged	less than 12	greater than 5	greater than 60

## How To Use The Matrix--And Its Limitations

The rating matrix indicative outcomes are what we typically observe--but are not meant to be precise indications or guarantees of future rating opinions. Positive and negative nuances in our analysis may lead to a notch higher or lower than the outcomes indicated in the various cells of the matrix.

In certain situations there may be specific, overarching risks that are outside the standard framework, e.g., a liquidity crisis, major litigation, or large acquisition. This often is the case regarding credits at the lowest end of the credit spectrum--i.e., the 'CCC' category and lower. These ratings, by definition, reflect some impending crisis or acute vulnerability, and the balanced approach that underlies the matrix framework just does not lend itself to such situations.

Similarly, some matrix cells are blank because the underlying combinations are highly unusual--and presumably would involve complicated factors and analysis.

The following hypothetical example illustrates how the tables can be used to better understand our rating process (see tables 1 and 2).

We believe that Company ABC has a satisfactory business risk profile, typical of a low investment-grade industrial issuer. If we believed its financial risk were intermediate, the expected rating outcome should be within one notch of 'BBB'. ABC's ratios of cash flow to debt (35%) and debt leverage (total debt to EBITDA of 2.5x) are indeed characteristic of intermediate financial risk.

It might be possible for Company ABC to be upgraded to the 'A' category by, for example, reducing its debt burden to the point that financial risk is viewed as minimal. Funds from operations (FFO) to debt of more than 60% and debt to EBITDA of only 1.5x would, in most cases, indicate minimal.

Conversely, ABC may choose to become more financially aggressive--perhaps it decides to reward shareholders by borrowing to repurchase its stock. It is possible that the company may fall into the 'BB' category if we view its financial risk as significant. FFO to debt of 20% and debt to EBITDA 4x would, in our view, typify the significant financial risk category.

Still, it is essential to realize that the financial benchmarks are guidelines, neither gospel nor guarantees. They can vary in nonstandard cases: For example, if a company's financial measures exhibit very little volatility, benchmarks may be somewhat more relaxed.

*Criteria | Corporates | General: Criteria Methodology: Business Risk/Financial Risk Matrix Expanded*

Moreover, our assessment of financial risk is not as simplistic as looking at a few ratios. It encompasses:

- a view of accounting and disclosure practices;
- a view of corporate governance, financial policies, and risk tolerance;
- the degree of capital intensity, flexibility regarding capital expenditures and other cash needs, including acquisitions and shareholder distributions; and
- various aspects of liquidity--including the risk of refinancing near-term maturities.

The matrix addresses a company's standalone credit profile, and does not take account of external influences, which would pertain in the case of government-related entities or subsidiaries that in our view may benefit or suffer from affiliation with a stronger or weaker group. The matrix refers only to local-currency ratings, rather than foreign-currency ratings, which incorporate additional transfer and convertibility risks. Finally, the matrix does not apply to project finance or corporate securitizations.

## Related Articles

Industrials' Business Risk/Financial Risk Matrix--A Fundamental Perspective On Corporate Ratings, published April 7, 2005, on RatingsDirect.

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Proxy Group of Nine Water Companies  
CAPITALIZATION AND FINANCIAL STATISTICS (1)  
2008 - 2012, Inclusive

	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	
	(MILLIONS OF DOLLARS)					
<u>CAPITALIZATION STATISTICS</u>						
<u>AMOUNT OF CAPITAL EMPLOYED</u>						
TOTAL PERMANENT CAPITAL	\$1,801.379	\$1,736.912	\$1,712.951	\$1,641.561	\$1,537.371	
SHORT-TERM DEBT	<u>\$55.136</u>	<u>\$81.076</u>	<u>\$53.463</u>	<u>\$31.243</u>	<u>\$84.104</u>	
TOTAL CAPITAL EMPLOYED	<u>\$1,856.515</u>	<u>\$1,817.988</u>	<u>\$1,766.414</u>	<u>\$1,672.804</u>	<u>\$1,621.475</u>	
<u>INDICATED AVERAGE CAPITAL COST RATES (2)</u>						
TOTAL DEBT	5.41 %	5.36 %	5.37 %	5.31 %	5.58 %	
PREFERRED STOCK	5.53	5.53	5.54	5.54	5.75	
						<u>5 YEAR</u>
<u>CAPITAL STRUCTURE RATIOS</u>						<u>AVERAGE</u>
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	49.12 %	50.69 %	50.97 %	50.80 %	50.35 %	50.39 %
PREFERRED STOCK	0.16	0.18	0.19	0.21	0.22	0.19
COMMON EQUITY	<u>50.72</u>	<u>49.13</u>	<u>48.84</u>	<u>48.99</u>	<u>49.43</u>	<u>49.42</u>
TOTAL	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	50.79 %	52.55 %	53.49 %	53.33 %	53.43 %	52.72 %
PREFERRED STOCK	0.15	0.17	0.18	0.19	0.21	0.18
COMMON EQUITY	<u>49.06</u>	<u>47.28</u>	<u>46.33</u>	<u>46.48</u>	<u>46.36</u>	<u>47.10</u>
TOTAL	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>FINANCIAL STATISTICS</u>						
<u>FINANCIAL RATIOS - MARKET BASED</u>						
EARNINGS / PRICE RATIO	5.58 %	5.40 %	5.67 %	3.97 %	2.44 %	4.61 %
MARKET / AVERAGE BOOK RATIO	178.65	167.29	161.63	149.69	157.41	162.93
DIVIDEND YIELD	3.39	3.65	3.84	4.27	4.07	3.84
DIVIDEND PAYOUT RATIO	61.46	67.87	66.67	60.06	64.23	64.06
<u>RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY</u>	9.94 %	8.99 %	8.98 %	6.99 %	6.39 %	8.26 %
<u>TOTAL DEBT / EBITDA (3)</u>	3.84 X	4.34 X	4.75 X	5.53 X	9.07 X	5.51 X
<u>FUNDS FROM OPERATIONS / TOTAL DEBT (4)</u>	20.65 %	18.82 %	17.10 %	16.41 %	16.14 %	17.82 %
TOTAL DEBT / TOTAL CAPITAL	50.79 %	52.55 %	53.49 %	53.33 %	53.43 %	52.72 %

Notes:

- (1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group, and are based upon financial statements as originally reported in each year.
- (2) Computed by relating actual total debt interest or preferred stock dividends booked to average of beginning and ending total debt or preferred stock reported to be outstanding.
- (3) Total debt relative to EBITDA (Earnings before Interest, Income Taxes, Depreciation and Amortization).
- (4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) plus interest charges as a percentage of total debt.

Source of Information: I-Metrix Database  
Company SEC Form 10-K

Capital Structure Based upon Total Permanent Capital for the  
Proxy Group of Nine Water Companies  
2008 - 2012, Inclusive

	2012	2011	2010	2009	2008	5 YEAR AVERAGE
<u>American States Water Co.</u>						
Long-Term Debt	42.49	45.46 %	44.30 %	46.95 %	46.25 %	45.09 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	57.51	54.54	55.70	53.05	53.75	54.91
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>American Water Works Co., Inc.</u>						
Long-Term Debt	54.30 %	55.72 %	56.73 %	56.98 %	53.75 %	55.49 %
Preferred Stock	0.21	0.27	0.29	0.30	0.32	0.28
Common Equity	45.49	44.01	42.98	42.72	45.93	44.23
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Aqua America, Inc.</u>						
Long-Term Debt	53.41 %	54.11 %	57.05 %	56.59 %	54.21 %	55.08 %
Preferred Stock	0.01	0.02	0.02	0.02	0.09	0.03
Common Equity	46.58	45.87	42.93	43.39	45.70	44.89
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Artesian Resources Corp.</u>						
Long-Term Debt	47.60 %	48.93 %	52.84 %	54.12 %	59.57 %	52.61 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	52.40	51.07	47.16	45.88	40.43	47.39
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>California Water Service Group</u>						
Long-Term Debt	50.39 %	52.04 %	52.51 %	47.93 %	41.88 %	48.95 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	49.61	47.96	47.49	52.07	58.12	51.05
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Connecticut Water Service, Inc.</u>						
Long-Term Debt	49.03 %	53.05 %	49.32 %	50.59 %	46.94 %	49.79 %
Preferred Stock	0.21	0.30	0.34	0.35	0.39	0.32
Common Equity	50.76	46.65	50.34	49.06	52.67	49.89
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Middlesex Water Company</u>						
Long-Term Debt	43.53 %	43.12 %	43.91 %	47.35 %	49.10 %	45.40 %
Preferred Stock	1.02	1.06	1.07	1.24	1.22	1.12
Common Equity	55.45	55.82	55.02	51.41	49.68	53.48
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>SJW Corporation</u>						
Long-Term Debt	55.39 %	56.63 %	53.79 %	49.52 %	46.08 %	52.28 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	44.61	43.37	46.21	50.48	53.92	47.72
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>York Water Company</u>						
Long-Term Debt	45.98 %	47.16 %	48.28 %	47.16 %	55.31 %	48.78 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	54.02	52.84	51.72	52.84	44.69	51.22
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Proxy Group of Nine Water Companies</u>						
Long-Term Debt	49.12 %	50.69 %	50.97 %	50.80 %	50.35 %	50.39 %
Preferred Stock	0.16	0.18	0.19	0.21	0.22	0.19
Common Equity	50.72	49.13	48.84	48.99	49.43	49.42
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>

Source of Information  
EDGAR Online's I-Metrix Database  
Annual Forms 10-K

United Water Rhode Island, Inc.  
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for  
the Proxy Group of Nine Water Companies

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
	Average Dividend Yield (1)	Value Line Projected Five Year Growth in EPS (2)	Reuters Mean Consensus Projected Five Year Growth Rate in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth in EPS (3)	Adjusted Dividend Yield (4)	Indicated Common Equity Cost Rate (5)
<u>Proxy Group of Nine Water Companies</u>								
American States Water Co.	2.60 %	8.00 %	6.00 %	6.00 %	6.00 %	6.50 %	2.68 %	9.18 %
American Water Works Co., Inc.	2.47	9.50	9.10	8.00	7.87	8.62	2.58	11.20
Aqua America, Inc.	2.30	8.00	6.70	5.50	5.93	6.53	2.38	8.91
Artesian Resources Corp.	3.64	NA	NA	NA	4.00	4.00	3.71	7.71
California Water Service Group	3.16	5.50	6.00	6.00	6.00	5.88	3.25	9.13
Connecticut Water Service, Inc.	3.35	6.00	NA	4.00	6.10	5.37	3.44	8.81
Middlesex Water Company	3.88	4.00	NA	NA	2.70	3.35	3.94	7.29
SJW Corporation	2.63	7.50	NA	NA	14.00	10.75	2.77	13.52
York Water Company	2.96	NA	NA	NA	4.90	4.90	3.03	7.93
Average								<u>9.30 %</u>
Median								<u>8.91 %</u>

NA= Not Available  
NMF = Not Meaningful Figure

Notes:

- (1) Indicated dividend at 04/30/2013 divided by the average closing price of the last 60 trading days ending 04/30/2013 for each company.
- (2) From pages 2 through 10 of this Schedule.
- (3) Average of columns 2 through 5 excluding negative growth rates.
- (4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co. ,  $2.60\% \times (1 + (1/2 \times 6.50\%)) = 2.68\%$ .
- (5) Column 6 + column 7.

Source of Information:

Value Line Investment Survey  
www.reuters.com Downloaded on 05/01/2013  
www.zacks.com Downloaded on 05/01/2013  
www.yahoo.com Downloaded on 05/01/2013

AMER. STATES WATER

NYSE-AWR

RECENT PRICE

56.22

P/E RATIO

20.2

(Trailing: 19.9)

(Median: 22.0)

RELATIVE P/E RATIO

1.21

DIV'D YLD

2.5%

VALUE LINE

TIMELINESS

2

Raised 11/23/12

SAFETY

2

Raised 7/20/12

TECHNICAL

4

Lowered 2/22/13

BETA

.70

(1.00 = Market)

2016-18 PROJECTIONS

Price

Gain

Ann'l Total

High

65

(+15%)

Return

6%

Low

45

(-20%)

-2%

Insider Decisions

M J J A S O N D J

To Buy

0

0

0

0

0

0

0

0

0

0

0

Options

4

2

0

16

0

0

1

1

1

To Sell

4

2

0

17

0

0

2

3

1

Institutional Decisions

2Q2012

3Q2012

4Q2012

To Buy

83

79

77

To Sell

50

65

64

Mid's (000)

11968

11745

12033

Percent shares traded

12

8

4

1997

1998

1999

2000

2001

2002

2003

2004

2005

2006

2007

2008

2009

2010

2011

2012

2013

2014

© VALUE LINE PUB. LLC

16-18

11.44

11.02

12.91

12.17

13.08

13.78

13.98

13.61

14.06

15.76

17.49

18.42

19.48

21.41

22.24

24.24

24.40

24.85

Revenues per sh

25.60

1.85

2.04

2.26

2.53

2.54

2.08

2.23

2.64

2.89

3.31

3.37

3.40

4.23

4.26

4.96

5.15

5.60

"Cash Flow" per sh

6.25

1.04

1.08

1.19

1.28

1.35

1.34

.78

1.05

1.32

1.33

1.62

1.55

1.62

2.22

2.24

2.82

2.70

2.85

Earnings per sh <sup>A</sup>

3.00

.83

.84

.85

.86

.87

.87

.88

.89

.90

.91

.96

1.00

1.01

1.04

1.10

1.27

1.45

1.55

Div'd Decl'd per sh <sup>B</sup>

1.70

2.58

3.11

4.30

3.03

3.18

2.68

3.76

5.03

4.24

3.91

2.89

4.45

4.18

4.24

4.26

3.54

4.40

4.35

Cap'l Spending per sh

4.20

11.24

11.48

11.82

12.74

13.22

14.05

13.97

15.01

15.72

16.84

17.53

17.95

19.39

20.26

21.68

23.61

23.70

23.95

Book Value per sh

24.25

13.44

13.44

13.44

15.12

15.12

15.18

15.21

16.75

16.80

17.05

17.23

17.30

18.53

18.63

18.85

19.26

19.25

19.50

Common Shs Outst'g <sup>C</sup>

21.50

14.5

15.5

17.1

15.9

16.7

18.3

31.9

23.2

21.9

27.7

24.0

22.8

21.2

15.7

15.4

14.3

**Bold figures are Value Line estimates**

18.5

Avg Ann'l P/E Ratio

1.15

.84

.81

.97

1.03

.86

1.00

1.82

1.23

1.17

1.50

1.27

1.36

1.41

1.00

.97

.92

Avg Ann'l Div'd Yield

3.1%

5.5%

5.0%

4.2%

4.2%

3.9%

3.6%

3.5%

3.6%

3.1%

2.5%

2.5%

2.9%

2.9%

3.0%

3.2%

3.1%

CAPITAL STRUCTURE as of 12/31/12

Total Debt \$335.8 mill.

