#### Carolina Water Service, Inc. of North Carolina Docket No. W-354, Sub 344

#### **BEFORE THE**

NORTH CAROLINA UTILITIES COMMISSION

EXHIBITS TO ACCOMPANY THE

DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
PARTNER
SUSSEX ECONOMIC ADVISORS, LLC

ON BEHALF OF

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

AUGUST 21, 2015

#### Table of Contents To the Direct Exhibits of Pauline M. Ahern, CRRA

	<u>Exhibit</u>
Summary of Cost of Capital and Fair Rate of Return	1
Capital Intensity and Depreciation Rates for Carolina Water Service, Inc. of NC and the Proxy Group of Eight Water Companies	2
Financial Profile of the Proxy Group of Eight Water Companies	3
Application of the Discounted Cash Flow Model (DCF) to the Proxy Group of Eight Water Companies	4
Current Institutional Holdings	5
Application of the Risk Premium Model (RPM) to the Proxy Group of Eight Water Companies	6
Application of the Capital Asset Pricing Model (CAPM) to the Proxy Group of Eight Water Companies	7
Basis of Selection for the Non-Price Regulated Companies Comparable in Total Risk to the Proxy Group of Eight Water Companies	8
Cost of Common Equity Models Applied to the Comparable Risk Non-Price Regulated Companies	9
Estimated Market Capitalization for Carolina Water Service, Inc. of NC and the Proxy Group of Eight Water Companies	10

#### Carolina Water Service, Inc. of NC

## Summary of Cost of Capital and Fair Rate of Return Based upon the Consolidated Capital Structure of Utilities, Inc. at $\underline{\text{Test Year End - December 31, 2014}}$

Type Of Capital	Amount Outstanding	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	\$ 180,000,000	48.99%	6.60% (1)	3.23%
Common Equity	\$ 187,441,949	51.01%	10.40% (2)	5.31%
Total	\$ 367,441,949	100.00%		8.54%

- (1) Company provided.
- (2) From page 2 of this Exhibit.

#### <u>Carolina Water Service, Inc. of NC</u> <u>Brief Summary of Common Equity Cost Rate</u>

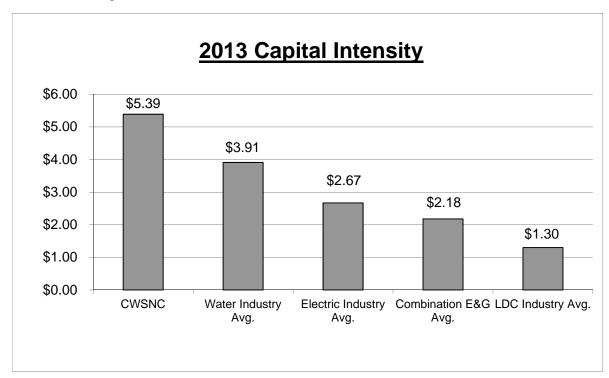
Line No.	Principal Methods	Proxy Group of Eight Water Companies
1.	Discounted Cash Flow Model (DCF) (1)	8.52 %
2.	Risk Premium Model (RPM) (2)	10.74
3.	Capital Asset Pricing Model (CAPM) (3)	9.41
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	10.63
5.	Indicated Common Equity Cost Rate before Adjustment for Business Risks	10.02 %
6.	Size Adjustment (5)	0.40
7.	Indicated Common Equity Cost Rate	10.42 %
8.	Recommended Common Equity Cost Rate	10.40 %

#### Notes: (1) From Exhibit 4.

- (2) From page 1 of Exhibit 6.
- (3) From page 1 of Exhibit 7.
- (4) From page 1 of Exhibit 9.
- (5) Business risk adjustment to reflect Carolina Water Service, Inc. of NC's greater business risk due to its small size relative to the proxy group as detailed in Ms. Ahern's accompanying direct testimony.

## Carolina Water Service, Inc. of NC 2013 Capital Intensity of Carolina Water Service, Inc. of NC and AUS Utility Reports Utility Companies Industry Averages

	Average Net Plant (\$ mill)		Total Operating Revenue (\$ mill)		Capital Intensity (\$)		Capital Intensity CWSNC v. Other Industries
							(times)
Carolina Water Service, Inc. of NC	\$	83.86	\$	15.56	\$	5.39	
Water Industry Average	\$	2,312.28	\$	591.26	\$	3.91	137.85%
Electric Industry Average	\$	16,284.49	\$	6,092.15	\$	2.67	201.87%
Combination Elec. & Gas Industry Average	\$	15,236.52	\$	6,985.66	\$	2.18	247.25%
Gas Distribution Average	\$	3,565.57	\$	2,750.03	\$	1.30	414.62%



#### Notes:

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

Source of Information:

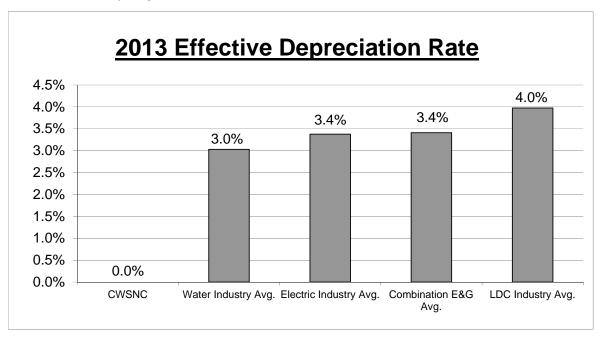
EDGAR Online's I-Metrix Database Company Annual Forms 10-K

AUS Utility Reports - January 2015 Published By AUS Consultants

Carolina Water Service Inc. of NC Annual Report to the North Carolina Utilities Commission for the year ended December 31, 2013.

## Carolina Water Service, Inc. of NC 2013 Depreciation Rate of Carolina Water Service, Inc. of NC and AUS Utility Reports Utility Companies Industry Averages

	Depreciation Depletion & Amort. Expense (\$ mill)		Average Total Gross Plant Less CWIP (\$ mill)		Depreciation Rate (%)	Depreciation Rate CWSNC v. Other Industries ( times )
Carolina Water Service, Inc. of NC	\$	2.06	\$	81.45	2.5%	
Water Industry Average	\$	77.95	\$	2,572.41	3.0%	83.33%
Electric Industry Average	\$	706.06	\$	20,900.90	3.4%	73.53%
Combination Elec. & Gas Industry Average	\$	717.06	\$	21,024.41	3.4%	73.53%
LDC Gas Distribution Industry Average	\$	182.93	\$	4,602.26	4.0%	62.50%



#### 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 - January 2015 Published by AUS Consultants

Carolina Water Service Inc. of NC Annual Report to the North Carolina Utilities Commission for the year ended December 31, 2013.

### Proxy Group of Eight Water Companies CAPITALIZATION AND FINANCIAL STATISTICS (1) 2009 - 2013, Inclusive

	2013 2012 2011 2010 2009 (MILLIONS OF DOLLARS)					
<u>CAPITALIZATION STATISTICS</u>		(		,		
AMOUNT OF CAPITAL EMPLOYED TOTAL PERMANENT CAPITAL SHORT-TERM DEBT TOTAL CAPITAL EMPLOYED	\$2,058.747 \$95.589 \$2,154.336	\$1,998.358 \$60.594 \$2,058.952	\$1,926.369 \$89.698 \$2,016.067	\$1,901.851 \$56.420 \$1,958.271	\$1,821.915 \$31.879 \$1,853.794	
INDICATED AVERAGE CAPITAL COST RATES (2) TOTAL DEBT PREFERRED STOCK CAPITAL STRUCTURE RATIOS	5.19 % 5.51 %		5.32 % 5.53 %	5.37 % 5.54 %	5.34 % 5.54 %	<u>5 YEAR</u> AVERAGE
BASED ON TOTAL PERMANENT CAPITAL: LONG-TERM DEBT PREFERRED STOCK COMMON EQUITY TOTAL	46.24 % 0.16 53.60 100.00 %	0.18 <u>50.50</u>	50.91 % 0.21 48.88 100.00 %	50.74 % 0.21 49.05 100.00 %	50.38 % 0.24 49.38 100.00 %	49.52 % 0.20 50.28 100.00 %
BASED ON TOTAL CAPITAL: TOTAL DEBT, INCLUDING SHORT-TERM PREFERRED STOCK COMMON EQUITY TOTAL	47.77 % 0.15 52.08 100.00 %	0.17 48.96	52.68 % 0.19 47.13 100.00 %	52.82 % 0.20 46.98 100.00 %	52.56 % 0.21 47.23 100.00 %	51.34 % 0.18 48.48 100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED EARNINGS / PRICE RATIO MARKET / AVERAGE BOOK RATIO DIVIDEND YIELD DIVIDEND PAYOUT RATIO	5.07 % 197.25 3.22 58.37	5.88 % 174.63 3.87 60.45	5.75 % 164.15 4.39 64.89	5.91 % 157.23 4.82 65.69	3.78 % 146.56 5.46 58.31	5.28 % 167.96 4.35 61.54
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	10.08 %	10.12 %	9.30 %	9.09 %	6.84 %	9.09 %
TOTAL DEBT / EBITDA (3)	3.65 X	3.83 X	4.30 X	4.55 X	5.40 X	4.35 X
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	22.91 %	20.95 %	19.26 %	17.60 %	16.76 %	19.50 %
TOTAL DEBT / TOTAL CAPITAL	47.77 %	50.87 %	52.68 %	52.82 %	52.56 %	51.34 %

#### 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

## $\frac{Capital\ Structure\ Based\ upon\ Total\ Permanent\ Capital\ for\ the}{Proxy\ Group\ of\ Eight\ Water\ Companies}$ $\frac{2009-2013,\ Inclusive}{}$

		<u> 2009 - 2</u>	2013, Inclusiv	<u>7e</u>		
	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	2009	<u>5 YEAR</u> <u>AVERAGE</u>
American States Water Co.						
Long-Term Debt	40.30 %	42.49 %	45.46 %	44.30 %	46.95 %	
Preferred Stock	0.00 59.70	0.00 57.51	0.00 54.54	0.00 55.70	0.00	0.00
Common Equity Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	53.05 100.00 %	56.10
rotal capital	100.00 //	100.00 70	100.00 /0	100.00 /0	100.00 //	100.00 /0
American Water Works Co., Inc.						
Long-Term Debt	52.42 %	54.30 %	55.72 %	56.73 %	56.98 %	55.23 %
Preferred Stock	0.17	0.21	0.27	0.29	0.30	0.25
Common Equity	47.41	45.49	44.01	42.98	42.72	44.52
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	50.32 %	53.41 %	54.11 %	57.05 %	56.59 %	54.29 %
Preferred Stock	0.01	0.01	0.02	0.02	0.02	0.02
Common Equity	49.67	46.58	45.87	42.93	43.39	45.69
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	
California Water Service Group						
Long-Term Debt	42.03 %	50.39 %	52.04 %	52.51 %	47.93 %	48.98 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	57.97	49.61	47.96	47.49	52.07	51.02
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	
Connecticut Water Service, Inc.						
Long-Term Debt	47.34 %	49.03 %	53.05 %	49.32 %	50.59 %	49.87 %
Preferred Stock	0.20	0.21	0.30	0.34	0.35	0.28
Common Equity	52.46	50.76	46.65	50.34	49.06	49.85
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	41.36 %	43.53 %	43.12 %	43.91 %	47.35 %	43.85 %
Preferred Stock	0.88	1.02	1.06	1.07	1.24	1.05
Common Equity	57.76	55.45	55.82	55.02	51.41	55.10
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
SIW Corporation	F1.00.0/	FF 20 0/	F. (2.0)	F2 70 0/	40.52.0/	F2 20 0/
Long-Term Debt Preferred Stock	51.09 % 0.00	55.39 % 0.00	56.63 % 0.00	53.79 % 0.00	49.52 % 0.00	53.28 % 0.00
Common Equity	48.91	44.61	43.37	46.21	50.48	46.72
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	
			,,,			
York Water Company						
Long-Term Debt	45.07 %	45.98 %	47.16 %	48.28 %	47.16 %	46.73 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	54.93	54.02	52.84	51.72	52.84	53.27
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	
Proxy Group of Eight Water Companies						
Long-Term Debt	46.24 %	49.32 %	50.91 %	50.74 %	50.38 %	49.52 %
Preferred Stock	0.16	0.18	0.21	0.21	0.24	0.20
Common Equity	53.60	50.50	48.88	49.05	49.38	50.28
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

