

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE

IN THE MATTER OF THE APPLICATION
OF ARTESIAN WATER COMPANY, INC.
FOR AUTHORITY TO INCREASE RATES
AND CHARGES FOR WATER SERVICE
(Filed April 11, 2014)

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PSC Docket No. 14-_____

**DIRECT TESTIMONY
OF
PAULINE M. AHERN, CRRA
PRINCIPAL
AUS CONSULTANTS
ON BEHALF OF
ARTESIAN WATER COMPANY, INC.**

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TABLE OF CONTENTS

	<u>Page</u>
<u>Introduction</u>	1
<u>General Principles</u>	6
<u>Business Risk</u>	7
<u>Financial Risk</u>	15
<u>Artesian Water Company, Inc.</u>	16
<u>Proxy Group</u>	17
<u>Common Equity Cost Rate Models</u>	18
<u>Capital Structure Ratios</u>	19
<u>Long-Term Debt Cost Rate</u>	21
<u>Discounted Cash Flow Model (DCF)</u>	22
<u>The Risk Premium Model (RPM)</u>	37
<u>The Capital Asset Pricing Model (CAPM)</u>	47
<u>Common Equity Cost Rates For The Proxy Group Of Domestic, Non-Price Regulated Companies Based Upon the DCF, RPM and CAPM</u>	51
<u>Conclusion of Common Equity Cost Rate</u>	55
<u>Flotation Cost Adjustment</u>	56
<u>Business Risk Adjustment</u>	60

Appendix A – Professional Qualifications of Pauline M. Ahern

1 **Introduction**

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

4 A. My name is Pauline M. Ahern. I am a Principal of AUS Consultants. My
5 business 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-eight state regulatory commissions in the United States as well as one
10 provincial regulatory commission in Canada on rate of return issues, including but
11 not limited to common equity cost rate, fair rate of return, capital structure issues,
12 and credit quality issues. I am a graduate of Clark University, Worcester, MA,
13 where I 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 I
17 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
19 A.G.A. Gas Index, which serves as the benchmark against which the performance
20 of the American Gas Index Fund (“AGIF”) is measured monthly. The A.G.A.
21 Gas Index and AGIF are a market capitalization weighted index and a mutual
22 fund, respectively, comprised of the common stocks of the publicly traded
23 corporate members of the A.G.A.

1 I am also the publisher of AUS Utility Reports, responsible for supervising
2 the production, publication, distribution and marketing of its reports. I am also
3 responsible for overseeing the production of the annual Financial & Operating
4 Statistics Report for the National Association of Water Companies (“NAWC”).

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

12 I am also an associate member of the National Association of Water
13 Companies, serving on its Finance/Accounting/Taxation and Rates and
14 Regulation Committees; a member of the Energy Association of Pennsylvania,
15 formerly the Pennsylvania Gas Association; and a member of the American
16 Finance, Financial Management and Energy Bar Associations. I am also a
17 member of Edison Electric Institute’s Cost of Capital Working Group and the
18 American Gas Association’s State Affairs Committee. In addition, I sit on the
19 Advisory Board of the Financial Research Institute of the University of Missouri
20 and the Advisory Council of New Mexico State University’s Center for Public
21 Utilities. Ms. Ahern is also a member of the Standard & Poor’s (“S&P”) Capital
22 IQ Client Advisory Board.

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

1 A. The purpose is to provide testimony on behalf of Artesian Water Company, Inc.
2 (“AWC” or the “Company”) regarding the appropriate common equity cost rate
3 that it should be afforded the opportunity to earn on its jurisdictional rate base.

4 **Q. WHAT IS YOUR RECOMMENDED OVERALL FAIR RATE OF**
5 **RETURN?**

6 A. I recommend that the Delaware Public Service Commission (“PSC” or the
7 “Commission”) authorize the Company the opportunity to earn an overall rate of
8 return of 8.40% relative to the Company’s expected capital structure as of
9 September 30, 2014, which is expected to consist of 49.46% long-term debt at a
10 cost rate of 5.84% and 50.54% common equity at a cost rate of 10.90%. The
11 overall rate of return is summarized in Table 1 below:

12 Table 1

13	<u>Type of Capital</u>	<u>Ratios</u>	<u>Cost Rate</u>	<u>Weighted</u>
14				<u>Cost Rate</u>
15				
16				
17	Long-Term Debt	49.46%	5.84%	2.89%
18	Common Equity	<u>50.54%</u>	10.90%	<u>5.51%</u>
19				
20	Total	<u>100.00%</u>		<u>8.40%</u>
21				

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

24 A. Yes. It has been marked for identification as PMA Exhibit 1 and includes
25 Schedules PMA-1 through PMA-12.

1 Q. PLEASE SUMMARIZE YOUR RECOMMENDED COMMON EQUITY
2 COST RATE.

3 A. My recommended common equity cost rate of 10.90% is summarized on page 2
4 of Schedule PMA-1. As a wholly-owned subsidiary of Artesian Resources
5 Corporation (“ARC” or the “Parent”), AWC’s common stock is not publicly
6 traded, hence a market-based common equity cost rate cannot be determined
7 directly for AWC. Therefore, in arriving at my recommended common equity
8 cost rate of 10.90%, I have assessed the market-based common equity cost rates
9 of companies of relatively similar, but not necessarily identical risk, i.e., a proxy
10 group of similar companies for insight into a recommended common equity cost
11 rate applicable to AWC. Using companies of relatively comparable risk as
12 proxies is consistent with the principles of fair rate of return established in the
13 *Hope*¹ and *Bluefield*² cases, adding reliability to the informed expert judgment
14 necessary to arrive at a recommended common equity cost rate. However, no
15 proxy group can be selected that is identical in risk to AWC. Therefore, the proxy
16 group’s results must be adjusted, if necessary, to reflect the unique relative
17 financial (credit) and/or business risks of the Company.

18 My recommendation results from the application of market-based cost of
19 common equity models, the Discounted Cash Flow (“DCF”) approach, the Risk
20 Premium Model (“RPM”) and the Capital Asset Pricing Model (“CAPM”) to the
21 market data of the proxy group of nine water companies whose selection will be

¹ *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

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

1 discussed below. In addition, I also applied the DCF, RPM and CAPM to the
2 market data of domestic, non-price regulated companies comparable in total risk
3 to the nine water companies.

4 The results derived from each are as follows:

	<u>Table 2</u>	<u>Proxy Group of Nine Water Companies</u>
5		
6		
7		
8		
9		
10		
11	Discounted Cash Flow Model	8.58%
12	Risk Premium Model	11.26%
13	Capital Asset Pricing Model	9.92%
14		
15	Cost of Equity Models Applied to	
16	Comparable Risk, Non-Price	
17	Regulated Companies	<u>10.98%</u>
18		
19	Indicated Common Equity	
20	Cost Rate	<u>10.45%</u>
21		
22	Flotation Cost Adjustment	0.20%
23		
24	Business Risk Adjustment	<u>0.25%</u>
25		
26	Recommended Common Equity	
27	Cost Rate	<u>10.90%</u>
28		

29 After reviewing the cost rates based upon these models, I conclude that a common
30 equity cost rate of 10.45% is indicated before any adjustment for AWC's flotation
31 costs and greater business risk relative to the proxy group of nine water
32 companies which will be discussed below. The indicated common equity cost
33 rate based upon the nine water companies needs to be adjusted upward by 0.20%
34 for flotation costs and 0.25% to reflect AWC's greater business risk as discussed

1 subsequently. After adjustment, the risk-adjusted common equity cost rate is
2 10.90% which is my recommended common equity cost rate.

3 **General Principles**

4 **Q. WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN**
5 **ARRIVING AT YOUR RECOMMENDED COMMON EQUITY COST**
6 **RATE OF 10.90%?**

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

1 Therefore I have considered DCF, RPM and CAPM equity cost rate models when
2 assessing the appropriate common equity cost rate for AWC.

3 **Business Risk**

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

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

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

16 **Q. WHAT UNIQUE BUSINESS RISKS DOES THE WATER INDUSTRY IN**
17 **GENERAL FACE TODAY?**

18 A. Water is essential to life and unlike electricity or natural gas, water is the only
19 utility product which is intended for customers to ingest. Consequently, water
20 quality is of paramount importance to the health and well-being of customers and
21 is therefore subject to additional and increasingly strict health and safety
22 regulations. Beyond health and safety concerns, water utility customers also have
23 significant aesthetic concerns regarding the water delivered to them and regulators

1 pay close attention to these concerns because of the strong feelings they arouse in
2 consumers. Also, unlike many electric and natural gas utilities, water utilities
3 serve a production function in addition to the delivery functions served by electric
4 and gas utilities.

5 Water utilities obtain supply from wells, aquifers, surface water reservoirs
6 or streams and rivers. Throughout the years, well supplies and aquifers have been
7 environmentally threatened, with historically minor purification treatment giving
8 way to major well rehabilitation, extensive treatment or replacement.
9 Simultaneously, safe drinking water quality standards have tightened
10 considerably, requiring multiple treatments prior to water delivery. Supply
11 availability is also limited by drought, water source overuse, runoff, threatened
12 species and habitat protection, and other operational, political and environmental
13 factors. In addition, the United States Environmental Protection Agency
14 (“EPA”), as well as individual state and local environmental agencies, are
15 continually monitoring potential contaminants in the water supply and
16 promulgating or expanding regulations when necessary. Increasingly stringent
17 environmental standards necessitate additional capital investment in the
18 distribution and treatment of water, exacerbating the pressure on water utilities’
19 free cash flows through increased capital expenditures for infrastructure, repair
20 and replacement. In the course of procuring water supplies and treating water so
21 that it complies with Safe Drinking Water Act (“SDWA”) standards, water
22 utilities have an ever-increasing responsibility to be stewards of the environment

1 from which supplies are drawn, in order to preserve and protect essential natural
2 resources of the United States.

3 Water utilities are typically vertically engaged in the entire process of
4 acquisition, supply, production, treatment and distribution of water. In contrast,
5 electric and natural gas companies, where transmission and distribution is
6 generally separate from generation, do not produce the electricity or natural gas
7 which they transmit and distribute. Hence, water utilities require significant
8 capital investment not only in distribution and transmission systems but also in
9 sources of supply (wells), production (treatment facilities), and storage. Capital
10 investment is necessary both to serve additional customers and to replace aging
11 systems, creating a major risk facing the water and wastewater utility industry.

12 Because the water and wastewater industry is more capital-intensive than
13 the electric, combination electric and gas, and natural gas utilities, the investment
14 required to produce a dollar of revenue is greater. For example, as shown on page
15 1 of Schedule PMA-2, it took \$3.75 of net utility plant on average to produce
16 \$1.00 in operating revenues in 2012 for the water utility industry as a whole. For
17 AWC, it took an even greater \$4.91 of net utility plant to produce \$1.00 of
18 operating revenues. In contrast, for the electric, combination electric and gas, and
19 natural gas utility industries, on average it took only \$2.56, \$2.12 and \$1.56
20 respectively, to produce \$1.00 in operating revenues in 2012. The greater capital
21 intensity of water utilities is not a new phenomenon, as water utilities have
22 exhibited a consistently and significantly greater capital intensity relative to
23 electric, combination electric and gas, and natural gas utilities during the ten years

1 ended 2012, as shown on page 2 of Schedule PMA-2. As financing needs have
2 increased over the last decade, the competition for capital from traditional sources
3 has increased, making the need to maintain financial integrity and the ability to
4 attract needed new capital increasingly important.

5 The National Association of Regulatory Utility Commissioners
6 (“NARUC”) also highlighted the challenges facing the water and wastewater
7 industry stemming from its capital intensity. NARUC’s Board of Directors
8 adopted the following resolution in July 2013:³

9 **WHEREAS**, There is both a constitutional basis and judicial precedent
10 allowing investor owned public water and wastewater utilities the opportunity to
11 earn a rate of return that is reasonably sufficient to assure confidence in the
12 financial soundness of the utility and its ability to provide quality service; *and*

13
14 **WHEREAS**, Through the *Resolution Supporting Consideration of*
15 *Regulatory Policies Deemed as “Best Practices”* (2005), the National Association
16 of Regulatory Utility Commissioners (NARUC) has previously recognized the
17 role of innovative regulatory policies and mechanisms in the ability for public
18 water and wastewater utilities to address significant infrastructure investment
19 challenges facing water and wastewater system operators; *and*

20 * * *

21
22 **WHEREAS**, Recent analysis shows that as compared to other regulated
23 utility sectors, significant and widespread discrepancies continue to be observed
24 between commission authorized returns on equity and observed actual returns on
25 equity among regulated water and wastewater utilities; *and*

26
27 **WHEREAS**, The extent of such discrepancies suggests the existence of
28 challenges unique to the regulation of water and wastewater utilities; *and*

29 * * *

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³ “Resolution Addressing Gap Between Authorized Versus Actual Returns on Equity in Regulation of Water and Wastewater Utilities”, Sponsored by the Committee on Water. Adopted by the NARUC Board of Directors, July 23, 2013.

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WHEREAS, Deficient returns present a clear challenge to the ability of the water and wastewater industry to attract the capital necessary to address future infrastructure investment requirements necessary to provide safe and reliable service, which could exceed one trillion dollars over a 20-year period; *and*

WHEREAS, The NARUC Committee on Water recognizes the critical role of the implementation and the effective use of sound regulatory practice [sic] and the innovative regulatory policies identified in the *Resolution Supporting Consideration of Regulatory Policies Deemed as "Best Practices"*; and

* * *

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its 2013 Summer Meeting in Denver, Colorado, identifies the implementation and effective use of sound regulatory practice [sic] and the innovative regulatory policies identified in the *Resolution Supporting Consideration of Regulatory Policies Deemed as "Best Practices"* (2005) as a critical component of a water and/or wastewater utility's reasonable ability to earn its authorized return; and *be it further*

RESOLVED, That NARUC recommends that economic regulators carefully consider and implement appropriate ratemaking measures as needed so that water and wastewater utilities have a reasonable opportunity to earn their authorized returns within their jurisdictions...

AWC itself is facing significant capital investment as it projects net capital expenditures of \$88.148 million for 2014 through 2018, representing an increase of approximately 28% over 2012 net utility plant of \$316.739 million.

The water utility industry also experiences lower relative depreciation rates. Lower depreciation rates, as one of the principal sources of internal cash flows for all utilities, mean that water utility depreciation as a source of internally-generated cash is far less than for electric, combination electric and gas, or natural gas utilities. Water utilities' assets have longer lives and, hence, longer capital recovery periods. Accordingly, water utilities face greater risk due to inflation, which results in a higher replacement cost per dollar of net plant than for other types of utilities. As shown on page 3 of Schedule PMA-2, water utilities

1 experienced an average depreciation rate of 3.1% for 2012 with AWC
2 experiencing a much lower value of 2.2%. In contrast, in 2012, the electric,
3 combination electric and gas, and natural gas utilities experienced average
4 depreciation rates of 3.2%, 3.5% and 4.1%, respectively. As with capital
5 intensity, the lower relative depreciation rates of water and wastewater utilities is
6 not a new phenomenon, as shown on page 4 of Schedule PMA-2. Lower
7 depreciation rates signify that the pressure on cash flows remains significantly
8 greater for water utilities than for other types of utilities.

9 Not only is the water utility industry historically capital intensive, it is
10 expected to incur significant capital expenditure needs over the next 20 years.

11
12 In 2011, the EPA stated the following⁴:

13 The survey estimated a total national infrastructure need is \$384.2
14 billion for the 20-year period from January 2011 through
15 December 2030.

16 * * *

17
18
19 The large magnitude of the national need reflects the challenges
20 confronting water systems as they deal with an infrastructure
21 network that has aged considerably since these systems were
22 constructed, in many cases, 50 to 100 years ago.

23 * * *

24
25
26 With \$247.5 billion in needs over the next 20 years, transmission
27 and distribution projects represent the largest category of need.
28 This result is consistent with the fact that transmission and
29 distribution mains account for most of the nation's water

⁴ "Fact Sheet: "EPA's 2011 Drinking Water Infrastructure Needs Survey and Assessment", United States Environmental Protection Agency, Office of Water, April 2013.

1 infrastructure. The other categories, in descending order of need
2 are: treatment, storage, source and a miscellaneous category of
3 needs called "other".
4

5 Water utility capital expenditures as large as those projected by the EPA
6 will require significant financing. The three sources typically used for financing
7 are debt, equity (common and preferred) and cash flow. All three are intricately
8 linked to the opportunity to earn a sufficient rate of return as well as the ability to
9 achieve that return. Consistent with *Hope* and *Bluefield*, the return must be
10 sufficient enough to maintain credit quality as well as enable the attraction of
11 necessary new capital, be it debt or equity capital. If it is unable to raise debt or
12 equity capital, the utility must turn to either retained earnings or free cash flow
13 (operating cash flow (funds from operations) minus capital expenditures), both of
14 which are directly linked to earning a sufficient rate of return. The level of free
15 cash flows represents the financial flexibility of a company or a company's ability
16 to meet the needs of its debt and equity holders. If either retained earnings or free
17 cash flows are inadequate, it will be nearly impossible for the utility to attract new
18 capital to invest in needed new infrastructure. It is clear that an insufficient rate
19 of return can be financially devastating for utilities and for their customers, the
20 ratepayers. Page 5 of Schedule PMA-2 demonstrates that the free cash flows
21 (funds from operations minus capital expenditures) of water utilities as a percent
22 of total operating revenues have been consistently negative and below that of the
23 electric, combination electric and gas, and natural gas utilities for the ten years
24 ended 2012, showing some improvement in 2011 and 2012. Magnifying the

1 impact of water utilities' potentially inadequate cash flow positions is a general
2 inability to achieve their authorized rates of return on common equity.

3 In view of the foregoing, it is clear that the water utility industry's high
4 degree of capital intensity and low depreciation rates, coupled with the need for
5 substantial infrastructure capital spending, make the need to maintain financial
6 integrity and the ability to attract needed new capital increasingly important in
7 order for water utilities to be able to successfully meet the challenges they face.

8 **Q. DOES A COMPANY'S SIZE HAVE A BEARING ON BUSINESS RISK?**

9 A. Yes. Company size is a significant element of business risk for which investors
10 expect to be compensated through greater returns. Smaller companies are simply
11 less able to cope with significant events that affect sales, revenues and earnings.
12 For example, smaller companies face more exposure to business cycles and
13 economic conditions, both nationally and locally. Additionally, the loss of
14 revenues from a few larger customers would have a greater effect on a small
15 company than on a much larger company with a larger, more diverse, customer
16 base. Moreover, smaller companies are generally less diverse in their operations
17 and have less financial flexibility.

18 Further evidence of the risk effects of size include the fact that investors
19 demand greater returns to compensate for the lack of marketability and liquidity
20 of the securities of smaller firms. It is a basic financial principle that it is the use
21 of funds invested and not the source of those funds that gives rise to the risk of
22 any investment⁵. Therefore, the Commission should authorize a cost of common

⁵ Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance
(McGraw-Hill Book Company, 1996) 204-205, 229.

1 equity in this proceeding that reflects AWC's relevant risk, including the impact
2 of its small size, which will subsequently be discussed.

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

6 **Q. PLEASE DISCUSS HOW AWC'S SIZE INCREASES ITS BUSINESS RISK**
7 **RELATIVE TO THE PROXY GROUP.**

8 A. AWC is smaller than the average company in the proxy group of nine water
9 companies based upon estimated market capitalization as will be discussed
10 subsequently. As shown on Schedule PMA-12, page 1, AWC's estimated market
11 capitalization of \$220.188 million is lower than the average market capitalization
12 of the water proxy group, \$1.769 billion on March 3, 2014. Consequently, AWC
13 has greater relative business risk because, all else being equal, size has a bearing
14 on risk.

15 **Financial Risk**

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

19 A. Financial risk is the additional risk created by the introduction of senior capital,
20 i.e., debt and preferred stock, into the capital structure. The higher the proportion
21 of senior capital in the capital structure, the higher the financial risk which must
22 be factored into the common equity cost rate, consistent with the previously

1 mentioned basic financial principle of risk and return, i.e., investors demand a
2 higher common equity return as compensation for bearing higher investment risk.

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

6 A. Yes, similar bond ratings and issuer credit ratings reflect and are representative of
7 similar combined business and financial risks, i.e., total risk faced by bond
8 investors. Although specific business or financial risks may differ between
9 companies, the same bond and credit ratings indicates that the combined risks are
10 similar, albeit not necessarily equal, as the purpose of the bond and credit rating
11 processes are to assess credit quality or credit risk and not common equity risk.
12 Risk distinctions within Standard & Poor's ("S&P") bond rating categories are
13 recognized by a plus or minus, i.e., within the A category, an S&P rating can be at
14 A+, A, or A-. Similarly, risk distinctions for Moody's ratings are distinguished by
15 numerical rating gradations, i.e., within the A category, a Moody's rating can be
16 A1, A2 and A3.

17 **Artesian Water Company, Inc.**

18 **Q. PLEASE DESCRIBE AWC.**

19 A. AWC is the successor to the Richardson Park Water Company which was
20 founded in 1905. AWC is the oldest, as well as the largest public water utility in
21 Delaware. It provides service to approximately 80,000 customers in all three
22 counties of Delaware. As stated previously, as a wholly-owned subsidiary of
23 ARC, the Company's common stock is not publicly traded.

1 **Q. HAVE YOU REVIEWED FINANCIAL INFORMATION FOR AWC?**

2 A. Yes. As shown on page 1 of Schedule PMA-3, during the five year period ending
3 2012, the achieved average earnings rate on book common equity for AWC was
4 8.27%. The year ending 2012 average common equity based upon total
5 permanent capital was 49.05%, while the five year average dividend payout ratio
6 was 81.68%.

7 Total debt as a percent of EBITDA for the years 2008-2012 ranged between
8 3.62 and 4.93 times and averaged 4.34 times.

9 **Proxy Group**

10 **Q. PLEASE EXPLAIN HOW YOU CHOSE THE PROXY GROUP OF NINE**
11 **WATER COMPANIES.**

12 A. I chose the proxy group by selecting those companies which meet the following
13 criteria: 1) they are included in the Water Company Group of AUS Utility
14 Reports (March 2014); 2) they have 70% or greater of 2012 total operating
15 income derived from and 70% or greater of 2012 total assets devoted to regulated
16 water operations; 3) at the time of the preparation of this testimony, they had not
17 publicly announced that they were involved in any major merger or acquisition
18 activity, i.e., one publicly-traded utility merging with or acquiring another; 4) they
19 have not cut or omitted their common dividends during the five years ending 2012
20 or through the time of the preparation of this testimony; 5) they have a *Value*
21 *Line* adjusted beta; 6) they have a positive *Value Line* five-year dividends per
22 share (DPS) growth rate projection; and 7) they have *Value Line*, Reuters, Zacks

1 or Yahoo! Finance, consensus five-year earnings per share (EPS) growth rate
2 projections.

3 The following nine companies met these criteria: American States Water
4 Co., American Water Works Co., Inc., Aqua America, Inc., Artesian Resources
5 Corp., California Water Service Corp., Connecticut Water Service, Inc.,
6 Middlesex Water Co., SJW Corp. and York Water Co.

7 **Q. HAVE YOU REVIEWED FINANCIAL DATA FOR THE PROXY**
8 **GROUP?**

9 A. Yes. Page 2 of Schedule PMA-3 contains comparative capitalization and
10 financial statistics for the nine proxy group water companies for the years 2008-
11 2012.

12 As shown on page 2, during the five-year period ending 2012, the 2012
13 achieved average earnings rate on book common equity for the group is 9.94%.
14 The 2012 common equity ratio based upon permanent capital (excluding short-
15 term debt) was 50.72%, and the average dividend payout ratio was 64.06%.

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

19 **Common Equity Cost Rate Models**

20 **Q. ARE THE COST OF COMMON EQUITY MODELS YOU USE MARKET-**
21 **BASED MODELS?**

22 A. Yes. It is important to use market-based models because the cost of common
23 equity is a function of investors' perception of risk, which is embodied in the

1 market prices they pay. The DCF model is market-based in that market prices
2 are utilized in developing the dividend yield component of the model. The RPM
3 is market-based in that the bond ratings and expected bond yields used in the
4 application of the RPM reflect the market's assessment of bond/credit risk. In
5 addition, the use of betas to determine the equity risk premium also reflects the
6 market's assessment of market/systematic risk as betas are derived from
7 regression analyses of market prices. The CAPM is market-based for many of the
8 same reasons that the RPM is market-based, i.e., the use of expected bond
9 (Treasury bond) yields and betas. Finally, the process of selecting the comparable
10 risk non-price regulated companies is market-based in that it is based upon
11 statistics which result from regression analyses of market prices and reflect the
12 market's assessment of total risk.

13 **Capital Structure Ratios**

14 **Q. WHAT CAPITAL STRUCTURE RATIOS DO YOU RECOMMEND BE**
15 **EMPLOYED IN DEVELOPING AN OVERALL FAIR RATE OF RETURN**
16 **APPROPRIATE FOR THE COMPANY?**

17 A. I recommend that the estimated capital structure ratios at the end of the test
18 period, September 30, 2014 of AWC be adopted for ratemaking purposes in
19 developing an overall rate of return applicable to AWC. In short, the capital
20 structure and related ratios I employ represent the capital structure which is
21 expected to be financing the AWC stand-alone Delaware jurisdictional rate base.
22 As stated previously, these ratios consist of 49.46% long-term debt and 50.54%
23 common equity and are summarized on page Schedule PMA-4.

1 **Q. ARE THE ESTIMATED CAPITAL STRUCTURE RATIOS AT**
2 **SEPTEMBER 30, 2014 APPROPRIATE FOR COST OF CAPITAL**
3 **PURPOSES?**

4 A. Yes, AWC's estimated capital structure ratios at September 30, 2014 are
5 appropriate for cost of capital purposes because they are indicative of the ratios
6 and embedded cost rate of fixed capital which AWC will experience in the near-
7 term future, the period of time in which new rates would be in effect. Since a
8 water utility has an obligation to serve all of the time, it is incumbent upon the
9 utility to maintain capital structure ratios which enable it to attract capital when
10 required, assuming a sufficient level of earnings. AWC's estimated September
11 30, 2014 capital structure, upon which its requested overall rate of return is based,
12 accomplishes the foregoing. In addition, it is consistent with the capital structures
13 maintained by enterprises with similar risk, given its small size and upcoming
14 extensive capital expenditure program, and it is not unduly costly to consumers.

15 **Q. HOW DOES AWC'S RATEMAKING COMMON EQUITY RATIO OF**
16 **50.54%, ESTIMATED AT SEPTEMBER 30, 2014 COMPARE WITH THE**
17 **COMMON EQUITY RATIOS MAINTAINED BY THE COMPANIES IN**
18 **THE PROXY GROUP?**

19 A. AWC's ratemaking common equity ratio of 50.54%, estimated at September 30,
20 2014 is conservative and reasonable to use, as well as consistent with the range of
21 common equity ratios maintained, on average, by the companies in the proxy
22 group of nine water companies upon which I base my common equity cost rate.
23 The common equity ratios based upon permanent capital (excluding short-term

1 debt) of the nine water companies ranged from 44.61% to 57.51% in 2012 (the
2 last year for which data for all the companies is available at this time) and
3 averaged 50.72% as shown on page 3 of Schedule PMA-3. For the five years
4 ending 2012, the average common equity ratios ranged between 44.23% and
5 54.91%, averaging 49.42%. As also discussed previously, AWC is smaller than
6 the average water company in the proxy group and anticipates significant capital
7 expenditures, therefore needing an appropriate common equity ratio and an
8 adequate return on common equity to ensure sufficient earnings to maintain its
9 credit quality and attract the capital necessary to fund its upcoming capital
10 expenditures at reasonable costs.

11 In view of the foregoing, AWC's proposed common equity ratio is both
12 conservative and reasonable given that AWC's proposed common equity ratio of
13 50.54% is: (1) within the range of common equity ratios maintained by the
14 companies in the proxy group for 2012 and on average for the five years ending
15 2012; and (2) similar to the average common equity ratios maintained by the
16 proxy group of water companies for 2012 and on average for the five years ended
17 2012.

18 **Long-Term Debt Cost Rate**

19 **Q. WHAT COST RATE FOR LONG-TERM DEBT IS MOST APPROPRIATE**
20 **FOR USE IN A COST OF CAPITAL DETERMINATION FOR AWC?**

21 A. A long-term debt cost rate of 5.84% actual at December 31, 2013 is the most
22 appropriate and is derived from AWC's long-term debt estimated to be
23 outstanding at September 30, 2014 as summarized on page 2 of Schedule PMA-5.

1 The long-term debt cost rate is determined by employing a cost rate to maturity
2 method, i.e., yield to maturity, using as inputs the stated coupon rate, net proceeds
3 ratio, which reflects the necessary costs of issuance, early redemption premiums
4 as applicable, and term in years. If such costs are not permitted to be recovered in
5 the effective long-term debt cost rate, recovery would be at the expense of the
6 common shareholders and the cost rate for common equity capital would be
7 higher than otherwise. Once the cost rate to maturity, i.e., effective cost rate, is
8 determined for each issue, a composite cost rate can be calculated based upon the
9 total annualized long-term debt cost and total long-term debt outstanding. In
10 addition, as shown on page 1 of Schedule PMA-5, the effective cost rates to
11 maturity relative to the 6.58% Series P and 5.96% Series R First Mortgage Bonds
12 each reflect a \$242,014 rebate from CoBank while the 6.73% Series S First
13 Mortgage Bonds reflects a rebate of \$145,234. Thus, AWC's embedded long-
14 term debt cost rate at September 30, 2014 is expected to be 5.84% as shown on
15 page 2 of Schedule PMA-5.