Due in 5 Yrs \$10.6 mill.

LT Debt \$332.5 mill.

LT Interest \$8.0 mill.

(LT interest earned: 5.2x: total interest coverage: 4.9x)

(42% of Cap'l)

Leases, Uncapitalized: Annual rentals \$3.0 mill.

Pension Assets-12/12 \$107.6 mill.

Oblig. \$163.2 mill.

Pfd Stock None.

Common Stock 19,263,011 shs.

as of 2/26/13

MARKET CAP: \$1.1 billion (Mid Cap)

CURRENT POSITION

2010

2011

12/31/12

(\$MILL.)

Cash Assets

4.2

1.3

23.5

Other

200.8

164.3

160.5

Current Assets

205.0

165.6

184.0

Accts Payable

36.2

37.9

40.6

Debt Due

61.3

.3

3.3

Other

81.3

66.2

49.8

Current Liab.

178.8

104.4

93.7

Fix. Chg. Cov.

428%

401%

442%

ANNUAL RATES

Past 10 Yrs.

Past 5 Yrs.

Est'd '10-'12

of change (per sh)

Revenues

5.5%

7.5%

3.5%

"Cash Flow"

6.5%

9.0%

4.5%

Earnings

6.5%

11.5%

8.0%

Dividends

3.0%

4.5%

8.0%

Book Value

5.0%

5.5%

6.5%

Cal-endar

QUARTERLY REVENUES (\$ mill.)

Full Year

Mar.31

Jun.30

Sep.30

Dec.31

2010

88.4

95.5

111.3

103.7

398.9

2011

94.3

109.8

119.9

95.3

419.3

2012

107.6

114.3

133.5

111.5

466.9

2013

105

120

135

110

470

2014

110

125

140

110

485

Cal-endar

EARNINGS PER SHARE <sup>A</sup>

Full Year

Mar.31

Jun.30

Sep.30

Dec.31

2010

.45

.47

.62

.68

2.22

2011

.37

.68

.83

.36

2.24

2012

.53

.79

.97

.53

2.82

2013

.50

.75

1.00

.45

2.70

2014

.55

.75

1.10

.45

2.85

Cal-endar

QUARTERLY DIVIDENDS PAID <sup>B</sup>

Full Year

Mar.31

Jun.30

Sep.30

Dec.31

2009

.250

.250

.250

.260

1.01

2010

.260

.260

.260

.260

1.04

2011

.260

.280

.280

.280

1.10

2012

.280

.280

.355

.355

1.27

2013

.355

BUSINESS:

American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Company, it supplies water to more than 250,000 customers in 75 communities in 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to nearly 23,250 customers in the city of Big Bear Lake and in areas of San Bernardino County. Sold Chaparral City Water of Arizona (6/11). Has 728 employees. Officers & directors own 2.9% of common stock (4/12 Proxy). Chairman: Lloyd Ross. President & CEO: Robert J. Sprowls, Inc. CA. Addr: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

American States Water's bottom line will likely backtrack a bit in 2013.

The company is coming off an impressive 2012, which saw share net increase 26% year over year. The strong performance was attributable to its American States Utility Services (ASUS) subsidiary that falls under its Contracted Services segment. Replacement and maintenance projects at Fort Bragg in North Carolina and Fort Bliss in Texas drove the majority of the bottom-line gains in this division. We believe that activity on military bases will slow down, given sequestration cuts and management's conservative tone for new military projects. We are maintaining our 2013 top- and bottom-line estimates until AWR reports its first-quarter results.

Golden State Water Company's (GSWC) water rate case should be finalized soon. The proposed settlement with the Division of Ratepayer Advocates (DRA) would generate \$14.5 million in additional gross margin starting in 2013. Rates in 2014 and 2015 would be increased between 2% and 3%, until the next rate filing in 2015. A final decision is expected to be approved by the California

Public Utilities Commission (CPUC) within the next 30 to 60 days. GSWC also filed its electric rate case for rates from 2013 through 2016. If approved, the rate increases are projected to generate roughly \$1.3 million in additional annual revenues.

Capital investments will pick up over the next couple of years. The annual capex budget is projected to be \$85 million over the next three years. These investments represent a step up from the roughly \$70 million averaged over the past couple of years.

The balance sheet continues to improve. The company generated \$27 million in free cash flow for 2012 compared to negative cash flow recorded over the prior couple of years. Improvements in liquidity and capitalization ratios should help AWR weather the sequester cuts.

This timely stock should have some appeal to momentum and income investors. Though we would suggest that value hunters wait for a better entry point, as these shares have appreciated substantially year to date.

Michael Collins

April 19, 2013

Company's Financial Strength	A
Stock's Price Stability	90
Price Growth Persistence	65
Earnings Predictability	90

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AMERICAN WATER NYSE-AWK										RECENT PRICE	41.64	P/E RATIO	18.9	(Trailing: 20.1 Median: NMF)	RELATIVE P/E RATIO	1.13	DIV'D YLD	2.5%	VALUE LINE						
TIMELINESS	4	Lowered 3/29/13											High:	23.7	23.0	25.8	32.8	39.4	41.9						
SAFETY	3	New 7/25/08											Low:	16.5	16.2	19.4	25.2	31.3	37.0						
TECHNICAL	3	Raised 4/19/13																							
BETA	.65	(1.00 = Market)																							
2016-18 PROJECTIONS			Price	Gain	Ann'l Total																				
High	60	(+45%)	12%																						
Low	40	(-5%)	2%																						
Insider Decisions			M	J	J	A	S	O	N	D	J														
to Buy	0	0	0	0	0	0	0	0	0	0	0														
Options	2	1	0	5	0	0	4	0	0	0	0														
to Sell	2	0	0	6	0	0	4	0	0	0	0														
Institutional Decisions			2Q2012	3Q2012	4Q2012	Percent	21																		
to Buy	176	173	188																						
to Sell	162	171	175																						
Hld's(000)	140028	143865	146609																						
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 <sup>E</sup>	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUBL. LLC 16-18							
--	--	--	--	--	--	--	--	--	13.08	13.84	14.61	13.98	15.49	15.18	16.25	17.40	18.35	Revenues per sh			20.00				
--	--	--	--	--	--	--	--	--	.65	d.47	2.87	2.89	3.56	3.73	4.15	4.30	4.50	"Cash Flow" per sh			5.20				
--	--	--	--	--	--	--	--	--	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.25	2.40	Earnings per sh <sup>A</sup>			2.85				
--	--	--	--	--	--	--	--	--	--	--	.40	.82	.86	.90	.96	1.04	1.12	Div'd Decl'd per sh <sup>B</sup>			1.40				
--	--	--	--	--	--	--	--	--	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.35	5.40	Cap'l Spending per sh			5.25				
--	--	--	--	--	--	--	--	--	23.86	28.39	25.64	22.91	23.59	24.11	25.10	26.40	27.50	Book Value per sh <sup>D</sup>			30.00				
--	--	--	--	--	--	--	--	--	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.00	179.00	Common Shs Outst'g <sup>G</sup>			190.00				
--	--	--	--	--	--	--	--	--	--	--	18.9	15.6	14.6	16.8	16.7	Bold figures are Value Line estimates			Avg Ann'l P/E Ratio			18.0			
--	--	--	--	--	--	--	--	--	--	--	1.14	1.04	.93	1.05	1.07				Relative P/E Ratio			1.20			
--	--	--	--	--	--	--	--	--	1.9%	4.2%	3.8%	3.1%	2.7%				Avg Ann'l Div'd Yield			2.8%					
CAPITAL STRUCTURE as of 12/31/12										--	--	--	2093.1	2214.2	2336.9	2440.7	2710.7	2866.2	2876.9	3100	3300	Revenues (\$mill)	3800		
Total Debt \$5576.4 mil. Due in 5 Yrs \$1034.0 mil.										--	--	--	d155.8	d342.3	187.2	209.9	267.8	304.9	375.0	400	430	Net Profit (\$mill)	540		
LT Debt \$5190.5 mil. LT Interest \$301.0 mil.										--	--	--	--	--	37.4%	37.9%	40.4%	39.5%	40.7%	40.0%	40.0%	Income Tax Rate	40.0%		
(Total interest coverage: 4.4x) (54% of Cap'l)										--	--	--	--	--	--	--	12.5%	6.2%	8.0%	10.0%	AFUDC % to Net Profit	12.0%			
Leases, Uncapitalized: Annual rentals \$28.1 mil.										--	--	--	56.1%	50.9%	53.1%	56.9%	56.8%	55.7%	53.8%	54.0%	54.0%	Long-Term Debt Ratio	53.5%		
Pension Assets \$1157.7 mil.										--	--	--	43.9%	49.1%	46.9%	43.1%	43.2%	44.2%	46.0%	46.0%	46.0%	Common Equity Ratio	46.5%		
Oblig. \$1621.2 mil.										--	--	--	8692.8	9245.7	8750.2	9289.0	9561.3	9580.3	9652.7	10300	10800	Total Capital (\$mill)	12000		
Pfd Stock \$18.9 mil. Pfd Div'd \$ .7 mil										--	--	--	8720.6	9318.0	9991.8	10524	11059	11021	11739	12300	12800	Net Plant (\$mill)	14000		
Common Stock 177,409,722 shs. as of 2/21/13										--	--	--	NMF	NMF	3.7%	3.8%	4.4%	4.8%	5.5%	5.5%	5.5%	Return on Total Cap'l	6.0%		
MARKET CAP: \$7.4 billion (Large Cap)										--	--	--	NMF	NMF	4.6%	5.2%	6.5%	7.2%	8.4%	8.5%	8.5%	Return on Shr. Equity	9.5%		
CURRENT POSITION										--	--	--	NMF	NMF	3.0%	1.8%	2.8%	3.5%	4.6%	4.5%	4.5%	Return on Com Equity	9.5%		
2010										--	--	--	--	--	34%	65%	56%	52%	45%	46%	47%	Retained to Com Eq	4.5%		
12/31/12										--	--	--	--	--	--	--	--	--	--	--	--	All Div'ds to Net Prof	50%		
(\$MILL.)																									
Cash Assets										13.1	14.2	24.4													
Other										521.2	1383.5	475.0													
Current Assets										534.3	1397.7	499.4													
Accts Payable										199.2	243.7	279.6													
Debt Due										274.5	543.9	385.9													
Other										300.8	701.5	329.3													
Current Liab.										774.5	1489.1	994.8													
Fix. Chg. Cov.										237%	256%	300%													
ANNUAL RATES										Past	Past	Est'd													
of change (per sh)										10 Yrs.	5 Yrs.	'09-'11													
Revenues										--	2.5%	4.5%													
"Cash Flow"										--	39.5%	6.5%													
Earnings										--	--	9.5%													
Dividends										--	--	7.5%													
Book Value										--	-0.5%	3.5%													
Cal-endar																									
QUARTERLY REVENUES (\$ mill.)										Mar.31	Jun.30	Sep.30	Dec.31									Full Year			
2010										588.1	671.2	786.9	664.5									2710.7			
2011										596.7	668.8	760.9	639.8									2666.2			
2012										618.7	745.6	831.8	680.8									2876.9			
2013										650	800	900	750									3100			
2014										700	850	975	775									3300			
Cal-endar																									
EARNINGS PER SHARE <sup>A</sup>										Mar.31	Jun.30	Sep.30	Dec.31									Full Year			
2010										.18	.42	.71	.23									1.53			
2011										.23	.42	.73	.32									1.72			
2012										.28	.66	.87	.30									2.11			
2013										.30	.65	.95	.35									2.25			
2014										.35	.70	1.00	.35									2.40			
Cal-endar																									
QUARTERLY DIVIDENDS PAID <sup>B</sup>										Mar.31	Jun.30	Sep.30	Dec.31									Full Year			
2009										.20	.20	.21	.21									.82			
2010										.21	.21	.22	.22									.86			
2011										.22	.23	.23	.23									.91			
2012										.23	.23	.25	.25									.96			
2013										.25															

**BUSINESS:** American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to over 14 million people in over 30 states and Canada. Its nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 89.1% of 2012 revenues. New Jersey is its biggest market

accounting for 22.2% of revenues. Has roughly 7,000 employees. Depreciation rate, 2.6% in '12. BlackRock, Inc., owns 10.3% of the common stock outstanding. Off. & dir. own less than 1% (3/13 Proxy). President & CEO; Jeffrey Sterba. Chairman; George Mackenzie. Address: 1025 Laurel Oak Road, Voorhees, NJ 08043. Telephone: 856-346-8200. Internet: [www.amwater.com](http://www.amwater.com).