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

### $\underline{Carolina\ Water\ Service,\ Inc.\ of\ NC}$ Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for $\underline{the\ Proxv\ Group\ of\ Eight\ Water\ Companies}$

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Eight Water Companies	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.	2.23 %	6.50 %	3.00 %	2.00 %	3.00 %	3.63 %	2.27 %	5.90 %
American Water Works Co., Inc.	2.29	7.50	8.03	7.90	8.03	7.87	2.38	10.25
Aqua America, Inc.	2.48	8.50	4.00	5.00	4.00	5.38	2.55	7.93
California Water Service Group	2.72	7.50	6.00	6.00	6.00	6.38	2.81	9.19
Connecticut Water Service, Inc.	2.85	7.00	5.00	5.00	5.00	5.50	2.93	8.43
Middlesex Water Company	3.44	5.00	NA	NA	2.70	3.85	3.51	7.36
SJW Corporation	2.39	7.00	NA	NA	14.00	10.50	2.52	13.02
York Water Company	2.59	7.00	NA	NA	4.90	5.95	2.67	8.62
							Average	8.84 %
							Median	8.52 %

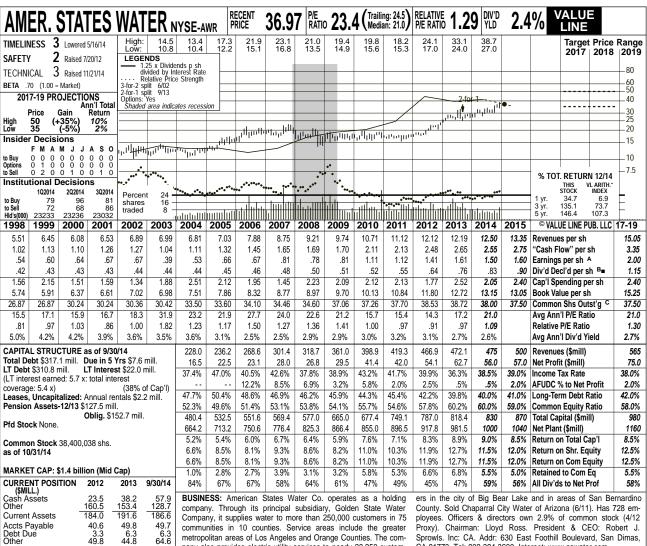
NA= Not Available NMF = Not Meaningful Figure

#### Notes

- (1) Indicated dividend at 02/27/2015 divided by the average closing price of the last 60 trading days ending 02/27/2015 for each company.
- (2) From pages 2 through 10 of this Exhibit.
- (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. , 2.23% x (1+(1/2 x 3.63%)) = 2.27%.
- (5) Column 6 + column 7.

Source of Information:

Value Line Investment Survey www.reuters.com Downloaded on 02/27/2015 www.zacks.com Downloaded on 02/27/2015 www.yahoo.com Downloaded on 02/27/2015



metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to nearly 23,250 custom-

Sprowls. Inc: CA. Addr: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

ANNUAL RATES Past Est'd '11-'13 Past 10 Yrs. 5.5% 7.5% 9.0% 4.0% 5.5% to '17-'19 4.0% 5.5% f change (per sh) Revenues "Cash Flow" Earnings Dividends Book Value 13.0% 6.5% 6.5% QUARTERLY REVENUES (\$ mill.) Mar.31 Jun. 30 Sep. 30 Dec. 31 endar 2011 94.3 109.8 119.9 95.3 419 114.3 466 2012 107.6 133.5 111.5 2013 110.6 120.7 130.9 109.9 472. 475 101.9 138.3 119.2 2015 110 125 145 500 120

93.7

488%

100.9

531%

120.6

533%

Current Liab.

Fix. Chg. Cov.

EARNINGS PER SHARE A Mar.31 Jun. 30 Sep. 30 Dec. 31 endar Year 2011 .19 .27 2012 26 40 49 1.41 .35 .43 .53 1.61 2013 .30 2014 .28 .54 .29 1.50 2015 .30 .45 .55 .30 1.60 QUARTERLY DIVIDENDS PAID B. Calendar Mar.31 Jun.30 Sep.30 Dec.31 2011 .13 .1775 .1775 .64 2013 1775 1775 2025 2025 76 .213 2014 2025 2025 2015

**Shares of American States Water have** surged since our October report. The price of the stock has increased 21%, well above the 4% gain posted by the market averages. The entire water sector has done well, but American States' performance has been especially strong. This is unusual because water utilities are generally considered to be low-Beta, defensive equities. One possibility for American States' stock movement could be that investors are willing to pay a large premium for higheryielding stocks with good dividend growth prospects. Another is that the company repurchased more of its own shares on the open market (at a very high price).

The attractiveness of the stock has been greatly reduced. Despite American States being one of the best run water utilities in the country, with very favorable long-term dividend growth prospects, our concern is with the valuation of the equity. True, these shares are ranked to perform in line with the market in the year ahead. However, total return potential through 2017-2019 is now below average.

Meanwhile, the company's earnings may be restrained by its current high return on equity. States regulate the upper limit as to what utilities are allowed to earn on the common equity dedicated to the water business. (Please note the calculations on our page can vary significantly from how regulators arrive at their numbers.) Hence, we estimate that American States' share net declined 6% in 2014, to \$1.50, because 2013's results were aided by a one-time recovery of certain expenses. In 2015, we expect earnings per share to recover and rise 6%, to \$1.60.

Nonregulated operations could well be a swing factor in the company's earnings. American States provides water services to nine domestic military bases. Profits from this segment can be uneven, but they carry higher margins than the regulated water business. We estimate that this endeavor accounts for almost 20% of the utility's total earnings. With an estimated 50 to 70 bases expected to privatize their water operations in the next few years, the company may pick up another 15 to 20. This would make our longterm earnings estimates somewhat conser vative.

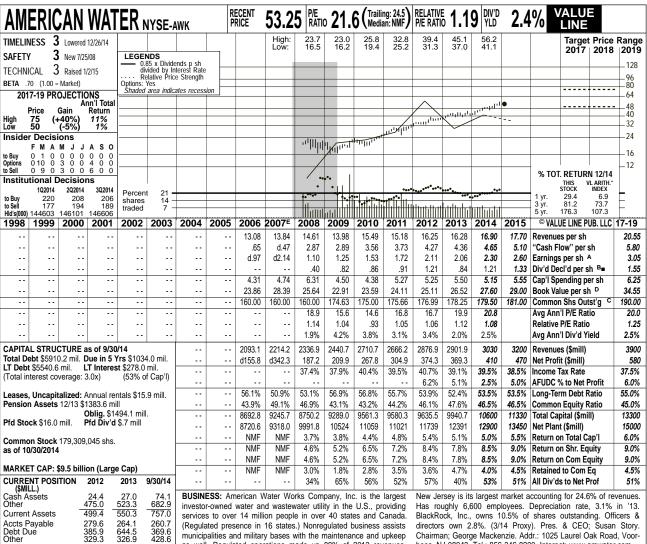
James A. Flood

January 16, 2015

(A) Primary earnings. Excludes nonrecurring add due to rounding. gains/(losses): '04, 7¢; '05, 13¢; '06, 3¢; '08, (B) Dividends historically paid in early March, (14¢); '10, (23¢) '11, 10¢. Next earnings report June, September, and December. ■ Divid reinstants of the provided by the second of the provided by the pro due mid February. Quarterly earnings may not vestment plan available.

(C) In millions, adjusted for splits.

Company's Financial Strength Stock's Price Stability Price Growth Persistence **Earnings Predictability** 



as well. Regulated operations made up 89% of 2013 revenues.

directors own 2.8%. (3/14 Proxy). Pres. & CEO; Susan Story. Chairman; George Mackenzie. Addr.: 1025 Laurel Oak Road, Voorhees, NJ 08043. Tel.: 856-346-8200. Internet: www.amwater.com.

Fix. Chg. Cov. 297% 307% 305% ANNUAL RATES Past Est'd '11-'13 5 Yrs. 3.0% 32.5% of change (per sh) Revenues "Cash Flow" 10 Yrs. Earnings Dividends Book Value 8.0% 5.5% -.5%

994.8

Current Liab.

1235.5

1058.9

Cal- endar			VENUES (Sep. 30		Full Year
2011 2012 2013 2014 2015	596.7 618.5 636.1 681.9 <b>705</b>	668.8 745.6 724.3	760.9 831.8 829.2	639.8 681.0 712.3	2666.2 2876.9 2901.9
Cal- endar			ER SHARE Sep. 30		Full Year
2011 2012 2013 2014 2015	.23 .28 .32 .38 .45	.42 .66 .57 .61	.73 .87 .84 .87 <b>1.00</b>	.34 .30 .33 .44 .45	1.72 2.11 2.06 <b>2.30</b> <b>2.60</b>
Cal- endar	QUART Mar.31		IDENDS PA		Full Year
2011 2012 2013 2014 2015	.22 .23  .28	.23 .23 .28 .31	.23 .25 .28 .31	.23 .50 .28 .31	.91 1.21 .84 1.21

American Water Works probably just wrapped up a successful 2014. Management estimates that full-year earnings per share will come in at \$2.30-\$2.35. Following last year's slight dip in the bottom line, this represents a nice recovery, especially considering that the utility lost \$0.05 a share due to wet weather, and took a \$0.04-a-share hit as a result of a chemical spill in West Virginia.

The year ahead should be even better. Share earnings are expected to reach \$2.60, a strong 13% increase over last year. A decent portion of the higher returns will be a result of American Water's continuing drive to improve its operating margins through cost cutting and cost savings from acquisitions. Indeed, the company's expense margin has declined from 41% in 2013 to an estimated 38% last year. Moreover, we are expecting a 1.5% improvement in this ratio in both 2015 and 2016, which should lower the rate to 35% by 2017.

Acquisitions will remain an important part of American Water's long-term plan. The water utility industry in the U.S. consists mostly of small municipallyrun systems. As vast sums of money are required to finance the modernization of an aging water infrastructure, more cash-strapped local authorities are willing to sell their systems to bigger well-capitalized utilities. And, while most purchase and the second in t chases aren't that large, consummating about 30 mergers a year, adds up in the long term.

Shares of American Water Works have been performing well. Since our October report, the price of the water utility's stock has risen over 10%, compared to an increase of about 4% for the broader market. Making this showing even more impressive is that water utilities are usually considered defensive plays. Overall, the stock price soared 31% in 2014, or about twice that of the market average.

We think that these shares may take a breather. Despite our favorable outlook for the company, the Timeliness rank of the stock has been lowered one notch to a 3 (Average). Moreover, the positive outlook appears to be fully priced into the equity as its prospects through 2017-2019 are now subpar.

James A. Flood January 16, 2015

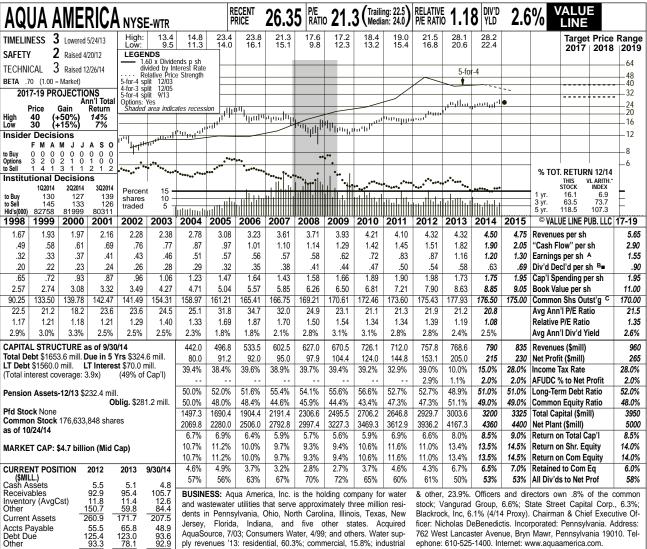
(A) Diluted earnings. Excludes nonrecurring losses: '08, \$4.62; '09, \$2.63; '11, \$0.07. Discontinued operations: '06,  $(4\phi)$ ; '11,  $3\phi$ ; '12, (10¢); '14, 3¢. Next earnings report due early

rounding. (B) Dividends paid in March, June, September, and December. 