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

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

18 A. The theory underlying the DCF model is that the present value of an expected
19 future stream of net cash flows during the investment holding period can be
20 determined by discounting those cash flows at the cost of capital, or the investors'
21 capitalization rate. DCF theory indicates that an investor buys a stock for an
22 expected total return rate, which is derived from cash flows received in the form
23 of dividends plus appreciation in market price (the expected growth rate).

1 Mathematically, the dividend yield on market price plus a growth rate equals the
2 capitalization rate, i.e., the total common equity return rate expected by investors.

3 Since market prices are employed in its application, the DCF is based upon
4 the Efficient Market Hypothesis (“EMH”) first pioneered by Eugene F. Fama⁶ in
5 1970. An efficient market is one in which security prices reflect all relevant
6 information all the time. This implies that prices adjust instantaneously to new
7 information, thus reflecting the intrinsic fundamental economic value of a
8 security.⁷ The EMH is a hypothesis only and not a fundamental “law” of finance,
9 meaning that it is only a theory of how the market works and how investors make
10 their investment decisions.

11 Nevertheless, the semistrong form of the EMH, which asserts that all
12 publicly available information is fully reflected in securities prices, i.e.,
13 fundamental analysis cannot “outperform the market”, has been historically
14 generally held to be true because the use of insider information and recently the
15 use of complicated computer algorithms often enable investors to “outperform the
16 market” and earn excessive returns. This means that all perceived risks are taken
17 into account by investors in the prices they pay for securities. Investors are thus
18 aware of all publicly-available information, including bond ratings; discussions
19 about companies by bond rating agencies and investment analysts; as well as the
20 various cost of common equity methodologies (“models”) discussed in the

⁶ Eugene F. Fama, “Efficient Capital Markets: A Review of Theory and Empirical Work” (Journal of Finance, May 1970) 383-417.

⁷ Eugene F. Brigham, Financial Management – Theory & Practice, 5th Edition (The Dryden Press, 1989) 225.

1 financial literature. Hence, no single common equity cost rate model should be
2 relied upon exclusively or weighted more heavily in determining a cost rate of
3 common equity and that the results of multiple cost of common equity models
4 should be taken into account.

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

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

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

13 A. The unadjusted dividend yields are based upon a recent (March 3, 2014) indicated
14 dividend divided by the average of closing market prices for the 60 days ending
15 March 3, 2014 as shown in Column 1 on page 1 of Schedule PMA-6.

16 **Q. PLEASE EXPLAIN THE ADJUSTED DIVIDEND YIELD SHOWN ON**
17 **PAGE 1 OF SCHEDULE PMA-6, COLUMN 7.**

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

21 DCF theory calls for the use of the full growth rate, or D_1 , in calculating
22 the dividend yield component of the model. However, since the various
23 companies in the proxy group increase their quarterly dividend at various times

1 during the year, a reasonable assumption is to reflect one-half the annual dividend
2 growth rate in the dividend yield component, or $D_{1/2}$. This is a conservative
3 approach which does not overstate the dividend yield which should be
4 representative of the next twelve-month period. Therefore, the actual average
5 dividend yields in Column 1 on page 1 of Schedule PMA-6 have been adjusted
6 upward to reflect one-half the average projected growth rate shown in Column 6.

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

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

1 Security analysts' earnings expectations have a more significant, but not
2 sole, influence on market prices than dividend expectations and on market price
3 appreciation or the "growth" experienced by investors.⁸

4 **Q. PLEASE SUMMARIZE YOUR DCF MODEL RESULTS.**

5 A. As shown on page 1 of Schedule PMA-6, the average result of the application of
6 the DCF model is 8.98% while the median result is 8.58%. In arriving at a
7 conclusion of a DCF-indicated common equity cost rate for the proxy group, I
8 have relied upon the median of the results of the DCF, due to the wide range of
9 DCF results as well as the continuing volatile capital market conditions in light of
10 the continuing fragile economic recovery, and to not give undue weight to outliers
11 on either the high or the low side. In my opinion, the median is a more accurate
12 and reliable measure of central tendency, and provides recognition of all the DCF
13 results.

14 **Q. PLEASE COMMENT UPON THE APPLICABILITY OF THE DCF**
15 **MODEL IN ESTABLISHING A COST OF COMMON EQUITY FOR**
16 **AWC.**

17 A. The DCF model has a tendency to mis-specify investors' required common equity
18 return rate when the market value of common stock differs significantly from its
19 book value. Mathematically, because the "simplified" DCF model traditionally
20 used in rate regulation assumes a market-to-book ratio of one, it
21 understates/overstates investors' required return rate when market value exceeds
22 or is less than book value. It does so because, in many instances, market prices

⁸ Roger A. Morin, New Regulatory Finance (Public Utility Reports, Inc., 2006) 298-303.

1 reflect investors' assessments of long-range market price growth potentials
2 (consistent with the infinite investment horizon implicit in the standard regulatory
3 version of the DCF model) not fully reflected in analysts' shorter range forecasts
4 of future growth in earnings per share (EPS), an accounting proxy. Thus, the
5 market-based DCF model will result in a total annual dollar return on book
6 common equity equal to the total annual dollar return expected by investors only
7 when market and book values are equal, a rare and unlikely situation. In recent
8 years, the market values of water utilities' common stocks have been well in
9 excess of their book values as shown on page 2 of Schedule PMA-3 ranging
10 between 145.24% and 173.44% for the five years ending 2012.

11 Under DCF theory, the rate of return investors require is related to the
12 market price paid for a security. Thus, market prices form the basis of investment
13 decisions and investors' expected rates of return. In contrast, a regulated utility is
14 generally limited to earning on a net book value (depreciated original cost) rate
15 base. Although market prices are significantly influenced by analysts' earnings
16 per share (EPS) growth forecasts, market values can diverge from book values for
17 a myriad of macroeconomic reasons including, but not limited to, EPS and
18 dividends per share (DPS) expectations, merger or acquisition expectations,
19 interest rates, investor sentiment, unemployment levels, monetary policy, fiscal
20 policy, etc.

21 Traditional rate base/rate of return regulation, where a market-based
22 common equity cost rate is applied to a book value rate base, presumes that
23 market-to-book ratios are at unity or 1.00. However, there is ample empirical

1 evidence over sustained periods which demonstrate that this is an incorrect
2 presumption. Since market-to-book ratios of unity or 1.00 are rarely the case as
3 discussed above, regulatory allowed returns on equity (ROEs), i.e., earnings, have
4 a limited effect on utilities' market/book ratios as the market prices of utility
5 common stocks are also influenced by factors beyond the direct influence of the
6 regulatory process.

7 As noted by Phillips:⁹

8
9 Many question the assumption that market price should equal book
10 value, believing that 'the earnings of utilities should be sufficiently
11 high to achieve market-to-book ratios which are consistent with
12 those prevailing for stocks of unregulated companies.'

13
14 In addition, Bonbright¹⁰ states:

15
16 In the first place, commissions cannot forecast, except within wide
17 limits, the effect their rate orders will have on the market prices of
18 the stocks of the companies they regulate. In the second place,
19 *whatever the initial market prices may be, they are sure to change*
20 *not only with the changing prospects for earnings, but with the*
21 *changing outlook of an inherently volatile stock market.* In short,
22 market prices are beyond the control, though not beyond the
23 influence of rate regulation. Moreover, even if a commission did
24 possess the power of control, any attempt to exercise it ... would
25 result in harmful, uneconomic shifts in public utility rate levels.
26 (italics added)

27
28 **Q. IS IT REASONABLE TO EXPECT THE MARKET VALUES OF**
29 **UTILITIES' COMMON STOCKS TO CONTINUE TO SELL WELL**
30 **ABOVE THEIR BOOK VALUES?**

⁹ Phillips, Charles F., The Regulation of Public Utilities – Theory and Practice (Public Utility Reports, Inc., 1993) 395.

¹⁰ James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates (Public Utilities Reports, Inc., 1988) 334.

1 A. Yes. Market-to-book ratios of regulated utilities vary from year to year, due to
2 such influences as the effects on the “Great Recession”, subsequent economic and
3 capital market turmoil and the fledgling recovery and the like. In my opinion, the
4 common stocks of all utilities will continue to sell substantially above their book
5 values, on average, because many investors will likely continue to commit a
6 greater percentage of their available capital to common stocks in view of lower
7 interest rate alternative investment opportunities. The recent past and current
8 capital market environment is in stark and historical contrast to the late 1970's and
9 early 1980's when very high (by historical standards) yields on secured debt
10 instruments in public utilities were available. Despite the fact that the market
11 dipped to a low in March 2009 as the “Great Recession” unfolded and the U.S.
12 has begun to recover from the “Great Recession” at a slow pace, the majority of
13 utility stocks, on average, have continued to sell at market prices well above their
14 book value. In addition, as previously discussed, such sustained high market-to-
15 book ratios have been influenced by factors other than fundamentals such as
16 actual and reported growth in EPS and DPS.

17 **Q. CAN THE UNDER- OR OVERSTATEMENT OF THE INVESTORS’**
18 **REQUIRED RATE OF RETURN ON THE MARKET BY THE DCF**
19 **MODEL BE DEMONSTRATED MATHEMATICALLY?**

20 A. Yes. Page 2 of Schedule PMA-6 demonstrates how a market-based DCF cost rate
21 of 8.98% (my average DCF result, shown on page 1 of Schedule PMA-6) applied
22 to a book value which is below market value will understate the investors’
23 required return on market value. As shown, there is no realistic opportunity to

1 earn the expected market-based rate of return on book value. In Column A,
2 investors expect a return on equity of 8.98%, the average DCF result for the proxy
3 group, return on a market price of \$27.34. Column B shows that when the 8.98%
4 return rate on market value is applied to book value which is approximately 50%
5 of market value, the total annual return opportunity is just \$1.219 on book value.
6 With an annual dividend of \$0.839, there is an opportunity for growth of \$0.380
7 which is just 1.39% in contrast to the 5.91% growth in market price expected by
8 investors. The converse is also true. When the market-to-book value is below 1,
9 the DCF cost rate will overstate the investors' required return on market value.

10 Hence, it is clear that the DCF model mis-specifies, that is, it either
11 understates or overstates investors' required cost of common equity capital when
12 market values exceed or are less than their underlying book values, and thus
13 multiple cost of common equity models should be relied upon, rather than
14 exclusive reliance upon the DCF model, when estimating investors' expectations.

15 **Q. ARE YOU AWARE OF ANY REGULATORY COMMISSIONS THAT**
16 **PRIMARILY RELY UPON THE DCF MODEL?**

17 A. Yes. However, in my experience, the majority of regulatory commissions,
18 including those which primarily rely upon the DCF model, also consider a
19 combination of the various cost of common equity models available.

20 Consideration of multiple cost of common equity models is always
21 appropriate, but is especially so at this time because, as stated above, the
22 traditional application of the DCF mis-specifies investors' required return. The
23 DCF mis-specifies, specifically understating investors' required return, because of

1 the confluence of recently rising market prices, the use of accounting measures as
2 proxies for capital appreciation in the DCF, and the recent dramatic rise in actual
3 and forecasted interest rates discussed below. The magnitude of this
4 understatement can be found in the difference between the 5.91% growth in
5 market values, i.e., growth in EPS, shown in column A on page 2 of Exhibit
6 PMA-6, and the growth in market value would be only 1.39%, as shown in
7 column B, when the 8.98% DCF cost rate is applied to book value, or up to
8 approximately 450 basis points. Coupled with the added reliability and accuracy
9 that the use of multiple cost of common equity models provides in the estimation
10 of the cost of common equity, it is more imperative than ever to not give
11 exclusive, primary or even greater reliance to the DCF analysis at this time.

12 **Q. IS THERE ACADEMIC SUPPORT FOR THE NEED TO RELY UPON**
13 **MORE THAN ONE COST OF COMMON EQUITY MODEL IN**
14 **ARRIVING AT A RECOMMENDED COMMON EQUITY COST RATE?**

15 A. Yes. For example, Phillips¹¹ states:

16 Since regulation establishes a level of authorized earnings which, in
17 turn, implicitly influences dividends per share, estimation of the
18 growth rate from such data is an inherently circular process. *For*
19 *these reasons, the DCF model "suggests a degree of precision which*
20 *is in fact not present" and leaves "wide room for controversy and*
21 *argument about the level of k". (italics added) (p. 396)*

22 * * *

23
24 Despite the difficulty of measuring relative risk, the comparable
25 earnings standard is no harder to apply than is the market-determined
26 standard. *The DCF method, to illustrate, requires a subjective*
27 *determination of the growth rate the market is contemplating.*

¹¹ Charles F. Phillips, Jr., The Regulation of Public Utilities-Theory and Practice
(Public Utility Reports, Inc., 1993) 396, 398.

1 Moreover, as Leventhal has argued: 'Unless the utility is permitted
2 to earn a return comparable to that available elsewhere on similar
3 risk, it will not be able in the long run to attract capital.' (italics
4 added) (p. 398)

5
6 Also, Morin¹² states:

7 Each methodology requires the exercise of considerable judgment on
8 the reasonableness of the assumptions underlying the methodology
9 and on the reasonableness of the proxies used to validate a theory.
10 *The inability of the DCF model to account for changes in relative*
11 *market valuation, discussed below, is a vivid example of the*
12 *potential shortcomings of the DCF model when applied to a given*
13 *company.* Similarly, the inability of the CAPM to account for
14 variables that affect security returns other than beta tarnishes its use.
15 (italics added)
16

17 No one individual method provides the necessary level of precision
18 for determining a fair return, but each method provides useful
19 evidence to facilitate the exercise of an informed judgment. Reliance
20 on any single method or preset formula is inappropriate when
21 dealing with investor expectations because of possible measurement
22 difficulties and vagaries in individual companies' market data.
23 (Morin, p. 428)
24

25 * * *

26 The financial literature supports the use of multiple methods.
27 Professor Eugene Brigham, a widely respected scholar and finance
28 academician, asserts:¹ (footnote omitted)
29

30 Three methods typically are used: (1) the Capital Asset Pricing
31 Model (CAPM), (2) the discounted cash flow (DCF) method, and (3)
32 the bond-yield-plus-risk-premium approach. These methods are not
33 mutually exclusive – no method dominates the others, and all are
34 subject to error when used in practice. Therefore, when faced with
35 the task of estimating a company's cost of equity, we generally use
36 all three methods and then choose among them on the basis of our
37 confidence in the data used for each in the specific case at hand.
38

39 Another prominent finance scholar, Professor Stewart
40 Myers, in an early pioneering article on regulatory finance,
41 stated:²(footnote omitted)

¹² Morin 428-431.

1
2 Use more than one model when you can. Because estimating the
3 opportunity cost of capital is difficult, only a fool throws away
4 useful information. That means you should not use any one model
5 or measure mechanically and exclusively. Beta is helpful as one tool
6 in a kit, to be used in parallel with DCF models or other techniques
7 for interpreting capital market data.
8

9 Reliance on multiple tests recognizes that no single methodology
10 produces a precise definitive estimate of the cost of equity. As stated
11 in Bonbright, Danielsen, and Kamerschen (1988), '*no single or*
12 *group test or technique is conclusive.*' Only a fool discards relevant
13 evidence. (italics in original) (Morin, p. 430)
14

15 * * *

16 While it is certainly appropriate to use the DCF methodology to
17 estimate the cost of equity, *there is no proof that the DCF produces*
18 *a more accurate estimate of the cost of equity than other*
19 *methodologies. Sole reliance on the DCF model ignores the capital*
20 *market evidence and financial theory formalized in the CAPM and*
21 *other risk premium methods. The DCF model is one of many tools to*
22 *be employed in conjunction with other methods to estimate the cost*
23 *of equity. It is not a superior methodology that supplants other*
24 *financial theory and market evidence. The broad usage of the DCF*
25 *methodology in regulatory proceedings in contrast to its virtual*
26 *disappearance in academic textbooks does not make it superior to*
27 *other methods.* The same is true of the Risk Premium and CAPM
28 methodologies. (italics added) (Morin, p. 431)
29

30 Brigham and Gapenski¹³ state:

31 In practical work, *it is often best to use all three methods – CAPM,*
32 *bond yield plus risk premium, and DCF – and then apply judgment*
33 *when the methods produce different results. People experienced in*
34 *estimating equity capital costs recognize that both careful analysis*
35 *and some very fine judgments are required. It would be nice to*
36 *pretend that these judgments are unnecessary and to specify an easy,*
37 *precise way of determining the exact cost of equity capital.*
38 Unfortunately, this is not possible. Finance is in large part a matter
39 of judgment, and we simply must face this fact. (italics in original)
40

¹³ Eugene F. Brigham and Louis C. Gapenski, Financial Management – Theory and Practice 4th Edition, (The Dryden Press, 1985) 256.

1 Finally, Brigham and Daves¹⁴ reiterate Brigham and Gapenski's
2 comments when they state:

3
4 Recent surveys found that the CAPM approach is by far the most
5 widely used method. Although most firms use more than one
6 method, almost 74 percent of respondents in one survey, and 85
7 percent in the other, used the CAPM.¹² (footnote omitted)

8
9 * * *

10 Approximately 16 percent now use the DCF approach, down from
11 31 percent in 1982. The bond-yield-plus-risk-premium is used
12 primarily by companies that are not publicly traded.
13

14 People experienced in estimating the cost of equity recognize that
15 both careful analysis and sound judgment are required. It would be
16 nice to pretend that judgment is unnecessary and to specify an easy,
17 precise way of determining the exact cost of equity capital.
18 Unfortunately, this is not possible -- finance is in large part a matter
19 of judgment, and we simply must face this fact.
20

21 **Q. DO YOU HAVE ANY OTHER CONCERNS WITH THE RESULTS OF**
22 **THE APPLICATION OF THE DCF MODEL?**

23 **A.** Yes. As discussed above, I have relied upon the median results of my DCF
24 analysis so as to not give undue weight to outliers on either the high side or the
25 low side as well as the greater accuracy and reliability of the median as a measure
26 of central tendency when there is a wide range of results.

27 The DCF results for the proxy group of nine water companies ranges from a
28 low of 5.44% to a high of 13.51% as shown on page 1 of Schedule PMA-6,
29 covering 807 basis points (8.07%) representing an implied risk differential
30 between the water company with the lowest DCF results and the water company
31 with the highest. Likewise the DCF results for the proxy group of non-price

¹⁴ Eugene F. Brigham and Phillip R. Daves, Intermediate Financial Management,

1 regulated companies ranges from a low of 5.95% to a high of 18.51% as shown
2 on page 5 of Schedule PMA-10, covering 1,296 basis points (12.96%), again
3 indicating an implied risk differential between the non-price regulated
4 companies with the lowest and highest DCF results.

5 Such wide ranges of DCF indicated costs of common equity are inconsistent
6 with the relative small range of bond ratings of either the water or non-price
7 regulated proxy companies. As shown on page 4 of Schedule PMA-8 and page 7
8 of Schedule PMA-10, the S&P bond ratings for the water proxy group range from
9 AA- to A- and from A to BBB+ for the non-price regulated proxy group,
10 respectively. Such a limited range of bond ratings is inconsistent with the wide
11 range of DCF results for both proxy groups.

12 Since S&P bond ratings are generally analogous to Moody's bond ratings,
13 an indication of the perceived risk differential between AA- and A- public utility
14 bonds is the spread between Moody's yields for AA- and A- public utility bonds.
15 Likewise, the spread between Moody's yields for A and BBB+ rated corporate
16 bonds is an indication of the risk differential for the non-price regulated proxy
17 group. It can be interpolated from the bond yields shown on page 5 of Schedule
18 PMA-8 that a AA- public utility bond would have been yielding 4.46%¹⁵ for the
19 three months ended January 2014 and an A- rated public utility bond would have
20 been yielding 4.59%¹⁶ for the three months ended January 2014. Similarly, using
21 average 3-month ending January 2014 A and BBB corporate bond yield averages

(Thomson-Southwestern, 2007) 332-333.

¹⁵ 4.46% = 4.53% (A rated public utility bond yield) - (1/3 * 0.21% (spread between A and Aa rated public utility bond yield)

1 of 4.79% and 5.32% from Mergent Bond Record (February 2014, Vol. 81, No. 2),
2 the A rated corporate bond yield averaged 4.79% and the BBB corporate bond
3 yield average 5.14%¹⁷. This indicates a risk differential of 0.13% for the water
4 proxy group and 0.35% for the non-regulated proxy group, in sharp contrast to the
5 8.07% and 12.96% implied in the DCF results for each group respectively.

6 Similarly, the average results of the traditional CAPM and the empirical
7 CAPM (“ECAPM”) represent a tighter range of results than the DCF for both the
8 water and non-price regulated proxy groups. For both the water and non-price
9 regulated proxy groups, the traditional CAPM results range from 8.78% to
10 11.17%, covering 239 basis points and the ECAPM results ranged from 9.67% to
11 11.46% covering 179 basis points. On average, the risk differential between the
12 non-price regulated companies with the lowest and highest average traditional
13 CAPM and ECAPM results is 209 basis points or 2.09%, again in contrast to the
14 implied risk differentials for the DCF results..

15 Since the indicated risk differentials related to each proxy group’s DCF
16 results are significantly greater than the indicated risk differentials related to each
17 proxy group’s S&P bond ratings and CAPM results, it is clear, in my opinion, that
18 the DCF does not accurately or reliably estimate the cost of common equity for
19 either the water or non-price regulated proxy group. In addition, the DCF is at
20 odds with the very foundation, i.e., the EMH, upon which it is predicated.

¹⁶ 4.59% = 4.53% (A rated public utility bond yield) + (1/3 * 0.45% (spread
between A and Aa rated public utility bond yield

¹⁷ 5.14% = 4.79% (A rated corporate bond yield) – (2/3 * 0.53% (spread between
A and Aa rated corporate bond yield

1 In view of all of the foregoing, in my opinion, the PSC should not give
2 exclusive, primary or even greater reliance to the DCF analysis than to the results
3 of other common equity cost rates at this time.

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

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

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

13 While the investors' required common equity return cannot be directly
14 determined or observed, it is possible to directly observe bond returns and yields.
15 According to RPM theory, one can assess a common equity risk premium over
16 bonds, either historically or prospectively, and then use that premium to derive a
17 cost rate of common equity.

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

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

1 A. I relied upon the results from the application of two risk premium methods. The
2 first method is the Predictive Risk Premium Model™ (PRPM™), while the
3 second method is a risk premium model using a total market approach.

4 **Q. PLEASE EXPLAIN THE PRPM™.**

5 A. The PRPM™, published in the *Journal of Regulatory Economics (JRE)*¹⁸, was
6 developed from the work of Robert F. Engle who shared the Nobel Prize in
7 Economics in 2003 “for methods of analyzing economic time series with time-
8 varying volatility (“ARCH”)¹⁹” with “ARCH” standing for autoregressive
9 conditional heteroskedasticity. In other words, volatility changes over time and is
10 related from one period to the next, especially in financial markets. Engle
11 discovered that the volatility in prices and returns also clusters over time, is
12 therefore highly predictable and can be used to predict future levels of risk and
13 risk premiums. The PRPM™ estimates the risk / return relationship directly by
14 analyzing the actual results of investor behavior rather than using subjective
15 judgment as to the inputs required for the application of other cost of common
16 equity models. In addition, the PRPM™ is not based upon an estimate of investor
17 behavior, but rather upon the evaluation of the results of that behavior, i.e., the
18 variance of historical equity risk premiums. In other words, the predicted equity
19 risk premium is generated by the prediction of volatility (risk). Also, in the
20 derivation of the premiums, greater weight is given to more recent time periods,
21 in contrast to reliance upon the arithmetic mean premium which gives equal

¹⁸ “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.

¹⁹ www.nobelprize.org

1 weight to each observed premium.

2 The inputs to the model are the historical returns on the common shares of
3 each company in the proxy group minus the historical monthly yield on long-term
4 U.S. Treasury securities through January 2014. Using a generalized form of
5 ARCH, known as GARCH, each water company's projected equity risk premium
6 was determined using Eviews[®] statistical software. The forecasted 30-year U.S.
7 Treasury Bond (Note) yield based upon the consensus forecast derived from the
8 December 1, 2013 and March 1, 2014 Blue Chip Financial Forecasts (Blue Chip)
9 is 4.40%, as discussed below. That was then added to each company's PRPM[™]-
10 derived equity risk premium to arrive at a PRPM[™] derived cost of common
11 equity as shown on page 2 of Schedule PMA-8, which presents the results for
12 each proxy company as well as the average and median results. As shown on
13 page 2, the average PRPM[™] indicated common equity cost rate is 12.72% and
14 the median is 11.67% for the nine water companies. I rely upon the median
15 PRPM[™] result due to the wide range of results and to not give any undue weight
16 to any high or low outliers.

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

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

21 **Q. PLEASE EXPLAIN THE BASIS OF THE EXPECTED BOND YIELD OF**
22 **5.27% APPLICABLE TO THE NINE WATER COMPANIES SHOWN ON**
23 **PAGE 3 OF SCHEDULE PMA-8.**

1 A. The first step in the total market approach RPM analysis is to determine the
2 expected bond yield. Because both ratemaking and the cost of capital, including
3 common equity cost rate, are prospective in nature, a prospective yield on
4 similarly-rated long-term debt is essential. Hence, I rely upon a consensus
5 forecast of about 50 economists of the expected yield on Aaa rated corporate
6 bonds for the six calendar quarters ending with the second calendar quarter of
7 2015 averaged with the long-range forecasts for 2015-2019 and 2020-2024 from
8 the March 1, 2014 and December 1, 2013 *Blue Chip*, respectively (shown on
9 pages 9 and 10 of Schedule PMA-8). As shown on Line No. 1 of page 3 of
10 Schedule PMA-8, the average expected yield on Moody's Aaa rated corporate
11 bonds is 5.14%. An adjustment of 0.16% is necessary to adjust that average Aaa
12 corporate bond yield to be equivalent to a Moody's A rated public utility bond, as
13 shown on Line No. 2 and explained in Note 2, resulting in an expected bond yield
14 applicable to a Moody's A rated public utility bond of 5.30% as shown on Line
15 No. 3.

16 Since the nine water companies' average Moody's bond rating is a split
17 A1/A2, an adjustment of a negative 0.04% is necessary to make the prospective
18 bond yield applicable to an A1/A2 public utility bond, as detailed in Note 3 on
19 page 3 of Schedule PMA-8. Therefore, the expected specific bond yield is 5.27%
20 for the nine water companies as shown on Line No. 5.

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

1 A. I evaluated the results of two different market equity risk premium studies based
2 upon Ibbotson Associates' data, *Value Line's* forecasted total annual market return
3 in excess of the prospective yield on Moody's Aaa corporate bonds, as well as
4 two different studies of the equity risk premium for public utilities with Moody's
5 A rated bonds as detailed on pages 8 and 11 of Schedule PMA-8. As shown on
6 Line No. 3, page 7, the mean equity risk premium of the nine water companies is
7 4.76%. This estimate is the result of an average of a beta-derived equity risk
8 premium as well as the average public utility equity risk premium relative to
9 bonds rated A by Moody's based upon holding period returns.

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

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

19 The total market equity risk premium utilized is 6.98%, based upon a
20 weighted average of the long-term arithmetic mean historical market equity risk
21 premium, a predicted market equity risk premium based upon the PRPMTM and a
22 forecasted market risk premium based upon *Value Line's* projected market
23 appreciation and dividend yield, giving the PRPMTM results 50% weight and the

1 Value Line and Ibbotson studies 25% weight. I have given the PRPMTM result
2 more weight because the PRPMTM is based upon a minimum of restrictive
3 assumptions²⁰. In addition, the PRPMTM is “not based upon an estimate of
4 investor behavior, but rather, upon a statistical analysis of actual investor
5 behavior” because it evaluates the results of that behavior, i.e., the volatility of
6 historical equity risk premiums.²¹

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

9 A. To derive the historical (expectational) market equity risk premium, I used the
10 most recent Morningstar data on holding period returns for the large company
11 common stocks from the Ibbotson[®] SBBI[®] 2013 Valuation Yearbook – Market
12 Results for Stocks, Bonds, Bills and Inflation (“SBBI – 2013”)²² and the average
13 historical yield on Moody’s Aaa and Aa rated corporate bonds for the period
14 1926-2012. The use of holding period returns over a very long period of time is
15 useful because it is consistent with the long-term investment horizon presumed by
16 the DCF model.

17 Consequently, as explained in note 1 on page 8 of Schedule PMA-8, the
18 long-term arithmetic mean monthly total return rate on large company common
19 stocks of 11.83% and the long-term arithmetic mean monthly yield on Moody’s

²⁰ Ahern, Hanley, Michelfelder 277.

²¹ “Comparative Evaluation of the Predictive Risk Premium ModelTM, 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.

²² Ibbotson[®] SBBI[®] - 2013 Valuation Yearbook – Market Results for Stocks, Bonds, Bills and Inflation (Morningstar, Inc., 2013).

1 Aaa and Aa rated corporate bonds of 6.23% were used. As shown on Line No. 1,
2 the resultant long-term historical equity risk premium on the market as a whole is
3 5.60%.