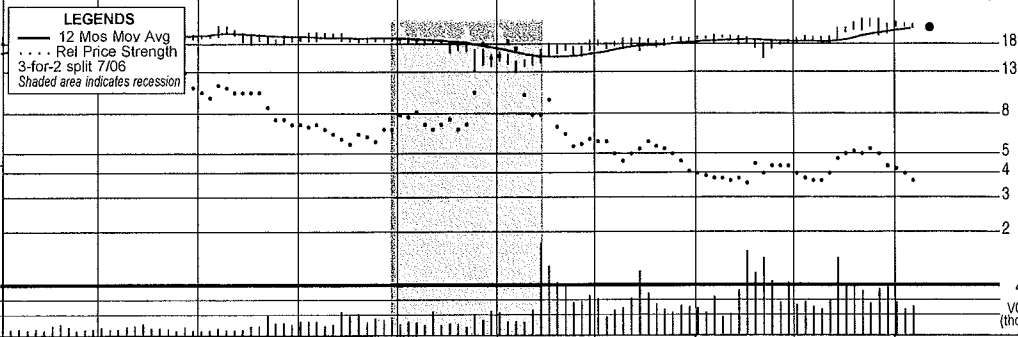
budget. Currently, we believe the company has too much debt, and that now is a propitious time to issue new equity (even if it is somewhat dilutive), because its shares are near their all-time highs and are up 150% from 2009's low. American Water's management believes that its stock is undervalued, however, so a large stock offering seems unlikely.

**American Water's earnings and dividend growth prospects are good for a water utility.** With the help of its aforementioned leaner cost structure, we estimate that the company's bottom line will grow by a healthy 9%-10% annual rate through 2016-2018. Larger contributions from the higher-margined, nonregulated businesses will be part of the reason for the good showing.

**We think American Water's positive attributes are reflected in its current stock price.** These shares have been on a tear, outperforming the market averages over the past one-, three-, and five-year periods, an unusual feat for a regulated utility in a rising market. Thus, we advise investors to avoid this untimely equity.

James A. Flood April 19, 2013

AQUA AMERICA NYSE-WTR				RECENT PRICE	32.12	P/E RATIO	25.1 (Trailing: 29.2 Median: 24.0)	RELATIVE P/E RATIO	1.50	DIV'D YLD	2.2%	VALUE LINE																					
TIMELINESS	2	Raised 10/5/12	High: 15.0	16.8	18.5	29.2	29.8	26.6	22.0	21.5	23.0	23.8	26.9	32.3	Target Price	2016	2017	2018															
SAFETY	2	Raised 4/20/12	Low: 9.6	11.8	14.2	17.5	20.1	18.9	12.2	15.4	16.5	19.3	21.1	25.7																			
TECHNICAL	3	Raised 4/12/13	LEGENDS 1.60 x Dividends p sh divided by Interest Rate ..... Relative Price Strength 5-for-4 split 12/00 5-for-4 split 12/01 5-for-4 split 12/03 4-for-3 split 12/05 Options: Yes Shaded areas indicate recessions										4-for-3																				
BETA	.60	(1.00 = Market)	2016-18 PROJECTIONS										Ann'l Total																				
			Price	Gain	Return																												
			High	Low	40	30	(+25%)	8%	1%																								
Insider Decisions			M	J	J	A	S	O	N	D	J																						
to Buy			0	0	0	0	0	0	0	0	0																						
Options			2	0	1	0	0	0	0	1	3																						
to Sell			3	1	0	0	0	0	0	0	2																						
Institutional Decisions			2Q2012	3Q2012	4Q2012																												
to Buy			112	117	118																												
to Sell			108	108	117																												
Hld's(000)			60392	64465	67182																												
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUB. LLC	16-18														
2.02	2.09	2.41	2.46	2.70	2.85	2.97	3.48	3.85	4.03	4.52	4.63	4.91	5.28	5.13	5.40	5.70	5.90	Revenues per sh	6.40														
.56	.61	.72	.76	.86	.94	.96	1.09	1.21	1.26	1.37	1.42	1.61	1.78	1.81	1.89	2.00	2.10	"Cash Flow" per sh	2.35														
.34	.40	.42	.47	.51	.54	.57	.64	.71	.70	.71	.73	.77	.90	1.04	1.09	1.35	1.45	Earnings per sh <sup>A</sup>	1.60														
.24	.26	.27	.28	.30	.32	.35	.37	.40	.44	.48	.51	.55	.59	.63	.67	.70	.84	Div'd Decl'd per sh <sup>B</sup>	1.00														
.58	.82	.90	1.16	1.09	1.20	1.32	1.54	1.84	2.05	1.79	1.98	2.08	2.37	2.38	2.48	2.65	2.65	Cap'l Spending per sh	2.65														
2.84	3.21	3.42	3.85	4.15	4.36	5.34	5.89	6.30	6.96	7.32	7.82	8.12	8.51	9.01	9.87	11.20	12.25	Book Value per sh	13.30														
67.47	72.20	106.80	111.82	113.97	113.19	123.45	127.18	128.97	132.33	133.40	135.37	136.49	137.97	138.88	140.35	140.50	141.00	Common Shs Outst'g <sup>C</sup>	143.00														
17.8	22.5	21.2	18.2	23.6	23.6	24.5	25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.0	21.0	Avg Ann'l P/E Ratio	21.0														
1.03	1.17	1.21	1.18	1.21	1.29	1.40	1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.40	1.40	1.40	Relative P/E Ratio	1.40														
3.9%	2.9%	3.0%	3.3%	2.5%	2.5%	2.5%	2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%			Avg Ann'l Div'd Yield	2.9%														
CAPITAL STRUCTURE as of 12/31/12																			367.2	442.0	496.8	533.5	602.5	627.0	670.5	726.1	712.0	757.8	800	835	Revenues (\$mill)	915	
Total Debt \$1669.2 mill. Due in 5 Yrs \$368.3 mill.																			67.3	80.0	91.2	92.0	95.0	97.9	104.4	124.0	144.8	153.1	190	205	Net Profit (\$mill)	220	
LT Debt \$1543.9 mill. LT Interest \$60.0 mill.																			39.3%	39.4%	38.4%	39.6%	38.9%	39.7%	39.4%	39.2%	32.9%	39.0%	40.0%	40.0%	Income Tax Rate	40.0%	
(LT interest earned: 5.0x; total interest coverage: 4.1x)																											2.9%	3.1%	3.0%	3.0%	AFUDC % to Net Profit	2.0%	
Pension Assets-12/12 \$190.1 mill.																			51.4%	50.0%	52.0%	51.6%	55.4%	54.1%	55.6%	56.6%	52.7%	52.7%	50.0%	50.0%	Long-Term Debt Ratio	50.0%	
Oblig. \$303.1 mill.																			48.6%	50.0%	48.0%	48.4%	44.6%	45.9%	44.4%	43.4%	47.3%	47.3%	50.0%	50.0%	Common Equity Ratio	50.0%	
Prd Stock None																			1355.7	1497.3	1690.4	1904.4	2191.4	2306.8	2495.5	2708.2	2648.8	2929.7	3150	3450	Total Capital (\$mill)	3800	
Common Stock 140,347,743 shares as of 2/14/13																			1824.3	2069.8	2280.0	2506.0	2792.8	2997.4	3227.3	3469.3	3612.9	3936.2	4150	4350	Ret Plant (\$mill)	4600	
MARKET CAP: \$4.5 billion (Mid Cap)																			6.4%	6.7%	6.9%	6.4%	5.9%	5.7%	5.6%	5.9%	6.9%	6.6%	6.0%	6.0%	Return on Total Cap'l	6.0%	
CURRENT POSITION																			10.2%	10.7%	11.2%	10.0%	9.7%	9.3%	9.4%	10.6%	11.6%	11.0%	12.0%	12.0%	Return on Shr. Equity	11.5%	
(\$MILL.)																			10.2%	10.7%	11.2%	10.0%	9.7%	9.3%	9.4%	10.6%	11.6%	11.0%	12.0%	12.0%	Return on Com Equity	11.5%	
Cash Assets																			4.2%	4.6%	4.9%	3.7%	3.2%	2.8%	2.7%	3.7%	4.6%	4.3%	6.0%	6.0%	Retained to Com Eq	4.0%	
Receivables																			59%	57%	56%	63%	67%	70%	72%	65%	60%	61%	52%	58%	All Div's to Net Prof	65%	
Inventory (AvgCst)																																	
Other																																	
Current Assets																			145.4	320.5	260.9												
Accts Payable																			45.3	68.3	55.5												
Debt Due																			28.5	80.4	125.4												
Other																			149.9	277.0	93.3												
Current Liab.																			223.7	425.7	274.2												
Fix. Chg. Cov.																			290%	367%	398%												
ANNUAL RATES																			Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18												
of change (per sh)																			8.0%	7.5%	3.5%												
Revenues																			8.5%	8.0%	4.5%												
"Cash Flow"																			6.5%	4.5%	8.0%												
Earnings																			7.5%	8.0%	6.0%												
Dividends																			9.0%	7.0%	8.0%												
Book Value																																	
Cal-endar	QUARTERLY REVENUES (\$ mill.)				Full Year																												
	Mar.31	Jun.30	Sep.30	Dec.31																													
2010	160.5	178.5	207.8	179.3	726.1																												
2011	163.6	178.3	197.3	172.7	712.0																												
2012	164.0	191.7	214.6	187.5	757.8																												
2013	180	210	215	195	800																												
2014	190	220	225	200	835																												
Cal-endar	EARNINGS PER SHARE <sup>A</sup>				Full Year																												
	Mar.31	Jun.30	Sep.30	Dec.31																													
2010	.16	.22	.32	.20	.90																												
2011	.22	.27	.30	.25	1.03																												
2012	.20	.30	.36	.25	1.09																												
2013	.25	.35	.43	.32	1.35																												
2014	.28	.37	.47	.33	1.45																												
Cal-endar	QUARTERLY DIVIDENDS PAID <sup>B</sup>				Full Year																												
	Mar.31	Jun.30	Sep.30	Dec.31																													
2009	.135	.135	.135	.145	.55																												
2010	.145	.145	.145	.155	.59																												
2011	.155	.155	.155	.165	.63																												
2012	.165	.165	.165	.175	.67																												
2013	.175																																
(A) Diluted Gs. Excl. nonrec. gains (losses);																			report due late April.														
(B) Dividends historically paid in early March,																			(C) In millions, adjusted for stock splits.														
June, Sept. & Dec. <sup>B</sup> Div'd. reinvestment plan available (5% discount).																			Company's Financial Strength				B++										
May not sum due to rounding. Next earnings																			Stock's Price Stability				100										
																			Price Growth Persistence				100										
																			Earnings Predictability				100										