Div. reinvestment available. Two payments made in 4th

Feb. Quarterly earnings may not sum due to | quarter of 2012. (C) In millions. (D) Includes intangibles. In 2013: \$1.21 billion, \$6 (E) Pro forma numbers for '06 & '07.

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



Jersey, Florida, Indiana, and five other states. Acquired AguaSource, 7/03; Consumers Water, 4/99; and others. Water supply revenues '13: residential, 60.3%; commercial, 15.8%; industrial

762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com.

Past Est'd '11-'13 to '17-'19 5.0% 10.5% 8.5% 9.0% 5.5% 712.0 this year. 757.8 790

93.6 92.9

235.4

389%

Mar.31 Jun.30 Sep.30 Dec.3 endar 2011 163.6 172.7 178.3 197.3 2012 164.0 191.7 214.6 187.5 2013 180.0 195.7 204.3 188.6 2014 182.7 195.3 210.5 201.5 2015 195 210 220 210 835 **EARNINGS PER SHARE A** Cal-Full endar Mar.31 Jun.30 Sep.30 Dec.31 Year 2011 .18 .15 19 .83 .87 .24 .29 .19 2012 .26 .36 .30 1.16 2013 2014 .31 .27 1.20 2015 .27 .32 .40 .31 1.30 QUARTERLY DIVIDENDS PAID B = Cal-Full Mar.31 Sep.30 endar Jun.30 Dec.3 Year 2011 .50 .124 .124 .124 .132 .132 .132 .132 .14 .54 .58 2012 2013 .14 .14 .152 .152 .152 .152 .165 .165 2014

274.2

413%

Past

10 Yrs. 6.5%

8.0%

8 5%

8.0%

QUARTERLY REVENUES (\$ mill.)

266.9

388%

5 Yrs. 4.0% 8.0%

11.0%

6.0%

Other Current Liab

Fix. Chg. Cov.

of change (per sh) Revenues

Cash Flow"

Earnings Dividends

Cal-

2015

Dividends Book Value

ANNUAL RATES

Aqua America should record solid earnings in 2015. The company probably posted decent results in 2014 as we think earnings per share rose 3.4%, to \$1.20. This figure is much better than it appears, as 2013 was an outstanding year and comparisons with it are very difficult. Fueled by an expanding rate base (on which the utility earns a return), we expect share net to increase a healthy 8%, to \$1.30 a share

Acquisitions will continue to remain a key part of Aqua's strategy. The U.S water market consists of over 50,000 municipally-run districts, many of which are financially strapped and don't have the required funds to upgrade their antiquated water infrastructure. Some are willing to sell themselves to a wellcapitalized utility. Since there are many redundancies in the business, Aqua is able to integrate purchases and improve profitability by reducing costs. An estimated 20 acquisitions were made last year, and we think that will represent the low end of Aqua's long-term merger activity.

Dividend growth prospects are excellent. Over the next three- to five-year period, the utility's annual payout will likely be hiked 9% annually, a level well above that of its peers.

Nonregulated operations will probably be affected by declining oil prices. Exploring for oil and gas domestically requires large quantities of water, which are usually shipped to the drilling site by trucks. This is an expensive and cumbersome process. Aqua has simplified the procedure by extending water pipelines right to the rigs. Energy producers are willing to pay high fees for such a service. However, with oil prices having declined by about 50% since last summer, energy exploration could fall substantially if crude prices do not recover.

Income-oriented investors will find much to like about these shares. True, the stock's yield is lower than the industry average. However, buyers typically have to sacrifice more current income to obtain a water utility with such robust dividend growth prospects. Indeed, the equity's capital appreciation and total return potential through 2017-2019 are much higher than others in the group.

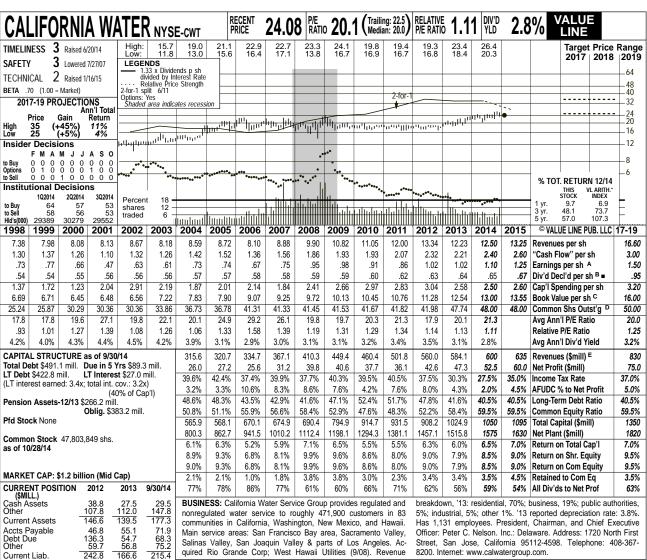
James A. Flood January 16, 2015

(A) Diluted egs. Excl. nonrec. gains (losses): '99, (9¢); '00, 2¢; '01, 2¢; '02, 4¢; '03, 3¢; '12, 18¢. Excl. gain from disc. operations: '12, 7¢; 13, 9¢. May not sum due to rounding. Next

earnings report due mid 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.

Company's Financial Strength Stock's Price Stability Price Growth Persistence 100 **Earnings Predictability** 



Previously granted rate relief should help propel California Water Service 299% Past Est'd '11-'13 5.0% 5.0% 5.5% 7.5% 7.0% 5.5% Group's earnings for the next few years. Utilities in the state are only allowed to file a petition seeking higher tariffs every three years. Hence, the relatively favorable decision allowed by California regulators last summer will have a positive effect on the company's bottom line through 2017. In addition, a major 501.8 560.0 potential regulatory risk has 584.1 removed for the next several years

We are raising our bottom-line estimates for the company, yet again. Third-quarter earnings came in higher than we expected, even though the recent rate hike was only in effect for part of the quarter. Expectations for the year-ending period are favorable, too. All told, share net should probably reach \$1.10, a 7.4% increase over 2013's uninspiring showing. In 2015, with the rates in effect for the entire year, a 13.6% hike in earnings per share, to \$1.25, is possible

Dividend growth should accelerate as well. Over the past five- and ten-year periods, California Water's annual dividend payout averaged a meager 1.0%, and 1.5%,

respectively. This rate was significantly below the average of the typical water utility. In the coming year, we are conservatively estimating that there will be a \$0.03 (4.6%) increase. Furthermore, annual hikes through 2017-2019 could be in the 7% range.

California Water is not being meaningfully impacted by the area's severe drought. State regulators have implemented rules so that water utilities won't be penalized for a decline in water due consumption to conservation measures. Also, future demand should be met with water from the company's own wells along with a dependable secondary source that sells its bulk water. Moreover, any change in the price of water will just be passed along directly to consumers.

These shares do not have much to offer. Despite a strong balance sheet and solid dividend growth prospects, the recent strong price showing by the equity of California Water has greatly reduced its nearterm attraction. Moreover, total return potential through 2017-2019 is below average for a stock followed by Value Line. James A. Flood January 16, 2015

Fix. Chg. Cov.

ANNUAL RATES

change (per sh)

98.1

116.8

111.4

110.5

.03

.03

.01

.03

Mar.31

.1575

.1625

16

Revenues

Cash Flow'

Earnings Dividends Book Value

endar

2011

2012

2013

2015 125

endar

2011

2012

2013

2014

2015

Cal-

endar

2011

2013

2014

2015

296%

Past

6.0% 5.5%

1.0% 5.5%

QUARTERLY REVENUES (\$ mill.)

Mar.31 Jun.30 Sep.30 Dec.31

EARNINGS PER SHARE A

Mar.31 Jun.30 Sep.30 Dec.31

QUARTERI Y DIVIDENDS PAID B

169.3

178.1

184.4

191.2

.50 .56

.61

.70

.75

Sep.30

.154

16

.1575

.1625

200

131.4

143.6

154.6

158.4

.29

.31

.28

.32

Jun.30

.154

.1575

.1625

16

160

301%

5 Yrs. 7.0% 6.5% 4.0% 1.5%

4.5%

103.0

121.5

133.7

139.9

.04

12

.12

.15

Dec.31

.154

16

1625

.1575

150

600

635

Year

1.02

1.02

1.10

1.25

Full

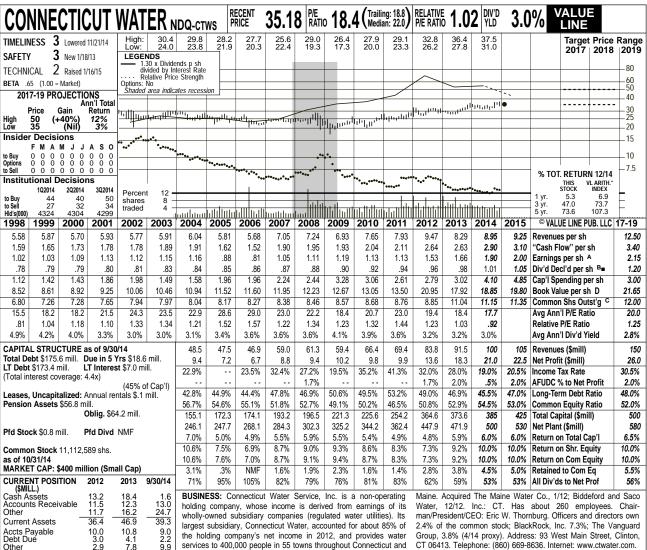
.62

.63

64

been

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



the holding company's net income in 2012, and provides water services to 400,000 people in 55 towns throughout Connecticut and

Group, 3.8% (4/14 proxy). Address: 93 West Main Street. Clinton. CT 06413. Telephone: (860) 669-8636. Internet: www.ctwater.com.

408% 375% 375% Fix. Chg. Cov. ANNUAL RATES Past Past Est'd '11-'13 10 Yrs. to '17-'19 f change (per sh) 5 Yrs. 4.0% 3.0% 2.5% 1.5% 5.0% 6.5% 8.0% 6.5% 5.5% 7.0% Revenue "Cash Flow" Earnings Dividends 4.0% 3.5% Book Value 6.0% 8.0% QUARTERLY REVENUES (\$ mill.) Mar.31 Jun. 30 Sep. 30 Dec. 31 endar 2011 16.0 17.4 15.4 69. 18.5 19.7 21.3 22.6 24.5 27.6 2012 19.5 83.8 91.5 21.6 2013

15.9

22.7

21.1

Other

Current Liab.

27.3 29.4 23.0 100 2014 28.0 32.0 FARNINGS PER SHARE A Cal-Full endar Mar.31 Jun. 30 Sep. 30 Dec. 31 Year 1.13 2011 37 .11 .22 1.53 1.66 2012 .47 .67 .17 2013 .39 .86 .17 2014 .27 .67 .76 1.90 .20 2015 .35 .60 .25 2.00 .80 QUARTERLY DIVIDENDS PAID B Cal-Full endar Mar.31 Jun.30 Sep.30 Dec.31 Year .942 2011 .233 .233 .238 .238 .2425 .2425 .962 2012 .238 .238 .2425 .2425 .2475 98 .2475 2014 .2475 .2475 .2575 .2575 1.01 2015

Connecticut Water Service probably finished up a successful 2014. Thanks to a deal reached in 2013 with Connecticut regulators, the utility agreed to lower customers' bills and delay seeking higher rates in return for being allowed to hold on to an IRS tax refund. In addition, Connecticut Water was able to cut costs by merging the two utilities that it operates in Maine. All told, we think that share net probably rose a robust 14%, to \$1.90.

Bottom-line gains should moderate this year. A recent petition for higher rates in Maine and the ongoing tax benefits should enable share earnings to rise \$0.10, or 5%, in 2015. If not for the difficult comparison with last year, these number would be more impressive.