4 I used arithmetic mean monthly total return rates for the large company
5 stocks and yields (income returns) for the Moody's Aaa/Aa corporate bonds,
6 because they are appropriate for cost of capital purposes as noted in the SBBI –
7 2013. Arithmetic mean return rates and yields are appropriate because ex-post
8 (historical) total returns and equity risk premiums differ in size and direction over
9 time, providing insight into the variance and standard deviation of returns.
10 Because the arithmetic mean captures the prospect for variance in returns and
11 equity risk premiums, it provides the valuable insight needed by investors in
12 estimating future risk when making a current investment. Absent such valuable
13 insight into the potential variance of returns, investors cannot meaningfully
14 evaluate prospective risk. If investors alternatively relied upon the geometric
15 mean of ex-post equity risk premiums, they would have no insight into the
16 potential variance of future returns because the geometric mean relates the change
17 over many periods to a constant rate of change, thereby obviating the year-to-year
18 fluctuations, or variance, *critical to risk analysis*.

19 Only the arithmetic mean takes into account all of the returns / premiums,
20 thereby providing meaningful insight into the variance and standard deviation of
21 those returns / premiums.

22 **Q. PLEASE EXPLAIN THE DERIVATION OF PRPM™ MARKET EQUITY**
23 **RISK PREMIUM.**

1 A. The inputs to the model are the historical monthly returns on large company
2 common stocks minus the monthly yields on Aaa corporate bonds during the
3 period from January 1928 through January 2014. Using the previously discussed
4 generalized form of ARCH, known as GARCH, the market's projected equity risk
5 premium was determined using Eviews[®] statistical software. The resulting
6 predicted market equity risk premium based upon the PRPM[™] of 9.26% is shown
7 on Line No. 2 on page 8 of Schedule PMA-8.

8 **Q. PLEASE EXPLAIN HOW YOU INCORPORATED *VALUE LINE'S***
9 **FORECASTED TOTAL ANNUAL MARKET RETURN MINUS THE**
10 **PROSPECTIVE YIELD ON AAA RATED CORPORATE BONDS IN**
11 **YOUR DEVELOPMENT OF AN EQUITY RISK PREMIUM FOR YOUR**
12 **RPM ANALYSIS?**

13 A. Once again, because both ratemaking and the cost of capital, including the cost
14 rate of common equity, are prospective, a prospective market equity risk premium
15 is essential. The derivation of the forecasted or prospective market equity risk
16 premium can be found in note 3 on page 8 of Schedule PMA-8. Consistent with
17 the development of the dividend yield component of my DCF analysis, it is
18 derived from an average of the most recent thirteen weeks ending March 7, 2014
19 3-5 year median market price appreciation potential by *Value Line* plus an
20 average of the median estimated dividend yield for the common stocks of the
21 1,700 firms covered in *Value Line's* Standard Edition as explained in detail in
22 Note 1 on page 2 of Schedule PMA-9.

1 The average median expected price appreciation is 31% which translates
2 to a 6.98% annual appreciation and, when added to the average (similarly
3 calculated) median dividend yield of 1.97% equates to a forecasted annual total
4 return rate on the market as a whole of 8.95%. The forecasted total market equity
5 risk premium of 3.81%, shown on Line No. 3, page 8 of Schedule PMA-8, is
6 derived by deducting the March 1, 2014 and December 1, 2013 *Blue Chip*
7 consensus estimate of about 50 economists of the expected yield on Moody's Aaa
8 rated corporate bonds for the six calendar quarters ending with the second
9 calendar quarter 2015 averaged with the projected long-range forecasts for 2015-
10 2019 and 2020-2024 of 5.14% from the *Value Line*-derived projected market risk
11 premium of 8.95% ($3.81\% = 8.95\% - 5.14\%$).

12 In arriving at my conclusion of equity risk premium of 6.98% on Line No.
13 4 on page 8, I have given 25% weight to the historical market equity risk premium
14 of 5.60%, 50% to the PRPMTM based market equity risk premium of 9.26% and
15 25% to the forecasted market equity risk premium of 3.81% shown on Line Nos.
16 1, 2 and 3, respectively ($6.98\% = (5.60 \times 25\%) + (9.26\% \times 50\%) + (3.81\% \times$
17 $25\%)$)).

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

20 A. As shown on page 1 of Schedule PMA-9, the most current median *Value Line*
21 beta for the nine water companies is 0.65. Applying the median beta of the proxy
22 group of 0.65 (consistent with my reliance upon the median DCF and PRPMTM
23 results as previously discussed), to the market equity risk premium of 6.98%

1 results in a beta adjusted equity risk premium of 4.54% for the nine water
2 companies.

3 **Q. HOW DID YOU DERIVE THE 4.97% EQUITY RISK PREMIUM BASED**
4 **UPON THE S&P UTILITY INDEX AND MOODY'S A RATED PUBLIC**
5 **UTILITY BONDS?**

6 A. First, I derived the long-term monthly arithmetic mean equity risk premium
7 between the S&P Utility Index total returns of 10.69% and monthly A rated
8 public utility bond yields of 6.53% from 1928-2012 to arrive at an equity risk
9 premium of 4.16% as shown on Line No. 3 on page 11 of Schedule PMA-8. I
10 then performed the PRPMTM using the same historical monthly equity risk
11 premiums to arrive at the PRPMTM derived equity risk premium of 5.24% for the
12 S&P Utility Index shown on Line No. 4, on page 10. I then assigned a 75%
13 weight to the PRPMTM result and a 25% weight to the historical risk premium.
14 The resulting weighted average was 4.97%.

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

17 A. The equity risk premium applicable to the proxy group of nine water companies is
18 the average of the beta-derived premium, 4.54%, and that based upon the holding
19 period returns of public utilities with A rated bonds, 4.97%, as summarized on
20 Line No. 3 on Schedule PMA-8, page 7, i.e., 4.76% (4.76% = (4.54% +
21 4.97%)/2).

22 **Q. WHAT IS THE INDICATED RPM COMMON EQUITY COST RATE**
23 **BASED UPON THE TOTAL MARKET APPROACH?**

1 A. It is 10.03% for the nine water companies as shown on Line No. 7 on Schedule
2 PMA-8, page 3.

3 **Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE PRPM™**
4 **AND THE TOTAL MARKET APPROACH RPM?**

5 A. As shown on page 1 of Schedule PMA-8, the indicated RPM-derived common
6 equity cost rate is 11.26%, derived by giving greater weight to the PRPM™
7 results as explained previously.

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

9 **Q. PLEASE EXPLAIN THE THEORETICAL BASIS OF THE CAPM.**

10 A. CAPM theory defines risk as the covariability of a security's returns with the
11 market's returns as measured by beta (β). A beta less than 1.0 indicates lower
12 variability while a beta greater than 1.0 indicates greater variability than the
13 market.

14 The CAPM assumes that all other risk, i.e., all non-market or unsystematic
15 risk, can be eliminated through diversification. The risk that cannot be eliminated
16 through diversification is called market, or systematic, risk. In addition, the
17 CAPM presumes that investors require compensation only for these systematic
18 risks which are the result of macroeconomic and other events that affect the
19 returns on all assets. The model is applied by adding a risk-free rate of return to a
20 market risk premium, which is adjusted proportionately to reflect the systematic
21 risk of the individual security relative to the total market as measured by beta.
22 The traditional CAPM model is expressed as:

1 $R_s = R_f + \beta(R_m - R_f)$

2

3 Where: R_s = Return rate on the common stock

4

5 R_f = Risk-free rate of return

6

7 R_m = Return rate on the market as a whole

8

9 β = Adjusted beta (volatility of the security
10 relative to the market as a whole)

11

12

Numerous tests of the CAPM have measured the extent to which security returns and betas are related as predicted by the CAPM, confirming the theory's 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.²³

13

14

15

16

17

18

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.

19

20

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

23 A. As shown in column 3 on page 1 of Schedule PMA-9, the risk-free rate adopted
24 for both applications of the CAPM is 4.40%. Because both the cost of capital and
25 ratemaking are prospective in nature, it is appropriate to use a forecasted risk-free
26 rate in a CAPM analysis. Therefore, the risk-free rate for my CAPM analysis is
27 based upon the average of the consensus forecast of the reporting economists in
28 the March 1, 2014 and December 1, 2013 *Blue Chip* of the expected yields on 30-

²³ Morin 175.

1 year U.S. Treasury bonds for the six quarters ending with the second calendar
2 quarter of 2015 averaged with the long-range forecasts for 2015-2019 and 2020-
3 2024 as shown in note 2, page 2 of Schedule PMA-9.

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

6 A. The yield on long-term U.S. Treasury T-Bonds is almost risk-free and its term is
7 consistent with the long-term cost of capital to public utilities measured by the
8 yields on A rated public utility bonds, the long-term investment horizon inherent
9 in utilities' common stocks, the long-term investment horizon presumed in the
10 standard DCF model employed in regulatory ratemaking, and the long-term life of
11 the jurisdictional rate base to which the allowed fair rate of return, i.e., cost of
12 capital will be applied. In contrast, short-term U.S. Treasury yields are more
13 volatile and largely a function of Federal Reserve monetary policy.

14 **Q. PLEASE EXPLAIN THE ESTIMATION OF THE EXPECTED EQUITY**
15 **RISK PREMIUM FOR THE MARKET.**

16 A. The basis of the market equity risk premium is explained in detail in Note 1 on
17 page 2 of Schedule PMA-9. It is derived from a weighted average of the most
18 recent thirteen weeks ending March 7, 2014 3-5 year median total market price
19 appreciation projections from *Value Line* (25% weight); the PRPMTM predicted
20 market equity risk premium using monthly equity risk premiums for large
21 company common stocks relative to long-term U.S. Treasury securities from
22 January 1926 through January 2014 (50% weight); and, the arithmetic mean
23 monthly equity risk premiums of large company common stocks relative to long-

1 term U.S. Treasury bond income yields from SBBI-2013 from 1926-2012 (25%
2 weight). My explanation for weighting PRPM™ results more heavily was
3 explained previously regarding the traditional risk premium analysis. Just as the
4 use of both a proxy group of comparable companies and multiple cost of common
5 equity models adds reliability to the informed expert judgment required in
6 arriving at a recommended common equity cost rate, the use of multiple methods
7 of estimating the market risk premium adds reliability for a CAPM analysis.

8 The *Value Line*-derived forecasted total market equity risk premium is
9 derived by deducting the 4.40% discussed above from the *Value Line* projected
10 total annual market return of 8.95%, resulting in a forecasted total market equity
11 risk premium of 4.55%. The PRPM™ market equity risk premium is 10.36%;
12 derived using the PRPM™ discussed above, relative to the yields on long-term
13 U.S. Treasury securities from January 1926 through January 2014. The long-term
14 income return on U.S. Government Securities of 5.28% was deducted from the
15 SBBI-2013 monthly historical total market return of 11.83% resulting in an
16 historical market equity risk premium of 6.55%.

17 The weighted average of the equity risk premiums result in an average
18 total market equity risk premium of 7.96% ($7.96\% = (4.55\% \times 25\%) + (10.36\% \times$
19 $50\%) + (6.55 \times 25\%)$).

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

22 A. As shown on Schedule PMA-9, page 1, the average traditional CAPM cost rate is
23 9.80%, while the median is 9.57% for the nine water companies. The average

1 ECAPM cost rate is 10.44%, while the median is 10.27%. Consistent with my
2 reliance upon the median DCF and PRPMTM results discussed above, I rely upon
3 the median results of the traditional CAPM and ECAPM for the proxy group,
4 9.57% and 10.27%, respectively. Thus, as shown on column 6 on page 1, the
5 CAPM cost rate applicable to the proxy group is 9.92%²⁴ based upon an average
6 of the traditional CAPM and ECAPM results for the proxy group.

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

9
10 **Q. PLEASE DESCRIBE THE BASIS OF APPLYING COST OF COMMON**
11 **EQUITY MODELS TO COMPARABLE RISK, NON-PRICE**
12 **REGULATED COMPANIES.**

13 A. Applying cost of common equity models to non-price regulated companies,
14 comparable in total risk, is derived from the “*corresponding risk*” standard of the
15 landmark cases of the U.S. Supreme Court, i.e., *Hope* and *Bluefield*, previously
16 discussed. Therefore, it is consistent with the *Hope* doctrine that the return to the
17 equity investor should be commensurate with returns on investments in other
18 firms having corresponding risks based upon the fundamental economic concept
19 of opportunity cost which maintains that the true cost of an investment is equal to
20 the cost of the best available alternative use of the funds to be invested. The
21 opportunity cost principle is also consistent with one of the fundamental
22 principles upon which regulation rests: that regulation is intended to act as a
23 surrogate for competition and to provide a fair rate of return to investors.

²⁴ 9.92% = (9.57% + 10.27%)/2.

1 The first step in determining such an opportunity cost of common equity
2 based upon a group of non-price regulated companies comparable in total risk to
3 the nine water companies is to choose an appropriate broad-based proxy group of
4 non-price regulated firms comparable in total risk to the proxy group of nine
5 water companies which excludes utilities to avoid circularity.

6 The selection criteria for the non-price regulated firms of comparable risk
7 are based upon statistics derived from the market prices paid by investors. *Value*
8 *Line* betas were used as a measure of systematic risk. The standard error of the
9 regression was used as a measure of each firm's unsystematic or specific risk with
10 the standard error of the regression reflecting the extent to which events specific
11 to a company's operations affect its stock price. In essence, companies which
12 have similar betas and standard errors of the regression, have similar total
13 investment risk. Using a *Value Line* proprietary database dated December 15,
14 2013, the application of these criteria based upon the nine water companies results
15 in a proxy group of non-price regulated firms comparable in total risk to the
16 average water company in the proxy group of nine water companies as explained
17 on page 4 of Schedule PMA-10.

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

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

1 not repeat the details of the rationale and application of each model shown on page
2 1 of Schedule PMA-10. An exception is that, in the application of the RPM, I did
3 not use public utility-specific equity risk premiums nor did I apply the PRPMTM to
4 the individual companies. Pages 2 through 4 of Schedule PMA-10 present the
5 basis of selection, the identities of the companies in the proxy group of non-price
6 regulated companies as well as relevant notes.

7 Page 5 of Schedule PMA-10 contains the derivation of the DCF cost rates.
8 As shown, the median DCF cost rate for the proxy group of twenty-eight non-price
9 regulated companies comparable in total risk to the nine water companies, is
10 11.88%.

11 Pages 6 through 8 contain information relating to the 10.79% RPM cost rate
12 for the proxy group of twenty-eight non-price regulated companies summarized on
13 page 6. As shown on Line No. 1 of page 6 of Schedule PMA-10, the consensus
14 prospective yield on Moody's Baa rated corporate bonds of 5.90% based upon the
15 six quarters ending with the second quarter of 2015 averaged with the long-range
16 forecasted yields for 2015-2019 and 2020-2024 from the March 1, 2014 and
17 December 1, 2013 *Blue Chip*. Since the twenty-eight non-price regulated
18 companies comparable in total risk to the nine water companies have an average
19 Moody's bond rating of Baa2 as shown on page 7 of Schedule PMA-10, no
20 adjustment is necessary to make the prospective bond yield applicable to the Baa
21 corporate bond yield. Thus, the expected specific bond yield is 5.90% for the
22 twenty-eight non-price regulated companies as shown on Line No. 1 on page 6 of
23 Schedule PMA-10. When the beta-adjusted risk premium of 4.89% relative to the

1 proxy group of non-price regulated companies, as derived on page 8, is added to
2 the prospective Baa rated corporate bond yields of 5.90% and the indicated RPM
3 cost rate is 10.79%.

4 Page 9 contains the details of the application of the traditional CAPM and
5 ECAPM to the proxy group of twenty-eight non-price regulated companies
6 comparable in total risk to the nine water companies. As shown, the median
7 traditional CAPM and ECAPM cost rates are 9.97% and 10.57%, respectively, for
8 the twenty-eight non-price regulated companies which, when averaged, result in an
9 indicated CAPM cost rate of 10.27%.

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

14 **A.** As shown on page 1 of Schedule PMA-10, the results of the DCF, RPM and
15 CAPM applied to the non-price regulated group comparable in total risk to the
16 nine water companies are 11.88%, 10.79% and 10.27%, respectively. Based upon
17 these results, I will rely upon the average DCF, RPM and CAPM result of 10.90%
18 for the proxy group of non-price regulated companies as summarized on page 1 of
19 Schedule PMA-10.

1 **Conclusion of Common Equity Cost Rate**

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

3 A. It is 10.90% based upon the indicated common equity cost rate resulting from the
4 application of multiple cost of common equity models to the nine water
5 companies adjusted for AWC's flotation costs and business risk.

6 I employ multiple cost of common equity models as primary tools in
7 arriving at my recommended common equity cost rate because; 1) no single
8 model is so inherently precise that it can be relied upon solely to the exclusion of
9 other theoretically sound models; 2) all of the models are market-based; 3) the use
10 of multiple models adds reliability to the estimation of the common equity cost
11 rate; and 4) as demonstrated above, the prudence of using multiple cost of
12 common equity models is supported in both the financial literature and regulatory
13 precedent. Therefore, no single model should be relied upon exclusively to
14 estimate investors' required rate of return on common equity.

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

1 Table 3

2 Proxy Group
3 of Nine
4 Water
5 Companies

6		
7	Discounted Cash Flow Model	8.58%
8	Risk Premium Model	11.26
9	Capital Asset Pricing Model	9.92
10		
11	Cost of Equity Models Applied to	
12	Comparable Risk, Non-Price	
13	Regulated Companies	<u>10.98</u>
14		
15	Indicated Common Equity	
16	Cost Rate	<u>10.45%</u>
17		
18	Flotation Cost Adjustment	0.20
19		
20	Business Risk Adjustment	<u>0.25</u>
21		
22	Recommended Common Equity	
23	Cost Rate	<u>10.90%</u>
24		

25

26 Based upon these common equity cost rate results, I conclude that a

27 common equity cost rate of 10.45% is indicated for the nine water companies

28 before the flotation cost and business risk adjustments previously discussed and

29 shown on Line Nos. 6 and 7 on page 1 of Schedule PMA-1.

30 **Flotation Cost Adjustment**

31 **Q. WHAT ARE FLOTATION COSTS?**

32 A. Flotation costs are those costs associated with the sale of new issuances of

33 common stock. They include market pressure and the essential costs of issuance,

34 e.g., underwriting fees and out-of-pocket costs for printing, legal, registration, etc.

1 **Q. WHY IS IT IMPORTANT TO RECOGNIZE FLOTATION COSTS IN**
2 **THE ALLOWED COMMON EQUITY COST RATE?**

3 A. It is important because there is no other mechanism in the ratemaking paradigm
4 through which such costs can be recovered. Because these costs are real and
5 legitimate, recovery of these costs should be permitted. As noted by Morin:

6 The costs of issuing these securities are just as real as operating
7 and maintenance expenses or costs incurred to build utility plants,
8 and fair regulatory treatment must permit recovery of these
9 costs....

10 The simple fact of the matter is that common equity capital is not
11 free....[Flotation costs] must be recovered through a rate of return
12 adjustment.²⁵

13 **Q. SHOULD FLOTATION COSTS BE RECOGNIZED ONLY WHEN THERE**
14 **WAS AN ISSUANCE DURING THE TEST YEAR OR THERE IS AN**
15 **IMMINENT POST-TEST YEAR ISSUANCE OF ADDITIONAL**
16 **COMMON STOCK?**

17 A. No. As noted above, there is no mechanism to recapture such costs in the
18 ratemaking paradigm other than an adjustment to the allowed common equity cost
19 rate. Flotation costs are charged to capital accounts and are not expensed on a
20 utility's income statement. As such, flotation costs are analogous to capital
21 investments reflected on the balance sheet. Recovery of capital investments
22 relates to the expected useful lives of the investment. Since common equity has a
23 very long and indefinite life (assumed to be infinity in the standard regulatory
24 DCF model), flotation costs should be recovered through an adjustment to

²⁵ Morin 321.

1 common equity cost rate even when there has not been an issuance during the test
2 year or in the absence of an expected imminent issuance of additional shares of
3 common stock.

4 Historical flotation costs are a permanent loss of investment to the utility
5 and should be accounted for. When any company, including a utility, issues
6 common stock, flotation costs are incurred for legal, accounting, printing fees and
7 the like. For each dollar of issuing market price, a small percentage is expensed
8 and is permanently unavailable for investment in utility rate base. Since these
9 expenses are charged to capital accounts and not expensed on the income
10 statement, the only way to restore the full value of that dollar of issuing price with
11 an assumed investor required return of 10% is for the net investment, \$0.95, to
12 earn more than 10% to net back to the investor a fair return on that dollar. In
13 other words, if a company issues stock at \$1.00 with 5% in flotation costs, it will
14 net \$0.95 in investment. Assuming the investor in that stock requires a 10%
15 return on his / her invested \$1.00, or \$0.10, the company needs to earn
16 approximately 10.5% on its invested \$0.95.

17 **Q. AWC IS A WHOLLY-OWNED SUBSIDIARY OF ARTESIAN**
18 **RESOURCES CORP. IS THERE A NEED TO REFLECT FLOTATION**
19 **COSTS IN THIS SITUATION?**

20 A. Yes. With the exception of retained earnings, AWC receives needed new
21 common equity capital from the Parent, raised in the capital markets through
22 public offerings of its common stock, incurring issuance costs to do so. Denying
23 recovery of the issuance costs associated with the common equity capital that is

1 invested in AWC would penalize investors, making it more difficult to raise new
2 equity capital at a reasonable cost.

3 **Q. DO THE COMMON EQUITY COST RATE MODELS YOU HAVE USED**
4 **ALREADY REFLECT INVESTORS' ANTICIPATION OF FLOTATION**
5 **COSTS?**

6 A. No. All of these models assume no transaction costs. The literature is quite clear
7 that these costs are not reflected in market prices paid for common stocks. For
8 example, Brigham and Daves confirm this and provide the methodology utilized
9 to calculate the flotation adjustment which will be discussed subsequently²⁶ and
10 shown on pages 1 and 2 of Schedule PMA-11. In addition, Morin confirms the
11 need for such an adjustment even when no new issue is imminent as previously
12 noted.²⁷ Consequently, it is proper to include a flotation cost adjustment when
13 using cost of common equity models to estimate the common equity cost rate.

14 **Q. HOW DID YOU CALCULATE THE FLOTATION COST ALLOWANCE?**

15 A. I modified the DCF calculation to provide a dividend yield that would reimburse
16 investors for issuance costs in accordance with the previously cited literature by
17 Brigham and Daves as well as Morin. The flotation cost adjustment recognizes
18 the costs of issuing equity that were incurred by the Parent since 2004. Based
19 upon the issuance costs shown on page 1 of Schedule PMA-11, an adjustment of
20 0.20% is required to reflect the flotation costs applicable to the proxy group as
21 shown on Line No. 6 on Schedule PMA-1, page 2.

²⁶ Brigham and Daves 342.

²⁷ Morin 327-30.

1 **Business Risk Adjustment**

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

4 A. Yes. As discussed above, increased risk due to small size must be taken into
5 account in the cost of common equity consistent with the financial principles of
6 risk and return. Since the Company is smaller in size relative to the proxy group
7 measured by the estimated market capitalization of common equity for AWC,
8 whose common stock is not traded, it has greater business risk than the average
9 company in the proxy group.

10 Table 4

	<u>Market</u> <u>Capitalization(1)</u> <u>(\$ Millions)</u>	<u>Times</u> <u>Greater than</u> <u>the Company</u>
17 AWC	\$220.188	
18 Proxy Group of Nine		
19 Water Companies	1,769.332	8.0x

21 (1) From page 1 of Schedule PMA-12.

22 Because the Company's common stock is not publicly traded, I have
23 assumed that if it were, the common shares would be selling at the same market-
24 to-book ratio as the average market-to-book ratio for the proxy group, 213.0%, on
25 March 3, 2014 as shown on page 2 of Schedule PMA-12. Since my
26 recommended common equity cost rate is based upon the market data of the
27 proxy group, it is reasonable to use the market-to-book ratios of the proxy group
28 to estimate AWC's market capitalization. Hence, the Company's market
29 capitalization is estimated at \$220.188 million based upon the average market-to-
30

1 book ratio of the proxy group. In contrast, the market capitalization of the
2 average water company was \$1.769 billion on March 3, 2014, or 8.0 times the
3 size of AWC's estimated market capitalization.

4 Therefore, it is necessary to upwardly adjust the common equity cost rate
5 of 10.45% based upon the nine water companies to reflect AWC's greater risk due
6 to its smaller relative size. The determination is based upon the size premiums for
7 decile portfolios of New York Stock Exchange (NYSE), American Stock
8 Exchange (AMEX) and NASDAQ listed companies for the 1926-2012 period and
9 related data from SBBI[®] – 2013. The nine water companies fall in between the
10 5th and 6th deciles and AWC's size premium would fall in between the 9th and 10th
11 deciles if its stock were traded and sold at the March 3, 2014 average market/book
12 ratio of 213.0% experienced by the nine water companies. As shown on page 1,
13 the size premium spread between the 5th and 6th deciles and the 9th and 10th deciles
14 is 2.70%. In view of the foregoing, an upward adjustment of 0.25% to reflect
15 AWC's greater relative business risk due to its smaller size is both reasonable and
16 conservative.

17 Adding a flotation cost adjustment of 0.20% and a business risk
18 adjustment of 0.25% to the 10.45% indicated common equity cost rate based upon
19 the nine water companies before adjustment, results in a flotation cost and
20 business risk-adjusted common equity cost rate of 10.90%²⁸ which is my
21 recommended common equity cost rate.

²⁸ 10.90% = 10.45% + 0.20% + 0.25%.

1 In my opinion, a common equity cost rate of 10.90% which results in an
2 overall rate of return of 8.40% is both reasonable and conservative.

3 A common equity cost rate of 10.90% is consistent with the *Hope* and
4 *Bluefield* standards of a fair and reasonable return which ensures the integrity of
5 presently invested capital and enables the attraction of needed new capital on
6 reasonable terms. It also ensures the continued reliability and quality of service to
7 the benefit of ratepayers. Thus, it balances the interests of both ratepayers and the
8 Company.

9 A common equity cost rate of 10.90% is also reasonable in light of current
10 and expected economic and capital market conditions given the previous
11 discussion of expected rising interest rates and capital costs.

12 **Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?**

13 **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	Maryland
Arizona	Michigan
British Columbia	Missouri
California	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
Maine	

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

Alpena Power Company	Aqua New Jersey, Inc.
Apple Canyon Utility Company	Aqua North Carolina, Inc.
Applied Wastewater Management, Inc.	Aqua Ohio, Inc.
Aqua Illinois, Inc.	Aqua Virginia, Inc.
Aquarion Water Company	The Atlantic City Sewerage Company
Aquarion Water Co. of New Hampshire, Inc.	Audubon Water Company
Arizona Water Company	Bermuda Water Company
Artesian Water Company	Carolina Pines Utilities, Inc.

Carolina Water Service, Inc. of NC
Carolina Water Service, Inc. of SC
Chaparral City Water Company
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
EPCOR Water Arizona, Inc.
Greenridge Utilities, Inc.
GTE Hawaiian Telephone Inc.
The Borough of Hanover, PA
Illinois American Water Company
Indiana American Water Company
Iowa American Water Company
Jersey Central Power & Light Co.
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 Harrisburg LLC
NRG Energy Center Pittsburgh LLC
Ohio-American Water Company
Penn Estates Utilities
Pinelands Waste Water Company
Pinelands 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.
Thames Water Americas
Tidewater Utilities, Inc.
Total Environmental Services, Inc. –
Treasure Lake Water & Sewer Divisions
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 West Lafayette, Inc.
United Water West Milford, Inc.
United Water Westchester, 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.
Water Services Corp. of Kentucky
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	National Fuel Gas Distribution Corp.
Anadarko Petroleum Corporation	National Fuel Gas Supply Corp.
Arizona Water Company	Newco Waste Systems of NJ, Inc.
Arkansas-Louisiana Gas Company	New Jersey Natural Gas Company
Arkansas Western Gas Company	New Jersey-American Water Company
Artesian Water Company	New York-American Water Company
Associated Natural Gas Company	North Carolina Natural Gas Corp.
Atlantic City Electric Company	Northumbrian Water Company
Bridgeport-Hydraulic Company	Ohio-American Water Company
Cambridge Electric Light Company	Oklahoma Natural Gas Company
Carolina Power & Light Company	Orange and Rockland Utilities
Citizens Gas and Coke Utility	Paiute Pipeline Company
City of Vernon, CA	PECO Energy Company
Columbia Gas/Gulf Transmission Cos.	Penn Estates Utilities, Inc.
Commonwealth Electric Company	Penn-York Energy Corporation
Commonwealth Telephone Company	Pennsylvania-American Water Co.
Conestoga Telephone & Telegraph Co.	PG Energy Inc.
Connecticut Natural Gas Corporation	Philadelphia Electric Company
Consolidated Gas Transmission Company	Providence Gas Company
Consumers Power Company	South Carolina Pipeline Company
CWS Systems, Inc.	Southwest Gas Corporation
Delmarva Power & Light Company	Stamford Water Company
East Honolulu Community Services, Inc.	Tesoro Alaska Petroleum Company
Equitable Gas Company	Tesoro Refining & Marketing Co.
Equitrans, Inc.	United Telephone of New Jersey
Florida Power & Light Company	United Utility Companies
Gary Hobart Water Company	United Water Arkansas, Inc.
Gasco, Inc.	United Water Delaware, Inc.
GTE Arkansas, Inc.	United Water Idaho, Inc.
GTE California, Inc.	United Water Indiana, Inc.
GTE Florida, Inc.	United Water New Jersey, Inc.
GTE Hawaiian Telephone	United Water New York, Inc.
GTE North, Inc.	United Water Pennsylvania, Inc.
GTE Northwest, Inc.	United Water Virginia, Inc.
GTE Southwest, Inc.	United Water West Lafayette, Inc.
Great Lakes Gas Transmission L.P.	Utilities, Inc. of Pennsylvania
Hawaiian Electric Company	Utilities, Inc. - Westgate
Hawaiian Electric Light Company	Vista-United Telecommunications Corp.
IES Utilities Inc.	Washington Gas Light Company
Illinois Power Company	Washington Natural Gas Company
Interstate Power Company	Washington Water Power Corporation
Interstate Power & Light Co.	Waste Management of New Jersey – Transfer Station A
Iowa Electric Light and Power Company	Wellsboro Electric Company
Iowa Southern Utilities Company	Western Reserve Telephone Company
Kentucky-West Virginia Gas Company	Western Utilities, Inc.
Lockhart Power Company	Wisconsin Power and Light Company
Middlesex Water Company	
Milwaukee Metropolitan Sewer District	
Mountaineer Gas 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:

Standard and Poor's Capital IQ Client Advisory Board
Advisory Council – New Mexico State University Center for Public Utilities
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:

“The Return on Equity Debate: Its Impact on Budgeting and Investment and Wall Street's View of Risk”, National Association of Water Companies – 2014 Indiana Chapter Water Summit, March 13, 2014, Indianapolis, IN.