ARTESIAN RES. CORP. NDQ--ARTNA				RECENT PRICE	21.81	TRAILING P/E RATIO	19.3	RELATIVE P/E RATIO	1.09	DIV'D YLD	3.7%	VALUE LINE
RANKS		20.04 15.18	22.62 17.20	22.33 17.90	20.67 18.26	19.31 13.00	18.73 12.81	19.59 16.43	19.99 15.16	24.43 18.20	23.32 21.52	High Low
PERFORMANCE	3 Average	<div>LEGENDS</div> <div>— 12 Mos Mov Avg</div> <div>.... Rel Price Strength</div> <div>3-for-2 split 7/06</div> <div>Shaded area indicates recession</div> 										
Technical	3 Average											
SAFETY	2 Above Average											
BETA	.60 (1.00 = Market)											
Financial Strength	B++											
Price Stability	100											
Price Growth Persistence	40											
Earnings Predictability	85											
© VALUE LINE PUBLISHING LLC		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013/2014	
SALES PER SH		6.67	7.52	7.77	7.20	7.59	8.11	8.48	7.56	8.10		
"CASH FLOW" PER SH		1.42	1.56	1.75	1.57	1.65	1.84	1.92	1.64	2.04		
EARNINGS PER SH		.72	.81	.97	.90	.86	.97	1.00	.83	1.13	1.17 <sup>A,B</sup> / 1.27 <sup>C</sup>	
DIV'DS DECL'D PER SH		.55	.58	.61	.66	.71	.72	.75	.76	.79		
CAP'L SPENDING PER SH		4.82	3.35	5.08	3.66	6.09	2.32	2.57	1.83	2.36		
BOOK VALUE PER SH		9.26	9.60	10.15	11.66	11.86	12.15	12.44	13.12	13.57		
COMMON SHS OUTST'G (MILL)		5.93	6.02	6.09	7.30	7.40	7.51	7.65	8.61	8.71		
AVG ANN'L P/E RATIO		25.4	24.2	20.3	21.5	20.1	16.4	18.2	22.5	18.3	18.6/17.2	
RELATIVE P/E RATIO		1.34	1.28	1.10	1.14	1.21	1.09	1.16	1.41	1.18		
AVG ANN'L DIV'D YIELD		3.0%	2.9%	3.1%	3.4%	4.1%	4.5%	4.1%	4.1%	3.8%		
SALES (\$MILL)		39.6	45.3	47.3	52.5	56.2	60.9	64.9	65.1	70.6	<b>Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.</b>	
OPERATING MARGIN		--	100.0%	45.6%	45.6%	45.1%	46.9%	46.5%	45.5%	48.7%		
DEPRECIATION (\$MILL)		4.0	4.4	4.6	5.2	5.8	6.6	7.0	7.4	7.9		
NET PROFIT (\$MILL)		4.4	5.0	6.1	6.3	6.4	7.3	7.6	6.7	9.8		
INCOME TAX RATE		39.6%	39.9%	39.0%	39.8%	40.8%	40.1%	40.0%	40.8%	40.2%		
NET PROFIT MARGIN		11.1%	11.1%	12.8%	11.9%	11.4%	11.9%	11.7%	10.4%	14.0%		
WORKING CAP'L (\$MILL)		d8.7	d1.8	d8.8	2.5	d20.9	d23.3	d27.9	d11.4	d11.4		
LONG-TERM DEBT (\$MILL)		82.4	92.4	92.1	91.8	107.6	106.0	105.1	106.5	106.3		
SHR. EQUITY (\$MILL)		54.9	57.8	61.8	85.1	87.8	91.2	95.1	113.0	118.2		
RETURN ON TOTAL CAP'L		5.1%	5.3%	5.8%	5.3%	4.7%	5.2%	5.6%	4.6%	5.9%		
RETURN ON SHR. EQUITY		8.0%	8.7%	9.8%	7.4%	7.3%	8.0%	8.0%	6.0%	8.3%		
RETAINED TO COM EQ		2.1%	2.7%	3.8%	2.1%	1.4%	2.1%	2.0%	.5%	2.5%		
ALL DIV'DS TO NET PROF		74%	69%	61%	71%	81%	74%	75%	92%	70%		
<sup>A</sup> No. of analysts changing earn. est. in last 5 days: 0 up, 0 down, consensus 5-year earnings growth not available. <sup>B</sup> Based upon 4 analysts' estimates. <sup>C</sup> Based upon 3 analysts' estimates.												
ANNUAL RATES		5 Yrs.		1 Yr.		INDUSTRY: Water Utility						
of change (per share)		1.5%		7.0%		<b>BUSINESS:</b> Artesian Resources Corporation, through its subsidiaries, provides water, wastewater, and other services on the Delmarva Peninsula. It distributes and sells water to residential, commercial, industrial, municipal, and utility customers in Delaware, Maryland, and Pennsylvania. The company also offers water for public and private fire protection to customers in its service territories. In addition, it provides contract water and wastewater services, water and sewer service line protection plans, and wastewater management services, as well as design, construction, and engineering services. As of December 31, 2012, the company served approximately 79,000 metered water customers through 1,162 miles of transmission and distribution mains. In March 2013, the company and the town of Chesapeake City announced the successful completion of an interconnection that will provide a new source of high-quality water service to the Chesapeake City community. Has 229 employees. Chairman, C.E.O. & President: Dian C. Taylor. Address: 664 Churchmans Rd., Newark, DE 19702. Tel.: (302) 453-6900. Internet: <a href="http://www.artesianwater.com">http://www.artesianwater.com</a> . J.V.						
Sales		3.0%		24.0%								
"Cash Flow"		2.0%		36.0%								
Earnings		4.5%		4.0%								
Dividends		4.5%		3.5%								
Book Value												
Fiscal Year	QUARTERLY SALES (\$mill.)	1Q	2Q	3Q	4Q	Full Year	ASSETS (\$mill.)					
12/31/10	15.0	16.0	18.0	15.9	64.9	64.9	Property, Plant & Equip, at cost	414.6	435.0	454.4		
12/31/11	14.8	16.5	17.7	16.1	65.1	65.1	Accum Depreciation	69.2	77.4	83.8		
12/31/12	16.7	17.9	19.0	17.0	70.6	70.6	Net Property	345.4	357.6	370.6		
12/31/13							Other	12.1	7.8	7.6		
							Total Assets	371.5	378.7	391.7		
Fiscal Year	EARNINGS PER SHARE	1Q	2Q	3Q	4Q	Full Year	LIABILITIES (\$mill.)					
12/31/09	.22	.27	.28	.20	.97	.97	Accts Payable	3.4	2.8	3.5		
12/31/10	.22	.24	.38	.16	1.00	1.00	Debt Due	30.6	13.8	12.6		
12/31/11	.14	.23	.26	.20	.83	.83	Other	7.9	8.1	8.8		
12/31/12	.28	.32	.33	.20	1.13	1.13	Current Liab	41.9	24.7	24.9		
12/31/13	.28	.31	.35				LONG-TERM DEBT AND EQUITY as of 12/31/12					
Cal-endar	QUARTERLY DIVIDENDS PAID	1Q	2Q	3Q	4Q	Full Year	Total Debt \$118.8 mill. Due in 5 Yrs. \$17.5 mill.					
2010	.187	.188	.188	.189	.75	.75	LT Debt \$106.3 mill.					
2011	.19	.19	.19	.193	.76	.76	Including Cap. Leases None					
2012	.193	.198	.198	.203	.79	.79	(47% of Cap'l)					
2013	.203						Leases, Uncapitalized Annual rentals \$.1 mill.					
INSTITUTIONAL DECISIONS							Pension Liability \$.4 mill. in '12 vs. \$.5 mill. in '11					
2Q'12 3Q'12 4Q'12							Pfd Stock None Pfd Div'd Paid None					
to Buy 38 34 28							Common Stock 8,710,288 shares (53% of Cap'l)					
to Sell 21 23 32												
Hld's(000) 2943 3021 3052												
TOTAL SHAREHOLDER RETURN							Dividends plus appreciation as of 3/31/2013					
3 Mos. 6 Mos. 1 Yr. 3 Yrs. 5 Yrs.												
1.09% -1.51% 24.15% 43.23% 49.32%												



CONNECTICUT WATER					NDQ-CTWS	RECENT PRICE	28.67	P/E RATIO	21.1	(Trailing: 18.9 Median: 23.0)	RELATIVE P/E RATIO	1.26	DIV'D YLD	3.5%	VALUE LINE	Target Price Range									
TIMELINESS	4	Lowered 3/29/13	SAFETY	3	New 1/18/13	TECHNICAL	4	Lowered 4/5/13	BETA	.75	(1.00 = Market)	LEGENDS 1.30 x Dividends p sh divided by Interest Rate ..... Relative Price Strength 3-for-2 split 9/01 Options: No Shaded areas indicate recessions													
2016-18 PROJECTIONS																Target Price Range									
Price	Gain	Ann'l Total																2016	2017	2018					
High	40	(+40%)	11%																						
Low	25	(-15%)	Nil																						
Insider Decisions																									
M J J A S O N D J																									
to Buy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Options	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
to Sell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Institutional Decisions																									
2Q2012 3Q2012 4Q2012																									
to Buy	38	29	48																						
to Sell	29	22	16																						
Hld's(000)	3095	3102	4069																						
Percent shares traded																									
12 8 4																									
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014																© VALUE LINE PUB. LLC 16-18									
5.67	5.58	5.87	5.70	5.93	5.77	5.91	6.04	5.81	5.68	7.05	7.24	6.93	7.85	7.93	7.63	8.35	8.90	Revenues per sh	11.25						
1.51	1.59	1.65	1.73	1.78	1.78	1.89	1.91	1.62	1.52	1.90	1.95	1.93	2.04	2.11	2.10	2.35	2.55	"Cash Flow" per sh	2.75						
1.00	1.02	1.03	1.09	1.13	1.12	1.15	1.16	.88	.81	1.05	1.11	1.19	1.13	1.13	1.53	1.40	1.55	Earnings per sh <sup>A</sup>	1.70						
.77	.78	.79	.79	.80	.81	.83	.84	.85	.86	.87	.88	.90	.92	.94	.96	.98	1.00	1.00	Div'd Decl'd per sh <sup>B</sup>	1.10					
1.99	1.12	1.42	1.43	1.86	1.98	1.49	1.58	1.96	1.96	2.24	2.44	3.28	3.06	2.61	2.34	2.75	2.85	Cap'l Spending per sh	2.90						
8.26	8.52	8.61	8.92	9.25	10.06	10.46	10.94	11.52	11.60	11.95	12.23	12.67	13.05	13.50	16.89	17.25	17.80	Book Value per sh D	20.40						
6.79	6.80	7.26	7.28	7.65	7.94	7.97	8.04	8.17	8.27	8.38	8.46	8.57	8.68	8.76	10.97	11.00	11.25	Common Shs Outst'g <sup>C</sup>	12.00						
12.9	15.5	18.2	18.2	21.5	24.3	23.5	22.9	28.6	29.0	23.0	22.2	18.4	20.7	23.0	19.4	19.4	19.4	Avg Ann'l P/E Ratio	20.0						
.74	.81	1.04	1.18	1.10	1.33	1.34	1.21	1.52	1.57	1.22	1.34	1.23	1.32	1.44	1.24	1.24	1.24	Relative P/E Ratio	1.35						
6.0%	4.9%	4.2%	4.0%	3.3%	3.0%	3.0%	3.1%	3.4%	3.6%	3.6%	3.6%	4.1%	3.9%	3.6%	3.6%	3.6%	3.6%	Avg Ann'l Div'd Yield	3.4%						
CAPITAL STRUCTURE as of 12/31/12																									
Total Debt \$181.5 mill. Due in 5 Yrs \$1.3 mill.																									
LT Debt \$178.5 mill. LT Interest \$7.6 mill.																									
(Total interest coverage: 8.8x)																									
(48% of Cap'l)																									
Leases, Uncapitalized: Annual rentals \$2 mill.																									
Pension Assets \$45.4 mill.																									
Oblig. \$66.5 mill.																									
Pfd Stock \$0.8 mill. Pfd Divd NMF																									
Common Stock 10,970,895 shs.																									
MARKET CAP: \$325 million (Small Cap)																									
CURRENT POSITION 2010 2011 12/31/12																									
(\$ MILL.)																									
Cash Assets	1.0	1.0	13.2																						
Accounts Receivable	10.1	14.9	11.5																						
Other	9.3	3.0	11.7																						
Current Assets	20.4	18.9	36.4																						
Accts Payable	6.6	7.2	10.0																						
Debt Due	--	--	3.0																						
Other	28.5	23.2	2.9																						
Current Liab.	35.1	30.4	15.9																						
Fix. Chg. Cov.	400%	419%	200%																						
ANNUAL RATES																									
of change (per sh)																									
Revenues	2.5%	5.0%	6.0%																						
"Cash Flow"	1.5%	4.0%	4.5%																						
Earnings	0.5%	4.0%	6.0%																						
Dividends	1.5%	1.5%	2.5%																						
Book Value	4.0%	3.0%	6.5%																						
QUARTERLY REVENUES (\$ mill.)																									
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																				
2010	13.8	15.9	21.0	15.7	66.4																				
2011	16.0	17.4	20.6	15.4	69.4																				
2012	18.5	21.3	24.5	19.5	83.8																				
2013	21.0	23.0	26.0	22.0	92.0																				
2014	22.0	24.0	30.0	24.0	100																				
EARNINGS PER SHARE <sup>A</sup>																									
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																				
2010	.12	.27	.54	.20	1.13																				
2011	.26	.37	.39	.11	1.13																				
2012	.22	.47	.67	.16	1.53																				
2013	.20	.40	.60	.20	1.40																				
2014	.25	.45	.65	.20	1.55																				
QUARTERLY DIVIDENDS PAID <sup>B</sup>																									
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																				
2009	.222	.222	.228	.228	.90																				
2010	.228	.228	.233	.233	.922																				
2011	.233	.233	.238	.238	.942																				
2012	.238	.238	.243	.243	.962																				
2013	.243																								

**BUSINESS:** Connecticut Water Service, Inc. is a non-operating holding company, whose income is derived from earnings of its wholly-owned subsidiary companies (regulated water utilities). Its largest subsidiary, Connecticut Water, accounted for about 85% of the holding company's net income in 2012, and provides water services to 400,000 people in 55 towns throughout Connecticut and Maine. Acquired The Maine Water Co., 1/12; Biddeford and Saco Water, 12/12. Inc.: CT. Has about 260 employees. Chairman/President/CEO: Eric W. Thornburg. Officers and directors own 2.2% of the common stock; BlackRock, Inc. 6.7%; The Vanguard Group, 5.3%. Address: 93 West Main Street, Clinton, CT 06413. Telephone: (860) 669-8636. Web: www.ctwater.com.

**The company's recent expansion diversifies its regulatory risk.** Before 2012's purchases, Connecticut Water's fate was solely in the hands of regulators in the Nutmeg state. Unfortunately, for CTWS, the state hasn't always been sympathetic to utilities. Despite some signs of improvement, however, the established rate of return that it allowed utilities to earn on equity was almost a full percentage point below that of the national average. And, while Maine can't be described as pro-business, based on past decisions, the state appears to have a more constructive utility policy.

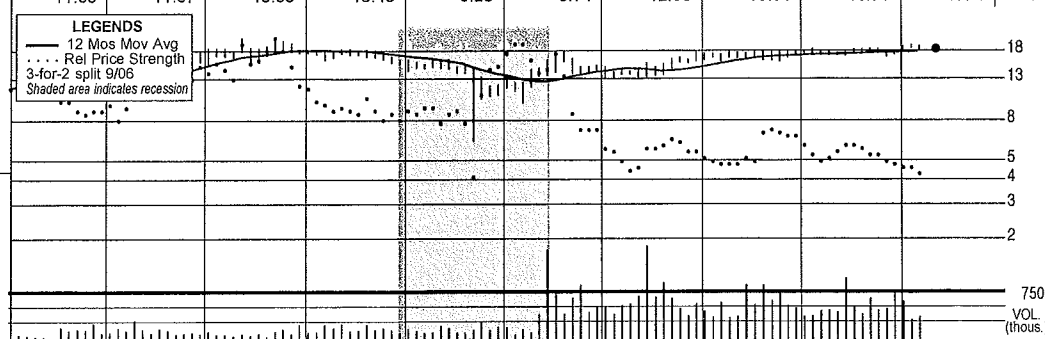
**Investors should hold off making commitments to this untimely stock, for now.** In our January report three months ago, we opined that despite some of the company's positives, the equity was more than fully valued. And even though it has underperformed the market averages by more than 10% over that time span, we believe that there are other utilities in the Value Line universe that offer better total return potential over the pull to 2016-2018.