Capital expenditures are expected to rise a sizable 20% in 2015. Like most water utilities, Connecticut Water is in the process of upgrading an antiquated infrastructure. We estimate that about \$46 million was spent on modernizations in 2014. The company has announced plans to increase this total to \$55 million this year.

Connecticut Water's finances should be able to handle the additional capi-

tal spending. Entering 2014's fourth quarter, the company's equity-to-total capital ratio stood at a very healthy 55%. Internally generated funds will probably not be sufficient to cover the capital budget over the next three- to five-year period. Issuance of new debt will be required and the quality of Connecticut's balance sheet may decline somewhat, but it still should remain in relatively good shape.

Two future projects will increase the company's revenues. Pipelines are being extended to include the town of Mansfield and the main campus of the University of Connecticut in Storrs to expand Connecticut Water's service area.

These shares have lost most of their appeal. Like the rest of the sector, the stock of Connecticut Water has outperformed the market by a wide margin since our October report. Hence, the equity is now less attractive on a relative basis. The Timelessness rank has also been dropped a notch to 3 (Average). Moreover, prospects to 2017-2019 are now well below average compared to other stocks in the *Value Line* universe.

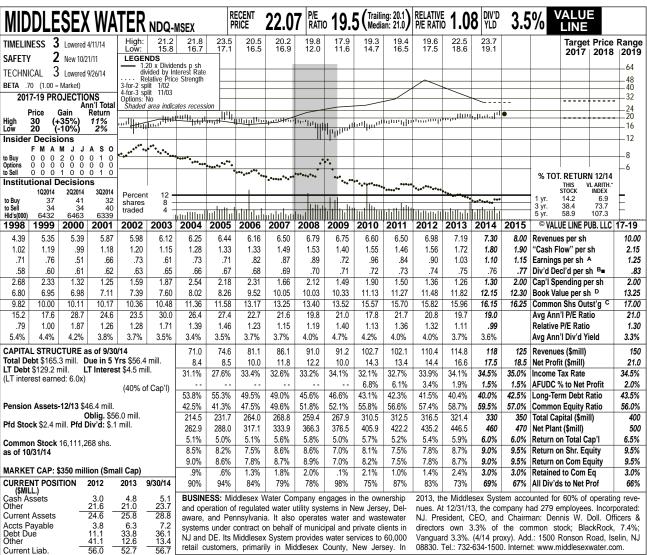
James A. Flood January 16, 2015

(A) Diluted earnings. Next earnings report due

June, September, and December. ■ Div'd rein- | lion/\$2.87 a share. (a) Divided samings report dealings report and becentives. 2 by distinguished early February. Quarterly earnings do not add in '12 due to rounding.

(B) Dividends historically paid in mid-March, (D) Includes intangibles. In '13: \$31.7 mil-

Company's Financial Strength Stock's Price Stability Price Growth Persistence Вн **Earnings Predictability** 



retail customers, primarily in Middlesex County, New Jersey. In

08830. Tel.: 732-634-1500. Internet: www.middlesexwater.com.

Fix. Chg. Cov. 554% 697% 695% ANNUAL RATES Past Est'd '11-'13 Past to '17-'19 6.5% 5.5% of change (per sh) Revenues "Cash Flow" 10 Yrs. 1.5% 5 Yrs. 1.0% 3.0% 3.5% 1.5% 4.5% 1.5% 1.5% Earnings Dividends Book Value 5.0% 2.0% 2.5% 1.5% 3.0%

Cal-			VENUES (		Full
endar	Mar.31	Jun. 30	Sep. 30	Dec. 31	Year
2011	24.0	26.1	28.7	23.3	102.1
2012	23.5	27.4	32.4	27.1	110.4
2013	27.0	29.1	31.3	27.4	114.8
2014	27.1	29.2	32.7	29.0	118
2015	29.0	31.0	34.0	31.0	125
Cal-	E/	RNINGS F	ER SHARI	Α	Full
endar	Mar.31	Jun. 30	Sep. 30	Dec. 31	Year
2011	.11	.23	.32	.12	.84
2012	.11	.23	.38	.17	.90
2013	.20	.28	.36	.19	1.03
2014	.20	.29	.42	.19	1.10
2015	.21	.31	.43	.20	1.15
Cal-	QUAR	TERLY DIV	IDENDS P	AID B <b>=</b>	Full
endar	Mar.31	Jun.30	Sep.30	Dec.31	Year
2011	.183	.183	.183	.185	.73
2012	.185	.185	.185	.1875	.74
2013	.1875	.1875	.1875	.19	.75
2014	.19	.19	.19	.1925	.76
2015	•	-		/	•
	l				

Middlesex Water Company has an incredibly consistent dividend policy. In late October, the company raised its dividend by one-quarter of \$0.01. For the full year, the increase works out to one cent. This marks the 12th straight year in which the utility has raised the annual payout by \$0.01.

Consistency is not always a good characteristic for a company. The latest dividend hike represents a paltry 1.3% yearly hike, compared to the industry average of over 6%. Indeed, represented the lowest rate of growth of any regulated water utility in the industry. What's more, we don't anticipate any change in Middlesex's one-cent-a-year philosophy until 2016 or 2017.

Near-term earnings prospects are not bad for a water utility. Even though we are not looking for a great comparison in the fourth quarter, better-than-expected results in the September period were probably enough to enable the company to earn \$1.10 a share, a solid 7% increase over 2013. Modest rate increases in both New Jersey and Delaware were most likely behind most of the gains. All things considered, this was a good showing, considering that the company lost its largest client (a Hess refinery) and the borough Sayreville less than two years ago. of In 2015, the increase in profits will probably be less impressive, as we estimate only calls for a 4%-5% advance in share net to \$1.15.

The balance sheet may be small but it is relatively solid. With net plant just a little north of \$450 million and total capital of only about \$330 million, Middlesex has better than average financial metrics compared to the rest of the industry.

More attractive candidates can found for those investors insisting on being involved in the water utility industry. If a water utility stock must be selected, we think that most current valuations in the group are too high. More-over, Middlesex would not be our recommendation. Typically, utilities with subpar dividend growth prospects must com-pensate buyers by having a much higher yield. Middlesex's yield does not appear to be high enough to make up for its poor dividend growth prospects.

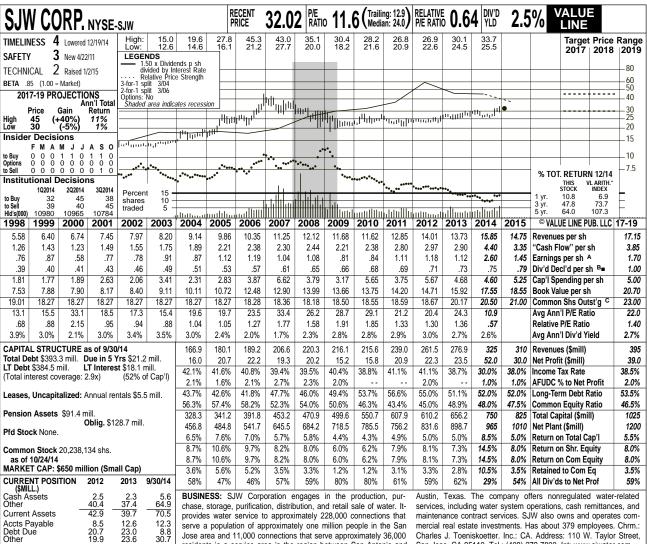
James A. Flood January 16, 2015

(A) Diluted earnings. May not sum due to rounding. Next earnings report due mid-February. (B) Dividends historically paid in mid-Feb.

May, Aug., and November.■ Div'd reinvestment plan available.

(C) In millions, adjusted for splits.

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



Jose area and 11,000 connections that serve approximately 36,000 residents in a service area in the region between San Antonio and

Charles J. Toeniskoetter, Inc.: CA. Address: 110 W. Taylor Street. San Jose, CA 95110. Tel.: (408) 279-7800. Int: www.sjwater.com.

Fix. Chg. Cov. 317% 268% 270% ANNUAL RATES Past Est'd '11-'13 Past 5 Yrs. 4.0% 4.0% .5% 3.5% 2.5% to '17-'19 4.0% 5.0% 7.0% 10 Yrs. 5.5% 6.0% 3.5% f change (per sh) Revenues "Cash Flow" Earnings Dividends Book Value 4.5% 5.5% QUARTERLY REVENUES (\$ mill.) Mar.31 Jun. 30 Sep. 30 Dec. 31 endar 2011 43.7 59.0 73.9 62.4 239 ( 65.6 82.4 261. 2012 51.1 62.4 2013 50.1 74.2 85.2 67.4 276. 125.4

49.1

Current Liab.

59.2

51.8

2015 60.0 75.0 95.0 80.0 310 EARNINGS PER SHARE A Mar.31 Jun. 30 Sep. 30 Dec. 31 endar Year 2011 .03 .35 .31 2012 .06 53 1.18 28 .07 .37 .44 .24 2013 1.12 2014 .34 1.88 2.60 2015 .10 .43 .55 .35 1.45 QUARTERLY DIVIDENDS PAID B. Full Calendar Mar.31 Jun.30 Sep.30 Dec.31 2011 .173 .69 .173 .173 .173 .1775 .1775 .1775 .1775 2013 1825 1825 1825 1825 .73 .75 .1875 1875 1875 2014 .1875 2015

SJW's impressive 2014 performance was the result of a one-time event. In the third quarter, the utility's share net spiked to \$1.88, versus the \$0.44 recorded in the similar 2013 period. Behind this whopping increase was SJWs recognition of \$58.2 million in revenues due the company for expenses incurred in previous years. The delay in recovering the revenues was the reason for the previous four quarters having negative year-over-year comparisons. We are not backing out the profits as a nonrecurring item because they were earned by the utility's main business during the course of normal operations. It's just that they were recognized all at the same time. Investors should note that SJW's P/E and relative P/E ratio will be out of kilter for the next three months. Earnings in 2015 will not be as poor as

they will probably appear. Excluding the large one-time item taken by SJW last year, we estimate that the utility could have shown close to a double-digit increase in earnings per share.

SJW is in the midst of overhauling its outdated infrastructure. To remove and are not impressive. install new pipes, as well as repair and James A. Flood

modernize waste facilities, the company will need to spend close to \$1 billion annually over the next several years.

The large projected capital outlays

will only have a minor impact on the **company's balance sheet.** SJW will have to issue new debt because internally generated funds will not cover the entire long-term capital budget. The common equity-to-total capital ratio will most likely decline from the current 48% level to about 46.5% by later in the decade. This should leave the utility with marginally below-average finances.

Shares of SJW do not have good nearterm prospects. Our proprietary system has dropped the ranking of SJW one notch to 4 (Below Average) for year-ahead relative performance.

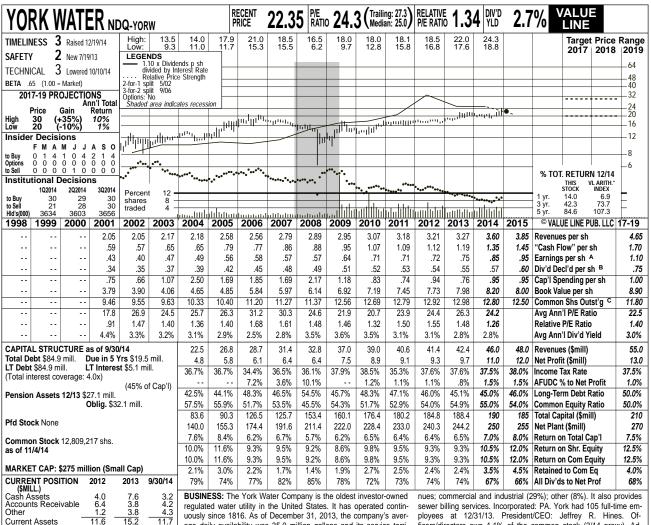
Long-term prospects are not encouraging either. The 18% rise in the price of the equity since our October report has reduced much of SJW's appeal. With the stock already trading in our 2017-2019 projected Target Price Range, both total return and capital appreciation potential January 16, 2015

(A) Diluted earnings. Excludes nonrecurring losses: '03, \$1.97; '04, \$3.78; '05, \$1.09; '06, \$16.36; '08, \$1.22; '10, 46¢. Next earnings June, September, and December. ■ Div'd reinreport due mid February. Quarterly egs. may

vestment plan available.