“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 13-18, 2013, Instructor (Cost of Capital).

“Regulated Utilities – Access to Capital”, (panelist) - Innovation: Changing the Future of Energy, 2013 Deloitte Energy Conference, Deloitte Center for Energy Solutions, May 22, 2013, Washington, DC.

“Comparative Evaluation of the Predictive Risk Premium Model, the Discounted Cash Flow Model and the Capital Asset Pricing Model for Estimating the Cost of Common Equity”, (co-presenter with Richard A. Michelfelder, Ph.D., Rutgers University) – Advanced Workshop in Regulation and Competition, 32nd Annual Eastern Conference of the Center for Research in Regulated Industries (CRRRI), May 17, 2013, Rutgers University, Shawnee on the Delaware, PA.

“Decoupling: Impact on the Risk and Cost of Common Equity of Public Utility Stocks”, before the Society of Utility and Regulatory Financial Analysts: 45th 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, 30th 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: 43rd 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, 29th 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: 42nd 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, 28th 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: 41st 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:

"Empirical Tests of the Generalized Consumption Asset Pricing Model for Estimating the Cost of Common Equity Capital for Public Utilities", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University, Dylan W. D'Ascendis, (Working Paper).

"Comparative Evaluation of the Predictive Risk Premium ModelTM, 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.

"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.

Exhibit No. 1
Artesian Water Company, Inc.
Docket No. _____

BEFORE THE
DELAWARE PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
PRINCIPAL
AUS CONSULTANTS

ON BEHALF OF

ARTESIAN WATER COMPANY, INC.

APRIL 11, 2014

Artesian Water Company, Inc.
Table of Contents
to the Financial Supporting Exhibit
of Pauline M. Ahern, CRRA

	<u>Schedule</u>
Summary of Cost of Capital and Fair Rate of Return	PMA-1
Capital Intensity and Depreciation Rates for Artesian Water Company, Inc. and the AUS Utility Reports Companies	PMA-2
Financial Profile of the Artesian Water Company, Inc. and the Proxy Group of Nine Water Companies	PMA-3
Capitalization and Capital Structure Ratios	PMA-4
Composite Interest Rate of Long-Term Debt	PMA-5
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model	PMA-6
Current Institutional Holdings	PMA-7
Indicated Common Equity Cost Rate Using the Risk Premium Model	PMA-8
Indicated Common Equity Cost Rate Using the Capital Asset Pricing Model	PMA-9
Cost of Common Equity Models Applied to Comparable Risk Non-Price Regulated Companies to the Proxy Group of Nine Water Companies and Basis of Selection	PMA-10
Calculation for Flotation Cost Adjustment	PMA-11
Estimated Market Capitalization for Artesian Water Company, Inc., and the Proxy Group of Nine Water Companies	PMA-12

Artesian Water Company
Summary of Cost of Capital and Fair Rate of Return
Based upon the Estimated Capital Structure at September 30, 2014

<u>Type of Capital</u>	<u>Ratios (1)</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	49.46%	5.84% (2)	2.89%
Common Equity	<u>50.54%</u>	10.90% (3)	<u>5.51%</u>
Total	<u>100.00%</u>		<u>8.40%</u>

Notes:

- (1) From Schedule PMA-4.
- (2) From Schedule PMA-5.
- (3) Based upon informed judgment from the entire study, the principal results of which are summarized on page 2.

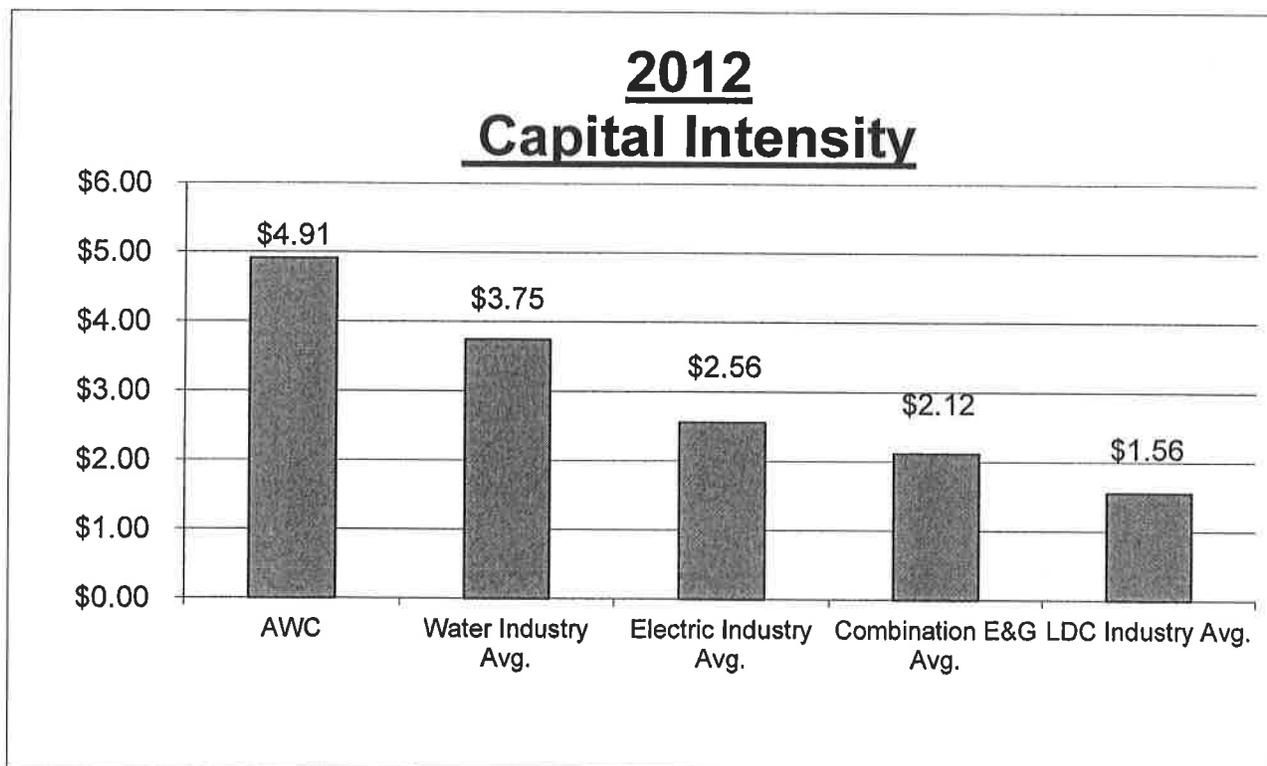
Artesian Water Company
Brief Summary of Common Equity Cost Rate

<u>No.</u>	<u>Principal Methods</u>	<u>Proxy Group of Nine Water Companies</u>
1.	Discounted Cash Flow Model (DCF) (1)	8.58 %
2.	Risk Premium Model (RPM) (2)	11.26
3.	Capital Asset Pricing Model (CAPM) (3)	9.92
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	<u>10.98</u>
5.	Indicated Common Equity Cost Rate before Adjustment for Business Risks	10.45 %
6.	Flotation Cost Adjustment (5)	0.20
7.	Business Risk Adjustment (6)	<u>0.25</u>
8.	Recommended Common Equity Cost Rate	<u><u>10.90 %</u></u>

- Notes: (1) From page 1 of Schedule PMA-6.
(2) From page 1 of Schedule PMA-8.
(3) From page 1 of Schedule PMA-9.
(4) From page 1 of Schedule PMA-10.
(5) From Schedule PMA-11.
(6) Business risk adjustment to reflect AWC's greater business risk due to its small size relative to the proxy group as detailed in Ms. Ahern's accompanying direct testimony.

Artesian Water Company
 2012 Capital Intensity of Artesian Water Company and
 AUS Utility Reports Utility Companies Industry Averages

	Average Net Plant (\$ mill)	Average Operating Revenue (\$ mill)	Capital Intensity (\$)	Capital Intensity AWC v. Other Industries (times)
Artesian Water Company	\$ 312.86	\$ 63.66	\$ 4.91	--
Water Industry Average	\$ 2,176.28	\$ 581.03	\$ 3.75	130.93%
Electric Industry Average	\$ 15,387.49	\$ 6,000.19	\$ 2.56	191.80%
Combination Elec. & Gas Industry Average	\$ 13,488.39	\$ 6,365.63	\$ 2.12	231.60%
Gas Distribution Average	\$ 3,348.51	\$ 2,149.69	\$ 1.56	314.74%



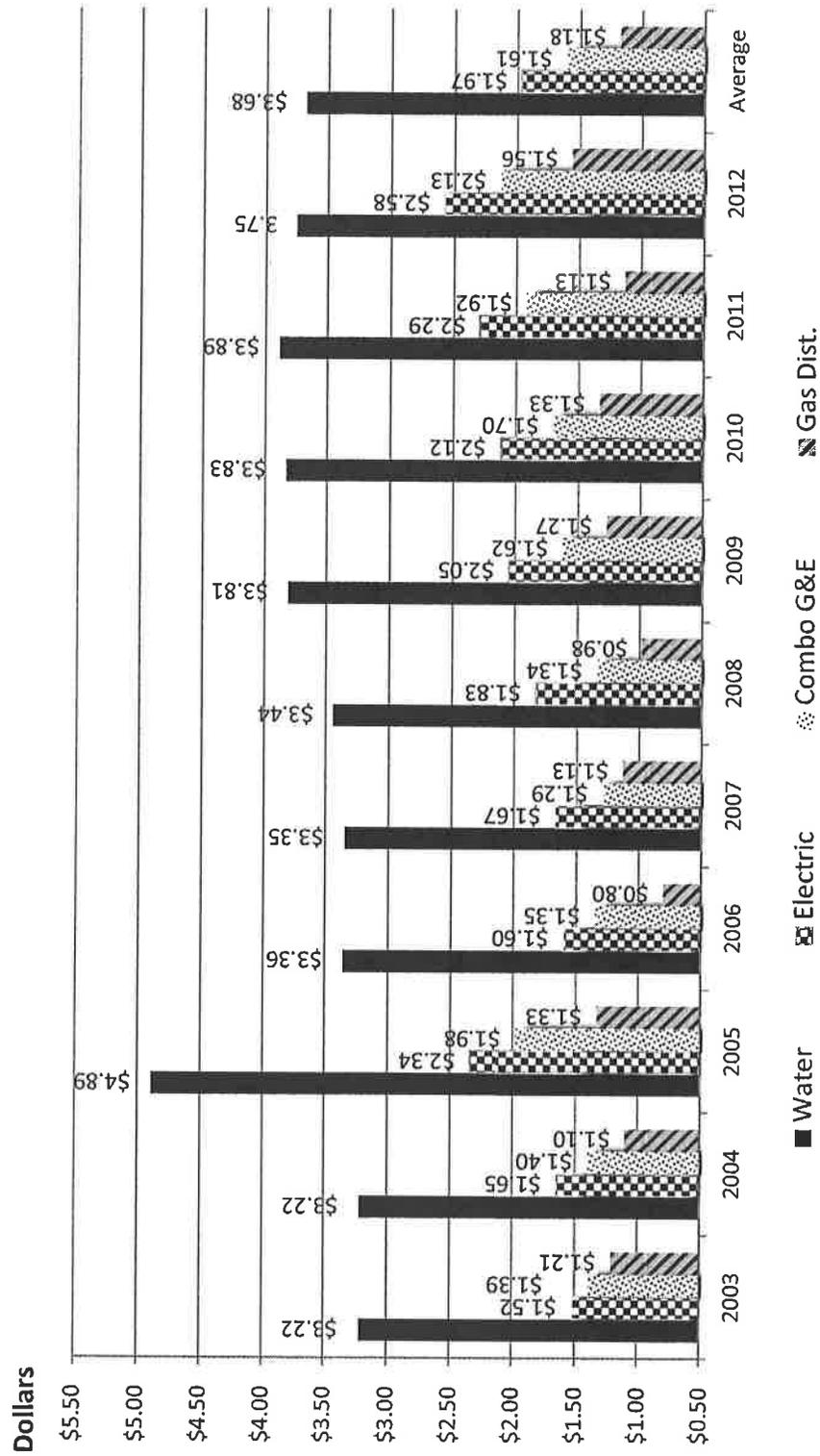
Notes:
 Capital Intensity is equal to Net Plant divided by Total Operating Revenue.

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

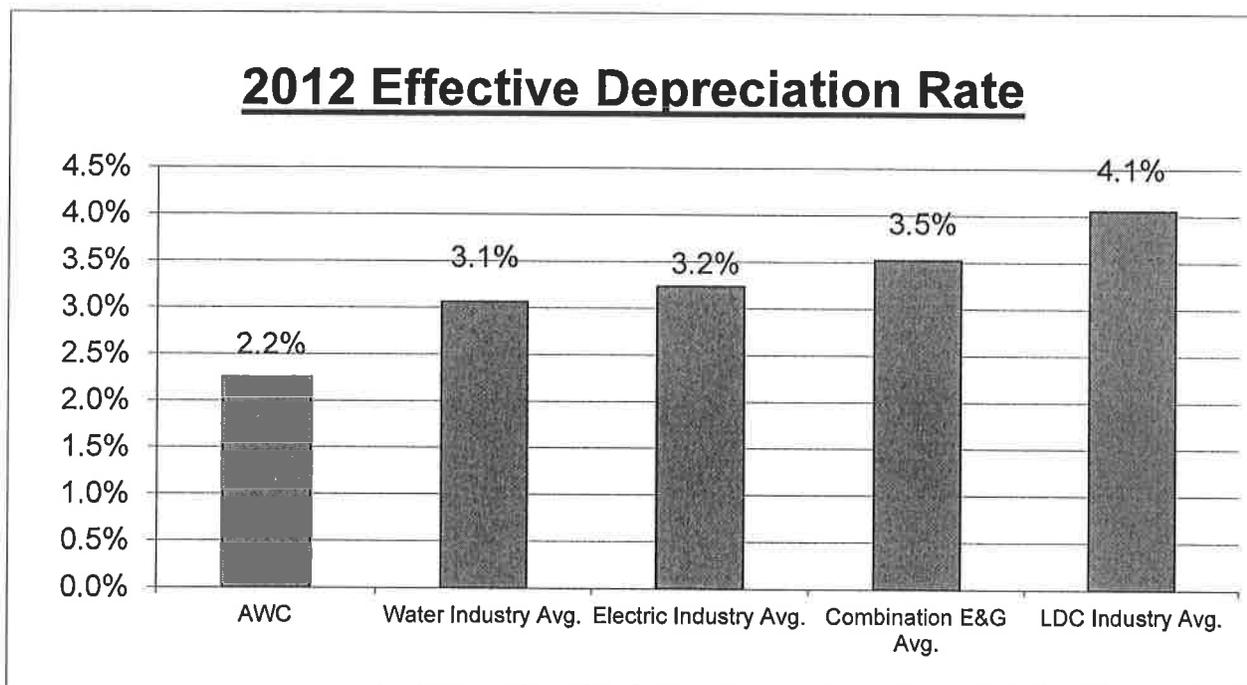
Capital Intensity of the AUS Utility Reports Companies 2003 - 2012



Source of Information: SEC Edgar I-Metrix Online Database

Artesian Water Company
 2012 Depreciation Rate of Artesian Water Company and
 AUS Utility Reports Utility Companies Industry Averages

	Depreciation Depletion & Amort. Expense (\$ mill)	Average Total Gross Plant Less CWIP (\$ mill)	Depreciation Rate (%)	Depreciation Rate AWC v. Other Industries (times)
Artesian Water Company	\$ 7.36	\$ 327.62	2.2%	--
Water Industry Average	\$ 73.48	\$ 2,397.71	3.1%	70.97%
Electric Industry Average	\$ 642.42	\$ 19,834.47	3.2%	68.75%
Combination Elec. & Gas Industry Average	\$ 659.14	\$ 18,702.81	3.5%	62.86%
LDC Gas Distribution Industry Average	\$ 175.22	\$ 4,318.74	4.1%	53.66%



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.

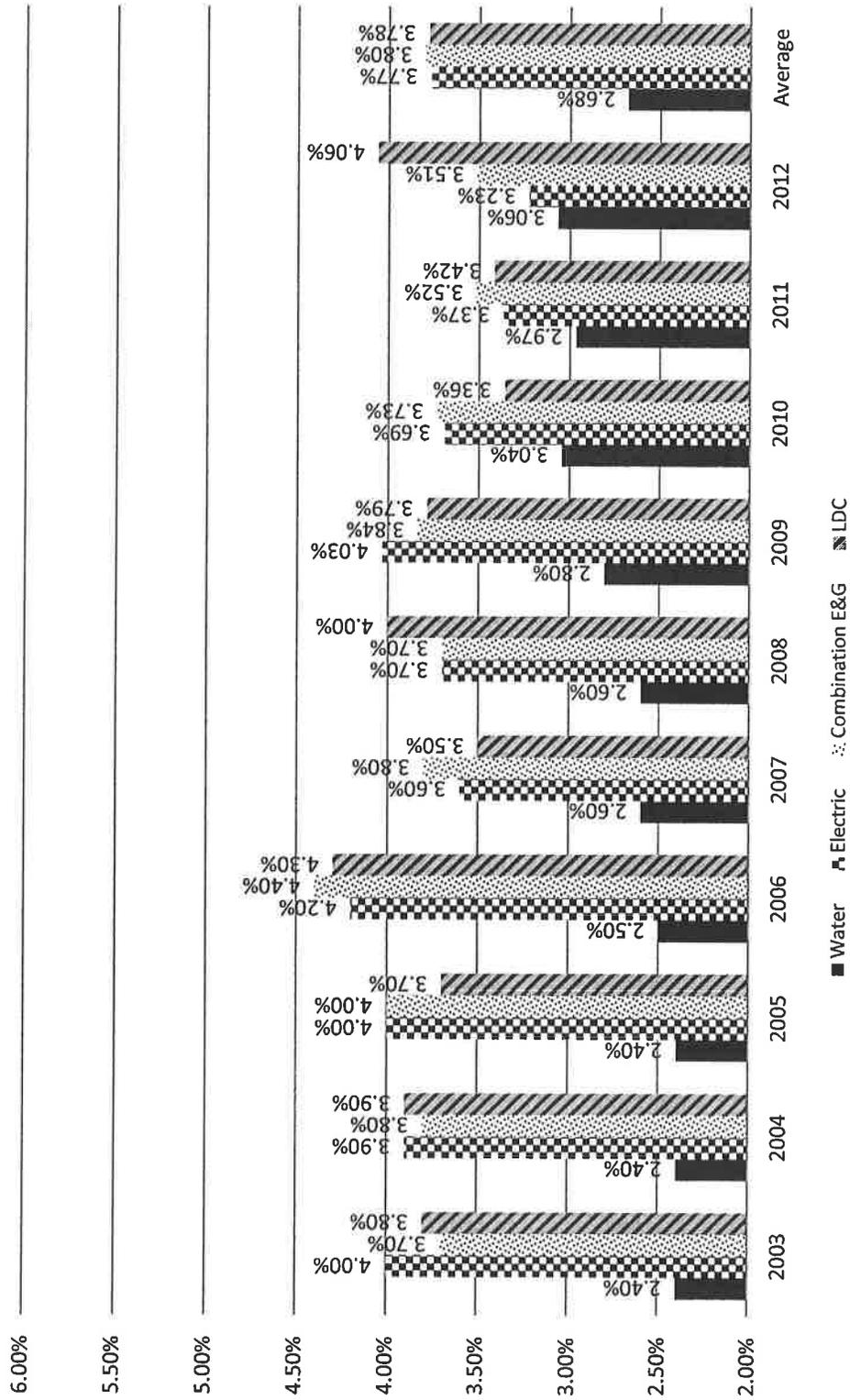
Source of Information:

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

AUS Utility Report - May 2013
 Published by AUS Consultants

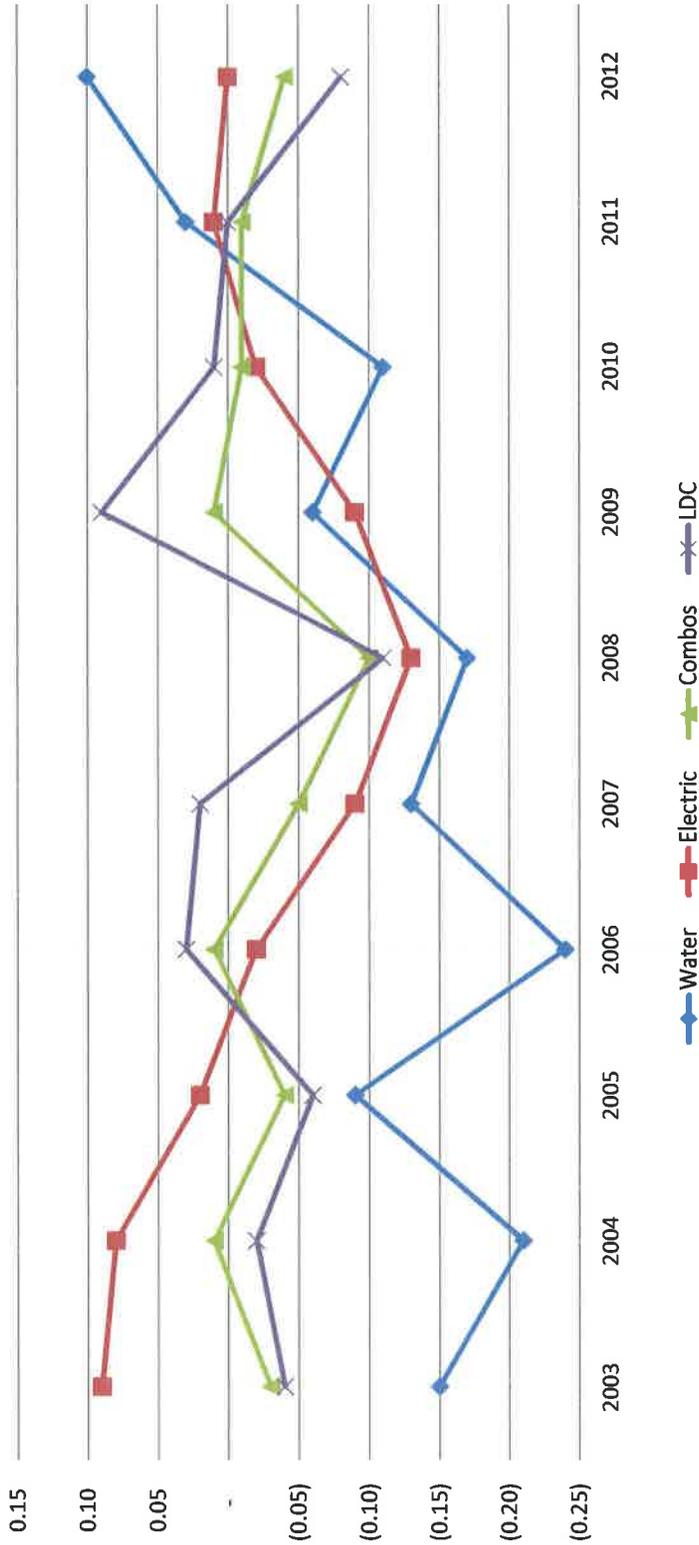
Company Provided Information

Depreciation Rates for the AUS Utility Reports Companies 2003-2012



Source of Information: SEC Edgar I-Metrix Online

Free Cash Flow / Operating Revenues for the AUS Utility Reports Companies 2003-2012



Artesian Water Company
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	\$ 210.743	\$ 208.576	\$ 189.974	\$ 188.608	\$ 187.523	
SHORT-TERM DEBT	-	-	5.588	7.434	2.344	
TOTAL-CAPITAL EMPLOYED	<u>\$ 210.743</u>	<u>\$ 208.576</u>	<u>\$ 195.562</u>	<u>\$ 196.042</u>	<u>\$ 189.867</u>	
<u>INDICATED AVERAGE CAPITAL COST RATES (2)</u>						
TOTAL DEBT	6.31 %	6.38 %	6.27 %	6.31 %	6.30 %	
<u>CAPITAL STRUCTURE RATIOS</u>						
						5 YEAR AVERAGE
<u>BASED ON TOTAL PERMANENT CAPITAL:</u>						
LONG-TERM DEBT	50.95 %	51.62 %	55.51 %	56.10 %	56.93 %	54.22 %
PREFERRED STOCK	-	-	-	-	-	-
COMMON EQUITY	<u>49.05</u>	<u>48.38</u>	<u>44.49</u>	<u>43.90</u>	<u>43.07</u>	<u>45.78</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>BASED ON TOTAL CAPITAL:</u>						
TOTAL DEBT, INCLUDING SHORT-TERM	50.95 %	51.62 %	56.78 %	57.77 %	57.46 %	54.92 %
PREFERRED STOCK	-	-	-	-	-	-
COMMON EQUITY	<u>49.05</u>	<u>48.38</u>	<u>43.22</u>	<u>42.23</u>	<u>42.54</u>	<u>45.08</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>DIVIDEND PAYOUT RATIO</u>	73.45 %	89.43 %	76.05 %	84.58 %	84.87 %	81.68 %
<u>RATE OF RETURN ON AVERAGE COMMON EQUITY</u>	9.13 %	7.44 %	8.66 %	8.50 %	7.62 %	8.27 %
<u>TOTAL DEBT / EBITDA (3)</u>	3.62 x	4.24 x	4.32 x	4.57 x	4.93 x	4.34 x
<u>TOTAL DEBT / TOTAL CAPITAL</u>	50.95 %	51.62 %	56.78 %	57.77 %	57.46 %	54.92 %

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 as a percentage of EBITDA (Earnings before Interest, Income Taxes, Depreciation and Amortization)

Source of Information: Artesian Water Company's Annual Reports to the Delaware Public Service Commission

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>CAPITAL STRUCTURE RATIOS</u>						
<u>BASED ON TOTAL PERMANENT CAPITAL:</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	<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>
<u>BASED ON TOTAL CAPITAL:</u>						
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	5.75 %	5.56 %	5.85 %	4.10 %	2.53 %	4.76 %
MARKET / AVERAGE BOOK RATIO	173.44	162.35	156.81	145.24	163.63	160.29
DIVIDEND YIELD	3.50	3.76	3.96	4.40	4.20	3.96
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 %
<u>TOTAL DEBT / TOTAL CAPITAL</u>	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

	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>5 YEAR AVERAGE</u>
<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>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>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>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>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>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>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	56.45	55.82	55.02	51.41	49.68	53.48
Total Capital	<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>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>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>					

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

Artesian Water Company
Projected Yest Year Capital Structure

<u>Line No.</u>	<u>Type of Capital</u>	<u>Test Year Balance</u>	<u>Ratio</u>
1	First Mortgage Bonds	\$103,870,493	49.46%
2	Common Equity:		
3	Common Stock	79,258,479	
4	Retained Earnings	<u>26,888,794</u>	
5	Total Equity	106,147,273	50.54%
6	Total Capitalization	<u>\$210,017,766</u>	

Source of Information: Schedule DLV-4B.