*James A. Flood*  
*April 19, 2013*





SJW CORP. NYSE-SJW				RECENT PRICE	26.38	P/E RATIO	20.6	(Trailing: 22.4 Median: 23.0)	RELATIVE P/E RATIO	1.23	DIV'D YLD	2.8%	VALUE LINE															
TIMELINESS	2	Raised 1/11/13	High: 15.1	Low: 12.7	15.0	19.6	27.8	45.3	43.0	35.1	30.4	28.2	26.8	26.9	28.1	25.3	Target Price	2016	2017	2018								
SAFETY	3	New 4/22/11	LEGENDS 1.50 x Dividends p sh divided by Interest Rate ... Relative Price Strength 3-for-1 split 3/04 2-for-1 split 3/06 Options: No Shaded areas indicate recessions																									
TECHNICAL	3	Raised 2/22/13	2016-18 PROJECTIONS																									
BETA	.85	(1.00 = Market)	Price	Gain	Ann'l Total																							
			High	Low	Return																							
			40	30	(+50%)																							
					(+15%)																							
Insider Decisions																												
M J J A S O N D J																												
to Buy																												
Options																												
to Sell																												
0 0 0 0 0 0 0 0 0 1 0																												
0 0 0 0 0 0 0 0 0 1 0																												
0 0 0 0 0 0 0 0 0 1 0																												
Institutional Decisions																												
2Q2012 3Q2012 4Q2012																												
to Buy																												
to Sell																												
Hold's(000)																												
8955 8844 9043																												
Percent																												
shares																												
traded																												
15																												
10																												
5																												

YORK WATER CO NDQ--YORW				RECENT PRICE	18.39	TRAILING P/E RATIO	25.5	RELATIVE P/E RATIO	1.44	DIV'D YLD	3.0%	VALUE LINE							
RANKS				14.03	17.87	20.99	18.55	16.50	17.95	18.00	18.14	18.49	19.24	High					
				11.00	11.67	15.33	15.45	6.23	9.74	12.83	15.81	16.75	17.62	Low					
PERFORMANCE	3	Average	<div>LEGENDS</div> <div>— 12 Mos Mov Avg</div> <div>.... Rel Price Strength</div> <div>3-for-2 split 9/06</div> <div>Shaded area indicates recession</div> 																
Technical	3	Average																	
SAFETY	2	Above Average																	
BETA	.70	(1.00 = Market)																	
Financial Strength	B++																		
Price Stability	90																		
Price Growth Persistence	60																		
Earnings Predictability	100																		
© VALUE LINE PUBLISHING LLC				2004	2005	2006	2007	2008	2009	2010	2011	2012	2013/2014						
REVENUES PER SH	2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21										
"CASH FLOW" PER SH	.65	.79	.77	.86	.88	.95	1.07	1.09	1.12										
EARNINGS PER SH	.49	.56	.58	.57	.57	.64	.71	.71	.72				.77 <sup>A</sup> /.83 <sup>C</sup>						
DIV'D DECL'D PER SH	.39	.42	.45	.48	.49	.51	.52	.53	.54										
CAP'L SPENDING PER SH	2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.94										
BOOK VALUE PER SH	4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73										
COMMON SHS OUTST'G (MILL)	10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92										
AVG ANN'L P/E RATIO	25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4				23.9/22.2						
RELATIVE P/E RATIO	1.36	1.39	1.68	1.61	1.48	1.46	1.32	1.50	1.57										
AVG ANN'L DIV'D YIELD	3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%										
REVENUES (\$MILL)	22.5	26.8	28.7	31.4	32.8	37.0	39.0	40.6	41.4				Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.						
NET PROFIT (\$MILL)	4.8	5.8	6.1	6.4	6.4	7.5	8.9	9.1	9.3										
INCOME TAX RATE	36.7%	36.7%	34.4%	36.5%	36.1%	37.9%	38.5%	35.3%	37.6%										
AFUDC % TO NET PROFIT	--	--	7.2%	3.6%	10.1%	--	1.2%	1.1%	1.1%										
LONG-TERM DEBT RATIO	42.5%	44.1%	48.3%	46.5%	54.5%	45.7%	48.3%	47.1%	46.0%										
COMMON EQUITY RATIO	57.5%	55.9%	51.7%	53.5%	45.5%	54.3%	51.7%	52.9%	54.0%										
TOTAL CAPITAL (\$MILL)	83.6	90.3	126.5	125.7	153.4	160.1	176.4	180.2	184.8										
NET PLANT (\$MILL)	140.0	155.3	174.4	191.6	211.4	222.0	228.4	233.0	240.3										
RETURN ON TOTAL CAP'L	7.6%	8.4%	6.2%	6.7%	5.7%	6.2%	6.5%	6.4%	6.4%										
RETURN ON SHR. EQUITY	10.0%	11.6%	9.3%	9.5%	9.2%	8.6%	9.8%	9.5%	9.3%										
RETURN ON COM EQUITY	10.0%	11.6%	9.3%	9.5%	9.2%	8.6%	9.8%	9.5%	9.3%										
RETAINED TO COM EQ	2.1%	3.0%	2.2%	1.7%	1.4%	1.9%	2.7%	2.5%	2.4%										
ALL DIV'DS TO NET PROF	79%	74%	77%	82%	85%	78%	72%	73%	74%										
No. of analysts changing earn. est. in last 5 days: 0 up, 0 down, consensus 5-year earnings growth not available. <sup>B</sup> Based upon 4 analysts' estimates. <sup>C</sup> Based upon 2 analysts' estimates.																			
ANNUAL RATES				ASSETS (\$mill.)				INDUSTRY: Water Utility											
of change (per share)								<b>BUSINESS:</b> The York Water Company engages in the impounding, purification, and distribution of water in York and Adams Counties, Pennsylvania. It also operates a wastewater collection and treatment system; and has two reservoirs comprising Lake Williams and Lake Redman, which together hold up to approximately 2.2 billion gallons of water. In addition, the company has a 15-mile pipeline from the Susquehanna River to Lake Redman, which provides access to an additional supply of 12.0 million gallons of untreated water per day; and owns two wells providing approximately 100,000 gallons per day to supply water to its customers in Carroll Valley, Adams County. As of December 31, 2012, it served 63,273 customers in 39 municipalities within York County and eight municipalities within Adams County. It serves various customers in fixtures and furniture, electrical machinery, food products, paper, ordnance units, textile products, air conditioning systems, and motorcycles industries. Has 105 employees. C.E.O. & President: Jeffrey R. Hines, Inc.: PA. Address: 130 East Market Street, York, PA 17401. Tel.: (717) 845-3601. Internet: <a href="http://www.yorkwater.com">http://www.yorkwater.com</a> . J.V.											
5 Yrs.				2010															
1 Yr.				2011															
Revenues				1.3															
"Cash Flow"				6.3															
Earnings				.6															
Dividends				.6															
Book Value				8.8															
Fiscal Year				12/31/12															
1Q				270.8															
2Q				279.2															
3Q				290.6															
4Q				50.3															
Full Year				228.4															
12/31/10				223.0															
12/31/11				240.3															
12/31/12				30.6															
12/31/13				282.5															
EARNINGS PER SHARE				LIABILITIES (\$mill.)				<b>April 19, 2013</b>  <b>TOTAL SHAREHOLDER RETURN</b> Dividends plus appreciation as of 3/31/2013											
1Q				1.2															
2Q				.0															
3Q				.0															
4Q				.4															
Full Year				5.3															
12/31/09				5.3															
12/31/10				5.5															
12/31/11																			
12/31/12																			
12/31/13																			
QUARTERLY SALES (\$mill.)				LONG-TERM DEBT AND EQUITY as of 12/31/12				<b>3 Mos.</b> 7.79% <b>6 Mos.</b> 4.08% <b>1 Yr.</b> 11.98% <b>3 Yrs.</b> 50.02% <b>5 Yrs.</b> 47.80%											
1Q				Total Debt \$85.0 mill. Due in 5 Yrs. \$19.5 mill.															
2Q				LT Debt \$84.9 mill. Including Cap. Leases None (46% of Cap'l)															
3Q				Leases, Uncapitalized Annual rentals None															
4Q				Pension Liability \$15.2 mill. in '12 vs. \$14.7 mill. in '11															
Full Year				Pfd Stock None Pfd Div'd Paid None (54% of Cap'l)															
12/31/10				Common Stock 12,918,633 shares															
12/31/11																			
12/31/12																			
12/31/13																			
INSTITUTIONAL DECISIONS																			
2Q'12																			
3Q'12																			
4Q'12																			
to Buy																			
to Sell																			
Hld's(000)																			
3270																			
3279																			
3178																			



United Water Rhode Island, Inc.  
Current Institutional Holdings and Individual Holdings  
the Proxy Group of Nine Water Companies

	<u>1</u>	<u>2</u>
	April 30, 2013 Percentage of Institutional Holdings	April 30, 2013 Percentage of Individual Holdings (1)
Proxy Group of Nine Water Companies		
American States Water Co.	67.52 %	32.48 %
American Water Works Co., Inc.	84.83	15.17
Aqua America, Inc.	48.94	51.06
Artesian Resources Corp.	39.90	60.10
California Water Service Group	50.37	49.63
Connecticut Water Service, Inc.	36.73	63.27
Middlesex Water Company	39.14	60.86
SJW Corporation	47.71	52.29
York Water Company	25.94	74.06
Average	<u>49.01 %</u>	<u>50.99 %</u>

Notes:

(1) (1 - column 1).

Source of Information: pro.edgar-online.com, April 30, 2013

United Water Rhode Island, Inc.  
Summary of Risk Premium Models for the  
Proxy Group of Nine Water Companies

	<u>Proxy Group of Nine Water Companies</u>
Predictive Risk Premium Model <sup>TM</sup> (PRPM <sup>TM</sup> ) (1)	12.02 %
Risk Premium Using an Adjusted Market Approach (2)	<u>9.77 %</u>
Average	<u><u>11.46 %</u></u>

Notes:

- (1) From page 2 of this Schedule.
- (2) From page 3 of this Schedule.

United Water Rhode Island, Inc.  
Derivation of Common Equity Cost Rate  
Using the Predictive Risk Premium Model <sup>TM</sup> (PRPM <sup>TM</sup>)  
Proxy Group of Nine Water Companies

	American States Water Co.	American Water Works Co., Inc.	Aqua America, Inc.	Artesian Resources Corp.	California Water Service Group	Connecticut Water Service, Inc.	Middlesex Water Company	S.J.W. Corporation	York Water Company
GARCH Coefficient (1)	1.626794043	8.071357859	2.245068724	2.168747606	1.752169631	1.677250909	1.914236095	1.319837243	1.9034449368
Average Variance (1)	0.38%	0.26%	0.48%	0.31%	0.31%	0.29%	0.27%	0.42%	0.47%
PRPM <sup>TM</sup> Derived Risk Premium (1)	7.70%	28.78%	13.74%	8.30%	6.79%	5.94%	6.38%	6.89%	11.38%
Risk-Free Rate (2)	4.32%	4.32%	4.32%	4.32%	4.32%	4.32%	4.32%	4.32%	4.32%
Indicated Cost of Common Equity	12.02%	33.10%	18.06%	12.62%	11.11%	10.26%	10.70%	11.21%	15.70%
								Average	14.97%
								Median	12.02%

Notes:

- (1) Based upon data from CRSP(R) Data © 2012, Center For Research in Security Prices (CRSP®), The University of Chicago Booth School of Business.
- (2) From note 3 on page 2 of Schedule PMA-9.

United Water Rhode Island, Inc.  
Indicated Common Equity Cost Rate  
Through Use of a Risk Premium Model  
Using an Adjusted Total Market Approach

<u>Line No.</u>		<u>Proxy Group of Nine Water Companies</u>
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	4.05 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	<u>0.33 (2)</u>
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	4.38 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	<u>0.18 (3)</u>
5.	Adjusted Prospective Bond Yield	4.56 %
6.	Equity Risk Premium (4)	<u>5.21</u>
7.	Risk Premium Derived Common Equity Cost Rate	<u><u>9.77 %</u></u>

- Notes:
- (1) Six quarter average consensus forecast ending with Q3 of 2014 of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see page 9 of this Schedule).
  - (2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.33% from page 6 of this Schedule.
  - (3) Adjustment to reflect the A3 Moody's bond rating of the proxy group of nine water companies as shown on page 4 of this Schedule. The 18 basis point adjustment is derived by taking 1/3 of the spread between Baa2 and A2 Public Utility Bonds ( $1/3 * 0.53\% = 0.18\%$ ).
  - (4) From page 7 of this Schedule.

United Water Rhode Island, Inc.  
Comparison of Bond Ratings, Business Risk and Financial Risk Profiles for the  
Proxy Group of Nine Water Companies

Proxy Group of Nine Water Companies	Moody's		Standard & Poor's	
	Bond Rating		Bond Rating	
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)
American States Water Co. (3)	A2	6.0		
American Water Works Co., Inc. (4)	Baa1	8.0		
Aqua America, Inc. (5)	NR	--		
Artesian Resources Corp.	NR	--		
California Water Service Group (6)	NR	--		
Connecticut Water Service, Inc. (7)	NR	--		
Middlesex Water Company	NR	--		
SJW Corporation (8)	NR	--		
York Water Company	A3	7.0		
Average				
United Water Works, Inc.	NR	--		

- Notes: (1) From page 5 of this Schedule.  
(2) From Standard & Poor's Issuer Ranking: U.S. Regulated Gas and Water Utilities, Strongest to Weakest, April 22, 2013.  
(3) Ratings, business risk and financial risk profiles are those of Golden State Water Company.  
(4) Ratings, business risk and financial risk profiles are those of Pennsylvania and New Jersey American Water.  
(5) Ratings, business risk and financial risk profiles are those of Aqua Pennsylvania, Inc.  
(6) Ratings, business risk and financial risk profiles are those of California Water Service Co.  
(7) Ratings, business risk and financial risk profiles are those of Connecticut Water Company.  
(8) Ratings, business risk and financial risk profiles are those of San Jose Water Co.