(C) In millions, adjusted for stock splits.

Company's Financial Strength Stock's Price Stability Price Growth Persistence 80 **Earnings Predictability** 



uously since 1816. As of December 31, 2013, the company's average daily availability was 35.0 million gallons and its service territory had an estimated population of 190,000. Has more than 63,000 customers. Residential customers accounted for 63% of 2013 reve-

ployees at 12/31/13. President/CEO: Jeffrey R. Hines. Officers/directors own 1.1% of the common stock (3/14 proxy). Address: 130 East Market Street York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

3.0% 6.5% 5.0% 2.5% 7.0% 5.5% 2.5% Dividends 4.5% 7.0% Book Value 5.0% QUARTERLY REVENUES (\$ mill.) Mar.31 Jun. 30 Sep. 30 Dec. 31 endar 2011 9.6 10.5 10.5 10.0 40.6 2012 9.6 10.4 11.0 10.4 41 2013 10.1 10.7 10.9 10.7 42. 46.0 2014 10.6 12.0 FARNINGS PER SHARE A Cal-Full endar Mar.31 Jun. 30 Sep. 30 Dec. 31 .71 2011 .17 .19 16 .22 2012 .15 .17 .18 .72 .75 2013 .17 .18 .21 2014 .23 .24 .85 .16 .22 2015 .20 .25 .25 .25 .95 QUARTERLY DIVIDENDS PAID B Cal-Full endar Mar.31 Jun.30 Sep.30 Dec.31 Year .52 2011 .131 .131 .131 .134 134 134 .134 .535 2012 2013 .138 138 .138 .138 .1431 .552 .1431 .1431 .1431 2014

1.1

4:3

5.5

414%

Past

10 Yrs.

4.5% 6.5% 5.5%

2.7

11.6

417%

to '17-'19

6.5% 7.0% 7.0%

1.8

6.0 7.8

Past Est'd '11-'13

417%

5 Yrs.

Accts Payable Debt Due

Current Liab.

Fix. Chg. Cov.

ANNUAL RATES

f change (per sh)

Other

Revenue "Cash Flow" Earnings

2015

.1495

In late November, The York Water Company raised its dividend by 4.5%. This increase is much higher than the sub-par (for a water utility) 2.5% annual growth rate that the company averaged over the past five years. We believe this is the start of a trend in which York will probably be able to raise the yearly payout between 5% and 6% for the next five years. The company has solid short-term earning prospects. For the last 10 months of 2014, Pennsylvania regulators allowed York to raise customers' monthly bills. This probably enabled the company to earn \$0.85 a share in 2014, a 13% increase over 2013. In 2015, due to a combination of the higher tariffs being in effect for all 12 months, along with a slower increase in expenses thanks to some cost cutting, we look for a 12% increase in share earnings, to \$0.95.

The capital budget is manageable.

Most U.S. water utilities have aging infrastructures that are in need of repair. We estimate that York spent about \$12 million for this purpose last year and will come close to this figure again in 2015. So, while the outlays will be meaningful, they

will not be overwhelming.

Finances should remain solid. Cash on hand and internally generated funds were probably sufficient to meet 2014's planned expenditures. Over the next three- to fiveyear period, however, York will most likely have to access the debt markets to fully fund the capital budget. Currently, the company is well capitalized, as its common equity-to-total capital ratio is a healthy 55%. So, while the company's financial condition may slip a few notches, we think the balance sheet will remain healthy.

As has been the case with most water utilities, York shares have been performing extremely well. In December alone, the value of the equity rose 20%. This strong showing has reduced the dividend yield to only 2.7%, or only 60 basis points higher than the median of all dividend-paying companies in the Value Line universe. Investors have been willing to pay a substantial premium for just a little more current income. In addition, the recent price run-up in the stock has left it with meager potential returns through 2017-2019.

James A. Flood

January 16, 2015

(A) Diluted earnings. Next earnings report due mid February.

(B) Dividends historically paid in mid-January, April, July, and October.

(C) In millions, adjusted for splits.

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

#### <u>Carolina Water Service, Inc. of NC</u> Current Institutional Holdings and Individual Holdings <u>the Proxy Group of Eight Water Companies</u>

	[1]	[2]
	February 27, 2015 Percentage of Institutional Holdings	February 27, 2015 Percentage of Individual Holdings (1)
Proxy Group of Eight Water		
Companies		
American States Water Co.	60.86 %	39.14 %
American Water Works Co., Inc.	80.79	19.21
Aqua America, Inc.	46.15	53.85
California Water Service Group	65.44	34.56
Connecticut Water Service, Inc.	39.14	60.86
Middlesex Water Company	38.82	61.18
SJW Corporation	53.07	46.93
York Water Company	29.41	70.59
Average	51.71 %	48.29 %

Notes:

(1) (1 - column 1).

Source of Information: pro.edgar-online.com, February 27, 2015

#### <u>Carolina Water Service, Inc. of NC</u> Summary of Risk Premium Models for the <u>Proxy Group of Eight Water Companies</u>

		Proxy Group Eight Water Companies	
Predictive Risk			
Premium Model ™			
$(PRPM^{IM})$ (1)		11.81	%
Risk Premium Using			
an Adjusted Total			
Market Approach (2)		9.67	_%
	A	10.74	07
	Average	10.74	<b>-</b> %

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

## Proxy Group of Eight Water Companies Indicated ROE Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Proxy Group of Eight Water	LT Average Predicted	Spot Predicted	Average Predicted	GARCH	Predicted Risk	Risk-Free	Indicated
Companies	Variance	Variance	Variance	Coefficient	Premium (2)	Rate (3)	ROE (4)
American States Water Co. American Water Works Co., Inc.	0.39% NM	0.47% NM	0.43% NM	1.677792 NM	9.01% NM	3.61% 3.61%	12.62% NM
Aqua America, Inc.	0.47%	0.34%	0.40%	2.229162	11.24%	3.61%	14.85%
California Water Service Group	0.32%	0.39%	0.35%	1.882704	8.20%	3.61%	11.81%
Connecticut Water Service, Inc.	0.28%	0.27%	0.28%	1.803111	6.23%	3.61%	9.84%
Middlesex Water Company	0.27%	0.34%	0.30%	2.003978	7.46%	3.61%	11.07%
SJW Corporation	0.42%	0.43%	0.43%	1.403779	7.49%	3.61%	11.10%
York Water Company	0.45%	0.41%	0.43%	2.081037	11.28%	3.61%	14.89%
						Average	12.31%
						Median	11.81%

- (1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by CRSP® Data® 2012. Center for Research in Security Prices, The University of Chicago Booth Schiool of Business and Bloomberg Professional Service.
- (2) (1+(Column [1] \* Column [2]) <sup>^12</sup>) 1.
- (3) From note 2 on page 2 of Exhibit 7.
- (4) Column [3] + Column [4].

## Carolina Water Service, Inc. of NC Indicated Common Equity Cost Rate Through Use of a Risk Premium Model Using an Adjusted Total Market Approach

Line No.		Proxy Group of Eight Water Companies
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	4.65 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public	
	Utility Bonds	0.10 (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	4.75 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.13 (3)
5.	Adjusted Prospective Bond Yield	4.88 %
6.	Equity Risk Premium (5)	4.79
7.	Risk Premium Derived Common Equity Cost Rate	9.67 %

- (1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 9-10 of this Exhibit).
- (2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.10% from page 6 of this Exhibit.
- (3) Adjustment to reflect the A2 / A3 Moody's LT issuer rating of the proxy group of eight water companies as shown on page 6 of this Exhibit. The 13 basis point upward adjustment is derived by taking 1/6 of the spread between A2 and A3 Public Utility Bonds (1/6 \* 0.79% = 0.13%) as derived from page 4 of this Exhibit.
- (4) From page 7 of this Exhibit.

#### <u>Carolina Water Service, Inc. of NC</u> Interest Rates and Bond Spreads for <u>Moody's Corporate and Public Utility Bonds</u>

#### **Selected Bond Yields**

[1]	[2]	[3]

	Aaa Rated Corporate Bond	A Rated Public Utility Bond	Baa Rated Public Utility Bond
Dec-14	3.79 %	3.95 %	4.70 %
Jan-15	3.46	3.58	4.39
Feb-15	3.61	3.62	4.44
Average	3.62 %	3.72 %	4.51 %

#### **Selected Bond Spreads**

A Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:

0.10 % (1)

Baa Rated Public Utility Bonds Over A Rated Public Utility Bonds:

0.79 % (2)

#### Notes:

- (1) Column [2] Column [1].
- (2) Column [3] Column [2].

Source of Information:

Bloomberg Professional Service

#### <u>Carolina Water Service, Inc. of NC</u> Comparison of Long-Term Issuer Ratingsfor the <u>Proxy Group of Eight Water Companies</u>

Moody's	Standard & Poor's
Long-Term Issuer Rating	Long-Term Issuer Rating
February 2015	February 2015

Proxy Group of Eight Water Companies	Bond Rating	Numerical Weighting(1)	Bond Rating	Numerical Weighting(1)
American States Water Co. (2)	A2	6.0	A+	5.0
American Water Works Co., Inc. (3)	A3	7.0	A-	7.0
Aqua America, Inc. (4)	NR		A+	5.0
California Water Service Group (5)	NR		A+	5.0
Connecticut Water Service, Inc. (6)	NR		Α	6.0
Middlesex Water Company	NR		A-	7.0
SJW Corporation (7)	NR		Α	6.0
York Water Company	NR		A-	7.0
Average	A2/A3	6.5	A	6.0

#### Notes:

- (1) From page 6 of this Exhibit.
- (2) Ratings are those of Golden State Water
- (3) Ratings are those of Pennsylvania American Water and New Jersey 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

#### Numerical Assignment for <u>Moody's and Standard & Poor's Long-Term Issuer Ratings</u>

Moody's Long-Term <u>Issuer Rating</u>	Numerical Weighting	S&P Long-Term <u>Issuer 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-
B1	14	В+
B2	15	В
B3	16	B-

#### <u>Carolina Water Service, Inc. of NC</u> Judgment of Equity Risk Premium for the Proxy Group of Eight Water Companies

Line No.	_	Proxy Group of Eight Water Companies
1.	Calculated equity risk premium based on the total market using	
	the beta approach (1)	4.85 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities	
	with A rated bonds (2)	4.73
3.	Average equity risk premium	4.79 %
Notes:	(1) From page 8 of this Exhibit.	

(2) From page 11 of this Exhibit.

#### Carolina Water Service, Inc. of NC Derivation of Equity Risk Premium Based on the Total Market Approach Using the Beta for the Proxy Group of Eight Water Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Eight Water Companies
1.	Ibbotson Equity Risk Premium (1)	5.85 %
2.	Ibbotson Equity Risk Premium based on PRPM <sup>TM</sup> (2)	6.18
3.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (3)	4.76
4.	Equity Risk Premium Based on S&P 500 Companies(4)	9.40
5.	Conclusion of Equity Risk Premium (5)	6.55 %
6.	Adjusted Value Line Beta (6)	0.74
7.	Forecasted Equity Risk Premium	4.85 %

#### Notes:

- (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2014 Classic 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 - 2013. (12.05% - 6.20% = 5.85%).
- (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 2015.
- (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 9.41% (described fully in note 1 of page 2 of Exhibit 9) and subtracting the average consensus forecast of Aaa corporate bonds of 4.65% (Shown on page 3 of this Exhibit). (9.41% - 4.65% = 4.76%).
- (4) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 14.05% was derived based upon expected dividend yields and long-term growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 4.65% results in a expected equity risk premium of 9.40%. (14.05% - 4.65% = 9.40%).
- (5) Average of Lines 1 through 4.
- (6) Median beta derived from page 1 of Exhibit 7.

#### Sources of Information:

<u>Ibbotson® SBBI® 2014 Classic Yearbook - Market Results for Stocks, Bonds, Bills, and</u> Inflation, Morningstar, Inc., 2014 Chicago, IL.

Industrial Manual and Mergent Bond Record Monthly Update.