Artesian Water Company
Calculation of the Effective Cost of Long-Term Debt

Line No.	Series	Issuance	Maturity	Years	Rate	Rebate	Adjusted Int Rate	Principal Amount	Issuance Costs	Net Proceeds	Proceeds Ratio	Effective Rate
1	O	1/1/2001	1/1/2021	20	8.17%		8.17%	20,000,000	497,375	19,502,625	97.51%	8.38%
2	P	9/1/2002	9/1/2022	20	6.58%	242,024	5.61%	25,000,000	127,546	24,872,454	99.49%	5.64%
3	Q	12/5/2003	12/14/2043	40	4.75%		4.75%	15,400,000 (1)	867,718	14,532,282	94.37%	5.03%
4	R	8/1/2005	12/31/2028	23	5.96%	242,024	4.99%	25,000,000	1,134,246	23,865,754	95.46%	5.23%
5	S	12/1/2008	12/31/2033	25	6.73%	145,215	5.76%	15,000,000	111,929	14,888,071	99.25%	5.81%
6	SRF	1/1/2001	1/1/2021	20	4.48%		4.48%	4,307,144	10,248	4,296,896	99.76%	4.49%
7	SRF	8/1/2003	7/31/2023	20	3.57%		3.57%	1,374,372 (2)	46,665	1,327,707	96.60%	3.70%
8	SRF	11/7/2003	11/1/2025	20	3.64%		3.64%	2,184,700 (3)	83,740	2,100,960	96.17%	3.79%
9	SRF	2/2/2011	2/1/2031	20	3.41%		3.41%	2,993,211	62,385	2,930,826	97.92%	3.48%
10	SRF	7/15/2011	7/1/2032	20	3.40%		3.40%	2,536,589 (4)	43,993	2,492,596	98.27%	3.46%

Notes:

- (1) Beginning 1/1/2014 the Q Bond has an insurance premium of \$26,950 (\$840,768 +\$26,950 = \$867,718)
- (2) The 3.57% loan had an original filing amount of \$2,900,285. Actual proceeds are identified above.
- (3) The 3.64% loan had an original filing amount of \$5,456,495. Actual proceeds are identified above.
- (4) The 3.40% loan had an original filing amount of \$3,606,720. The balance shown represents the est proceeds to be received.

Source of Information: Schedule DLV-4C

Artesian Water Company
Calculation of the Embedded Cost of Debt

Line No.	Series	Date of Maturity	Interest Rate	Outstanding Balance	Percent to Total	Effective Rate	Weighted Cost
1	O	1/1/2021	8.17%	20,000,000	19.25%	8.38%	1.61%
2	P	9/1/2022	6.58%	25,000,000	24.07%	5.64%	1.36%
3	Q	12/14/2043	4.75%	15,400,000	14.83%	5.03%	0.75%
4	R	12/31/2028	5.96%	25,000,000	24.07%	5.23%	1.26%
5	S	12/31/2033	6.73%	10,350,000	9.96%	5.81%	0.58%
6	SRF	1/1/2021	4.48%	1,467,202	1.41%	4.49%	0.06%
7	SRF	7/31/2023	3.57%	642,847	0.62%	3.70%	0.02%
8	SRF	11/1/2025	3.64%	1,202,970	1.16%	3.79%	0.04%
9	SRF	2/1/2031	3.41%	2,451,591	2.36%	3.48%	0.08%
10	SRF	7/1/2032	3.40%	2,355,882	2.27%	3.46%	0.08%
				<u>103,870,492</u>			<u>5.84%</u>

Source of Information: Company Provided

Artesian Water Company
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>
<u>Proxy Group of Nine Water Companies</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)
American States Water Co.	2.90 %	7.00 %	1.00 %	1.00 %	1.00 %	2.50 %	2.94 %	5.44 %
American Water Works Co., Inc.	2.67	8.50	8.90	7.20	6.85	7.86	2.77	10.63
Aqua America, Inc.	2.58	10.00	7.40	5.90	5.80	7.28	2.67	9.95
Artesian Resources Corp.	3.76	NA	NA	NA	4.00	4.00	3.84	7.84
California Water Service Group	2.89	7.00	6.00	6.00	6.00	6.25	2.98	9.23
Connecticut Water Service, Inc.	2.93	6.50	NA	5.00	5.00	5.50	3.01	8.51
Middlesex Water Company	3.75	4.00	NA	NA	2.70	3.35	3.81	7.16
SJW Corporation	2.62	7.50	NA	NA	14.00	10.75	2.76	13.51
York Water Company	2.80	6.50	NA	NA	4.90	5.70	2.88	<u>8.58</u>
Average								<u>8.98</u> %
Median								<u>8.58</u> %

NA= Not Available
NMF = Not Meaningful Figure

Notes:

- (1) Indicated dividend at 03/03/2014 divided by the average closing price of the last 60 trading days ending 03/03/2014 for each company.
- (2) From pages 3 through 11 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., $2.90\% \times (1 + (1/2 \times 2.50\%)) = 2.94\%$.
- (5) Column 6 + column 7.

Source of Information:

Value Line Investment Survey
www.reuters.com Downloaded on 03/04/2014
www.zacks.com Downloaded on 03/04/2014
www.yahoo.com Downloaded on 03/04/2014

Artesian Water Company
Hypothetical Example of the Inadequacy of
A DCF Return Rate Related to Book Value
When Market Value is Greater / Less than Book Value

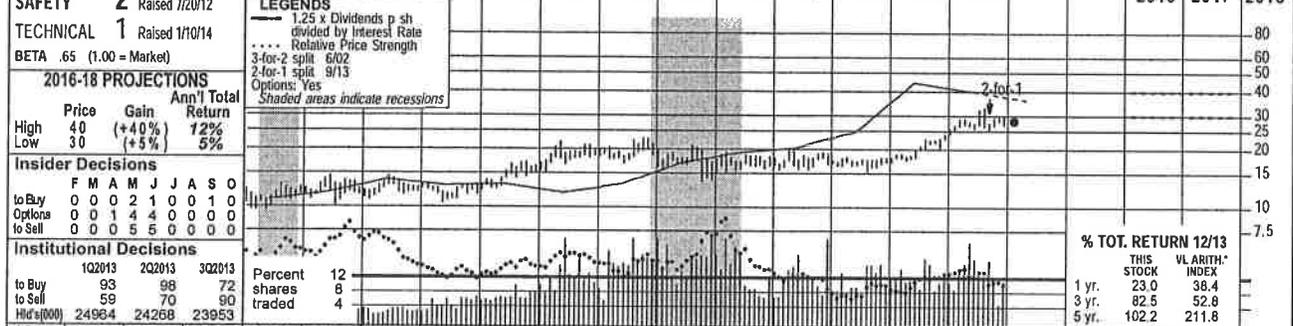
<u>Line No.</u>		<u>Based on the Proxy Group of Nine Water Companies</u>	
		<u>Column A</u>	<u>Column B</u>
		<u>Market Value</u>	<u>Book Value</u>
1.	Per Share	\$ 27.34 (1)	\$ 13.57 (2)
2.	DCF Cost Rate (3)	8.98%	8.98%
3.	Return in Dollars (4)	\$ 2.455	\$ 1.219
4.	Dividends (5)	\$ 0.839	\$ 0.839
5.	Growth in Dollars (6)	\$ 1.616	\$ 0.380
6.	Return on Market Value (7)	8.98%	4.46%
7.	Rate of Growth on Market Value (8)	5.91%	1.39%

Notes:

- (1) Average price of the proxy group of nine water companies as shown on page 2 of Schedule PMA-12.
- (2) Average book value of the proxy group of nine water companies as shown on page 2 of Schedule PMA-12.
- (3) Average DCF cost rate from page 1 of this Schedule.
- (4) Line 1 x Line 2.
- (5) Dividends are based on a 3.07% adjusted dividend yield which is the average adjusted dividend yield of the proxy group of nine water companies.
- (6) Line 3 - Line 4.
- (7) Line 3 / Line 1.
- (8) Line 7 / Line 1.

AMER. STATES WATER NYSE:AWR

RECENT PRICE **28.15** P/E RATIO **18.5** (Trailing: 17.9) RELATIVE P/E RATIO **0.99** DIV'D YLD **3.1%** VALUE LINE



1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	16-18	
5.72	5.51	6.45	6.08	6.53	6.89	6.99	6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.20	12.50	Revenues per sh	13.50
.92	1.02	1.13	1.10	1.26	1.27	1.04	1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.50	2.65	"Cash Flow" per sh	2.95
.52	.54	.60	.64	.67	.67	.39	.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.55	1.60	Earnings per sh A	1.80
.42	.42	.43	.43	.43	.44	.44	.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.76	Div'd Decl'd per sh B	1.00
1.29	1.56	2.15	1.51	1.59	1.34	1.88	2.51	2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.30	2.25	Cap'l Spending per sh	2.50
5.62	5.74	5.91	6.37	6.61	7.02	6.98	7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.55	13.25	Book Value per sh	16.25
26.87	26.87	26.87	30.24	30.24	30.36	30.42	33.50	33.60	34.10	34.46	34.80	37.06	37.26	37.70	38.53	39.00	40.00	Common Shs Outst'g C	43.00
14.5	15.5	17.1	15.9	16.7	18.3	31.9	23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	18.4	18.4	Avg Ann'l P/E Ratio	19.5
.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	.91	1.03	1.03	Relative P/E Ratio	1.30
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%	2.7%	2.7%	Avg Ann'l Div'd Yield	3.1%

CAPITAL STRUCTURE as of 9/30/13
 Total Debt \$335.5 mill. Due in 5 Yrs \$10.6 mill.
 LT Debt \$332.1 mill. LT Interest \$16.0 mill.
 (LT interest earned: 5.2x: total interest coverage: 4.9x) (41% 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 38,717,549 shs. as of 11/1/13

MARKET CAP: \$1.1 billion (Mid Cap)

CURRENT POSITION

	2011	2012	9/30/13
Cash Assets	1.3	23.5	26.2
Other	184.3	160.5	176.4
Current Assets	185.6	184.0	202.6
Accts Payable	37.9	40.6	62.9
Debt Due	3	3.3	3.4
Other	66.2	49.8	49.4
Current Liab.	104.4	93.7	115.7
Fix. Chg. Cov.	401%	442%	450%

ANNUAL RATES

	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	5.5%	7.5%	3.0%
"Cash Flow"	6.5%	9.0%	4.5%
Earnings	6.5%	11.5%	7.0%
Dividends	3.0%	4.5%	10.0%
Book Value	5.0%	5.5%	7.0%

QUARTERLY REVENUES (\$ MILL.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
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	110.5	120.7	130.9	112.9	475
2014	115	125	140	120	500

EARNINGS PER SHARE A

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	.23	.24	.31	.33	1.11
2011	.19	.34	.42	.17	1.12
2012	.27	.40	.49	.26	1.41
2013	.35	.43	.53	.24	1.55
2014	.33	.42	.55	.30	1.60

QUARTERLY DIVIDENDS PAID B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	.13	.13	.13	.13	.52
2011	.13	.14	.14	.14	.55
2012	.14	.14	.1775	.1775	.64
2013	.1775	.1775	.2025	.2025	.76
2014					

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 (8/11). 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 core water utility business probably just completed a highly profitable 2013. Through the September quarter, Golden Gate Water's contribution to share net rose a whopping 28%. This occurred despite higher administrative and purchased water costs and a smaller contribution from the company's nonutility business. These expenses were more than offset by increased revenue resulting from the implementation of higher rates.

We are relatively bullish on American States' nonutility business. The company runs the water systems at nine U.S. military bases through its ASUS subsidiary. There is ongoing debate on Wall Street regarding the future growth in this sector. Some feel that the company's earnings peaked in 2012 when they contributed almost \$0.40 a share to the bottom line. We are on the other side of this argument. American States' long experience in running these operations will enable it to win more bids from army bases through 2016-2018, in our opinion. Currently, the utility is involved in the bidding for 10 installations that are looking to outsource

these operations. Indeed, annual profits from this sector could grow to as high as \$0.50 a share over the next three- to five-year period.

Finances are healthy. Internally generated funds should be sufficient to cover American States' construction budget for the foreseeable future. As a result, we think that the strong equity-to-total capital ratio should remain at a very solid 57%. Reflecting this is the company's Financial Strength rating of an A, the highest grade of any water utility.

The company's long-term dividend growth prospects are robust as well. The equity's yield is close to the norm for the water utility group. However, its dividend growth prospects of 9% through 2016-2018 are significantly above the industry average. Thus, investors currently don't have to pay as high a premium for the stock as they had to in the past. And, while the nonutility operations have lowered the company's earnings predictability compared to its peers, we think the stock is still attractive on a risk-return basis.

James A. Flood
January 17, 2014

(A) Primary earnings. Excludes nonrecurring gains/(losses): '04, 7¢; '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢); '11, 10¢. Next earnings report due early February. Quarterly egs. may not add due to rounding.
 (B) Dividends historically paid in early March, June, September, and December. = Div'd reinvestment plan available.
 (C) In millions, adjusted for splits.

Company's Financial Strength A
 Stock's Price Stability 85
 Price Growth Persistence 75
 Earnings Predictability 90

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AMERICAN WATER NYSE-AWK

RECENT PRICE **41.71** P/E RATIO **18.1** (Trailing: 20.5; Median: NMF) RELATIVE P/E RATIO **0.97** DIV'D YLD **2.8%** VALUE LINE

TIMELINESS 3 Raised 10/4/13
SAFETY 3 New 7/25/08
TECHNICAL 3 Lowered 8/9/13
BETA .65 (1.00 = Market)

2016-18 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+55%)	17%
Low	45	(+10%)	5%

Insider Decisions

	F	M	A	M	J	J	A	S	O
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	3	0	0	0	0	0

Institutional Decisions

	1Q2013	2Q2013	3Q2013
to Buy	191	165	197
to Sell	186	209	176
Hold's (000)	145912	144834	144172

LEGENDS
1.00 x Dividends p sh divided by Interest Rate
Relative Price Strength
Options: Yes
Shaded areas indicate recessions

Target Price Range
2016 2017 2018
80
60
50
40
30
25
20
15
10
7.5

% TOT. RETURN 12/13
THIS STOCK INDEX
1 yr. 16.1 38.4
3 yr. 82.1 52.8
5 yr. 139.0 211.8

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 ^E	2007	2008	2009	2010	2011	2012	2013	2014	VALUE LINE PUB. LLC	16-18	
--	--	--	--	--	--	--	--	--	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.15	17.20	Revenues per sh	20.00	
--	--	--	--	--	--	--	--	--	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.45	4.70	"Cash Flow" per sh	5.25	
--	--	--	--	--	--	--	--	--	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.20	2.40	Earnings per sh ^A	2.90	
--	--	--	--	--	--	--	--	--	--	--	.40	.82	.86	.91	.96	1.06	1.20	Div'd Decl'd per sh ^{B=C}	1.40	
--	--	--	--	--	--	--	--	--	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.15	5.50	Cap'l Spending per sh	5.50	
--	--	--	--	--	--	--	--	--	23.86	28.39	25.64	22.91	23.59	24.11	25.10	26.15	27.50	Book Value per sh ^D	31.85	
--	--	--	--	--	--	--	--	--	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.50	180.00	Common Shs Outst'g ^C	185.00	
--	--	--	--	--	--	--	--	--	--	--	18.9	15.6	14.6	16.8	16.7	16.6	18.0	Avg Ann'l P/E Ratio	18.5	
--	--	--	--	--	--	--	--	--	--	--	1.14	1.04	.93	1.05	1.07	1.04	1.04	Relative P/E Ratio	1.25	
--	--	--	--	--	--	--	--	--	--	--	1.9%	4.2%	3.8%	3.1%	2.7%	2.6%	2.6%	Avg Ann'l Div'd Yield	2.7%	
CAPITAL STRUCTURE as of 9/30/13										2093.1	2214.2	2336.9	2440.7	2710.7	2668.2	2876.9	2885	3100	Revenues (\$mill)	3700
Total Debt \$5677.2 mil. Due In 5 Yrs \$1034.0 mil.										d155.8	d342.3	187.2	209.9	267.8	304.9	375.0	390	430	Net Profit (\$mill)	535
LT Debt \$5174.1 mil. LT Interest \$301.0 mil.										--	--	37.4%	37.9%	40.4%	39.5%	40.7%	38.5%	38.0%	Income Tax Rate	38.0%
(Total Interest coverage: 4.4x) (53% of Cap'l)										--	--	--	--	--	12.5%	6.2%	4.0%	8.0%	AFUDC % to Net Profit	8.0%
Leases, Uncapitalized: Annual rentals \$28.1 mil.										56.1%	50.9%	53.1%	56.9%	56.8%	55.7%	53.8%	52.5%	52.0%	Long-Term Debt Ratio	51.5%
Pension Assets \$1157.7 mil.										43.9%	49.1%	46.9%	43.1%	43.2%	44.2%	46.0%	47.5%	48.0%	Common Equity Ratio	48.5%
Oblig. \$1621.2 mil.										8692.8	9245.7	8750.2	9289.0	9561.3	9580.3	9652.7	9880	10400	Total Capital (\$mill)	12200
Pfd Stock \$17.6 mil. Pfd Div'd \$.7 mil										8720.6	9318.0	9991.8	10524	11059	11021	11739	12250	12750	Net Plant (\$mill)	13550
Common Stock 178,274,197 shs. as of 10/31/13										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	9.0%
CURRENT POSITION 2011 2012 9/30/13										NMF	NMF	3.0%	1.8%	2.8%	3.5%	4.6%	4.5%	4.5%	Return on Com Equity	9.0%
(\$MILL)										--	--	34%	65%	56%	52%	45%	48%	50%	Retained to Com Eq	4.5%
Cash Assets 14.2 24.4 32.4										--	--	--	--	--	52%	45%	48%	50%	All Div'ds to Net Prof	48%
Other 1383.5 475.0 580.8										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. It's 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; Jeffery Sterba. Chairman; George Mackenzie. Address: 1025 Laurel Oak Road, Voorhees, NJ 08043. Telephone: 856-346-8200. Internet: www.amwater.com.										
Current Assets 1397.7 499.4 613.2										American Water Works dwarfs most of its peers. The company is larger by a wide margin than any of the other investor-owned utilities included in the industry group followed by <i>Value Line</i> . Indeed, the utility alone accounts for approximately 50% of the entire industry when measured by market capitalization.										
Accts Payable 243.7 279.6 209.8										Size matters in the water utility business. Currently, the market is made up of tens of thousands of small water utilities run by local municipalities. Due to financial pressures, most of these systems have not been properly maintained and are in dire need of modernization. Thus, it is more advantageous for these smaller entities to sell their operations to concerns that have both the financial wherewithal and managerial experience required to address the problems. American Water has added almost 20 new acquisitions over each of the past two years.										
Debt Due 543.9 385.9 503.1										A decent amount of American Water's profit growth comes from the successful integration of acquisitions. With its large infrastructure, the company has consistently been able to reduce costs and squeeze efficiencies out of its purchases.										
Other 701.5 329.3 428.6										Excellent cost controls help American Water maintain good relationships with regulators. All utilities are exposed to the risk of harsh treatment by state authorities. By managing expenses so rigorously, the company has been able to considerably reduce the chance of this happening.										
Current Liab. 1489.1 994.8 1141.5										American Water offers good value vis-a-vis other water utilities. Historically, water stocks with above-average dividend growth prospects have much lower current yields than similar water stocks with sub-par dividend potential. (This is the premium that investors must pay for greater future cash flows.) In the recent past, the yield spreads between the high-and low-quality stocks has narrowed considerably. Thus, this is a good time to take positions in industry leaders such as American Water because they are cheap on a relative value basis.										
Fix. Chg. Cov. 256% 292% 300%										<i>James A. Flood</i> January 17, 2014										

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	--	3.0%	4.0%
"Cash Flow"	--	NMF	5.5%
Earnings	--	--	8.5%
Dividends	--	--	7.5%
Book Value	--	-1.5%	4.5%

QUARTERLY REVENUES (\$mill.)

Calendar	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	636.1	724.3	829.2	695.4	2885
2014	675	775	900	750	3100

EARNINGS PER SHARE ^A

Calendar	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	.32	.57	.84	.47	2.20
2014	.35	.65	1.00	.40	2.40

QUARTERLY DIVIDENDS PAID ^{B=C}

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	.21	.21	.22	.22	.86
2011	.22	.23	.23	.23	.91
2012	.23	.23	.25	.25	.96
2013	.25	.25	.28	.28	1.06
2014					

(A) Diluted earnings. Excludes nonrecurring losses: '08, \$4.62; '09, \$2.63; '11, \$0.07. Discontinued operations: '08, (4¢); '11, 3¢; '12, (10¢). Next earnings report due early February.
(B) Dividends paid in March, June, September, and December. (C) Div. reinvestment available. (D) Includes in-

Quarterly earnings may not sum due to rounding. (E) Pro forma numbers for '06 & '07.
tangibles. In 2012: \$1,207 billion, \$6.82/share.
(E) Pro forma numbers for '06 & '07.

Company's Financial Strength B+
Stock's Price Stability 95
Price Growth Persistence 75
Earnings Predictability 20

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AQUA AMERICA NYSE-WTR

RECENT PRICE	23.09	P/E RATIO	19.9 (Trailing: 20.6, Median: 24.0)	RELATIVE P/E RATIO	1.07	DIV'D YLD	2.8%	VALUE LINE									
TIMELINESS	3 Lowered 5/24/13	High: 12.0	13.4	14.8	23.4	23.8	21.3	17.6	17.2	18.4	19.0	21.5	28.1	20.6	Target Price Range 2016	2017	2018
SAFETY	2 Raised 4/20/12	Low: 7.7	9.5	11.3	14.0	16.1	15.1	9.8	12.3	13.2	15.4	16.8	20.6				
TECHNICAL	3 Raised 12/27/13	LEGENDS --- 1.60 x Dividends p sh divided by Interest Rate Relative Price Strength 5-for-4 split 12/01 5-for-4 split 12/03 4-for-3 split 12/05 5-for-4 split 9/13 Options: Yes Shaded areas indicate recessions															
BETA	.60 (1.00 = Market)	2016-18 PROJECTIONS Price High 40 Low 25 Gain (+75%) Ann'l Total Return 179% 5% Insider Decisions F M A M J J A S O to Buy 0 0 0 0 0 0 0 0 0 0 Options 2 2 0 0 1 3 2 1 1 to Sell 0 0 0 0 2 0 0 1 1 Institutional Decisions 1Q2013 2Q2013 3Q2013 to Buy 136 141 153 to Sell 116 130 154 Hld's(000) 82403 82501 85173 Percent shares traded 15 10 5															

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUB. LLC	16-18
1.61	1.67	1.93	1.97	2.16	2.28	2.38	2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.55	4.60	Revenues per sh	4.95
.45	.49	.58	.61	.69	.76	.77	.87	.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.85	1.95	"Cash Flow" per sh	1.85
.27	.32	.33	.37	.41	.43	.46	.51	.57	.56	.57	.58	.62	.72	.83	.87	1.15	1.25	Earnings per sh A	1.45
.19	.20	.22	.23	.24	.26	.28	.29	.32	.35	.38	.41	.44	.47	.50	.54	.58	.64	Div'd Decl'd per sh B	.86
.46	.65	.72	.93	.87	.96	1.06	1.23	1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.90	1.90	Cap'l Spending per sh	2.75
2.27	2.57	2.74	3.08	3.32	3.49	4.27	4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.60	9.45	Book Value per sh	11.50
84.33	90.25	133.50	139.78	142.47	141.49	154.31	158.97	161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.00	179.50	Common Shs Outst'g C	184.00
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	21.4	21.4	Avg Ann'l P/E Ratio	22.5
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	1.20	1.20	Relative P/E Ratio	1.50
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%	2.4%	2.4%	Avg Ann'l Div'd Yield	2.6%

CAPITAL STRUCTURE as of 9/30/13		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Revenues (\$mill)	Income Tax Rate	AFUDC % to Net Profit	Long-Term Debt Ratio	Common Equity Ratio	Total Capital (\$mill)	Net Plant (\$mill)	Return on Total Cap'l	Return on Shr. Equity	Return on Com Equity	Retained to Com Eq	All Div'ds to Net Prof
Total Debt	\$1630.5 mill. Due in 5 Yrs \$368.3 mill.	367.2	442.0	496.8	533.5	602.5	627.0	670.5	726.1	712.0	757.8	770	825	825	825	915	40.0%	2.0%	50.0%	50.0%	4230	4900	6.5%	12.5%	12.5%	5.0%	59%
LT Debt	\$1439.3 mill. LT Interest \$60.0 mill. (LT interest earned: 5.0%; total interest coverage: 4.1x)	67.3	80.0	91.2	92.0	95.0	97.9	104.4	124.0	144.8	153.1	200	225	225	225	265	40.0%	2.0%	50.0%	50.0%	4350	4900	6.5%	12.5%	12.5%	5.0%	59%
Pension Assets	-12/12 \$190.1 mill. Oblig. \$303.1 mill.	51.4%	50.0%	52.0%	51.6%	55.4%	54.1%	55.6%	56.8%	52.7%	52.7%	51.0%	51.0%	51.0%	51.0%	51.0%	49.0%	49.0%	50.0%	50.0%	4350	4900	6.5%	12.5%	12.5%	5.0%	59%
Pfd Stock	None	1355.7	1497.3	1690.4	1904.4	2191.4	2306.6	2495.5	2706.2	2646.8	2929.7	2975	3350	3350	3350	3350	3350	3350	50.0%	50.0%	4350	4900	6.5%	12.5%	12.5%	5.0%	59%
Common Stock	176,709,658 shares as of 10/24/13	1824.3	2069.8	2280.0	2506.0	2792.8	2997.4	3227.3	3469.3	3612.9	3936.2	4150	4350	4350	4350	4350	4350	4350	50.0%	50.0%	4350	4900	6.5%	12.5%	12.5%	5.0%	59%
MARKET CAP:	\$4.1 billion (Mid Cap)	4.2%	4.6%	4.9%	3.7%	3.2%	2.8%	2.7%	3.7%	4.6%	4.3%	6.5%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	50.0%	50.0%	4350	4900	6.5%	12.5%	12.5%	5.0%	59%

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately three million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Acquired AquaSource, 7/03; Consumers Water, 4/99; and others. Water supply revenues '12: residential, 60.5%; commercial, 16.1%; industrial & other, 23.4%. Officers and directors own 1.4% of the common stock; Blackrock, Inc, 6.3%; State Street Capital Corp., 5.7%; Vanguard Group 5.6% (4/13 Proxy). Chairman & Chief Executive Officer: Nicholas DeBenedictis, Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com.

Aqua America has exited the Florida market. In five separate transactions, the utility sold off all of its operations in the Sunshine State for a total of \$90 million. This will allow the company to focus its attention in the states where most of its assets are concentrated.

Growth through acquisition will remain a keystone of the company's strategy. Aqua purchased 13 utilities last year and 18 in 2012. We think that this number will actually increase in the years ahead. That's because the U.S. is populated with thousands of small municipally-owned water utilities. Because cities across the country are struggling financially, they are having trouble financing the costs of repairing their aging water infrastructures. Many are finding it easier to sell their operations to larger investor-owned companies that have the financial wherewithal to fund the needed capital expenditures. Moreover, Aqua can run the operations at a much lower cost using its management expertise and economies of scale.

Aqua will follow up a strong 2013 with a solid 2014, in our opinion. Aided by the use of a "repair tax deduction", we think the company posted a gain in share net of over 30% last year. More impressive perhaps, would be the utility's ability to top last year's exceptional gain by 9% this year. Most of this will be due to a combination of cost reductions and the implementation of higher rates implemented by state regulators.

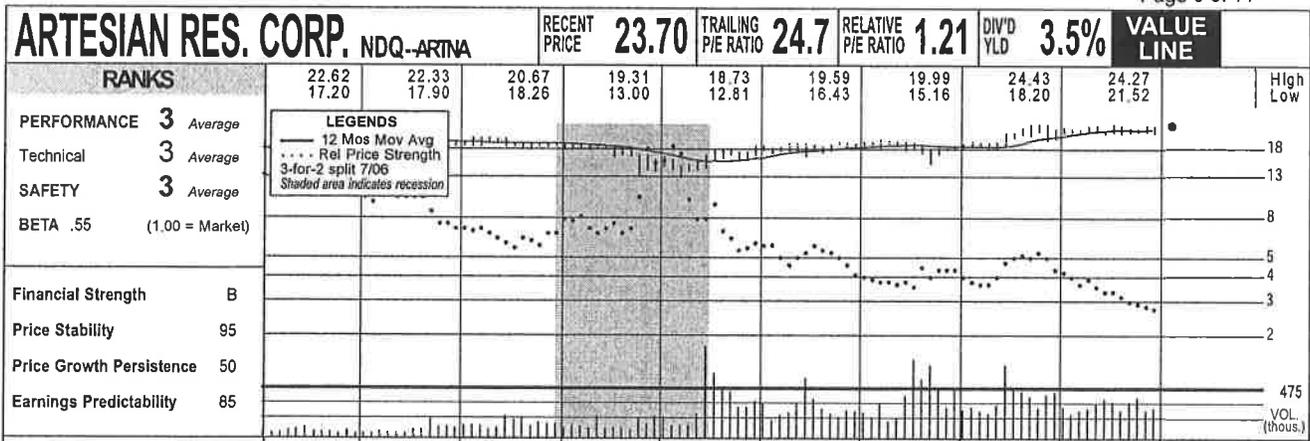
Hydraulic fracking provides opportunities for Aqua's nonregulated earnings. This drilling technique requires copious amounts of water. Aqua has entered into a joint venture on a pipeline that will bring water directly to the wells, eliminating the need for thousands of trucks laden with water choking the street traffic in Pennsylvania. When fully up and running, we think that this can add about \$0.10 a share to the bottom line.