Source Information: Moody's Investors Service  
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for  
Moody's and Standard & Poor's Bond Ratings  
and Standard & Poor's Business and Financial Risk Profiles

<u>Moody's Bond Rating</u>	<u>Numerical Bond Weighting</u>	<u>Standard &amp; Poor's Bond Rating</u>
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-

Standard & Poor's

<u>Business Risk Profile</u>	<u>Numerical Weighting</u>	<u>Financial Risk Profile</u>	<u>Numerical Weighting</u>
Excellent	1	Minimal	1
Strong	2	Modest	2
Satisfactory	3	Intermediate	3
Fair	4	Significant	4
Weak	5	Aggressive	5
Vulnerable	6	Highly Leveraged	6

Moody's  
Comparison of Interest Rate Trends  
for the Three Months Ending March 2013 (1)

Months	Corporate Bonds		Public Utility Bonds		Spread - Corporate v. Public Utility Bonds			Spread - Public Utility Bonds	
	Aaa Rated		Aa Rated	A Rated	Aa (Pub. Util.) over Aaa (Corp.)	A (Pub. Util.) over Aaa (Corp.)	Baa (Pub. Util.) over Aaa (Corp.)	A over Aa	Baa over A
January-13	3.80 %		3.90 %	4.15 %			4.66 %		
February-13	3.90		3.95	4.18			4.74		
March-13	3.80		3.90	4.15			4.66		
Average of Last 3 Months	3.83 %		3.92 %	4.16 %	0.09 %	0.33 %	0.86 %	0.24 %	0.53 %

Notes: (1) All yields are distributed yields.

Source of Information: Mergent Bond Record, April 2013, Vol. 80, No. 4

United Water Rhode Island, Inc.  
Judgment of Equity Risk Premium for  
the Proxy Group of Nine Water Companies

<u>Line No.</u>		<u>Proxy Group of Nine Water Companies</u>
1.	Calculated equity risk premium based on the total market using the beta approach (1)	5.46 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	<u>4.95</u>
3.	Average equity risk premium	<u><u>5.21 %</u></u>

Notes: (1) From page 8 of this Schedule.  
(2) From page 10 of this Schedule.



United Water Rhode Island, Inc.  
Derivation of Equity Risk Premium Based on the Total Market Approach  
Using the Beta for  
the Proxy Group of Nine Water Companies

<u>Line No.</u>	<u>Proxy Group of Nine Water Companies</u>
<u>Based on S&amp;P Valuation Yearbook Data:</u>	
1. Ibbotson Equity Risk Premium (1)	5.60 %
2. Ibbotson Equity Risk Premium based on PRPM™ (2)	9.17
<u>Based on Value Line Summary and Index:</u>	
3. Equity Risk Premium Based on <u>Value Line</u> Summary and Index (3)	<u>8.64</u>
4. Conclusion of Equity Risk Premium (4)	7.80 %
5. Adjusted Value Line Beta (5)	<u>0.70</u>
6. Beta Adjusted Equity Risk Premium	<u><u>5.46 %</u></u>

- Notes:
- (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® S&P® 2013 Valuation Yearbook - Market Results for Stocks, Bonds, Bills, and Inflation minus the arithmetic mean monthly yield of Moody's Aaa and Aa corporate bonds from 1926 - 2012.  $(11.83\% - 6.23\% = 5.60\%)$ .
  - (2) The Predictive Risk Premium Model (PRPM™) is discussed in Ms. Ahern's accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM™ is derived by applying the PRPM™ to the monthly risk premiums between Ibbotson large company common stock monthly returns minus the average Aaa and Aa corporate monthly bond yields, from January 1928 through March 2013.
  - (3) The equity risk premium based on the Value Line Summary and Index is derived from taking the projected 3-5 year total annual market return of 12.69% (described fully in note 1 of page 2 of Schedule PMA-8) and subtracting the average consensus forecast of Aaa corporate bonds of 4.05% (Shown on page 3 of this Schedule).  $(12.69\% - 4.05\% = 8.64\%)$ .
  - (4) Average of Lines 1, 2, & 3.
  - (5) Median beta derived from page 1 of Schedule PMA-8.

Sources of Information:

Ibbotson® S&P® 2013 Valuation Yearbook - Market Results for Stocks, Bonds, Bills, and Inflation, Morningstar, Inc., 2013 Chicago, IL.  
Industrial Manual and Mergent Bond Record Monthly Update.  
Value Line Summary and Index  
Blue Chip Financial Forecasts, May 1, 2013

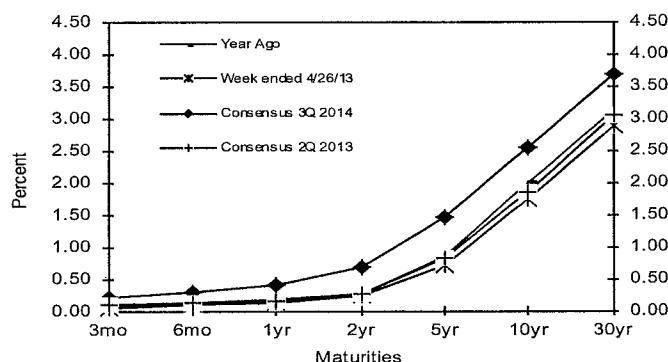
## Consensus Forecasts Of U.S. Interest Rates And Key Assumptions<sup>1</sup>

	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			Latest Q	2Q	3Q	4Q	1Q	2Q	3Q
Interest Rates	Apr. 26	Apr. 19	Apr. 12	Apr. 5	Mar.	Feb.	Jan.	1Q 2013	2013	2013	2013	2014	2014	2014
Federal Funds Rate	0.14	0.15	0.15	0.12	0.14	0.15	0.14	0.14	0.2	0.2	0.2	0.2	0.2	0.2
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.3	3.3	3.3	3.3	3.3	3.3
LIBOR, 3-mo.	0.28	0.28	0.28	0.28	0.28	0.29	0.30	0.29	0.3	0.3	0.3	0.3	0.4	0.4
Commercial Paper, 1-mo.	0.06	0.07	0.08	0.09	0.10	0.12	0.12	0.11	0.1	0.1	0.2	0.2	0.2	0.3
Treasury bill, 3-mo.	0.05	0.06	0.07	0.07	0.09	0.10	0.07	0.09	0.1	0.1	0.1	0.1	0.2	0.2
Treasury bill, 6-mo.	0.09	0.09	0.10	0.10	0.11	0.12	0.11	0.11	0.1	0.1	0.2	0.2	0.2	0.3
Treasury bill, 1 yr.	0.12	0.12	0.12	0.13	0.15	0.16	0.15	0.15	0.2	0.2	0.2	0.2	0.3	0.4
Treasury note, 2 yr.	0.24	0.24	0.24	0.24	0.26	0.27	0.27	0.27	0.3	0.3	0.4	0.4	0.6	0.7
Treasury note, 5 yr.	0.71	0.71	0.72	0.73	0.82	0.85	0.81	0.83	0.8	0.9	1.0	1.2	1.3	1.5
Treasury note, 10 yr.	1.73	1.73	1.79	1.81	1.96	1.98	1.91	1.95	1.9	2.0	2.1	2.3	2.4	2.5
Treasury note, 30 yr.	2.88	2.89	2.96	3.02	3.16	3.17	3.08	3.14	3.0	3.2	3.3	3.4	3.5	3.7
Corporate Aaa bond	3.69	3.68	3.75	3.82	3.93	3.90	3.80	3.88	3.8	3.9	4.0	4.1	4.2	4.3
Corporate Baa bond	4.53	4.54	4.62	4.70	4.85	4.85	4.73	4.81	4.7	4.8	4.9	5.0	5.2	5.3
State & Local bonds	3.90	3.89	3.93	3.96	3.96	3.72	3.60	3.76	3.8	3.8	3.8	3.9	4.0	4.1
Home mortgage rate	3.40	3.41	3.43	3.54	3.57	3.53	3.41	3.50	3.5	3.6	3.7	3.8	4.0	4.1
	History								Consensus Forecasts-Quarterly					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Key Assumptions	2011	2011	2011	2012	2012	2012	2012	2013	2013	2013	2013	2014	2014	2014
Major Currency Index	69.6	69.9	72.4	72.9	73.9	74.0	73.2	74.7	75.7	76.1	76.3	76.6	76.7	76.7
Real GDP	2.5	1.3	4.1	2.0	1.3	3.1	0.4	2.5	1.8	2.3	2.7	2.7	2.9	3.0
GDP Price Index	2.6	3.0	0.4	2.0	1.6	2.7	1.0	1.2	1.7	2.0	1.8	2.0	2.0	2.0
Consumer Price Index	4.7	2.9	1.4	2.3	1.0	2.1	2.2	1.4	1.3	2.1	2.0	2.2	2.2	2.3

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data for interest rates except LIBOR is from Federal Reserve Release (FRSR) H.15. LIBOR quotes available from *The Wall Street Journal*. Interest rate definitions are the same as those in FRSR H.15. Treasury yields are reported on a constant maturity basis. Historical data for the Fed's Major Currency Index is from FRSR H.10 and G.5. Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS).

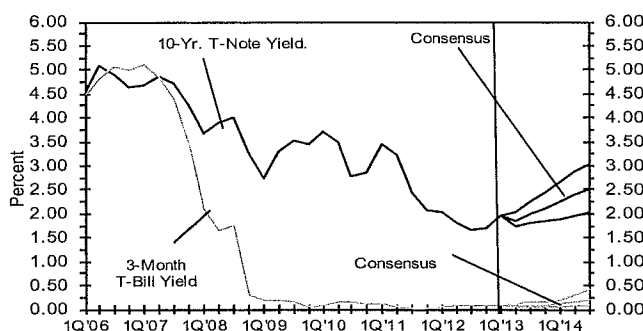
### U.S. Treasury Yield Curve

Week ended April 26, 2013 and Year Ago vs.  
1Q 2013 and 2Q 2014 Consensus Forecasts



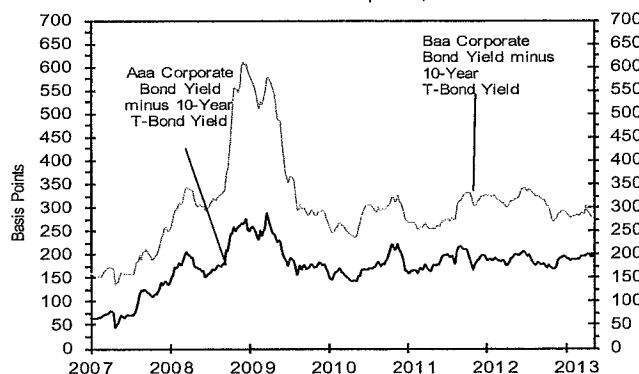
### U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield

(Quarterly Average) History Forecast



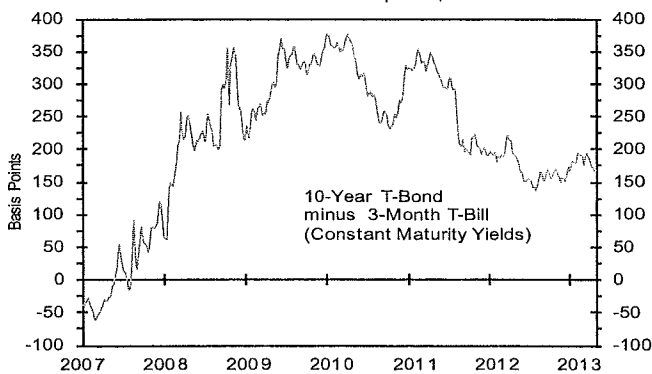
### Corporate Bond Spreads

As of week ended April 26, 2013



### U.S. Treasury Yield Curve

As of week ended April 26, 2013



United Water Rhode Island, Inc.  
Derivation of Mean Equity Risk Premium Based on a Study  
Using Holding Period Returns of Public Utilities

<u>Line No.</u>		<u>Over A Rated Moody's Public Utility Bonds - AUS Consultants Study (1)</u>
1.	Arithmetic Mean Holding Period Returns on the Standard & Poor's Utility Index 1926-2012 (2):	10.69 %
2.	Arithmetic Mean Yield on Moody's A Rated Public Utility Yields 1926-2012	<u>(6.53)</u>
3.	Historical Equity Risk Premium	4.16 %
4.	Forecasted Equity Risk Premium Based on PRPM™ (3)	<u>5.73</u>
5.	Average of Historical and PRPM™ Equity Risk Premium	<u><u>4.95 %</u></u>

- Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2012, (AUS Consultants, 2013).
- (2) Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.
- (3) The Predictive Risk Premium Model (PRPM™) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A rated public utility bonds from 1928 - 2012.