<u>Value Line</u> Summary and Index

Blue Chip Financial Forecasts, March 1, 2015 and December 1, 2014

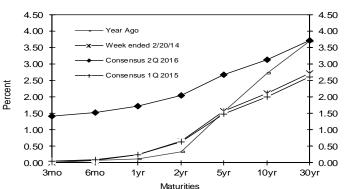
**Bloomberg Professional Services** 

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

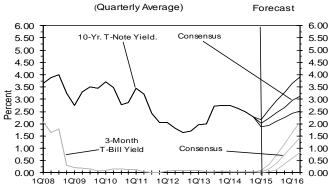
	History						Cons	ensus l	Forecas	sts-Qua	arterly	Aves		
	Av	erage For	Week End	ding	Ave	rage For N	Month	Latest Q	1Q	2Q	3Q	4Q	1Q	2
Interest Rates	Feb. 20	Feb. 13	Feb. 6	Jan. 30	Jan.	Dec.	Nov.	4Q 2014	<u>2015</u>	<u>2015</u>	<u>2015</u>	<u>2015</u>	<u>2016</u>	<u> 2016</u>
Federal Funds Rate	0.12	0.12	0.09	0.12	0.11	0.12	0.09	0.10	0.1	0.2	0.4	0.8	1.1	1🕖
Prime Rate	3.25	3.25	325	3.25	3.25	3.25	3.25	3.25	3.3	3.3	3.5	3.8	4.1	4.5
LIBOR, 3-mo.	0.26	0.26	0.26	0.26	0.26	0.23	0.23	0.23	0.3	0.4	0.6	0.9	1.3	1.6
Commercial Paper, 1-mo.	0.06	0.08	0.08	0.08	0.09	0.11	0.07	0.08	0.1	0.2	0.4	0.8	1.1	1.5
Treasury bill, 3-mo.	0.02	0.01	0.02	0.02	0.03	0.03	0.02	0.02	0.0	0.2	0.4	0.7	1.1	1.4
Treasury bill, 6-mo.	0.07	0.07	0.07	0.08	0.08	0.11	0.07	0.08	0.1	0.2	0.5	0.8	1.2	15
Treasury bill, 1 yr.	0.24	0.24	0.21	0.17	0.20	0.21	0.13	0.15	0.2	0.4	0.7	1.1	1.4	1 📻
Treasury note, 2 yr.	0.67	0.65	0.54	0.51	0.55	0.64	0.53	0.54	0.6	0.9	1.1	1.5	1.8	2.7
Treasury note, 5 yr.	1.58	1.51	1.31	1.28	1.37	1.64	1.62	1.60	1.5	1.7	1.9	2.1	2.4	
Treasury note, 10 yr.	2.11	2.00	1.81	1.77	1.88	2.21	2.33	2.28	2.0	2.2	2.4	2.7	2.9	3
Treasury note, 30 yr.	2.72	2.58	2.39	2.33	2.46	2.83	3.04	2.97	2.6	2.8	3.0	3.3	3.5	3.
Corporate Aaa bond	3.77	3.62	3.42	3.36	3.46	3.79	3.92	3.88	3.7	3.8	4.1	4.3	4.6	4.5
Corporate Baa bond	4.64	4.53	4.41	4.36	4.45	4.74	4.79	4.74	4.6	4.7	5.0	5.2	5.4	5.
State & Local bonds	3.62	3.60	3.49	3.36	3.40	3.70	3.96	3.87	3.5	3.7	3.9	4.2	4.4	4.5
Home mortgage rate	3.76	3.69	3.59	3.66	3.71	3.86	4.00	3.97	3.8	3.9	4.2	4.4	4.7	4.9
				Histor	y				Co	nsensu	ıs Fore	casts-(	)uartei	rly
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	<b>4Q</b>	1Q	2Q
Key Assumptions	2013	2013	2013	2013	2014	2014	2014	2014	2015	2015	2015	2015	2016	2016
Major Currency Index	74.7	76.4	76.7	76.0	77.1	76.6	77.8	82.6	87.7	89.0	89.5	90.0	89.6	89.1
Real GDP	2.7	1.8	4.5	3.5	-2.1	4.6	5.0	2.2	2.6	3.0	3.1	3.0	2.9	2.9
GDP Price Index	1.3	1.2	1.7	1.5	1.3	2.1	1.4	0.1	0.4	1.6	1.8	1.9	2.0	2.0
Consumer Price Index	1.2	0.4	2.2	1.1	1.9	3.0	1.1	-1.2	-1.8	2.0	2.2	2.2	2.2	2.2

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).

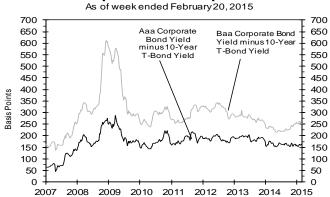




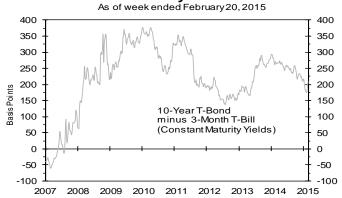
#### U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield



#### **Corporate Bond Spreads**



#### **U.S. Treasury Yield Curve**



Anem Direct Exhibit 6
Page 10 of 11

14 ■ BLUE CHIP FINANCIAL FORECASTS ■ DECEMBER 1, 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 2016 through 2020 and averages for the five-year periods 2016-2020 and 2020-2025. Apply these projections cautiously. Few economic, demographic and political forces can be evaluated accurately over such long time spans. cautiously. Few economic, demographic and political forces can be evaluated accurately over such long time spans.

		Average For The Year Five-Year Average							s
Interest Rates		2016	2017	2018	2019	2020	2016-2020	_	
1. Federal Funds Rate	CONSENSUS	1.8	2.9	3.6	3.7	3.7	3.1	3.6	
	Top 10 Average	2.4	3.7	4.2	4.2	4.2	3.7	4.1	₽
	Bottom 10 Average		2.3	2.9	3.0	3.0	2.5	2.9	5
2. Prime Rate	CONSENSUS	4.7	5.8	6.5	6.6	6.6	6.0	6.5	N
	Top 10 Average	5.4	6.6	7.1	7.2	7.2	6.7	7.1	7
	Bottom 10 Average		5.2	5.8	5.9	5.8	5.4	5.6	N
3. LIBOR, 3-Mo.	CONSENSUS	2.1	3.2	3.7	3.9	3.9	3.3	3.8	Aug
	Top 10 Average	2.7	3.9	4.3	4.4	4.4	3.9	4.3	3
4. Commercial Paper, 1-Mo.	Bottom 10 Average CONSENSUS	1.5 1.9	2.5	3.1	3.2 3.7	3.3 3.7	2.7 <b>3.1</b>	3.3 3.7	
4. Commerciai Paper, 1-Mo.		2.4	<b>3.0</b> 3.5	<b>3.3</b> 4.0	4.2	4.2	3.6	4.2	
	Top 10 Average Bottom 10 Average		2.5	3.0	3.1	3.2	2.7	3.2	
5. Treasury Bill Yield, 3-Mo.	CONSENSUS	1.8	2.9	3.4	3.6	3.6	3.0	3.5	
3. Heastry Bill Held, 3-1416.	Top 10 Average	2.4	3.6	4.0	4.2	4.1	3.7	4.1	
	Bottom 10 Average		2.2	2.9	2.9	2.9	2.4	2.7	
6. Treasury Bill Yield, 6-Mo.	CONSENSUS	2.0	3.0	3.6	3.7	4.7	3.4	3.6	
, in the same of t	Top 10 Average	2.5	3.8	4.2	4.4	7.4	4.4	4.2	
	Bottom 10 Average		2.4	3.0	3.1	3.1	2.6	2.8	
7. Treasury Bill Yield, 1-Yr.	CONSENSUS	2.1	3.2	3.7	3.8	3.8	3.3	3.7	
•	Top 10 Average	2.8	3.9	4.4	4.5	4.4	4.0	4.3	
	Bottom 10 Average	1.6	2.5	3.1	3.1	3.2	2.7	2.9	
8. Treasury Note Yield, 2-Yr.	CONSENSUS	2.5	3.4	3.9	4.0	4.0	3.6	4.0	
	Top 10 Average	3.3	4.1	4.5	4.7	4.6	4.2	4.5	
	Bottom 10 Average	1.9	2.8	3.3	3.3	3.3	2.9	3.2	
<ol><li>Treasury Note Yield, 5-Yr.</li></ol>	CONSENSUS	3.1	3.8	4.2	4.3	4.3	4.0	4.3	
	Top 10 Average	3.8	4.5	4.9	5.1	5.1	4.7	4.9	
	Bottom 10 Average		3.2	3.6	3.5	3.6	3.3	3.6	
11. Treasury Note Yield, 10-Yr.	CONSENSUS	3.7	4.3	4.6	4.7	4.7	4.4	4.6	
	Top 10 Average	4.4	5.0	5.4	5.6	5.6	5.2	5.4	
	Bottom 10 Average		3.5	3.8	3.8	3.9	3.7	3.9	
12. Treasury Bond Yield, 30-Yr.	CONSENSUS	4.3	4.8	5.0	5.1	5.2	4.9	5.1	
	Top 10 Average	5.0	5.6	5.9	6.2	6.2	5.8	6.0	
12 Communic Aca Dec 137 11	Bottom 10 Average		4.0	4.2	4.2	4.3	4.1	4.3	
13. Corporate Aaa Bond Yield	CONSENSUS	<b>5.1</b> 5.8	5.6	6.0	6.1	<b>6.1</b>	5.8	6.1	
	Top 10 Average Bottom 10 Average		6.4 4.8	6.8 5.1	7.0 5.1	7.0 5.2	6.6 5.0	6.8 5.4	
13. Corporate Baa Bond Yield	CONSENSUS	6.0	6.5	6.8	6.9	7.0	6.6	7.0	
13. Corporate Baa Bond Tield	Top 10 Average	6.7	7.3	7.7	7.9	7.9	7.5	7.7	
	Bottom 10 Average		5.6	5.9	5.9	6.0	5.8	6.2	
14. State & Local Bonds Yield	CONSENSUS	4.9	5.2	5.4	5.4	5.4	5.2	5.3	
	Top 10 Average	5.5	5.7	6.0	6.1	6.1	5.9	6.0	
	Bottom 10 Average		4.6	4.7	4.7	4.7	4.6	4.7	
15. Home Mortgage Rate	CONSENSUS	5.2	5.8	6.2	6.3	6.3	6.0	6.2	
	Top 10 Average	5.9	6.5	7.1	7.2	7.2	6.8	7.0	
	Bottom 10 Average	4.6	5.1	5.5	5.5	5.5	5.2	5.3	
A. FRB - Major Currency Index	CONSENSUS	83.6	83.3	82.7	82.4	82.1	82.8	82.0	
	Top 10 Average	86.7	86.7	86.6	86.5	86.6	86.6	86.3	
	Bottom 10 Average	80.3	79.8	78.5	77.9	77.3	78.7	77.4	
			Year-Ov	er-Year,	% Chang	e	- Five-Year	Average	s
		2016	<u> 2017</u>	<u> 2018</u>	2019	<u> 2020</u>	2016-2020	2021-20	25
B. Real GDP	CONSENSUS	2.8	2.8	2.6	2.4	2.4	2.6	2.3	
	Top 10 Average	3.2	3.1	2.9	2.8	2.7	2.9	2.6	
	Bottom 10 Average		2.4	2.3	1.8	2.0	2.2	2.0	
C. GDP Chained Price Index	CONSENSUS	2.0	2.2	2.2	2.1	2.1	2.1	2.1	
	Top 10 Average	2.3	2.7	2.6	2.5	2.4	2.5	2.5	
D. C	Bottom 10 Average		1.8	1.8	1.8	1.8	1.8	1.8	
D. Consumer Price Index	CONSENSUS	2.3	2.5	2.4	2.3	2.3	2.4	2.3	
	Top 10 Average	2.7	3.1	3.0	2.8	2.7	2.8	2.7	
	Bottom 10 Average	2.0	2.0	2.0	1.9	1.9	1.9	1.9	