Aqua stock is attractive compared to other water utilities. While the yield is marginally lower than the group average, this is more than offset by the equity's strong dividend growth prospects. Therefore, conservative, income-seeking investors might find these shares of interest.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	70
Earnings Predictability	100

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(A) Diluted eqs. Excl. nonrec. gains (losses): '99, (9¢); '00, 2¢; '01, 2¢; '02, 4¢; '03, 3¢; '12, 18¢. Excl. gain from disc. operations: '12, 7¢; '13, 3¢. May not sum due to rounding. Next earnings report due early February.
(B) Dividends historically paid in early March, June, Sept. & Dec. = Div'd. reinvestment plan available (5% discount).
(C) In millions, adjusted for stock splits.
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© VALUE LINE PUBLISHING LLC	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014/2015
SALES PER SH	7.52	7.77	7.20	7.59	8.11	8.48	7.56	8.10	--	
"CASH FLOW" PER SH	1.66	1.75	1.57	1.65	1.84	1.92	1.64	2.04	--	
EARNINGS PER SH	.81	.97	.90	.86	.97	1.00	.83	1.13	1.02 ^{A,B}	1.23 ^{C/NA}
DIV'DS DECL'D PER SH	.58	.61	.66	.71	.72	.75	.76	.79	--	
CAP'L SPENDING PER SH	3.35	5.08	3.66	6.09	2.32	2.57	1.83	2.36	--	
BOOK VALUE PER SH	9.60	10.15	11.66	11.86	12.15	12.44	13.12	13.57	--	
COMMON SHS OUTST'G (MILL)	6.02	6.09	7.30	7.40	7.51	7.65	8.61	8.71	--	
AVG ANN'L P/E RATIO	24.2	20.3	21.5	20.1	16.4	18.2	22.5	18.3	23.2	19.3/NA
RELATIVE P/E RATIO	1.28	1.10	1.14	1.21	1.09	1.16	1.41	1.17	--	
AVG ANN'L DIV'D YIELD	2.9%	3.1%	3.4%	4.1%	4.5%	4.1%	4.1%	3.8%	--	
SALES (\$MILL)	45.3	47.3	52.5	56.2	60.9	64.9	65.1	70.6	--	Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.
OPERATING MARGIN	100.0%	45.6%	45.6%	45.1%	46.9%	46.5%	45.5%	48.7%	--	
DEPRECIATION (\$MILL)	4.4	4.6	5.2	5.8	6.6	7.0	7.4	7.9	--	
NET PROFIT (\$MILL)	5.0	6.1	6.3	6.4	7.3	7.6	6.7	9.8	--	
INCOME TAX RATE	39.9%	39.0%	39.8%	40.8%	40.1%	40.0%	40.8%	40.2%	--	
NET PROFIT MARGIN	11.1%	12.8%	11.9%	11.4%	11.9%	11.7%	10.4%	14.0%	--	
WORKING CAP'L (\$MILL)	d1.8	d8.8	2.5	d20.9	d23.3	d27.9	d11.4	d11.4	--	
LONG-TERM DEBT (\$MILL)	92.4	92.1	91.8	107.6	106.0	105.1	106.5	106.3	--	
SHR. EQUITY (\$MILL)	57.8	61.8	85.1	87.8	91.2	95.1	113.0	118.2	--	
RETURN ON TOTAL CAP'L	5.3%	5.8%	5.3%	4.7%	5.2%	5.6%	4.6%	5.9%	--	
RETURN ON SHR. EQUITY	8.7%	9.8%	7.4%	7.3%	8.0%	8.0%	6.0%	8.3%	--	
RETAINED TO COM EQ	2.7%	3.8%	2.1%	1.4%	2.1%	2.0%	.5%	2.5%	--	
ALL DIV'DS TO NET PROF	69%	61%	71%	81%	74%	75%	92%	70%	--	

^ANo. of analysts changing earn. est. in last 3 days: 0 up, 0 down, consensus 5-year earnings growth not available. ^BBased upon 3 analysts' estimates. ^CBased upon 3 analysts' estimates.

ANNUAL RATES					ASSETS (\$mill.)				
of change (per share)	5 Yrs.	1 Yr.			2011	2012	9/30/13		
Sales	1.5%	7.0%			.3	.6	.6		
"Cash Flow"	3.0%	24.0%			8.6	8.7	8.8		
Earnings	2.0%	36.0%			1.5	1.4	1.6		
Dividends	4.5%	4.0%			2.9	2.8	3.7		
Book Value	4.5%	3.5%			13.3	13.5	14.7		
Fiscal Year	QUARTERLY SALES (\$mill.)				Full Year	LIABILITIES (\$mill.)			
	1Q	2Q	3Q	4Q		Accts Payable	2.8	3.5	3.7
12/31/11	14.8	16.5	17.7	16.1	65.1	Debt Due	13.8	12.6	10.9
12/31/12	16.7	17.9	19.0	17.0	70.6	Other	8.1	8.8	11.8
12/31/13	16.3	17.8	18.1			Current Llab	24.7	24.9	26.4
12/31/14						LONG-TERM DEBT AND EQUITY as of 9/30/13			
Fiscal Year	EARNINGS PER SHARE				Full Year	Total Debt \$116.6 mill.	Due in 5 Yrs. NA		
	1Q	2Q	3Q	4Q		LT Debt \$105.7 mill.			
12/31/10	.22	.24	.38	.16	1.00	Including Cap. Leases NA			
12/31/11	.14	.23	.26	.20	.83	Leases, Uncapitalized Annual rentals NA			
12/31/12	.28	.32	.33	.20	1.13				
12/31/13	.19	.28	.29	.24		Pension Liability \$4 mill. in '12 vs. \$.5 mill. in '11			
12/31/14	.20	.34				Pfd Stock None	Pfd Div'd Paid None		
Calendar	QUARTERLY DIVIDENDS PAID				Full Year	Common Stock 8,793,216 shares	(53% of Cap'l)		
	1Q	2Q	3Q	4Q					
2011	.19	.19	.19	.193	.76				
2012	.193	.198	.198	.203	.79				
2013	.203	.206	.206	.209	.82				
2014									
INSTITUTIONAL DECISIONS					TOTAL SHAREHOLDER RETURN				
	1Q'13	2Q'13	3Q'13		Dividends plus appreciation as of 12/31/2013				
to Buy	32	31	30		3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
to Sell	26	30	27		4.10%	4.92%	6.13%	35.96%	76.91%
Hld's(000)	3036	3029	3033						

INDUSTRY: Water Utility

BUSINESS: 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. Has 229 employees. Chairman, C.E.O. & President: Dian C. Taylor. Address: 664 Churchmans Rd., Newark, DE 19702. Tel.: (302) 453-6900. Internet: <http://www.artesianwater.com>.

J.V.

January 17, 2014

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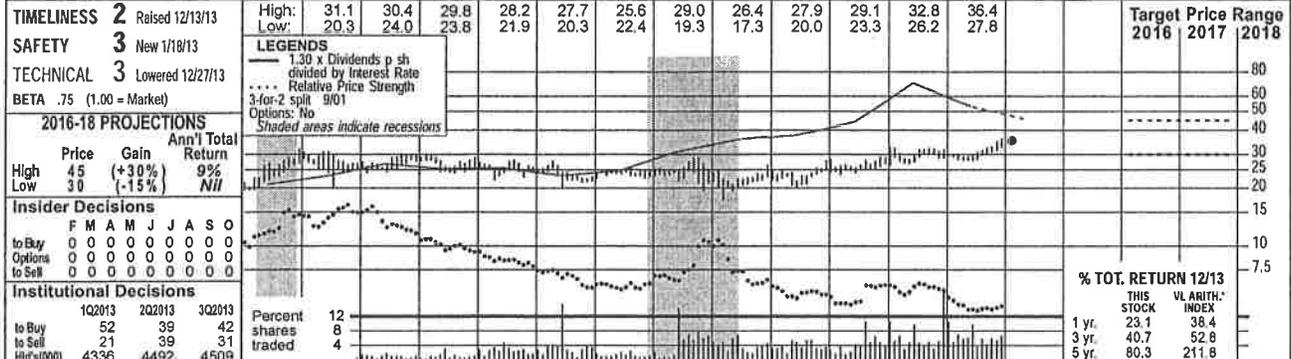
CALIFORNIA WATER NYSE-CWT				RECENT PRICE	22.47	PIE RATIO	20.4 (Trailing: 22.9 Median: 21.0)	RELATIVE PIE RATIO	1.10	DIV'D YLD	3.0%	VALUE LINE														
TIMELINESS 3	Raised 11/1/13	High: 13.4	15.7	19.0	21.1	22.9	22.7	23.3	24.1	19.8	19.4	19.3	23.4	Target Price Range 2016 2017 2018 64 48 40 32 24 16 12 8 6												
SAFETY 3	Lowered 7/27/07	Low: 10.2	11.8	13.0	15.6	16.4	17.1	13.8	16.7	16.9	16.7	16.8	18.4													
TECHNICAL 2	Raised 1/17/14	LEGENDS 1.33 x Dividends p sh divided by Interest Rate - - - - Relative Price Strength 2-for-1 split 6/11 Options: Yes Shaded areas indicate recessions																								
BETA .60	(1.00 = Market)	2016-18 PROJECTIONS Price 35 Gain (+55%) Ann'l Total Return 15% Low 25 (+10%) 7%																								
Insider Decisions F M A M J J A S O to Buy 0 20 0 0 0 0 0 0 1 0 Options 0 0 0 0 0 0 0 1 0 0 to Sell 0 0 0 0 0 0 0 0 0 0																										
Institutional Decisions 10/2013 20/2013 30/2013 to Buy 86 61 50 to Sell 39 57 61 Held(000) 26409 26677 27841 Percent shares traded 10 12 6																										
% TOT. RETURN 12/13 THIS STOCK VL ARITH. INDEX 1 yr. 29.7 36.4 3 yr. 36.8 52.8 5 yr. 16.9 211.8																										
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014																										
7.74	7.36	7.98	8.08	8.13	8.67	8.18	8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.15	13.15	Revenues per sh	16.00							
1.46	1.30	1.37	1.26	1.10	1.32	1.26	1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.20	2.50	"Cash Flow" per sh	2.85							
.92	.73	.77	.66	.47	.63	.61	.73	.74	.67	.75	.95	.98	.91	.86	1.02	.95	1.15	Earnings per sh A	1.40							
.53	.54	.54	.55	.56	.56	.58	.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.68	Div'd Decl'd per sh B =	.90							
1.30	1.37	1.72	1.23	2.04	2.91	2.19	1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.45	3.35	Cap'l Spending per sh	3.00							
6.50	6.69	6.71	6.45	6.48	6.56	7.22	7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.45	12.85	Book Value per sh C	14.75							
25.24	25.24	25.87	30.29	30.36	30.36	33.86	36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.75	48.00	Common Shs Outst'g D	50.0							
12.6	17.8	17.8	19.6	27.1	19.8	22.1	20.1	24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	21.6		Avg Ann'l P/E Ratio	22.0							
.73	.93	1.01	1.27	1.39	1.08	1.26	1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.44		Relative P/E Ratio	1.45							
4.6%	4.2%	4.0%	4.3%	4.4%	4.5%	4.2%	3.9%	3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%		Avg Ann'l Div'd Yield	3.0%							
CAPITAL STRUCTURE as of 9/30/13 Total Debt \$469.7 mill. Due in 5 Yrs \$65.3 mill. LT Debt \$430.2 mill. LT Interest \$29.5 mill. (LT interest earned: 6.7%; total int. cov.: 6.0x) (42% of Cap'l) Pension Assets-12/12 \$202.9 mill. Oblig. \$402.9 mill. Pfd Stock None Common Stock 47,739,024 shs. as of 10/31/13 MARKET CAP: \$1.1 billion (Mid Cap)													277.1	315.6	320.7	334.7	367.1	410.3	449.4	460.4	501.8	560.0	580	630	Revenues (\$mill) E	800
													19.4	28.0	27.2	25.6	31.2	39.8	40.6	37.7	36.1	42.6	45.0	55.0	Net Profit (\$mill)	70.0
													39.9%	39.6%	42.4%	37.4%	39.9%	37.7%	40.3%	39.5%	40.5%	37.5%	34.0%	39.0%	Income Tax Rate	39.0%
													10.3%	3.2%	3.3%	10.6%	8.3%	8.6%	7.6%	4.2%	7.6%	8.0%	6.0%	8.5%	AFUDC % to Net Profit	10.0%
													50.2%	48.6%	48.3%	43.5%	42.9%	41.6%	47.1%	52.4%	51.7%	47.8%	42.0%	44.0%	Long-Term Debt Ratio	47.5%
													49.1%	50.8%	51.1%	55.9%	56.6%	58.4%	52.9%	47.6%	48.3%	52.2%	58.0%	56.0%	Common Equity Ratio	52.5%
													498.4	565.9	568.1	670.1	674.9	680.4	794.9	914.7	931.5	908.2	1025	1100	Total Capital (\$mill)	1400
													759.5	800.3	862.7	941.5	1010.2	1112.4	1198.1	1294.3	1381.1	1457.1	1510	1565	Net Plant (\$mill)	1725
													5.6%	6.1%	6.3%	5.2%	5.9%	7.1%	6.5%	5.5%	5.5%	6.3%	6.0%	6.5%	Return on Total Cap'l	6.5%
													7.8%	8.9%	9.3%	6.8%	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.5%	9.0%	Return on Shr. Equity	9.5%
													7.9%	9.0%	9.3%	6.8%	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.5%	9.0%	Return on Com Equity	9.5%
													.7%	2.1%	2.1%	1.0%	1.8%	3.8%	3.8%	3.0%	2.3%	3.4%	2.5%	3.5%	Retained to Com Eq	3.5%
													91%	77%	78%	86%	77%	61%	60%	66%	71%	62%	67%	62%	All Div'ds to Net Prof	64%
CASH ASSETS Cash Assets 27.2 38.8 48.8 Other 86.7 107.8 121.8 Current Assets 113.9 146.6 170.6 Accts Payable 48.9 46.8 60.4 Debt Due 53.7 136.3 59.5 Other 49.3 59.7 77.1 Current Liab. 151.9 242.8 197.0 Fix. Chg. Cov. 276% 297% 325%													BUSINESS: California Water Service Group provides regulated and nonregulated water service to roughly 471,900 customers in 83 communities in California, Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rlo Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '12: residential, 66%; business, 18%; public authorities, 4%; industrial, 4%; other 8%. '12 reported depreciation rate: 2.8%. Has 1,131 employees. President, Chairman, and Chief Executive Officer: Peter C. Nelson, Inc.: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet: www.calwatergroup.com.													
ANNUAL RATES Past 10 Yrs. 5 Yrs. Est'd '10-'12 to '16-'18 of change (per sh) Revenues 4.0% 7.0% 4.5% "Cash Flow" 5.5% 7.5% 5.0% Earnings 5.0% 5.5% 7.0% Dividends 1.0% 1.5% 6.5% Book Value 5.0% 4.5% 5.5%													A final agreement between California Water Service Group and state regulators is all but finalized. Last quarter, the California Public Utility Commission's (CPUC) Office of Ratepayers Advocates (ORA) announced that a settlement has been reached with the utility. Though the CPUC doesn't have to go along with the ORA's decision, the chances of that appear to be virtually nil. The deal appears to be fair to both California Water and its customers. According to the terms of the arrangement, California Water will be allowed to increase its gross revenues by \$45 million in 2014, \$10 million in 2015, and \$10 million in 2016. In return, the utility would be required to invest \$321 million in water system infrastructure improvements from 2013-2015. Moreover, should the utility invest an additional \$126 million, it would be granted another \$19 million rate hike at a later date. The CPUC is expected to release its decision early this year. We expect the company's bottom line to rebound nicely in 2014. Due to the implementation of higher rates, we think California's share net can rise 21% this year. Comparisons would be even more impressive if 2013's results were not bolstered by a \$0.09-a-share tax break. California Water's next dividend announcement could break a long-term trend. Over the past five and 10 years, the annual payout has grown by 1.0% and 1.5%, respectively, levels that were substantially below that of the average water utility. We estimate that when the new dividend is announced in the first quarter, the hike can be anywhere from 6% to 9%. These shares have been strong performers of late. The broad market averages rose sharply in last year's fourth quarter. Not surprisingly, conservative, income-oriented water utility stocks lagged. That is, all but California Water and one of its peers. Our view on California Water shares has changed for the better. Assuming state regulators remain fair when the utility seeks higher rates in three years, we think that the stock, which has been a major under performer over the past one-three- and five-year periods, could turn in solid total returns through 2016-2018.													
QUARTERLY REVENUES (\$mill) E Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2010 90.3 118.3 146.3 105.5 460.4 2011 98.1 131.4 169.3 103.0 501.8 2012 116.8 143.6 178.1 121.5 560.0 2013 111.4 154.6 184.4 129.6 580 2014 130 160 200 140 630													EARNINGS PER SHARE A Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2010 .05 .25 .49 .12 .91 2011 .03 .29 .50 .04 .86 2012 .03 .31 .56 .12 1.02 2013 d.03 .28 .61 .09 .95 2014 .05 .35 .60 .15 1.15													
QUARTERLY DIVIDENDS PAID B = Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2010 .149 .149 .149 .149 .60 2011 .154 .154 .154 .154 .62 2012 .1575 .1575 .1575 .1575 .63 2013 .16 .16 .16 .16 .64 2014													Company's Financial Strength B++ Stock's Price Stability 100 Price Growth Persistence 50 Earnings Predictability 90													

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (4¢); '01, 2¢; '02, 4¢; '11, 4¢. Next earnings report due mid-February.
 (B) Dividends historically paid in late Feb., May, Aug., and Nov. = Div'd reinvestment plan available.
 (C) Incl. intangible assets. In '12: \$18.8 mill., \$0.44/sh.
 (D) In millions, adjusted for splits.
 (E) Excludes non-reg. rev.

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CONNECTICUT WATER NDQ-CTWS



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	7.65	7.93	7.63	8.65	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	2.55	2.65	"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	1.65	1.75	Earnings per sh ^A	1.85
.77	.78	.79	.79	.80	.81	.83	.84	.85	.86	.87	.88	.90	.92	.94	.96	.98	1.01	Div'd Decl'd per sh ^B	1.12
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	17.55	17.80	Book Value per sh D	20.40
6.79	6.80	7.28	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	11.10	11.25	Common Shs Outs'tg ^C	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	18.5	19.5	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	1.03	1.03	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%	3.2%	3.2%	3.2%	Avg Ann'l Div'd Yield	3.4%

CAPITAL STRUCTURE as of 9/30/13

Total Debt \$180.9 mill. Due in 5 Yrs \$14.8 mill.
LT Debt \$175.5 mill. LT Interest \$7.6 mill.
(Total interest coverage: 8.8x)

(49% 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 11,018,161 shs.
as of 10/31/13

MARKET CAP: \$375 million (Small Cap)

47.1	48.5	47.5	46.9	59.0	61.3	59.4	66.4	69.4	83.8	95.0	100	Revenues (\$mill)	135
9.2	9.4	7.2	6.7	8.8	9.4	10.2	9.8	9.9	13.6	18.0	19.5	Net Profit (\$mill)	22.0
17.9%	22.9%	--	23.5%	32.4%	27.2%	19.5%	35.2%	41.3%	32.0%	32.0%	33.0%	Income Tax Rate	35.0%
--	--	--	--	--	1.7%	--	--	1.8%	1.7%	2.0%	2.0%	AFUDC % to Net Profit	3.0%
43.5%	42.8%	44.9%	44.4%	47.8%	46.9%	50.6%	49.5%	53.2%	49.0%	49.5%	49.5%	Long-Term Debt Ratio	48.5%
55.9%	58.7%	54.6%	55.1%	51.8%	52.7%	49.1%	50.2%	46.5%	50.8%	50.5%	50.5%	Common Equity Ratio	51.5%
148.9	155.1	172.3	174.1	193.2	196.5	221.3	225.6	254.2	364.8	370	395	Total Capital (\$mill)	475
238.9	246.1	247.7	268.1	284.3	302.3	325.2	344.2	362.4	447.9	465	490	Net Plant (\$mill)	550
7.5%	7.0%	5.0%	4.9%	5.5%	5.9%	5.5%	5.4%	4.9%	4.8%	6.0%	6.0%	Return on Total Cap'l	5.5%
10.9%	10.6%	7.5%	6.9%	8.7%	9.0%	9.3%	8.6%	8.3%	7.3%	9.5%	9.5%	Return on Shr. Equity	9.0%
11.0%	10.6%	7.6%	7.0%	8.7%	9.1%	9.4%	8.7%	8.3%	7.3%	9.5%	9.5%	Return on Com Equity	9.0%
3.2%	3.1%	3%	NMF	1.6%	1.9%	2.3%	1.6%	1.4%	2.7%	4.0%	3.5%	Retained to Com Eq	3.0%
71%	71%	95%	105%	82%	79%	76%	81%	83%	62%	59%	58%	All Div'ds to Net Prof	61%

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% (4/13 proxy). Address: 93 West Main Street, Clinton, CT 06413. Telephone: (860) 669-8636. Internet: www.ctwater.com.

CURRENT POSITION

	2011	2012	9/30/13
Cash Assets	1.0	13.2	1.6
Accounts Receivable	14.9	11.5	14.3
Other	3.0	11.7	31.3
Current Assets	18.9	36.4	47.2
Accs Payable	7.2	10.0	7.4
Debt Due	--	3.0	5.4
Other	23.2	2.9	6.5
Current Liab.	30.4	15.9	19.3
Fix. Chg. Cov.	419%	455%	460%

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	3.5%	6.0%	6.5%
"Cash Flow"	2.5%	6.0%	4.5%
Earnings	1.5%	6.5%	6.5%
Dividends	1.5%	2.0%	3.0%
Book Value	5.5%	6.5%	6.0%

Connecticut Water Service is consolidating its operations in Maine. In 2012, the company acquired The Maine Water Co. and Biddeford and Saco Water. Merging the two entities will reduce overhead, specifically resources spent on regulatory matters. Moreover, now that it has established a presence in the state, future tuck in acquisitions there seem likely.

The utility is also expanding on its home turf. Agreements have been reached to expand pipelines to supply water to the town of Mansfield as well as the main campus of the University of Connecticut, which is the equivalent of a small city. Additional mergers are probable here too.

Less onerous regulation augurs well for Connecticut Water. One of the key factors in analyzing a utility is how fair is the regulatory climate where it operates. Historically, Connecticut's Public Regulatory Authority (PURA) hasn't had a good reputation. Indeed, Value Line ranks the conditions in the state as Below Average. In the recent past, however, PURA appears to be striking a better balance between the interests of the public and the

utilities it oversees. For example, last year the company was permitted to keep the benefits from an IRS refund in exchange for lowering rates and agreeing not to seek rate relief before 2015.

We are raising our earnings estimates for the utility. Despite fourth quarter's results probably being flat, we think that Connecticut Water's share net rose 8% to \$1.65 in 2013, versus 2012's strong showing. For 2014, combining the utility's growing rate base with the advantages allowed by PURA, earnings per share could rise 6% to \$1.75.

Dividend growth is still below average for a water utility. Over the past decade, the company has not had a good dividend-paying record compared to its peers. This is a trend that should continue for the foreseeable future due to the projected sharp rise in Connecticut Water's capital spending program.

These share are ranked to outperform the market in the year ahead. But due to the stock's recent strength, much of its appeal over the next three-to five-year period has been diminished.

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	21.5	22.5	29.6	21.4	95.0
2014	22.0	24.0	30.0	24.0	100

EARNINGS PER SHARE ^A

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	.24	.39	.86	.16	1.65
2014	.30	.47	.73	.25	1.75

QUARTERLY DIVIDENDS PAID ^B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	.228	.228	.233	.233	.922
2011	.233	.233	.238	.238	.942
2012	.238	.238	.2425	.2425	.962
2013	.2425	.2425	.2475	.2475	.98
2014					

James A. Flood
January 17, 2014

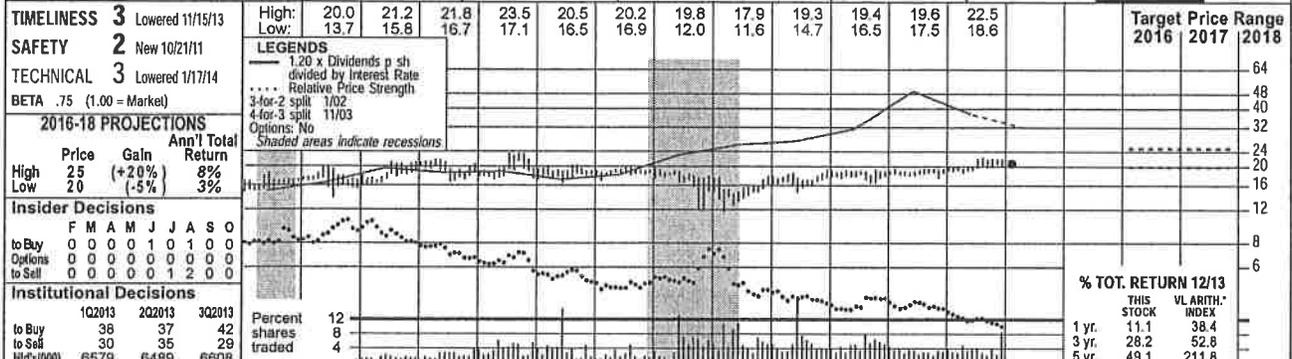
Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	45
Earnings Predictability	85

(A) Diluted earnings. Next earnings report due mid-February. Quarterly earnings do not add in '12 due to rounding.
(B) Dividends historically paid in mid-March.
(C) In millions, adjusted for split.
(D) Includes Intangibles. In '12: \$31.7 million/\$2.89 a share.

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MIDDLESEX WATER NDQ-MSEX



1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUB. LLC	6-18
4.72	4.39	5.35	5.39	5.87	5.98	6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.20	7.70	Revenues per sh	9.10
1.02	1.02	1.19	.99	1.18	1.20	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.75	1.85	"Cash Flow" per sh	2.30
.67	.71	.78	.51	.66	.73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.00	1.05	Earnings per sh ^A	1.15
.57	.58	.60	.61	.62	.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	Div'd Decl'd per sh ^B	.80
1.20	2.68	2.33	1.32	1.25	1.59	1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.50	1.65	Cap'l Spending per sh	2.00
6.00	6.80	6.95	6.98	7.11	7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.70	12.10	Book Value per sh ^D	12.90
8.54	9.82	10.00	10.11	10.17	10.36	10.48	11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	16.00	16.25	Common Shs Outst'g ^C	17.00
13.4	15.2	17.6	28.7	24.6	23.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	20.3		Avg Ann'l P/E Ratio	20.0
.77	.79	1.00	1.87	1.26	1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.33	1.13		Relative P/E Ratio	1.35
6.3%	5.4%	4.4%	4.2%	3.8%	3.7%	3.5%	3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%		Avg Ann'l Div'd Yield	3.6%

CAPITAL STRUCTURE as of 9/30/13
Total Debt \$166.4 mill. Due in 5 Yrs \$60.0 mill.
LT Debt \$130.6 mill. LT Interest \$7.0 mill.
(LT interest coverage: 4.1x)

Pension Assets-12/12 \$37.9 mill.
Oblig. \$62.8 mill.

Pfd Stock \$2.9 mill. Pfd Div'd: \$.1 mill.

Common Stock 15,919,974 shs.
as of 10/31/13

MARKET CAP: \$325 million (Small Cap)

CURRENT POSITION (SMILL)

	2011	2012	9/30/13
Cash Assets	3.1	3.0	3.0
Other	19.8	21.6	24.3
Current Assets	22.9	24.6	27.3
Accts Payable	5.7	3.8	4.4
Debt Due	4.6	11.1	35.8
Other	36.4	41.1	12.1
Current Liab.	48.7	56.0	52.3
Fix. Chg. Cov.	380%	410%	415%

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	1.5%	1.0%	5.5%
"Cash Flow"	3.0%	2.0%	7.0%
Earnings	3.5%	2.5%	4.0%
Dividends	1.5%	1.5%	1.5%
Book Value	4.5%	4.0%	2.0%

QUARTERLY REVENUES (\$ MILL.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	21.6	26.5	29.6	25.0	102.7
2011	24.0	26.1	28.7	23.3	102.1
2012	23.5	27.4	32.3	27.1	110.4
2013	27.0	29.1	31.3	27.6	115
2014	30.0	30.0	35.0	30.0	125

EARNINGS PER SHARE ^A

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	.11	.31	.37	.17	.95
2011	.17	.23	.32	.12	.84
2012	.11	.23	.38	.17	.90
2013	.20	.28	.36	.16	1.00
2014	.17	.28	.40	.20	1.05

QUARTERLY DIVIDENDS PAID ^B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	.180	.180	.180	.183	.72
2011	.183	.183	.183	.185	.73
2012	.185	.185	.185	.1875	.74
2013	.1875	.1875	.1875	.19	.753
2014					

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 80,000 retail customers, primarily in Middlesex County, New Jersey. In 2012, the Middlesex System accounted for 65% of total revenues. At 12/31/12, the company had 279 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers/directors own 3.1% of the common stock; BlackRock, 6.3%; The Vanguard Group, 5.7% (4/13 proxy). Address: 1500 Ronson Road, Iselin, NJ 08830. Tel.: 732-634-1500. Internet: www.middlesexwater.com.