United Water Rhode Island, Inc.  
Indicated Common Equity Cost Rate Through Use  
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
	Value Line Adjusted Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate (3)	ECAPM Cost Rate (4)	Indicated Common Equity Cost Rate (5)
<u>Proxy Group of Nine Water Companies</u>						
American States Water Co.	0.70	8.40 %	4.32 %	10.20 %	10.83 %	
American Water Works Co., Inc.	0.65	8.40	4.32	9.78	10.52	
Aqua America, Inc.	0.60	8.40	4.32	9.36	10.20	
Artesian Resources Corp.	0.60	8.40	4.32	9.36	10.20	
California Water Service Group	0.65	8.40	4.32	9.78	10.52	
Connecticut Water Service, Inc.	0.75	8.40	4.32	10.62	11.15	
Middlesex Water Company	0.70	8.40	4.32	10.20	10.83	
SJW Corporation	0.85	8.40	4.32	11.46	11.78	
York Water Company	0.70	8.40	4.32	10.20	10.83	
Average	<u>0.69</u>			<u>10.11 %</u>	<u>10.76 %</u>	<u>10.44 %</u>
Median	<u>0.70</u>			<u>10.20 %</u>	<u>10.83 %</u>	<u>10.52 %</u>

See page 2 for notes.

United Water Rhode Island, Inc.  
Development of the Market-Required Rate of Return on Common Equity Using  
the Capital Asset Pricing Model for  
the Proxy Group of Nine Water Companies  
Adjusted to Reflect a Forecasted Risk-Free Rate and Market Return

Notes:

- (1) For reasons explained in Ms. Ahern's accompanying direct testimony, from the 13 weeks ending May 3, 2013, Value Line Summary & Index, a forecasted 3-5 year total annual market return of 12.69% can be derived by averaging the 13 weeks ending May 3, 2013 forecasted total 3-5 year total appreciation, converting it into an annual market appreciation and adding the Value Line average forecasted annual dividend yield.
- The 3-5 year average total market appreciation of 49% produces a four-year average annual return of 10.48%  $((1.49^{0.25}) - 1)$ . When the average annual forecasted dividend yield of 2.21% is added, a total average market return of 12.69%  $(2.21\% + 10.48\%)$  is derived.
- The 13 weeks ending May 3 2013 forecasted total market return of 12.69% minus the risk-free rate of 4.32% (developed in Note 2) is 8.37%  $(12.69\% - 4.32\%)$ .
- The Predictive Risk Premium Model (PRPM<sup>TM</sup>) market equity risk premium of 10.28% is derived by applying the PRPM<sup>TM</sup> to the monthly equity risk premium of large company common stocks over the income return on long-term U.S. Government Securities from January 1926 through March 2013.
- The Morningstar, Inc. (Ibbotson Associates) calculated arithmetic mean monthly market equity risk premium of 6.55% for the period 1926-2012 results from a total market return of 11.83% less the arithmetic mean income return on long-term U.S. Government Securities of 5.28%  $(11.83\% - 5.28\% = 6.55\%)$ .
- These three expectational risk premiums are then averaged, resulting in an 8.40% market equity risk premium, which is then multiplied by the beta in column 1 of page 1 of this Schedule.  $((8.37\% + 10.28\% + 6.55\%)/3)$ .
- (2) For reasons explained in Ms. Ahern's direct testimony, the risk-free rate that Ms. Ahern relies upon for her CAPM analysis is the average of the historical income return on 30 Year Treasury Bonds which is 5.28% for 1926-2012 and the average forecast based upon six quarterly estimates of 30-year Treasury Note yields per the consensus of nearly 50 economists reported in the Blue Chip Financial Forecasts dated May 1, 2013 (see page 9 of Schedule PMA-7). The estimates are detailed below:

Morningstar Historical Income Returns On 30 Year Treasury Bonds (1926-2012):		<u>5.28%</u>
	<u>30-Year Treasury Note Yield</u>	
Second Quarter 2013		3.00%
Third Quarter 2013		3.20%
Fourth Quarter 2013		3.30%
First Quarter 2014		3.40%
Second Quarter 2014		3.50%
Third Quarter 2014		<u>3.70%</u>
Average		<u>3.35%</u>
Average of Historical and Projected Returns on 30 Year Treasury Bonds:		5.28%
		<u>3.35</u>
		<u>8.63%</u>
		$8.63\%/2 = \underline{4.32\%}$

- (3) The traditional Capital Asset Pricing Model (CAPM) is applied using the following formula:

$$R_S = R_F + \beta (R_M - R_F)$$

Where  $R_S$  = Return rate of common stock  
 $R_F$  = Risk Free Rate  
 $\beta$  = Value Line Adjusted Beta  
 $R_M$  = Return on the market as a whole

- (4) The empirical CAPM is applied using the following formula:

$$R_S = R_F + .25 (R_M - R_F) + .75 \beta (R_M - R_F)$$

Where  $R_S$  = Return rate of common stock  
 $R_F$  = Risk-Free Rate  
 $\beta$  = Value Line Adjusted Beta  
 $R_M$  = Return on the market as a whole

Source of Information: Value Line Summary & Index  
Blue Chip Financial Forecasts, May 1, 2013  
Value Line Investment Survey, (Standard Edition)  
2013 Ibbotson® S&P® Valuation Yearbook, Morningstar, Inc., 2013, Chicago, IL

United Water Rhode Island, Inc.  
Summary of Cost of Equity Models Applied to the  
Proxy Group of Non-Price-Regulated Companies  
Comparable in Total Risk to the  
Proxy Group of Nine Water Companies

<u>Principal Methods</u>	<u>Thirty Non-Price- Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	11.59 %
Risk Premium Model (RPM) (2)	10.44
Capital Asset Pricing Model (CAPM) (3)	<u>10.52</u>
Average	<u><u>10.85 %</u></u>

Notes:

- (1) From page 5 of this Schedule.
- (2) From page 6 of this Schedule.
- (3) From page 9 of this Schedule.

United Water Rhode Island, Inc.  
Basis of Selection of Comparable Risk  
Domestic Non-Price Regulated Companies

Proxy Group of Nine Water Companies	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
American States Water Co.	0.70	0.49	3.2346	0.0634
American Water Works Co., Inc.	0.65	0.44	2.9944	0.0592
Aqua America, Inc.	0.60	0.35	2.5578	0.0501
Artesian Resources Corp.	0.60	0.32	2.7579	0.0540
California Water Service Group	0.65	0.40	2.6584	0.0521
Connecticut Water Service, Inc.	0.75	0.58	3.0991	0.0607
Middlesex Water Company	0.70	0.53	2.6329	0.0516
SJW Corporation	0.85	0.70	3.5218	0.0690
York Water Company	0.70	0.48	3.1205	0.0612
Average	<u>0.69</u>	<u>0.48</u>	<u>2.9530</u>	<u>0.0579</u>
Beta Range (+/- 2 std. Devs. of Beta)	0.36	0.60		
2 std. Devs. of Beta	0.12			
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.6936	3.2124		
Std. dev. of the Res. Std. Err.	0.1297			
2 std. devs. of the Res. Std. Err.	0.2594			

United Water Rhode Island, Inc.  
Proxy Group of Non-Price Regulated Companies  
Comparable in Total Risk to the  
Proxy Group of Nine Water Companies

<u>Proxy Group of Thirty Non-Price-Regulated Companies</u>	<u>VL Adjusted Beta</u>	<u>Unadjusted Beta</u>	<u>Residual Standard Error of the Regression</u>	<u>Standard Deviation of Beta</u>
Gallagher (Arthur J.)	0.75	0.57	2.8982	0.0568
AutoZone Inc.	0.65	0.41	2.9922	0.0586
Baxter Intl Inc.	0.70	0.49	2.8958	0.0567
Bristol-Myers Squibb	0.70	0.49	2.7999	0.0549
Brown & Brown	0.75	0.55	2.8472	0.0558
ConAgra Foods	0.65	0.42	2.7874	0.0546
Capitol Fed. Finl	0.60	0.38	2.9742	0.0583
CenturyLink Inc.	0.75	0.55	3.0014	0.0588
Quest Diagnostics	0.75	0.60	2.7993	0.0549
Dun & Bradstreet	0.75	0.59	2.9200	0.0572
DaVita Inc.	0.70	0.47	2.8517	0.0559
Hershey Co.	0.60	0.38	2.7212	0.0533
J&J Snack Foods	0.70	0.49	3.1564	0.0619
Kroger Co.	0.60	0.36	2.8934	0.0567
Lancaster Colony	0.70	0.51	3.1589	0.0619
McKesson Corp.	0.75	0.60	3.1902	0.0625
Mercury General	0.70	0.48	3.0001	0.0588
Mead Johnson Nutrition	0.65	0.42	3.1065	0.0802
Annaly Capital Mgmt.	0.65	0.43	3.1224	0.0612
Northwest Bancshares	0.75	0.57	3.0101	0.0590
Owens & Minor	0.70	0.54	3.1521	0.0618
Peoples United Finl	0.65	0.45	2.8024	0.0549
Sherwin-Williams	0.65	0.47	2.9985	0.0588
Smucker (J.M.)	0.70	0.48	2.9307	0.0574
Silgan Holdings	0.75	0.54	2.8827	0.0565
Suburban Propane	0.75	0.54	3.1128	0.0610
Stericycle Inc.	0.70	0.47	2.8682	0.0562
Waste Connections	0.70	0.53	2.7498	0.0539
Weis Markets	0.65	0.42	2.9109	0.0570
Berkley (W.R.)	0.70	0.47	2.8996	0.0568
Average	<u>0.69</u>	<u>0.49</u>	<u>2.9478</u>	<u>0.0584</u>
Proxy Group of Nine Water Companies	<u>0.69</u>	<u>0.48</u>	<u>2.9530</u>	<u>0.0579</u>



Basis of Selection of the Group of Non-Price Regulated Companies  
Comparable in Total Risk to the Proxy Group of Nine Water Companies

The criteria for selection of the proxy group of thirty non-price regulated companies was that the non-price regulated companies be domestic and have a meaningful projected rate of return on book common equity, shareholder's equity, net worth or partner's capital for the years 2016-2018, as reported in Value Line Investment Survey (Standard Edition).

The proxy group of thirty non-price regulated companies was selected based upon the unadjusted beta range of 0.36 – 0.60 and standard error of the regression range of 2.6936 – 3.2124 of the water proxy group.

These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression. Plus or minus two standard deviations captures 95.50% of the distribution of unadjusted betas and standard errors of the regression.

The standard deviation of the water industry's standard error of the regression is 0.1297. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1297 = \frac{2.9530}{\sqrt{518}} = \frac{2.9530}{22.7596}$$

Source of Information: Value Line, Inc., March 15, 2013  
Value Line Investment Survey (Standard Edition)

United Water Rhode Island, Inc.  
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to  
the Proxy Group of Nine Water Companies

Proxy Group of Thirty Non-Price-Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Reuters Mean Consensus Projected Five Year Growth Rate in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Adjusted Dividend Yield	Indicated Common Equity Cost Rate
Gallagher (Arthur J.	3.41 %	9.00 %	13.00 %	12.40 %	13.25 %	11.91 %	3.61 %	15.52 %
AutoZone Inc.	-	15.00	14.00	15.80	14.80	14.90	-	NA
Baxter Intl Inc.	2.59	8.00	9.00	8.80	9.05	8.71	2.70	11.41
Bristol-Myers Squibb	3.61	10.00	8.80	5.30	8.60	8.18	3.76	11.94
Brown & Brown	1.19	7.00	11.00	11.30	11.33	10.16	1.25	11.41
ConAgra Foods	2.91	13.00	12.00	8.00	11.04	11.01	3.07	14.08
Capitol Fed. Finl	2.52	6.00	5.00	5.00	3.00	4.75	2.58	7.33
CenturyTel, Inc.	6.00	(1.00)	1.30	2.80	0.55	1.55	6.04	7.59
Quest Diagnostics	2.12	6.50	10.00	10.80	10.18	9.37	2.22	11.59
Dun & Bradstreet	1.83	6.50	10.00	12.00	10.73	9.81	1.92	11.73
DaVita Inc.	-	15.00	14.00	12.80	14.68	14.12	-	NA
Hershey Co.	1.98	11.00	9.50	9.90	9.68	10.02	2.08	12.10
J&J Snack Foods	0.89	9.00	10.00	10.00	10.00	9.75	0.93	10.68
Kroger Co.	1.93	10.00	7.30	9.20	7.30	8.45	2.01	10.46
Lancaster Colony	2.02	5.50	NA	NA	10.00	7.75	2.10	9.85
McKesson Corp.	0.75	10.50	14.00	13.00	13.00	12.63	0.80	13.43
Mercury General	6.37	5.00	6.00	2.10	2.10	3.80	6.49	10.29
Mead Johnson Nutrition	1.56	10.00	11.00	11.00	11.02	10.76	1.65	12.41
Annaly Capital Mgmt.	11.82	(2.50)	NA	(1.30)	3.50	1.75	11.92	13.67
Northwest Bancshares	3.92	8.50	5.00	NA	5.00	6.17	4.04	10.21
Owens & Minor	2.81	9.00	9.00	9.00	9.50	9.13	2.94	12.07
Peoples United Fin	4.95	17.50	7.50	6.50	7.58	9.77	5.19	14.96
Sherwin-Williams	0.93	15.50	13.00	14.20	14.93	14.41	1.00	15.41
Smucker (J.M.)	2.15	8.50	8.40	8.70	8.32	8.48	2.24	10.72
Silgan Holdings	1.04	10.50	10.00	10.70	10.37	10.39	1.09	11.48
Suburban Propane	7.92	6.50	3.00	2.50	3.00	3.75	8.07	11.82
Stericycle Inc.	-	12.50	15.00	15.50	15.09	14.52	-	NA
Waste Connections	1.12	13.50	10.00	15.30	10.95	12.44	1.19	13.63
Weiss Markets	2.94	3.50	NA	NA	NA	3.50	2.99	6.49
Berkley (W.R.)	0.84	11.50	9.60	9.50	9.50	10.03	0.88	10.91
Average								11.60 %
Median								11.59 %

NA= Not Available  
NMF= Not Meaningful Figure

(1) Ms. Ahern's application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the application of the DCF to her proxy group of water companies. She uses the 60 day average price and the spot indicated dividend as of April 30, 2013 for her dividend yield and then adjusts that yield for 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, www.reuters.com, www.zacks.com, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

Source of Information: Value Line Investment Survey;  
www.reuters.com Downloaded on 05/01/2013  
www.zacks.com Downloaded on 05/01/2013  
www.yahoo.com Downloaded on 05/01/2013

United Water Rhode Island, Inc.  
Indicated Common Equity Cost Rate  
Through Use of a Risk Premium Model  
Using an Adjusted Total Market Approach

<u>Line No.</u>		<u>Proxy Group of Thirty Non-Price- Regulated Companies</u>
1.	Prospective Yield on Baa Rated Corporate Bonds (1)	4.98 %
2.	Equity Risk Premium (2)	<u>5.46</u>
3.	Risk Premium Derived Common Equity Cost Rate	<u><u>10.44 %</u></u>

Notes: (1) Average forecast based upon six quarterly estimates of Baa rated corporate bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated May 1, 2013 (see page 9 of Schedule PMA-7). The estimates are detailed below.