## <u>Carolina Water Service, Inc. of NC</u> Derivation of Mean Equity Risk Premium Based on a Study <u>Using Holding Period Returns of Public Utilities</u>

Line No.			Over A Rated Moody's Public Utility Bonds (1)
1.		Arithmetic Mean Holding Period Returns on the Standard & Poor's Utility Index 1928- 2014 (2):	10.69 %
2.		Arithmetic Mean Yield on Moody's A Rated Public Utility Yields 1928-2014	(6.48)
3.		Historical Equity Risk Premium	4.21 %
4.		Forecasted Equity Risk Premium Based on PRPM <sup>TM</sup> (3)	4.18
5.		Forecased Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (4)	5.80
6.		Average of Historical and $PRPM^TM$ Equity Risk Premium	4.73 %
Notes:	(1)	Based on S&P Public Utility Index monthly total returns and Bond average monthly yields from 1928-2014.	l Moody's Public Utility
	(2)	Holding period returns are calculated based upon income r interest) plus the relative change in the market value of a so holding period.	•
	(3)	The Predictive Risk Premium Model (PRPM) is applied to the monthly total returns of the S&P Utility Index and the mont rated public utility bonds from January 1928 - February 20	hly yields on Moody's A
	(4)	Using data from Bloomberg Professional Service for the S& expected return of 10.55% was derived based on expected long-term growth estimates as a proxy for market apprecia expected A rated public utility bond yield of 4.75%, calculat this Exhibit results in an equity risk premium of 5.80%. (10)	P Utilities Index, an dividend yields and tion. Subtracting the red on line 3 of page 3 of

[8]

### Carolina Water Service, Inc. of NC Indicated Common Equity Cost Rate Through Use of the Traditional Capital Asset Pricing Model (ECAPM) and Empirical Capital Asset Pricing Model (ECAPM)

[4]

[5]

[6]

[7]

[3]

Proxy Group of Eight Water Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
American States Water Co.	0.70	0.77	0.74	7.50 %	3.61 %	9.16 %	9.65 %	
American Water Works Co., Inc.	0.70	0.55	0.63	7.50	3.61	8.34	9.03	
Aqua America, Inc.	0.70	0.73	0.72	7.50	3.61	9.01	9.54	
California Water Service Group	0.70	0.77	0.74	7.50	3.61	9.16	9.65	
Connecticut Water Service, Inc.	0.65	0.69	0.67	7.50	3.61	8.64	9.25	
Middlesex Water Company	0.70	0.80	0.75	7.50	3.61	9.24	9.70	
SJW Corporation	0.85	0.83	0.84	7.50	3.61	9.91	10.21	
York Water Company	0.65	0.89	0.77	7.50	3.61	9.39	9.82	
Average			0.73			9.10 %	9.61 %	9.36 %
Median			0.74			9 16 %	9.65 %	941 %

#### Notes:

[1]

[2]

(1) The market risk premium (MRP) is an average of four different measures. The first measure of the MRP derives the total return on the market by adding the thirteen-week average forecasted 3-5 year capital appreciation to the thirteen-week average expected dividend from Value Line Summary and Index. The projected risk-free rate (developed in Note 2) is then subtracted from the total return to arrive at the projected MRP. The second measure of MRP is based on the arithmetic mean of historical monthly return data of large stocks less the income return on long-term government bonds from 1926-2013 as published by Morningstar, Inc. The third measure applies the PRPM to the lbbotson historical data to derive a projected MRP. The fourth measure uses data from Bloomberg Professional Services to derive a total projected return on the S&P 500 by using expected dividend yields and long-term growth estimates as a proxy for capital appreciation. The projected risk-free rate is then subtracted from the projected total return to arrive at the projected MRP. The four measures of MRP are illustrated below:

Measure 1: Value Line Projected MRP (Thirteen weeks ending 2/27/15)

Total projected return on the market 3 -5 years hence:		9.41	%
Projected Risk-Free Rate (described in Note 2):		3.61	
MRP based on Value Line Summary & Index:	•	5.80	%
	•		-
Measure 2: Ibbotson Arithmetic Mean MRP (1926 - 2013)			
Arithmetic Mean Monthly Returns for Large Stocks 1926 - 2013:		12.05	%
Arithmetic Mean Income Returns on Long-Term Government Bonds:		5.26	
MRP based on Ibbotson Historical Data:		6.79	%
			_
Measure 3: Application of the PRPM to Ibbotson Historical Data:		6.98	%
			=
Measure 4: Bloomberg Projected MRP			
Total return on the Market based on the S&P 500:		14.05	%
Projected Risk-Free Rate (described in Note 2):		3.61	
MRP based on Bloomberg data		10.44	%
	•	•	-
	Average MRP:	7.50	%
	l.		-

(2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in <u>Blue Chip Financial Forecasts</u> The projection of the risk-free rate is illustrated below:

First Quarter 2015	2.60 %
Second Quarter 2015	2.80
Third Quarter 2015	3.00
Fourth Quarter 2015	3.30
First Quarter 2016	3.50
Second Quarter 2016	3.70
2016-2020	4.90
2021-2025	5.10
	3.61 %

(3) Average of Column 6 and Column 7.

#### Sources of Information:

Value Line Summary and Index Blue Chip Financial Forecasts March 1, 2015 and December 1, 2014 Ibbotson 2014 Classic Yearbook Bloomberg Professional Services

## Carolina Water Service Inc. of NC Basis of Selection of the Group of Non-Price Regulated Companies Comparable in Total Risk to the Proxy Group of Eight 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 <u>Value Line Investment Survey</u> (Standard Edition).

The proxy group of twenty-eight non-price regulated companies were then selected based upon the unadjusted beta range of 0.37 – 0.61 and residual standard error of the regression range of 2.4920 – 2.9720 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 residual standard errors of the regression.

The standard deviation of the water industry's residual standard error of the regression is 0.1200. The standard deviation of the standard error of the regression is calculated as follows:

Standard Deviation of the Std. Err. of the Regr. = <u>Standard Error of the Regression</u>

 $\sqrt{2N}$ 

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

Thus, 
$$0.1200 = \frac{2.7320}{\sqrt{518}} = \frac{2.7320}{22.7596}$$

Source of Information: Value Line, Inc., December 15, 2014

Value Line Investment Survey (Standard Edition)

## <u>Carolina Water Service, Inc. of NC</u> Basis of Selection of Comparable Risk <u>Domestic Non-Price Regulated Companies</u>

	[1]	[2]	[3]	[4]
Proxy Group of Eight Water Companies	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
American States Water Co. American Water Works Co., Inc. Aqua America, Inc. California Water Service Group Connecticut Water Service, Inc. Middlesex Water Company SJW Corporation York Water Company Average	0.65 0.65 0.60 0.60 0.75 0.75 0.85 0.70	0.44 0.44 0.35 0.36 0.55 0.56 0.73 0.47 0.49	3.1757 2.5968 2.3272 2.2764 2.8197 2.5174 3.2010 2.9414 2.7320	0.0719 0.0588 0.0527 0.0516 0.0639 0.0570 0.0725 0.0666 0.0619
Beta Range (+/- 2 std. Devs. of Beta 2 std. Devs. of Beta	0.37 0.12	0.61		
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.4920	2.9720		
Std. dev. of the Res. Std. Err.	0.1200			
2 std. devs. of the Res. Std. Err.	0.2400			

Source of Information: Valueline Proprietary Database 12/15/14

## Carolina Water Service, Inc. of NC Proxy Group of Non-Price Regulated Companies Comparable in Total Risk to the Proxy Group of Eight Water Companies

[1] [2] [3] [4]

	r-1	r1	r1	r - 1
Proxy Group of Twenty-Eight Non- Price-Regulated Companies	VL Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
Gallagher (Arthur J.	0.75	0.60	2.8257	0.0640
Amgen	0.75	0.56	2.8681	0.0650
Baxter Int'l Inc.	0.75	0.59	2.8485	0.0645
Brown-Forman 'B'	0.75	0.59	2.5194	0.0571
Bristol-Myers Squibb	0.70	0.51	2.7060	0.0613
Brown & Brown	0.75	0.57	2.5708	0.0582
Quest Diagnostics	0.75	0.58	2.7019	0.0612
Dun & Bradstreet	0.75	0.61	2.8850	0.0653
DaVita HealthCare	0.70	0.49	2.7874	0.0631
Haemonetics Corp.	0.65	0.46	2.5941	0.0588
Kroger Co.	0.65	0.45	2.7324	0.0619
Lancaster Colony	0.75	0.55	2.8757	0.0651
Mercury General	0.75	0.59	2.8344	0.0642
Markel Corp.	0.75	0.55	2.6954	0.0610
Annaly Capital Mgmt.	0.65	0.45	2.6087	0.0591
Northwest Bancshares	0.75	0.59	2.6054	0.0590
Owens & Minor	0.75	0.55	2.9650	0.0672
Ross Stores	0.75	0.58	2.7900	0.0632
Sherwin-Williams	0.70	0.47	2.7446	0.0622
Smucker (J.M.)	0.70	0.50	2.5587	0.0580
Silgan Holdings	0.70	0.47	2.7938	0.0633
Stericycle Inc.	0.65	0.43	2.5317	0.0573
Molson Coors Brewing	0.75	0.55	2.8609	0.0648
Teleflex Inc.	0.75	0.60	2.6693	0.0605
Hanover Insurance	0.75	0.59	2.5287	0.0573
TJX Companies	0.75	0.61	2.5257	0.0572
Weis Markets	0.65	0.47	2.6581	0.0602
Alleghany Corp.	0.75	0.57	2.7854	0.0631
Average	0.72	0.54	2.7168	0.0615
Proxy Group of Eight Water				
Companies	0.69	0.49	2.7320	0.0619

# Carolina Water Service, Inc. of NC 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 Eight Water Companies

Principal Methods	Proxy Group of Twenty-Eight Non-Price- Regulated Companies	
Discounted Cash Flow Model (DCF)		
(1)	10.63	%
Risk Premium Model (RPM) (2)	11.01	
Capital Asset Pricing Model (CAPM)		
(3)	10.06	_
		_
Average	10.57	%
		_
Median	10.63	%

- (1) From page 2 of this Exhibit.
- (2) From page 3 of this Exhibit.
- (3) From page 6 of this Exhibit.

Median

10.63 %

### $\frac{Carolina\ Water\ Service,\ Inc.\ of\ NC}{DCF\ Results\ for\ the\ Proxy\ Group\ of\ Non-Price-Regulated\ Companies\ Comparable\ in\ Total\ Risk\ to\ the\ Proxy\ Group\ of\ Eight\ Water\ Companies$

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]

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.	3.07 %	15.00 %	12.56 %	13.00 %	12.56 %	13.28 %	3.27 %	16.55 %
Amgen	1.54	9.00	11.10	9.20	11.10	10.10	1.62	11.72
Baxter Int'l Inc.	2.90	5.50	4.78	8.20	4.78	5.82	2.98	8.80
Brown-Forman 'B'	1.40	9.00	8.05	9.20	NA	8.75	1.46	10.21
Bristol-Myers Squibb	2.45	7.50	15.65	15.60	15.65	13.60	2.62	16.22
Brown & Brown	1.36	14.00	10.47	10.20	10.47	11.29	1.44	12.73
Quest Diagnostics	1.92	7.00	7.47	10.10	9.41	8.50	2.00	10.50
Dun & Bradstreet	1.44	5.50	7.03	7.90	7.03	6.87	1.49	8.36
DaVita HealthCare	-	12.00	4.21	12.20	8.11	9.13	-	NA
Haemonetics Corp.	-	11.00	12.00	11.80	12.00	11.70	-	NA
Kroger Co.	1.11	10.50	11.93	11.50	11.93	11.47	1.17	12.64
Lancaster Colony	1.99	6.00	NA	NA	8.00	7.00	2.06	9.06
Mercury General	4.40	7.00	3.20	2.10	3.20	3.88	4.49	8.37
Markel Corp.	-	12.50	10.00	10.00	10.00	10.63	-	NA
Annaly Capital Mgmt.	11.03	0.50	(19.60)	(1.20)	(11.40)	0.50	11.06	11.56
Northwest Bancshares	4.29	5.50	NA	NA	5.00	5.25	4.40	9.65
Owens & Minor	2.85	10.50	6.63	6.90	6.63	7.67	2.96	10.63
Ross Stores	0.85	8.50	12.30	11.60	11.84	11.06	0.90	11.96
Sherwin-Williams	0.82	17.00	18.60	14.20	15.73	16.38	0.89	17.27
Smucker (J.M.)	2.43	6.50	4.67	5.70	5.50	5.59	2.50	8.09
Silgan Holdings	1.11	9.00	6.88	9.30	8.44	8.41	1.16	9.57
Stericycle Inc.	-	11.00	14.50	14.70	15.00	13.80	-	NA
Molson Coors Brewing	1.96	8.50	3.20	5.10	3.20	5.00	2.01	7.01
Teleflex Inc.	1.19	15.50	11.80	11.20	12.27	12.69	1.27	13.96
Hanover Insurance	2.31	22.50	(1.10)	NA	(1.10)	22.50	2.57	25.07
TJX Companies	1.04	11.00	10.22	11.90	10.81	10.98	1.10	12.08
Weis Markets	2.56	1.00	NA	NA	NA	1.00	2.57	3.57
Alleghany Corp.	-	3.00	NA	NA	8.50	5.75	-	NA
							Average	11.55 %