Middlesex Water's recent dividend hike was subpar for a water utility. The company increased its payout by only 1.3%, versus the industry average of over 5%. Moreover, this represents the lowest growth rate of the nine water utilities that Value Line covers. It was also the 11th straight year in which the annual increase was only \$0.01 a share.

Long-term dividend growth prospects are also below average. Over the next three- to five-year period, we expect the yearly raises to remain in the 1%-2% range. Much of this is a result of the company's high dividend payout ratio, which provides little room for future increases. This is also the reason why Middlesex sports a current dividend yield that is a full percentage point higher than the typical water utility. (Investors are willing to pay a premium and accept a lower yield in return for the potential of larger dividends in the future.)

Middlesex has been hit with some bad luck in the commercial and industrial markets. Last year, a large Hess refinery was shuttered. In addition, a major contract to supply water to a large borough in

New Jersey lapsed. Together both accounted for almost \$5 million in revenues. **Meanwhile, requests for higher rates have recently been filed.** Two of Middlesex's subsidiaries petitioned regulators in Delaware and New Jersey seeking to recover costs used to repair and upgrade its water systems. If approved, rates would increase 14.4% and 15.9%, respectively. Very favorable rulings would probably make our earnings estimates conservative through 2016-2018.

The capital spending program has been increased. The company plans on spending \$75 million over the next three years to upgrade and expand its infrastructure. Most of the funds will be invested in the residential sector, which is more predictable and carries higher margins than the commercial and industrial segments of the business.

We would advise investors to steer clear of this stock for the time being. Until the company's earnings can somehow gain sufficient traction to support a loftier dividend, there are more worthwhile selections in the water utility group.

James A. Flood *January 17, 2014*

(A) Diluted earnings. May not sum due to rounding. Next earnings report due mid-Feb.
(B) Dividends historically paid in mid-Feb., May, Aug., and November. Div'd reinvestment plan available.
(C) In millions, adjusted for splits.
(D) Intangible assets in 2012: \$9.2 million, \$0.58 a share.

Company's Financial Strength B++
Stock's Price Stability 95
Price Growth Persistence 40
Earnings Predictability 80

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SJW CORP. NYSE-SJW				RECENT PRICE	29.15	P/E RATIO	23.1	(Trailing: 24.5 Median: 23.0)	RELATIVE P/E RATIO	1.24	DIV'D YLD	2.6%	VALUE LINE																																																																																																																																																																																																																																																	
TIMELINESS 3 Lowered 11/8/13	High: 15.1	15.0	19.6	27.8	45.3	43.0	35.1	30.4	28.2	26.8	26.9	30.1	Target Price Range 2016 2017 2018 80 60 50 40 30 25 20 15 10 7.5																																																																																																																																																																																																																																																	
SAFETY 3 New 4/22/11	Low: 12.7	12.6	14.6	16.1	21.2	27.7	20.0	18.2	21.6	20.9	22.6	24.5																																																																																																																																																																																																																																																		
TECHNICAL 2 Raised 1/31/14	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																																																																																																																																																																																																																																																													
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sh	20	28	29	1.27	1.26	1.43	1.23	1.49	1.55	1.75	1.89	2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	3.25	3.50	Earnings per sh ^A	20	28	29	.80	.76	.87	.58	.77	.78	.91	.87	1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.20	1.40	Div'd Decl'd per sh ^B	20	28	29	.38	.39	.40	.41	.43	.46	.49	.51	.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	Cap'l Spending per sh	46	47	43	1.27	1.81	1.77	1.89	2.63	2.06	3.41	2.31	2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	5.25	5.20	Book Value per sh	20	28	29	7.02	7.53	7.88	7.90	8.17	8.40	9.11	10.11	10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.40	16.40	Common Shs Outst ^C	10000	10629	10697	19.02	19.01	18.27	18.27	18.27	18.27	18.27	18.27	18.27	18.27	18.36	18.18	18.50	18.55	18.59	18.67	20.25	21.00	Avg Ann'l P/E Ratio	10000	10629	10697	11.2	13.1	15.5	33.1	18.5	17.3	15.4	19.6	19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	22.7	22.7	Relative P/E Ratio	10000	10629	10697	.65	.68	.88	2.15	.95	.94	.88	1.04	1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.27	1.27	Avg Ann'l Div'd Yield	10000	10629	10697	4.3%	3.9%	3.0%	2.1%	3.0%	3.4%	3.5%	3.0%	2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.7%
	1Q2013	2Q2013	3Q2013	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014																																																																																																																																																																																																																																									
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CAPITAL STRUCTURE as of 9/30/13 Total Debt \$335.1 mill. Due in 5 Yrs \$21.2 mill. LT Debt \$335.1 mill. LT Interest \$18.6 mill. (Total interest coverage: 4.6x) (51% of Cap'l)																																																																																																																																																																																																																																																														
Leases, Uncapitalized: Annual rentals \$4.7 mill.																																																																																																																																																																																																																																																														
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BUSINESS: SJW Corporation engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 227,000 connections that serve a population of approximately one million people in the San Jose area and 8,700 connections that serve approximately 36,000 residents in a service area in the region between San Antonio and Austin, Texas. The company offers nonregulated water-related services, including water system operations, cash remittances, and maintenance contract services. SJW also owns and operates commercial real estate investments. Has about 375 employees. Chrm.: Charles J. Toeniskoetter, Inc.; CA. Address: 110 W. Taylor Street, San Jose, CA 95110. Tel.: (408) 279-7800. Int: www.sjwater.com.																																																																																																																																																																																																																																																														
We have lowered our 2013 earnings estimate for SJW. Higher costs for both extracting ground water and for purchasing water on the open market resulted in an unexpected 17% decline in last year's third-quarter earnings per share. As a result, we think the company's annual share net only reached \$1.20, \$0.10 less than our previous estimate.																																																																																																																																																																																																																																																														
Earnings for the next several years will depend upon state regulators. In 2012, SJW filed a rate case with the California Public Utility Commission (CPUC) seeking to have rates increased 21.5% in 2013, 4.9% in 2014, and 12.6% in 2016, respectfully. Raising customers' bills by such significant amounts is not easy for any public body. However, SJW's pipelines are antiquated and badly in need of modernization.																																																																																																																																																																																																																																																														
We are guardedly optimistic regarding SJW's chances of receiving a favorable ruling. With the exception of the allowed return on equity, the CPUC's recent decisions have been reasonable. Utilities that have made sound arguments for the need for higher tariffs have been treated fairly. Still, predicting regulators'																																																																																																																																																																																																																																																														
actions is not an exact science. SJW's short-term dividend growth prospects are unexciting. The company is expected to raise its dividend later this month or in early February. We are anticipating only a quarterly increase of \$0.005 a share (or \$0.02 a share on an annual basis). This increase is only 2.7%, versus the industry average of over 5%. As future rate relief is implemented, there is the possibility that our projections could prove conservative.																																																																																																																																																																																																																																																														
SJW operates in healthy service areas. The company's main utility operations are in San Jose, the home of Silicon Valley. While other parts of California may suffer, due to the high cost of doing business, this is a geographic location that should continue to experience solid growth. Moreover, the company's Texas subsidiary is located in the thriving Austin-to-San Antonio corridor.																																																																																																																																																																																																																																																														
We think that there are other stocks in the water utility group that hold greater appeal than SJW. On a risk adjusted basis, the equity's prospects are in line with the industry averages.																																																																																																																																																																																																																																																														
<i>James A. Flood January 17, 2014</i>																																																																																																																																																																																																																																																														
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YORK WATER NDQ:YCRW		RECENT PRICE	P/E RATIO	(Trailing: 29.7)	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE
TIMELINESS 5 Lowered 11/22/13 SAFETY 2 New 7/19/13 TECHNICAL 2 Raised 1/3/14 BETA .70 (1.00 = Market)		21.37	26.7	(Trailing: 29.7)	1.44	2.7%	
2016-18 PROJECTIONS Price Gain Ann'l Total High 30 (+40%) 12% Low 20 (-5%) 2%		High: 13.4 13.5 14.0 17.9 21.0 18.5 16.5 18.0 18.0 18.1 18.5 22.0 Low: 8.2 9.3 11.0 11.7 15.3 15.5 6.2 9.7 12.8 15.8 16.8 17.6	LEGENDS --- 1.10 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 5/02 3-for-2 split 9/06 Options: No Shaded areas indicate recessions		Target Price Range 2016 2017 2018 64 48 40 32 24 16 12 8 6		
Insider Decisions F M A M J J A S O to Buy 0 0 4 0 1 5 0 2 5 Options 0 0 0 0 0 0 0 0 0 to Sell 0 0 1 0 0 0 0 0 0		Institutional Decisions 1Q2013 2Q2013 3Q2013 to Buy 33 32 30 to Sell 21 26 23 Hold(%) 3375 3346 3451		% TOT. RETURN 12/13 THIS STOCK VL ARITH. INDEX 1 yr. 21.7 38.4 3 yr. 31.5 52.8 5 yr. 101.4 211.8			
CAPITAL STRUCTURE as of 9/30/13 Total Debt \$84.9 mill. Due in 5 Yrs \$19.5 mill. LT Debt \$84.9 mill. LT Interest \$5.2 mill. (Total Interest coverage: 2.9x)		20.9 22.5 26.8 28.7 31.4 32.8 37.0 39.0 40.6 41.4 43.0 46.0 4.4 4.8 5.8 6.1 6.4 6.4 7.5 8.9 9.1 9.3 10.0 11.5		Revenues per sh 4.15 "Cash Flow" per sh 1.65 Earnings per sh A 1.05 Div'd Decl'd per sh B .70 Cap'l Spending per sh 1.05 Book Value per sh 9.60 Common Shs Outst'g C 12.00 Avg Ann'l P/E Ratio 23.0 Relative P/E Ratio 1.55 Avg Ann'l Div'd Yield 2.8%			
Pension Assets 12/12 \$22.7 mill. Oblig. \$34.7 mill.		34.8% 36.7% 36.7% 34.4% 36.5% 36.1% 37.0% 38.5% 35.3% 37.6% 36.0% 36.0% -- -- -- -- 3.6% 10.1% -- 1.2% 1.1% 1.0% 1.0%		Income Tax Rate 36.0% AFUDC % to Net Profit 1.0% Long-Term Debt Ratio 42.5% Common Equity Ratio 57.5%			
MARKET CAP: \$275 million (Small Cap)		69.0 83.6 90.3 126.5 125.7 153.4 160.1 176.4 180.2 184.8 190 185 116.5 140.0 155.3 174.4 191.6 211.4 222.0 228.4 233.0 240.3 245 250 8.5% 7.6% 8.4% 6.2% 6.7% 5.7% 6.2% 6.5% 6.4% 6.4% 6.5% 7.5%		Total Capital (\$mill) 200 Net Plant (\$mill) 260 Return on Total Cap'l 7.5% Return on Shr. Equity 11.0% Return on Com Equity 11.0% Retained to Com Eq 3.5% All Div'ds to Net Prof 67%			
MARKET CAP: \$275 million (Small Cap)		11.4% 10.0% 11.6% 9.3% 9.5% 9.2% 8.6% 9.8% 9.5% 9.3% 9.5% 11.5% 11.4% 10.0% 11.6% 9.3% 9.5% 9.2% 8.6% 9.8% 9.5% 9.3% 9.5% 11.5%		2.6% 2.1% 3.0% 2.2% 1.7% 1.4% 1.9% 2.7% 2.5% 2.4% 3.0% 3.0% 77% 79% 74% 77% 82% 85% 78% 72% 73% 74% 71% 63%			
CURRENT POSITION 2011 2012 9/30/13 (\$MILL) Cash Assets 4.0 4.0 6.8 Accounts Receivable 6.0 6.4 3.9 Other 1.4 1.2 3.6 Current Assets 11.4 11.6 14.3 Accts Payable 1.1 1.1 1.9 Debt Due -1 - - Other 4.1 4.3 5.0 Current Liab. 5.3 5.5 6.9 Fix. Chg. Cov. 160% 156% 154%		ANNUAL RATES Past Past Est'd '10-'12 of change (per sh) 10 Yrs. 5 Yrs. '16-'18 Revenues 4.5% 3.5% 4.5% "Cash Flow" 6.5% 6.5% 7.0% Earnings 4.5% 4.5% 6.5% Dividends 1.5% 3.0% 5.0% Book Value 7.0% 6.0% 4.5%		BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2012, the company's average daily availability was 35.0 million gallons and its service territory had an estimated population of 189,000. Has more than 63,000 customers. Residential customers accounted for 63% of 2012 revenues; commercial and industrial (29%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 103 full-time employees at 12/31/12. President/CEO: Jeffrey R. Hines. Officers/directors own 1.2% of the common stock (3/13 proxy). Address: 130 East Market Street York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.			
QUARTERLY REVENUES (\$ mill.) Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2010 9.0 9.7 10.5 9.8 39.0 2011 9.6 10.5 10.5 10.0 40.6 2012 9.6 10.4 11.0 10.4 41.4 2013 10.1 10.7 10.9 11.3 43.0 2014 10.5 11.5 12.2 11.8 46.0		QUARTERLY DIVIDENDS PAID^a Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2010 .128 .128 .128 .128 .512 2011 .131 .131 .131 .131 .524 2012 .134 .134 .134 .134 .535 2013 .138 .138 .138 .138 .552 2014 .1431		The York Water Company probably experienced little growth in the year just ended. We think that the company's share net barely moved higher in 2013, reaching \$0.75, at best. This represents the fourth-consecutive year in which the bottom line has showed little improvement. Moreover, the dividend only increased slightly over the same time period. Higher rates could possibly provide a nice lift to profits in 2014, however. York is still awaiting the ruling on a rate case filed last year in Pennsylvania. The petition was for a 17% hike in tariffs to enable it to recover the nearly \$50 million that it spent over the past several years upgrading the system's deteriorating infrastructure. A share-repurchase program would also help. The company hasn't really bought back any of the 1.2 million shares authorized by its board more than a year ago. While this might not sound like much, the amount represents more than 9% of the company's outstanding shares. The balance sheet should remain in good shape. York's finances have strengthened over the last several years.			
QUARTERLY EARNINGS PER SHARE^A Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2010 .15 .18 .21 .17 .71 2011 .17 .19 .19 .16 .71 2012 .15 .17 .22 .18 .72 2013 .17 .18 .19 .21 .75 2014 .19 .22 .22 .22 .85		And, even assuming a reduction in the equity base resulting from the share repurchases, we think that the equity-to-total capital ratio will remain at a healthy 55% next year, and gradually rise to 57% by 2016-2018. Having solid finances will also provide York with greater flexibility. As the industry continues to consolidate, perhaps a small acquisition or two could be made to help foster earnings growth. We have raised the company's long-term dividend growth prospects. York raised its dividend by 3.5% last quarter, nearly double the average of the past several years. Though this rate is still below the industry average, it might signal a more positive long-term trend. York shares are now ranked 5 (Lowest) for year-ahead relative performance. While our outlook for the company has improved since our October report, it now appears that all of the company's positive metrics are fully reflected in the recent stock price. Indeed, the current price earnings ratio of nearly 27 is high, both for a water utility and the general market.		James A. Flood January 17, 2014			
QUARTERLY DIVIDENDS PAID^a Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2010 .128 .128 .128 .128 .512 2011 .131 .131 .131 .131 .524 2012 .134 .134 .134 .134 .535 2013 .138 .138 .138 .138 .552 2014 .1431		Company's Financial Strength B+ Stock's Price Stability 90 Price Growth Persistence 70 Earnings Predictability 100		To subscribe call 1-800-833-0046.			

(A) Diluted earnings. Next earnings report due early February.
 (B) Dividends historically paid in mid-January, April, July, and October.

(C) In millions, adjusted for splits.

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Artesian Water Company
Current Institutional Holdings and Individual Holdings
the Proxy Group of Nine Water Companies

	<u>1</u>	<u>2</u>
	March 03, 2014 Percentage of Institutional Holdings	March 03, 2014 Percentage of Individual Holdings (1)
Proxy Group of Nine Water Companies		
American States Water Co.	59.29 %	40.71 %
American Water Works Co., Inc.	80.62	19.38
Aqua America, Inc.	47.91	52.09
Artesian Resources Corp.	37.63	62.37
California Water Service Group	57.94	42.06
Connecticut Water Service, Inc.	40.23	59.77
Middlesex Water Company	38.24	61.76
SJW Corporation	52.96	47.04
York Water Company	<u>27.26</u>	<u>72.74</u>
Average	<u>49.12 %</u>	<u>50.88 %</u>

Notes:

(1) (1 - column 1).

Source of Information: pro.edgar-online.com, March 3, 2014

Artesian Water Company
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™ (PRPM™) (1)	11.67 %
Risk Premium Using an Adjusted Market Approach (2)	<u>10.03 %</u>
Weighted Average (3)	<u><u>11.26 %</u></u>

Notes:

- (1) From page 2 of this Schedule.
- (2) From page 3 of this Schedule.
- (3) Allocating a 75% weighting to PRPM™ results and 25% to the adjusted market approach as discussed in Ms. Ahern's direct testimony.

Artesian Water Company
 Derivation of Common Equity Cost Rate
 Using the Predictive Risk Premium Model™ (PRPM™)
 Proxy Group of Nine Water Companies (1)

	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 (2)	1.53539039	4.55424938	2.201821475	2.124202151	1.849771699	1.763372713	1.907163437	1.344368648	1.949912546
Average Variance (2)	0.39%	0.30%	0.47%	0.30%	0.31%	0.28%	0.27%	0.42%	0.46%
PRPM™ Derived Risk Premium (2)	7.41%	17.62%	13.29%	7.94%	7.14%	6.19%	6.35%	6.97%	11.26%
Risk-Free Rate (3)	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%
Indicated Cost of Common Equity	11.81%	NA	17.69%	12.34%	11.54%	10.59%	10.75%	11.37%	15.66%
								Average	12.72%
								Median	11.67%

Notes:

- (1) From first available trading month through January 2014.
- (2) Based upon data from CRSP® Data © 2012, Center For Research in Security Prices (CRSP®), The University of Chicago Booth School of Business.
- (3) From note 3 on page 2 of Schedule PMA-9.

Artesian Water Company
 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)	5.14 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	<u>0.16</u> (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	5.30 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	<u>(0.04)</u> (3)
5.	Adjusted Prospective Bond Yield	5.27 %
6.	Equity Risk Premium (4)	<u>4.76</u>
7.	Risk Premium Derived Common Equity Cost Rate	<u><u>10.03</u></u> %

- Notes: (1) Average consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 9 and 10 of this Schedule).
- (2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.16% from page 6 of this Schedule.
- (3) Adjustment to reflect the A1/A2 Moody's bond rating of the proxy group of nine water companies as shown on page 4 of this Schedule. The 4 basis point adjustment is derived by taking 1/6 of the spread between Aa2 and A2 Public Utility Bonds ($1/6 * 0.21\% = 0.04\%$).
- (4) From page 7 of this Schedule.

Artesian Water Company
Comparison of Bond Ratings, Business Risk and Financial Risk Profiles for the
Proxy Group of Nine Water Companies

<u>Proxy Group of Nine Water Companies</u>	Moody's		Standard & Poor's	
	Bond Rating		Bond Rating	
	March 2014		March 2014	
<u>Proxy Group of Nine Water Companies</u>	<u>Bond Rating</u>	<u>Numerical Weighting (1)</u>	<u>Bond Rating</u>	<u>Numerical Weighting (1)</u>
American States Water Co. (2)	A2	6.0	A+	5.0
American Water Works Co., Inc. (3)	A1	5.0	A+	5.0
Aqua America, Inc. (4)	NR	--	AA-	4.0
Artesian Resources Corp.	NR	--	NR	--
California Water Service Group (5)	NR	--	AA-	4.0
Connecticut Water Service, Inc. (6)	NR	--	A/A-	6.5
Middlesex Water Company	NR	--	A	6.0
SJW Corporation (7)	NR	--	A	6.0
York Water Company	NR	--	A-	7.0
Average	<u>A1/A2</u>	<u>5.5</u>	<u>A+</u>	<u>5.4</u>

Notes:

- (1) From page 5 of this Schedule.
- (2) Ratings are those of Golden State Water
- (3) Ratings are those of Pennsylvania American Water.
- (4) Ratings are those of Aqua Pennsylvania, Inc.
- (5) Ratings are those of California Water Service
- (6) Ratings are those of Connecticut Water
- (7) Ratings are those of San Jose Water Co.

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

Moody's
 Comparison of Interest Rate Trends
 for the Three Months Ending January 2014 (1)

Months	Corporate Bonds		Public Utility Bonds		Spread - Corporate v. Public Utility Bonds		Spread - Public Utility Bonds	
	Aaa Rated	Aa Rated	A Rated	Baa Rated	Aa (Pub, Util.) over Aaa (Corp.)	A (Pub, Util.) over Aaa (Corp.)	A over Aa	Baa over A
January-14	4.49 %	4.44 %	4.63 %	5.09 %				
December-13	4.62	4.59	4.81	5.25				
November-13	4.63	4.56	4.77	5.24				
Average of Last 3 Months	4.58 %	4.53 %	4.74 %	5.19 %	(0.05) %	0.16 %	0.21 %	0.45 %

Notes: (1) All yields are distributed yields.

Source of Information: Mergent Bond Record, February 2014, Vol. 81, No. 2.

Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

<u>Moody's Bond Rating</u>	<u>Numerical Bond Weighting</u>	<u>Standard & 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-
B	14	B+
B2	15	B
B3	16	B-

Artesian Water Company
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)	4.54 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	<u>4.97</u>
3.	Average equity risk premium	<u><u>4.76 %</u></u>

Notes: (1) From page 8 of this Schedule.
(2) From page 11 of this Schedule.

Artesian Water Company
 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 SBBI Valuation Yearbook Data:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.60 %
2.	Ibbotson Equity Risk Premium based on PRPM™ (2)	9.26
<u>Based on Value Line Summary and Index:</u>		
3.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (3)	<u>3.81</u>
4.	Conclusion of Equity Risk Premium (4)	6.98 %
5.	Adjusted Value Line Beta (5)	<u>0.65</u>
6.	Beta Adjusted Equity Risk Premium	<u><u>4.54 %</u></u>

- Notes:
- (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 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 January 2014.
 - (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 8.95% (described fully in note 1 of page 2 of Schedule PMA-9) and subtracting the average consensus forecast of Aaa corporate bonds of 5.14% (Shown on page 3 of this Schedule). (8.95% - 5.14% = 3.81%).
 - (4) Weighted average giving 50% to the PRPM™ results and 25% to Value Line and Ibbotson results as explained in Ms. Ahern's direct testimony.
 - (5) Median beta derived from page 1 of Schedule PMA-9.

Sources of Information:

Ibbotson® SBBI® 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, March 1, 2014 and December 1, 2013

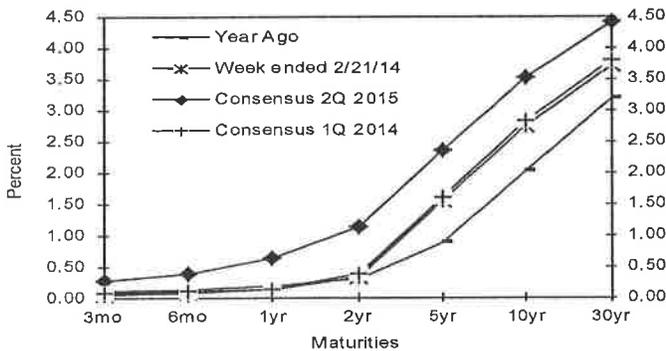
Consensus Forecasts Of U.S. Interest Rates And Key Assumptions¹

Interest Rates	History								Consensus Forecasts-Quarterly Avg.						
	Average For Week Ending				Average For Month				Latest Q	1Q 2014	2Q 2014	3Q 2014	4Q 2014	1Q 2015	2Q 2015
	Feb. 21	Feb. 14	Feb. 7	Jan. 31	Jan.	Dec.	Nov.	4Q 2013							
Federal Funds Rate	0.06	0.06	0.07	0.07	0.07	0.09	0.08	0.09	0.1	0.1	0.1	0.2	0.2	0.3	0.3
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	3.3
LIBOR, 3-mo.	0.24	0.24	0.23	0.23	0.24	0.24	0.24	0.24	0.3	0.3	0.3	0.3	0.4	0.5	0.5
Commercial Paper, 1-mo.	0.06	0.06	0.06	0.05	0.05	0.06	0.05	0.06	0.1	0.1	0.1	0.2	0.2	0.3	0.3
Treasury bill, 3-mo.	0.05	0.04	0.07	0.04	0.04	0.07	0.07	0.06	0.1	0.1	0.1	0.1	0.2	0.3	0.3
Treasury bill, 6-mo.	0.08	0.09	0.08	0.07	0.07	0.10	0.10	0.09	0.1	0.1	0.2	0.2	0.3	0.4	0.4
Treasury bill, 1 yr.	0.12	0.12	0.12	0.11	0.12	0.13	0.12	0.12	0.1	0.2	0.3	0.3	0.5	0.6	0.6
Treasury note, 2 yr.	0.33	0.33	0.31	0.36	0.39	0.34	0.30	0.33	0.4	0.5	0.6	0.8	0.9	1.1	1.1
Treasury note, 5 yr.	1.54	1.53	1.48	1.55	1.65	1.58	1.37	1.44	1.6	1.7	1.9	2.0	2.2	2.3	2.3
Treasury note, 10 yr.	2.73	2.75	2.68	2.73	2.86	2.90	2.72	2.75	2.8	3.0	3.1	3.3	3.4	3.5	3.5
Treasury note, 30 yr.	3.70	3.69	3.63	3.65	3.77	3.89	3.80	3.79	3.8	3.9	4.1	4.2	4.3	4.4	4.4
Corporate Aaa bond	4.48	4.50	4.45	4.45	4.49	4.62	4.63	4.59	4.6	4.7	4.8	4.9	5.0	5.2	5.2
Corporate Baa bond	5.13	5.13	5.09	5.10	5.19	5.38	5.38	5.36	5.2	5.4	5.5	5.7	5.8	5.9	5.9
State & Local bonds	4.44	4.46	4.46	4.48	4.59	4.73	4.60	4.63	4.5	4.6	4.7	4.8	4.9	4.9	4.9
Home mortgage rate	4.33	4.28	4.23	4.32	4.43	4.46	4.26	4.30	4.4	4.6	4.7	4.8	5.0	5.1	5.1

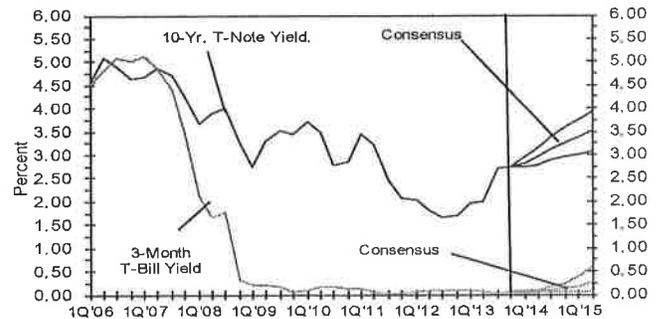
Key Assumptions	History								Consensus Forecasts-Quarterly					
	1Q 2012	2Q 2012	3Q 2012	4Q 2012	1Q 2013	2Q 2013	3Q 2013	4Q 2013	1Q 2014	2Q 2014	3Q 2014	4Q 2014	1Q 2015	2Q 2015
Major Currency Index	72.9	73.9	74.0	73.2	74.7	76.4	76.7	76.0	77.1	77.5	77.9	78.2	78.2	78.1
Real GDP	3.7	1.2	2.8	0.1	1.1	2.5	4.1	2.4	1.9	2.8	2.9	3.0	3.0	3.0
GDP Price Index	2.0	1.8	2.3	1.1	1.3	0.6	2.0	1.6	1.6	1.7	1.9	1.9	2.0	1.9
Consumer Price Index	2.1	1.4	1.7	2.4	1.2	0.4	2.2	1.1	1.8	1.8	2.1	2.0	2.0	2.1

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 same as those in FRSR H.15. Treasury yields are reported on a constant maturity basis. Historical data for 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).

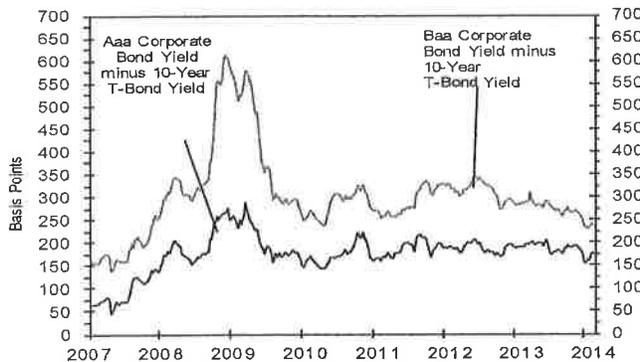
U.S. Treasury Yield Curve
 Week ended February 21, 2014 and YearAgo vs. 1Q 2014 and 2Q 2015 Consensus Forecasts



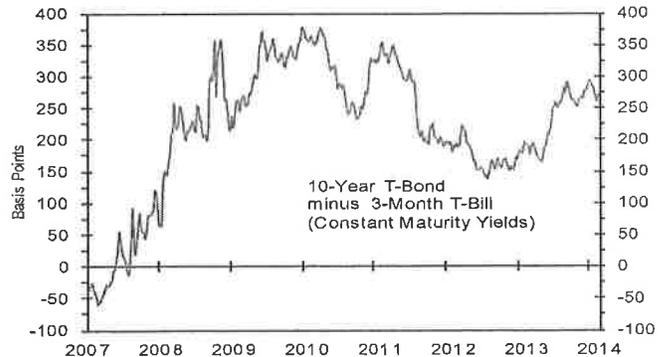
U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield
 (Quarterly Average) History Forecast



Corporate Bond Spreads
 As of week ended February 21, 2014



U.S. Treasury Yield Curve
 As of week ended February 21, 2014



Long-Range Estimates:

The table below contains results of our semi-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are estimates for the years 2015 through 2019 and averages for the five-year periods 2015-2019 and 2020-2024. Apply these projections cautiously. Few economic, demographic and political forces can be evaluated accurately over such long time spans.