Second Quarter 2013	4.70 %
Third Quarter 2013	4.80
Fourth Quarter 2013	4.90
First Quarter 2014	5.00
Second Quarter 2014	5.20
Third Quarter 2014	<u>5.30</u>
Average	<u><u>4.98 %</u></u>

(2) From page 8 of this Schedule.

United Water Rhode Island, Inc.  
Comparison of Bond Ratings for the  
Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the  
Proxy Group of Nine Water Companies

	Moody's Bond Rating May 2013		Standard & Poor's Bond Rating May 2013	
<u>Proxy Group of Thirty Non- Price-Regulated Companies</u>	<u>Bond Rating</u>	<u>Numerical Weighting (1)</u>	<u>Bond Rating</u>	<u>Numerical Weighting (1)</u>
Gallagher (Arthur J.)	NR	--	NR	--
AutoZone Inc.	Baa2	9.0	BBB	9.0
Baxter Intl Inc.	A3	7.0	A	6.0
Bristol-Myers Squibb	A2	6.0	A+	5.0
Brown & Brown	NR	--	NR	--
ConAgra Foods	Baa2	9.0	BBB-	10.0
Capitol Fed. Finl	NR	--	NR	--
CenturyLink Inc.	Ba2	12.0	BB	12.0
Quest Diagnostics	Baa2	9.0	BBB+	8.0
Dun & Bradstreet	NR	--	NR	--
DaVita Inc.	B2	15.0	B	15.0
Hershey Co.	A2	6.0	A	6.0
J&J Snack Foods	NR	--	NR	--
Kroger Co.	Baa2	9.0	BBB	9.0
Lancaster Colony	NR	--	NR	--
McKesson Corp.	Baa2	9.0	A-	7.0
Mercury General	NR	--	NR	--
Mead Johnson Nutrition	Baa1	8.0	BBB-	10.0
Annaly Capital Mgmt.	NR	--	NR	--
Northwest Bancshares	NR	--	NR	--
Owens & Minor	Ba1	11.0	BBB	9.0
Peoples United Finl	A2	6.0	NR	--
Sherwin-Williams	A3	7.0	A	6.0
Smucker (J.M.)	A3	7.0	NR	--
Silgan Holdings	Ba2	12.0	BB-	13.0
Suburban Propane	Ba3	13.0	BB-	13.0
Stericycle Inc.	NR	--	NR	--
Waste Connections	NR	--	NR	--
Weis Markets	NR	--	NR	--
Berkley (W.R.)	Baa2	9.0	BBB+	8.0
Average	Baa2	9.1	BBB	9.1

Notes:

(1) From page 5 of Schedule PMA-7.

Source of Information:

Standard & Poor's Bond Guide April 2013  
www.moodys.com; downloaded 5/1/2013

United Water Rhode Island, Inc.  
Derivation of Equity Risk Premium Based on the Total Market Approach  
Using the Beta for  
the Proxy Group of Non-Price-Regulated Companies  
Proxy Group of Nine Water Companies

<u>Line No.</u>	<u>Proxy Group of Thirty Non-Price- Regulated Companies</u>
<u>Based on S&amp;P Valuation Yearbook Data:</u>	
1. Ibbotson Equity Risk Premium (1)	5.60 %
2. Ibbotson Equity Risk Premium based on PRPM™ (2)	9.17
<u>Based on Value Line Summary and Index:</u>	
3. Equity Risk Premium Based on <u>Value Line</u> Summary and Index (3)	<u>8.64</u>
4. Conclusion of Equity Risk Premium (4)	7.80 %
5. Adjusted Value Line Beta (5)	<u>0.70</u>
6. Forecasted Equity Risk Premium	<u><u>5.46</u></u> %

- Notes: (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® S&P® 2012 Valuation Yearbook - Market Results for Stocks, Bonds, Bills, and Inflation minus the arithmetic mean monthly yield of Moody's Aaa and Aa corporate bonds from 1926 - 2012. (11.83% - 6.23% = 5.60%).
- (2) The Predictive Risk Premium Model (PRPM™) is discussed in Ms. Ahern's accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM™ is derived by applying the PRPM™ to the monthly risk premiums between Ibbotson large company common stock monthly returns minus the average Aaa and Aa corporate monthly bond yields, from January 1928 through March 2013.
- (3) From page 8 of Schedule PMA-7.
- (4) Average of Lines 1, 2, & 3.
- (5) Median beta derived from page 9 of this Schedule.

Sources of Information:

Ibbotson® S&P® 2013 Valuation Yearbook - Market Results for Stocks, Bonds, Bills, and Inflation, Morningstar, Inc., 2013 Chicago, IL.  
Value Line Summary and Index  
Blue Chip Financial Forecasts, May 1, 2013

United Water Rhode Island, Inc.  
Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the  
Proxy Group of Nine Water Companies

Proxy Group of Thirty Non-Price-Regulated Companies	Value Line Adjusted Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate (3)	ECAPM Cost Rate (4)	Indicated Common Equity Cost Rate (5)
Gallagher (Arthur J.)	0.75	8.40 %	4.32 %	10.62 %	11.15 %	
AutoZone Inc.	0.65	8.40	4.32	9.78	10.52	
Baxter Intl Inc.	0.70	8.40	4.32	10.20	10.83	
Bristol-Myers Squibb	0.70	8.40	4.32	10.20	10.83	
Brown & Brown	0.75	8.40	4.32	10.62	11.15	
ConAgra Foods	0.65	8.40	4.32	9.78	10.52	
Capitol Fed. Finl	0.60	8.40	4.32	9.36	10.20	
CenturyLink Inc.	0.75	8.40	4.32	10.62	11.15	
Quest Diagnostics	0.75	8.40	4.32	10.62	11.15	
Dun & Bradstreet	0.75	8.40	4.32	10.62	11.15	
DaVita Inc.	0.70	8.40	4.32	10.20	10.83	
Hershey Co.	0.60	8.40	4.32	9.36	10.20	
J&J Snack Foods	0.70	8.40	4.32	10.20	10.83	
Kroger Co.	0.60	8.40	4.32	9.36	10.20	
Lancaster Colony	0.70	8.40	4.32	10.20	10.83	
McKesson Corp.	0.75	8.40	4.32	10.62	11.15	
Mercury General	0.70	8.40	4.32	10.20	10.83	
Mead Johnson Nutrition	0.65	8.40	4.32	9.78	10.52	
Annaly Capital Mgmt.	0.65	8.40	4.32	9.78	10.52	
Northwest Bancshares	0.75	8.40	4.32	10.62	11.15	
Owens & Minor	0.70	8.40	4.32	10.20	10.83	
Peoples United Finl	0.65	8.40	4.32	9.78	10.52	
Sherwin-Williams	0.65	8.40	4.32	9.78	10.52	
Smucker (J.M.)	0.70	8.40	4.32	10.20	10.83	
Silgan Holdings	0.75	8.40	4.32	10.62	11.15	
Suburban Propane	0.75	8.40	4.32	10.62	11.15	
Stericycle Inc.	0.70	8.40	4.32	10.20	10.83	
Waste Connections	0.70	8.40	4.32	10.20	10.83	
Weis Markets	0.65	8.40	4.32	9.78	10.52	
Berkley (W.R.)	0.70	8.40	4.32	10.20	10.83	
Average	<u>0.69</u>			<u>10.14 %</u>	<u>10.79 %</u>	<u>10.47 %</u>
Median	<u>0.70</u>			<u>10.20 %</u>	<u>10.83 %</u>	<u>10.52 %</u>

Notes:

- (1) From Schedule PMA-8, page 2, note 1.
- (2) From Schedule PMA-8, page 2, note 2.
- (3) Derived from the model shown on Schedule PMA-8, page 2, note 3.
- (4) Derived from the model shown on Schedule PMA-8, page 2, note 4.
- (5) Average of CAPM and ECAPM cost rates.

United Water Rhode Island, Inc.  
Derivation of Investment Risk Adjustment Based upon  
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.	1	2	3	4
	Market Capitalization on April 30, 2013 (1) ( millions )	Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	Applicable Size Premium (3)	Spread from Applicable Size Premium for (4)
1.				
a.	\$ 11,888	10	6.03%	
2.	\$ 1,698,784	6	1.72%	4.31%
	(A)	(B)	(C)	(D)
				(E)
</				

	(A)		(B)		(C)		(D)		(E)	
	Decile		Number of Companies (millions)		Recent Total Market Capitalization (millions)		Recent Average Market Capitalization (millions)		Size Premium (Return in Excess of CAPM) (2)	
Largest	1	173	\$	10,255,341,469	\$	59,279,430	-0.37%			
	2	193		2,219,118,548		11,498,024	0.76%			
	3	187		1,072,861,025		5,737,225	0.92%			
	4	202		695,897,336		3,445,036	1.14%			
	5	205		473,139,390		2,307,997	1.70%			
	6	234		377,485,205		1,613,185	1.72%			
	7	317		329,504,738		1,039,447	1.73%			
	8	329		214,084,258		650,712	2.46%			
	9	466		166,708,095		357,743	2.70%			
	10	1068		107,517,520		100,672	6.03%			
Smallest										

\*From Ibbotson 2013 Yearbook

Notes:

- (1) From Page 2 of this Schedule.
- (2) Gleaned from Column (D) on the bottom of this page. The appropriate decile (Column (A)) corresponds to the market capitalization of the proxy group, which is found in Column 1.
- (3) Corresponding risk premium to the decile is provided on Column (E) on the bottom of this page.
- (4) Line No. 1a Column 3 – Line No. 2 Column 3 and Line No. 1b, Column 3 – Line No. 3 of Column 3 etc.. For example, the 4.31% in Column 4, Line No. 2 is derived as follows 4.31% = 6.03% - 1.72%.

United Water Rhode Island, Inc.  
Market Capitalization of United Water Rhode Island, Inc. and  
the Proxy Group of Nine Water Companies

Company	Exchange	1 Common Stock Shares Outstanding at Fiscal Year End 2012 (millions)	2 Book Value per Share at Fiscal Year End 2012 (1)	3 Total Common Equity at Fiscal Year End 2012 (millions)	4 Closing Stock Market Price on April 30, 2013	5 Market-to-Book Ratio on April 30, 2013 (2)	6 Market Capitalization on April 30, 2013 (3) (millions)
United Water Rhode Island, Inc.		NA	NA	\$ 5,915 (4)	NA	201.0 % (5)	\$ 11,888 (6)
Based Upon the Proxy Group of Nine Water Companies							
Proxy Group of Nine Water Companies							
American States Water Co.	NYSE	19,237	\$ 23.630	\$ 454,579	\$ 55.480	234.8 %	\$ 1,067,281
American Water Works Co., Inc.	NYSE	176,988	\$ 25.115	\$ 4,444,988	\$ 41.880	166.8	\$ 7,412,257
Aqua America, Inc.	NYSE	140,167	\$ 9.886	\$ 1,385,704	\$ 31.730	321.0	\$ 4,447,507
Artesian Resources Corp.	NASDAQ	7,838	\$ 15.078	\$ 118,180	\$ 23.570	156.3	\$ 184,744
California Water Service Group	NYSE	41,908	\$ 11.304	\$ 473,712	\$ 20.050	177.4	\$ 840,260
Connecticut Water Service, Inc.	NASDAQ	10,939	\$ 17.014	\$ 186,121	\$ 28.480	167.4	\$ 311,557
Middlesex Water Company	NASDAQ	15,795	\$ 11.499	\$ 181,632	\$ 19.610	170.5	\$ 309,740
SJW Corporation	NYSE	18,671	\$ 14.708	\$ 274,604	\$ 25.360	172.4	\$ 473,486
York Water Company	NASDAQ	12,919	\$ 7.727	\$ 99,825	\$ 18.750	242.7	\$ 242,224
Average		49,385	\$ 15.107	\$ 846,594	\$ 29.434	201.0 %	\$ 1,698,784

NA= Not Available

- Notes: (1) Column 3 / Column 1.  
(2) Column 4 / Column 2.  
(3) Column 5 \* Column 3.  
(4) Total capitalization of United Water Rhode Island multiplied by the recommended common equity ratio (11.065M x 53.45% = 5,915M).  
(5) The market-to-book ratio of United Water Rhode Island, Inc. on April 30, 2013 is assumed to be equal to the market-to-book ratio of the Proxy Group of Nine Water Companies at April 30, 2013.  
(6) United Water Rhode Island, Inc.'s common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at April 30, 2013 of the Proxy Group of Nine Water Companies, 201%, and United Water Rhode Island, Inc.'s market capitalization on April 30, 2013 would therefore have been \$11,888 million.

Source of information: 2012 Annual Forms 10K  
yahoo.finance.com