Interest Rates		Average For The Year					Five-Year Averages	
		2015	2016	2017	2018	2019	2015-2019	2020-2024
1. Federal Funds Rate	CONSENSUS	0.4	1.7	2.9	3.6	3.9	2.5	3.7
	Top 10 Average	0.8	2.6	3.9	4.2	4.5	3.2	4.4
	Bottom 10 Average	0.2	0.8	1.6	2.6	3.1	1.6	2.9
2. Prime Rate	CONSENSUS	3.5	4.8	6.0	6.6	6.9	5.6	6.7
	Top 10 Average	3.9	5.6	6.9	7.2	7.6	6.2	7.4
	Bottom 10 Average	3.3	4.1	5.0	5.7	6.1	4.8	5.8
3. LIBOR, 3-Mo.	CONSENSUS	0.9	2.2	3.3	4.0	4.2	2.9	4.0
	Top 10 Average	1.6	3.3	4.6	5.0	5.2	3.9	5.0
	Bottom 10 Average	0.4	1.1	2.0	2.8	3.3	1.9	3.0
4. Commercial Paper, 1-Mo.	CONSENSUS	0.6	2.0	3.1	3.7	3.9	2.6	3.7
	Top 10 Average	1.0	2.7	3.9	4.3	4.5	3.3	4.3
	Bottom 10 Average	0.3	1.3	2.3	2.9	3.1	2.0	3.0
5. Treasury Bill Yield, 3-Mo.	CONSENSUS	0.5	1.7	2.9	3.5	3.7	2.5	3.6
	Top 10 Average	1.0	2.7	3.9	4.3	4.5	3.3	4.3
	Bottom 10 Average	0.2	0.8	1.7	2.4	3.0	1.6	2.7
6. Treasury Bill Yield, 6-Mo.	CONSENSUS	0.7	2.0	3.1	3.7	3.9	2.7	3.8
	Top 10 Average	1.2	2.9	4.1	4.5	4.6	3.5	4.5
	Bottom 10 Average	0.3	1.1	1.9	2.7	3.1	1.8	2.8
7. Treasury Bill Yield, 1-Yr.	CONSENSUS	0.9	2.2	3.2	3.8	4.0	2.8	3.9
	Top 10 Average	1.5	3.2	4.3	4.7	4.8	3.7	4.6
	Bottom 10 Average	0.4	1.2	2.0	2.8	3.1	1.9	2.9
8. Treasury Note Yield, 2-Yr.	CONSENSUS	1.4	2.6	3.6	4.0	4.3	3.2	4.2
	Top 10 Average	2.0	3.5	4.5	4.9	5.0	4.0	4.9
	Bottom 10 Average	0.8	1.7	2.4	3.1	3.5	2.3	3.3
10. Treasury Note Yield, 5-Yr.	CONSENSUS	2.3	3.3	4.1	4.4	4.6	3.7	4.4
	Top 10 Average	2.9	4.0	4.8	5.1	5.3	4.4	5.1
	Bottom 10 Average	1.7	2.6	3.2	3.5	3.7	2.9	3.6
11. Treasury Note Yield, 10-Yr.	CONSENSUS	3.4	4.1	4.6	4.8	5.0	4.4	4.9
	Top 10 Average	3.9	4.8	5.3	5.6	5.8	5.1	5.6
	Bottom 10 Average	2.8	3.5	3.8	4.0	4.1	3.7	4.0
12. Treasury Bond Yield, 30-Yr.	CONSENSUS	4.3	4.7	5.2	5.5	5.6	5.0	5.5
	Top 10 Average	4.8	5.5	6.0	6.3	6.5	5.8	6.2
	Bottom 10 Average	3.7	4.0	4.4	4.6	4.7	4.3	4.6
13. Corporate Aaa Bond Yield	CONSENSUS	4.9	5.4	5.9	6.2	6.3	5.7	6.2
	Top 10 Average	5.6	6.2	6.7	7.0	7.2	6.5	7.0
	Bottom 10 Average	4.2	4.5	4.9	5.2	5.3	4.8	5.3
13. Corporate Baa Bond Yield	CONSENSUS	5.9	6.3	6.8	7.1	7.2	6.7	7.0
	Top 10 Average	6.5	7.1	7.5	7.9	8.1	7.4	7.9
	Bottom 10 Average	5.1	5.4	5.7	6.1	6.1	5.7	6.0
14. State & Local Bonds Yield	CONSENSUS	4.8	5.2	5.6	5.7	5.7	5.4	5.5
	Top 10 Average	5.2	5.9	6.3	6.5	6.6	6.1	6.3
	Bottom 10 Average	4.3	4.5	4.8	4.9	4.9	4.7	4.7
15. Home Mortgage Rate	CONSENSUS	5.1	5.6	6.1	6.4	6.5	5.9	6.4
	Top 10 Average	5.6	6.3	6.9	7.1	7.3	6.6	7.1
	Bottom 10 Average	4.4	5.0	5.3	5.5	5.6	5.2	5.6
A. FRB - Major Currency Index	CONSENSUS	77.8	78.4	78.8	79.1	79.2	78.7	79.7
	Top 10 Average	81.0	82.3	83.4	84.2	84.4	83.1	84.8
	Bottom 10 Average	74.6	74.3	74.0	73.7	74.0	74.1	74.7
B. Real GDP		Year-Over-Year, % Change					Five-Year Averages	
	CONSENSUS	3.0	2.9	2.7	2.6	2.5	2.7	2.4
C. GDP Chained Price Index	Top 10 Average	3.5	3.3	3.1	2.9	2.9	3.1	2.7
	Bottom 10 Average	2.5	2.5	2.3	2.1	2.2	2.3	2.1
D. Consumer Price Index	CONSENSUS	2.0	2.1	2.1	2.1	2.1	2.1	2.1
	Top 10 Average	2.5	2.5	2.6	2.5	2.5	2.5	2.5
	Bottom 10 Average	1.5	1.7	1.7	1.7	1.7	1.7	1.7
	CONSENSUS	2.2	2.3	2.3	2.3	2.3	2.3	2.3
	Top 10 Average	2.6	2.8	2.8	2.8	2.8	2.8	2.8
	Bottom 10 Average	1.7	1.9	1.9	1.9	2.0	1.9	1.9

Artesian Water Company
 Derivation of Mean Equity Risk Premium Based on a Study
Using Holding Period Returns of Public Utilities

Line No.		Over A Rated Moody's Public Utility Bonds - AUS <u>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>5.24</u>
5.	Weighted Average of Historical and PRPM™ Equity Risk Premium (4)	<u><u>4.97 %</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.
- (4) Weighted average allocates 75% to PRPM™ study results and 25% to historical results.

Artesian Water Company
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>
<u>Proxy Group of Nine Water Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Market Risk Premium (1)</u>	<u>Risk-Free Rate (2)</u>	<u>Traditional CAPM Cost Rate (3)</u>	<u>ECAPM Cost Rate (4)</u>	<u>Indicated Common Equity Cost Rate (5)</u>
American States Water Co.	0.65	7.96 %	4.40 %	9.57 %	10.27 %	
American Water Works Co., Inc.	0.65	7.96	4.40	9.57	10.27	
Aqua America, Inc.	0.60	7.96	4.40	9.18	9.97	
Artesian Resources Corp.	0.55	7.96	4.40	8.78	9.67	
California Water Service Group	0.60	7.96	4.40	9.18	9.97	
Connecticut Water Service, Inc.	0.75	7.96	4.40	10.37	10.87	
Middlesex Water Company	0.75	7.96	4.40	10.37	10.87	
SJW Corporation	0.85	7.96	4.40	11.17	11.46	
York Water Company	0.70	7.96	4.40	9.97	10.57	
Average	<u>0.68</u>			<u>9.80 %</u>	<u>10.44 %</u>	<u>10.12 %</u>
Median	<u>0.65</u>			<u>9.57 %</u>	<u>10.27 %</u>	<u>9.92 %</u>

See page 2 for notes.

Artesian Water Company, 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 March 7, 2014, Value Line Summary & Index, a forecasted 3-5 year total annual market return of 8.95% can be derived by averaging the 13 weeks ending March 7, 2014 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 31% produces a four-year average annual return of 6.98% $((1.31^{0.25}) - 1)$. When the average annual forecasted dividend yield of 1.97% is added, a total average market return of 8.95% $(1.97\% + 6.98\%)$ is derived.

The 13 weeks ending March 7, 2014 forecasted total market return of 8.95% minus the risk-free rate of 4.40% (developed in Note 2) is 4.55% $(8.95\% - 4.40\%)$.

The Predictive Risk Premium Model (PRPM™) market equity risk premium of 10.36% is derived by applying the PRPM™ 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 January 2014.

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 weighted, 50% weighting to the PRPM™ risk premium, and 25% to the Value Line and Ibbotson risk premiums resulting in a 7.96% weighted average market equity risk premium, which is then multiplied by the beta in column 1 of page 1 of this Schedule. $(7.96\% = (4.55\% \times 25\%) + (10.36\% \times 50\%) + (6.55\% \times 25\%))$.

- (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 forecast of 30-year Treasury Note yields per the consensus of nearly 50 economists reported in the Blue Chip Financial Forecasts dated March 1, 2014 and December 1, 2013 (see pages 9 & 10 of Exhibit PMA-8). The estimates are detailed below:

	<u>30-Year Treasury Note Yield</u>
First Quarter 2014	3.80%
Second Quarter 2014	3.90%
Third Quarter 2014	4.10%
Fourth Quarter 2014	4.20%
First Quarter 2015	4.30%
Second Quarter 2015	4.40%
2015 – 2019	5.00%
2020 – 2024	<u>5.50%</u>
Average	<u>4.40%</u>

- (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
 β = 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
 β = Value Line Adjusted Beta
 R_M = Return on the market as a whole

Source of Information: Value Line Summary & Index
Blue Chip Financial Forecasts, March 1, 2014 and December 1, 2013
Value Line Investment Survey, (Standard Edition)
2013 Ibbotson® SBBI® Valuation Yearbook, Morningstar, Inc., 2013, Chicago, IL

Artesian Water Company
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>Proxy Group of Twenty-Eight Non- Price-Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	11.88 %
Risk Premium Model (RPM) (2)	10.79
Capital Asset Pricing Model (CAPM) (3)	<u>10.27</u>
Average	<u><u>10.98 %</u></u>

Notes:

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

Artesian Water Company
 Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

<u>Proxy Group of Nine Water Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Unadjusted Beta</u>	<u>Residual Standard Error of the Regression</u>	<u>Standard Deviation of Beta</u>
American States Water Co.	0.70	0.48	3.3620	0.0650
American Water Works Co., Inc.	0.65	0.44	3.0655	0.0610
Aqua America, Inc.	0.60	0.36	2.5902	0.0501
Artesian Resources Corp.	0.55	0.30	2.6477	0.0512
California Water Service Group	0.65	0.40	2.7115	0.0524
Connecticut Water Service, Inc.	0.75	0.58	3.1061	0.0601
Middlesex Water Company	0.70	0.54	2.6637	0.0515
SJW Corporation	0.85	0.70	3.6057	0.0697
York Water Company	0.70	0.48	3.1325	0.0606
Average	<u>0.68</u>	<u>0.48</u>	<u>2.9872</u>	<u>0.0580</u>
Beta Range (+/- 2 std. Devs. of Beta) 2 std. Devs. of Beta	0.36 0.12	0.60		
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.7246	3.2498		
Std. dev. of the Res. Std. Err.	0.1313			
2 std. devs. of the Res. Std. Err.	0.2626			

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

<u>Proxy Group of Twenty-Eight 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	2.9742	0.0575
Baxter Intl Inc.	0.70	0.49	2.9372	0.0568
Bristol-Myers Squibb	0.70	0.50	2.8839	0.0558
Brown & Brown	0.75	0.55	3.1464	0.0608
ConAgra Foods	0.65	0.42	2.7898	0.0540
Capitol Fed. Finl	0.60	0.39	3.0449	0.0589
CenturyLink Inc.	0.75	0.57	3.0568	0.0591
Quest Diagnostics	0.75	0.59	2.7655	0.0535
Dun & Bradstreet	0.75	0.60	2.9024	0.0561
DaVita HealthCare	0.65	0.46	2.8841	0.0558
Haemonetics Corp.	0.65	0.41	2.7538	0.0533
Kroger Co.	0.60	0.36	2.8843	0.0558
Lancaster Colony	0.70	0.53	3.1660	0.0612
McKesson Corp.	0.75	0.58	3.2240	0.0623
Mercury General	0.70	0.48	3.0066	0.0581
Mead Johnson Nutrition	0.65	0.43	3.1630	0.0824
Annaly Capital Mgmt.	0.65	0.39	3.2022	0.0619
Northwest Bancshares	0.75	0.59	3.0864	0.0597
Owens & Minor	0.70	0.53	3.2368	0.0626
Peoples United Finl	0.65	0.46	2.8665	0.0554
Sherwin-Williams	0.70	0.48	2.9688	0.0574
Smucker (J.M.)	0.70	0.49	2.9429	0.0569
Silgan Holdings	0.75	0.56	2.8926	0.0559
Suburban Propane	0.70	0.54	3.0689	0.0593
Stericycle Inc.	0.70	0.49	2.9267	0.0566
Waste Connections	0.70	0.53	2.7663	0.0535
Weis Markets	0.65	0.42	2.9050	0.0562
Berkley (W.R.)	0.70	0.47	2.9475	0.0570
Average	<u>0.69</u>	<u>0.50</u>	<u>2.9783</u>	<u>0.0584</u>
Proxy Group of Nine Water Companies	<u>0.68</u>	<u>0.48</u>	<u>2.9872</u>	<u>0.0580</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 twenty-eight non-price regulated companies was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The proxy group of twenty-eight non-price regulated companies were then selected based upon the unadjusted beta range of 0.36 – 0.60 and standard error of the regression range of 2.7246 – 3.2498 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 0.1313. 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

$$\text{Thus, } 0.1313 = \frac{2.9872}{\sqrt{518}} = \frac{2.9872}{22.7596}$$

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

Artesian Water Company
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 Twenty-Eight 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.)	3.13 %	12.50 %	12.00 %	10.70 %	13.14 %	12.09 %	3.31 %	15.40 %
Baxter Intl Inc.	2.86	8.00	7.40	8.90	7.44	7.94	2.97	10.91
Bristol-Myers Squibb	2.74	10.00	13.00	10.80	13.50	11.83	2.91	14.74
Brown & Brown	1.31	14.00	14.00	10.70	15.53	13.56	1.40	14.96
ConAgra Foods	3.16	11.00	8.40	7.20	8.43	8.76	3.30	12.06
Capitol Fed. Finl	2.51	6.00	5.00	3.50	5.00	4.88	2.57	7.45
CenturyTel, Inc.	7.08	8.00	0.30	0.30	(1.00)	2.87	7.18	10.05
Quest Diagnostics	2.46	7.00	9.80	10.60	9.84	9.31	2.57	11.88
Dun & Bradstreet	1.59	7.00	6.50	7.60	6.57	6.92	1.64	8.56
DaVita Inc.	-	14.00	12.00	10.90	11.96	12.22	-	NA
Haemonetics Corp.	-	11.00	13.00	12.30	13.00	12.33	-	NA
Kroger Co.	1.72	10.50	7.90	7.20	7.90	8.38	1.79	10.17
Lancaster Colony	2.03	6.00	NA	NA	7.00	6.50	2.10	8.60
McKesson Corp.	0.57	14.00	19.00	14.00	19.93	16.73	0.62	17.35
Mercury General	5.24	8.00	3.20	3.20	3.20	4.40	5.35	9.75
Mead Johnson Nutrition	1.67	12.00	10.00	11.40	10.60	11.00	1.76	12.76
Annis Capital Mgmt.	11.61	(2.50)	NA	3.50	3.50	3.50	11.81	15.31
Northwest Bancshares, Inc.	3.62	8.50	5.00	5.00	5.00	5.88	3.73	9.61
Owens & Minor	2.80	10.00	9.00	9.00	9.00	9.25	2.93	12.18
Peoples United Fin	4.49	19.00	12.00	6.50	12.07	12.39	4.77	17.16
Sherwin-Williams	1.18	16.50	13.00	13.30	13.57	14.09	1.26	15.35
Smucker (J.M.)	2.35	8.50	7.70	7.30	7.75	7.81	2.45	10.26
Silgan Holdings	1.19	10.50	10.00	10.90	10.21	10.40	1.25	11.65
Suburban Propane	7.86	12.00	13.00	3.00	13.00	10.25	8.26	18.51
Stericycle Inc.	-	12.00	16.00	16.00	16.00	15.00	-	NA
Waste Connections	1.08	12.00	12.00	14.10	12.05	12.54	1.15	13.69
Weis Markets	2.40	3.50	NA	NA	NA	3.50	2.45	5.95
Berkley (W.R.)	0.97	12.50	7.90	9.50	6.91	9.20	1.01	10.21
Average								12.18 %
Median								11.88 %

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 March 3, 2014 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 03/04/2014
www.zacks.com Downloaded on 03/04/2014
www.yahoo.com Downloaded on 03/04/2014

Artesian Water Company
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 Twenty-Eight Non- Price-Regulated Companies</u>
1.	Prospective Yield on Baa Rated Corporate Bonds (1)	5.90 %
2.	Equity Risk Premium (2)	<u>4.89</u>
3.	Risk Premium Derived Common Equity Cost Rate	<u><u>10.79 %</u></u>

Notes: (1) Average forecast based upon estimates of Baa rated corporate bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated March 1, 2014 December 1, 2013 and (see pages 9 and 10 of Schedule PMA-8). The estimates are detailed below."

First Quarter 2014	5.20 %
Second Quarter 2014	5.40
Third Quarter 2014	5.50
Fourth Quarter 2014	5.70
First Quarter 2015	5.80
Second Quarter 2015	5.90
2015-2019	6.70
2020-2024	<u>7.00</u>
Average	<u><u>5.90 %</u></u>

(2) From page 8 of this Schedule.

Artesian Water Company
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

Proxy Group of Twenty-Eight Non-Price-Regulated Companies	Moody's Bond Rating March 2014		Standard & Poor's Bond Rating March 2014	
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)
Gallagher (Arthur J.)	NR	--	NR	--
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.	Ba1	11.0	BB	12.0
Quest Diagnostics	Baa2	9.0	BBB+	8.0
Dun & Bradstreet	NR	--	NR	--
DaVita HealthCare	B2	15.0	B	15.0
Haemonetics Corp.	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	A3	7.0	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.)	<u>Baa2</u>	<u>9.0</u>	<u>BBB+</u>	<u>8.0</u>
Average	<u>Baa2</u>	<u>9.3</u>	<u>BBB</u>	<u>9.4</u>

Notes:
(1) From page 5 of Schedule PMA-8.

Source of Information:
Standard & Poor's Bond Guide February 2014
www.moodys.com; downloaded 3/4/2014

Artesian Water Company
 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 Twenty-Eight Non- Price-Regulated Companies</u>
<u>Based on SBBI Valuation Yearbook Data:</u>	
1.	Ibbotson Equity Risk Premium (1) 5.60 %
2.	Ibbotson Equity Risk Premium based on PRPM™ (2) 9.26
<u>Based on Value Line Summary and Index:</u>	
3.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (3) 3.81
4.	Conclusion of Equity Risk Premium (4) 6.98 %
5.	Adjusted Value Line Beta (5) 0.70
6.	Forecasted Equity Risk Premium 4.89 %

- Notes:
- (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 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 January 2014.
 - (3) From page 8 of Schedule PMA-8.
 - (4) Weighted average giving 50% to the PRPM™ results and 25% to each of the other results as explained in Ms. Ahern's direct testimony.
 - (5) Median beta derived from page 9 of this Schedule.

Sources of Information:

Ibbotson® SBBI® 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, March 1, 2014 and December 1, 2013

Artesian Water Company
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 Twenty-Eight 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	7.96 %	4.40 %	10.37 %	10.87 %	
Baxter Intl Inc.	0.80	7.96	4.40	10.77	11.17	
Bristol-Myers Squibb	0.70	7.96	4.40	9.97	10.57	
Brown & Brown	0.75	7.96	4.40	10.37	10.87	
ConAgra Foods	0.65	7.96	4.40	9.57	10.27	
Capitol Fed. Finl	0.55	7.96	4.40	8.78	9.67	
CenturyLink Inc.	0.75	7.96	4.40	10.37	10.87	
Quest Diagnostics	0.75	7.96	4.40	10.37	10.87	
Dun & Bradstreet	0.80	7.96	4.40	10.77	11.17	
DaVita HealthCare	0.70	7.96	4.40	9.97	10.57	
Haemonetics Corp.	0.70	7.96	4.40	9.97	10.57	
Kroger Co.	0.65	7.96	4.40	9.57	10.27	
Lancaster Colony	0.75	7.96	4.40	10.37	10.87	
McKesson Corp.	0.70	7.96	4.40	9.97	10.57	
Mercury General	0.75	7.96	4.40	10.37	10.87	
Mead Johnson Nutrition	0.65	7.96	4.40	9.57	10.27	
Annaly Capital Mgmt.	0.65	7.96	4.40	9.57	10.27	
Northwest Bancshares	0.75	7.96	4.40	10.37	10.87	
Owens & Minor	0.85	7.96	4.40	11.17	11.46	
Peoples United Finl	0.70	7.96	4.40	9.97	10.57	
Sherwin-Williams	0.70	7.96	4.40	9.97	10.57	
Smucker (J.M.)	0.70	7.96	4.40	9.97	10.57	
Silgan Holdings	0.70	7.96	4.40	9.97	10.57	
Suburban Propane	0.70	7.96	4.40	9.97	10.57	
Stericycle Inc.	0.70	7.96	4.40	9.97	10.57	
Waste Connections	0.70	7.96	4.40	9.97	10.57	
Weis Markets	0.65	7.96	4.40	9.57	10.27	
Berkley (W.R.)	<u>0.65</u>	7.96	4.40	<u>9.57</u>	<u>10.27</u>	
Average	<u>0.71</u>			<u>10.04 %</u>	<u>10.62 %</u>	<u>10.33 %</u>
Median	<u>0.70</u>			<u>9.97 %</u>	<u>10.57 %</u>	<u>10.27 %</u>

Notes:

- (1) From Schedule PMA-9, page 2, note 1.
- (2) From Schedule PMA-9, page 2, note 2.
- (3) Derived from the model shown on Schedule PMA-9, page 2, note 3.
- (4) Derived from the model shown on Schedule PMA-9, page 2, note 4.
- (5) Average of CAPM and ECAPM cost rates.

Adriatic Water Company
 Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

Equity Issuances and Flotation Costs of the Parent Since 2004

Date	Transaction (1)	[Column 1] Shares Issued	[Column 2] Market Price per Share	[Column 3] Offering Price per Share	[Column 4] Market Pressure (2)	[Column 5] Underwriting Discount	[Column 6] Net Proceeds per Share (3)	[Column 7] Gross Equity Issue before Costs (4)	[Column 8] Total Net Proceeds (5)	[Column 9] Total Flotation Costs (6)	[Column 10] Flotation Cost Percentage (7)
07/15/11	Share Offering	885,290 (8)	\$ 19.2300	\$ 18.5500	\$ 0.6400	\$ 0.8000	\$ 17.8500	\$ 17,135,114	\$ 15,855,977	\$ 1,279,138	7.47%
06/14/07	Share Offering	1,000,000	\$ 19.3000	\$ 18.1500	\$ 0.1500	\$ 0.8139	\$ 18.3361	\$ 19,300,000	\$ 18,336,125	\$ 963,875	4.99%
								\$ 36,435,114	\$ 34,192,102	\$ 2,243,013	6.16%

Flotation Cost Adjustment

Average Dividend Yield	Average Projected EPS Growth Rate	Adjusted Dividend Yield	Average DCF Cost Rate Unadjusted for Flotation (9)	DCF Cost Rate Adjusted for Flotation (10)	Flotation Cost Adjustment (11)
2.99 %	5.81 %	3.08 %	8.99 %	9.19 %	0.20 %

Proxy Group of Nine Water Companies

Notes are on page 2 of this Schedule.

Artesian Water Company, Inc.
Notes to Accompany the
Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

- (1) Company-provided.
- (2) Column 2 – Column 3.
- (3) Column 2 – the sum of columns 4 and 5.
- (4) Column 1 * Column 2.
- (5) Column 1 * Column 6.
- (6) Column 1 * (the sum of columns 4 and 5).
- (7) (Column 7 – Column 8) divided by Column 7.
- (8) Includes an over-allotment option of 84,000 shares.
- (9) Using the average growth rate from Schedule 6.
- (10) Adjustment for flotation costs based on adjusting the average DCF constant growth cost rate in accordance with the following:

$$K = \frac{D(1 + 0.5g)}{P(1 - F)} + g,$$

where g is the growth factor and F is the percentage of flotation costs.

- (11) Flotation cost adjustment of 0.17% equals the difference between the flotation adjusted average DCF cost rate of 9.04% and the unadjusted average DCF cost rate of 8.87% of the proxy group of nine water companies.

Source of Information:

Company provided information

Artesian Water Company
 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 March 3, 2014 (1) (millions)	Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	Applicable Size Premium (3)	Spread from Applicable Size Premium for (4)
1.				
	\$ 220.188	9 - 10	4.45%	
2.	\$ 1,769.332	5 - 6	1.75%	2.70%

Decile	(A)	(B)	(C)	(D)	(E)
	Number of Companies (millions)	Recent Total Market Capitalization (millions)	Recent Average Market Capitalization (millions)	Size Premium (Return in Excess of CAPM) (2)	
Largest	1	163	\$ 8,865,444.654	\$ 54,389.231	-0.38%
	2	181	2,044,297.841	\$ 11,294.463	0.78%
	3	196	1,063,677.148	\$ 5,426.924	0.94%
	4	201	664,148.153	\$ 3,304.220	1.17%
	5	200	449,181.802	\$ 2,245.909	1.74%
	6	238	369,281.218	\$ 1,551.602	1.75%
	7	301	297,500.544	\$ 988.374	1.77%
	8	333	208,267.900	\$ 625.429	2.51%
	9	450	156,980.841	\$ 348.846	2.80%
Smallest	10	1212	111,034.220	\$ 91.612	6.10%

*From Ibbotson 2012 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 2.7% in Column 4, Line No. 2 is derived as follows 2.7% = 4.45% - 1.75%.

Artesian Water Company
 Market Capitalization of Artesian Water Company 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 March 03, 2014	5 Market-to-Book Ratio on March 03, 2014 (2)	6 Market Capitalization on March 03, 2014 (3) (millions)
Artesian Water Company		NA	NA	103,375 (4)	NA		
Based Upon the Proxy Group of Nine Water Companies						213.0 % (5)	\$ 220,188 (6)
Proxy Group of Nine Water Companies							
American States Water Co.		38,474	\$ 11,815	\$ 454,579	\$ 30,020	254.1 %	\$ 1,155,002
American Water Works Co., Inc.		176,988	\$ 25,115	\$ 4,444,988	\$ 44,150	175.8	\$ 7,814,020
Aqua America, Inc.		175,209	\$ 7,909	\$ 1,385,704	\$ 24,740	312.8	\$ 4,334,673
Artesian Resources Corp.		7,838	\$ 15,078	\$ 118,180	\$ 21,820	144.7	\$ 171,027
California Water Service Group		41,908	\$ 11,304	\$ 473,712	\$ 23,060	204.2	\$ 967,242
Connecticut Water Service, Inc.		10,939	\$ 17,014	\$ 186,121	\$ 32,950	193.7	\$ 360,456
Middlesex Water Company		15,795	\$ 11,499	\$ 181,532	\$ 19,980	173.8	\$ 315,584
SJW Corporation		18,671	\$ 14,708	\$ 274,504	\$ 29,330	199.4	\$ 547,608
York Water Company		12,919	\$ 7,727	\$ 99,825	\$ 20,000	258.8	\$ 258,373
Average		55,416	\$ 13,574	\$ 846,594	\$ 27,341	213.0 %	\$ 1,769,332

NA= Not Available

- Notes: (1) Column 3 / Column 1.
 (2) Column 4 / Column 2.
 (3) Column 5 * Column 3.

(4) From Financial Statements of Artesian Water Company for Fiscal Year End 2012.

(5) The market-to-book ratio of Artesian Water Company on March 03, 2014 is assumed to be equal to the market-to-book ratio of the Proxy Group of Nine Water Companies at March 03, 2014.

(6) Artesian Water Company's common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at March 03, 2014 of the Proxy Group of Nine Water Companies, 213%, and Artesian Water Company's market capitalization on March 03, 2014 would therefore have been \$220,188 million.

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