NA= Not Available NMF= Not Meaningful Figure

(1) Mr. D'Ascendis's application of the DCF model to the domestic, non-price regluated comparable risk companies is identical to the application of the DCF to his proxy group of water companies. he uses the 60 day average price and the spot indicated dividend as of February 27, 2015 for his dividend yield and then adjusts that yield for 1/2 the average projected growth rate in EPS, which is salculated 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 02/27/2015 www.zacks.com Downloaded on 02/27/2015 www.yahoo.com Downloaded on 02/27/2015

## Carolina Water Service, Inc. of NC Indicated Common Equity Cost Rate Through Use of a Risk Premium Model Using an Adjusted Total Market Approach

Line No.			Proxy Group of Twenty-Eight Non- Price-Regulated Companies
1.		Prospective Yield on Baa Rated Corporate Bonds (1)	5.51 %
2.		Equity Risk Premium (2)	5.50
3.		Risk Premium Derived Common Equity Cost Rate	<u>11.01</u> %
Notes:	(1)	Average forecast of Baa corporate bonds based upon of nearly 50 economists reported in Blue Chip Fidated March 1, 2015 and December 1, 2014 (see Exhibit 6). The estimates are detailed below.	nancial Forecasts
		First Quarter 2015 Second Quarter 2015 Third Quarter 2015 Fourth Quarter 2015 First Quarter 2016 Second Quarter 2016 2016-2020 2021-2025	4.60 % 4.70 5.00 5.20 5.40 5.60 6.60 7.00
		Average	5.51 %

(2) From page 5 of this Exhibit.

#### Carolina Water Service, Inc. of NC

## Comparison of Long-Term Issuer Ratings for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the <a href="Proxy Group of Eight Water Companies">Proxy Group of Eight Water Companies</a>

	Long-Tern	oody's n Issuer Rating ary 2015	Long-Tern	Standard & Poor's Long-Term Issuer Rating February 2015	
Proxy Group of Twenty-Eight Non-Price-Regulated Companies	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)	
Gallagher (Arthur J.	NR		NR		
Amgen	Baa1	8.0	A	6.0	
Baxter Int'l Inc.	A3	7.0	A-	7.0	
Brown-Forman 'B'	A1	5.0	A-	7.0	
Bristol-Myers Squibb	A2	6.0	A+	5.0	
Brown & Brown	Baa3	10.0	BBB-	10.0	
Quest Diagnostics	Baa2	9.0	BBB+	8.0	
Dun & Bradstreet	NR		BBB-	10.0	
DaVita HealthCare	B1	14.0	BB	12.0	
Haemonetics Corp.	NR		NR		
Kroger Co.	Baa2	9.0	BBB	9.0	
Lancaster Colony	NR		NR		
Mercury General	WR		NR		
Markel Corp.	Baa2	9.0	BBB	9.0	
Annaly Capital Mgmt.	NR		NR		
Northwest Bancshares	NR		NR		
Owens & Minor	Ba1	11.0	BBB	9.0	
Ross Stores	A3	7.0	A-	7.0	
Sherwin-Williams	A3	7.0	A	6.0	
Smucker (J.M.)	A3	7.0	BBB	9.0	
Silgan Holdings	Ba2	12.0	BB+	11.0	
Stericycle Inc.	NR		NR		
Molson Coors Brewing	Baa2	9.0	BBB+	8.0	
Teleflex Inc.	NR		BB	12.0	
Hanover Insurance	Baa3	10.0	BBB	9.0	
TJX Companies	A3	7.0	A+	5.0	
Weis Markets	NR		NR		
Alleghany Corp.	Baa2	9.0	BBB	9.0	
Average	Baa2	8.7	BBB+	8.4	

Notes:

(1) From page 6 of Exhibit 6.

Source of Information:

**Bloomberg Professional Services** 

## Carolina Water Service, Inc. of NC 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 Eight Water Companies

<u>Line No.</u>	Equity Risk Premium Measure	Proxy Group of Twenty-Eight Non- Price-Regulated Companies
1.	Ibbotson Equity Risk Premium (1)	5.85 %
2.	Ibbotson Equity Risk Premium based on PRPM (1)	6.18
3.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (1)	4.76
4.	Equity Risk Premium Based on S&P 500 Companies(1)	9.40
5.	Conclusion of Equity Risk Premium (2)	6.55 %
6.	Adjusted Value Line Beta (3)	0.84
7.	Forecasted Equity Risk Premium	5.50 %

Notes:

- (1) From page 8 of Exhibit 6.
- (2) Average of Lines 1 through 4.
- (3) Median beta derived from page 5 of this Exhibit.

#### Sources of Information:

<u>Ibbotson® SBBI® 2014 Classic Yearbook - Market Results for Stocks, Bonds, Bills, and Inflation, Morningstar, Inc., 2014 Chicago, IL.</u>

**Value Line** Summary and Index

Blue Chip Financial Forecasts, March 1, 2015 and December 1, 2014 Bloomberg Professional Services

## $\underline{\textit{Carolina Water Service, Inc. of NC}} \\ Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the <math display="block">\underline{\textit{Proxy Group of Eight Water Companies}} \\ \\$

[1] [2] [3] [4] [5] [6] [7] [8]

Proxy Group of Twenty- Eight Non-Price-Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Gallagher (Arthur J.	0.80	0.96	0.88	7.50 %	3.61 %	10.21 %	10.44 %	
Amgen	0.80	1.02	0.91	7.50	3.61	10.44	10.60	
Baxter Int'l Inc.	0.90	0.83	0.87	7.50	3.61	10.14	10.38	
Brown-Forman 'B'	0.85	1.08	0.97	7.50	3.61	10.89	10.94	
Bristol-Myers Squibb	0.75	0.92	0.84	7.50	3.61	9.91	10.21	
Brown & Brown	0.85	0.89	0.87	7.50	3.61	10.14	10.38	
Quest Diagnostics	0.85	0.83	0.84	7.50	3.61	9.91	10.21	
Dun & Bradstreet	1.00	1.34	1.17	7.50	3.61	12.39	12.07	
DaVita HealthCare	0.85	0.77	0.81	7.50	3.61	9.69	10.04	
Haemonetics Corp.	0.80	0.76	0.78	7.50	3.61	9.46	9.87	
Kroger Co.	0.75	0.85	0.80	7.50	3.61	9.61	9.99	
Lancaster Colony	0.75	0.91	0.83	7.50	3.61	9.84	10.15	
Mercury General	0.65	0.66	0.66	7.50	3.61	8.56	9.20	
Markel Corp.	0.65	0.82	0.74	7.50	3.61	9.16	9.65	
Annaly Capital Mgmt.	0.50	0.41	0.46	7.50	3.61	7.06	8.07	
Northwest Bancshares	0.70	0.77	0.74	7.50	3.61	9.16	9.65	
Owens & Minor	0.90	1.04	0.97	7.50	3.61	10.89	10.94	
Ross Stores	0.75	0.92	0.84	7.50	3.61	9.91	10.21	
Sherwin-Williams	0.75	0.93	0.84	7.50	3.61	9.91	10.21	
Smucker (J.M.)	0.70	0.85	0.78	7.50	3.61	9.46	9.87	
Silgan Holdings	0.80	0.81	0.81	7.50	3.61	9.69	10.04	
Stericycle Inc.	0.80	0.79	0.80	7.50	3.61	9.61	9.99	
Molson Coors Brewing	0.85	1.04	0.95	7.50	3.61	10.74	10.83	
Teleflex Inc.	0.95	0.79	0.87	7.50	3.61	10.14	10.38	
Hanover Insurance	0.85	0.97	0.91	7.50	3.61	10.44	10.60	
TJX Companies	0.75	0.93	0.84	7.50	3.61	9.91	10.21	
Weis Markets	0.70	0.86	0.78	7.50	3.61	9.46	9.87	
Alleghany Corp.	0.70	0.96	0.83	7.50	3.61	9.84	10.15	
Average			0.84			9.88 %	10.18 %	10.03 %
Median			0.84			9.91 %	10.21 %	10.06 %

- From Exhibit 7, note 1.
   From Exhibit 7, note 2.
   Average of CAPM and ECAPM cost rates.

# Aug 21 2015

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

Line No.

2

			[1]	[2]	[3]	[4]
		Market Capitaliza 31, 20	Market Capitalization on December 31, 2014 (1)	Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	Applicable Size Premium (3)	Spread from Applicable Size Premium (4)
		( millions )	(times larger)			
Carolina Water Service, Inc. of NC		\$ 127.613		10	5.78%	
Proxy Group of Eight Water Companies		\$ 2,355.800	18.5 x	9	1.74%	4.04%
		(A)	(B)	(0)	(D)	(E)
			Market			Premium
			Capitalization of	Market		(Return in
		Decile	Company	Capitalization of Largest Company	Midpoint	CAPM) (2)
			( millions )	( millions )	(millions)	
	Largest	1	\$ 24,428.848	\$ 591,015.721	\$ 307,722.285	-0.36%
		2	10,170.746	24,272.837	17,221.792	0.63%
		3	5,864.266	10,105.622	7,984.944	0.91%
		4	3,724.624	5,844.592	4,784.608	1.06%
		N	2,552.441	3,724.186	3,138.314	1.60%
		9	1,688.895	2,542.913	2,115.904	1.74%
		7	1,011.278	1,686.860	1,349.069	1.71%
		8	549.056	1,010.634	779.845	2.15%
		6	300.752	548.839	424.796	2.69%
	Smallest	10	3.037	300.725	151.881	5.78%
			*Fro	*From Duff & Phelps 2015 Valuation Handbook (Preview Edition)	aluation Handbook (Pre	view Edition)

Notes:

From Page 2 of this Exhibit.
 Gleaned from Column (D) on the bottom of this page. The appropriate decile (Column (A)) corresponds to the market capitalization of the proxy group, which is found in Column 1.

(3) Corresponding risk premium to the decile is provided on Column (E) on the bottom of this page.

(4) Line No. 1a Column 3 – Line No. 2 Column 3 and Line No. 1b, Column 3 – Line No. 3 of Column 3 etc.. For example, the 4.04% in Column 4, Line No. 2 is derived as follows 4.04% = 2.69% - 1.74%.

Market Capitalization of Carolina Water Service, Inc. of NC and the Proxy Group of Eight Water Companies Carolina Water Service, Inc. of NC

[9]	Market Capitalization on February 27, 2015 (3) (millions)	\$ 127.613		\$ 1,553.861	\$ 9,646.736	\$ 4,673.286	\$ 1,214.054	3 409.518	371.299	670.422	307.220	\$ 2,355.800
[5]	Market-to-Book Ratio Con February or 27, 2015 (2)	196.7 %		315.6 %	204.0	304.5	202.8	206.3	196.7	208.7	296.8	241.9 %
[4]	Closing Stock Market Price on February 27, 2015	NA		\$ 40.130	\$ 54.080	\$ 26.440	\$ 25.430	\$ 37.100	\$ 23.260	\$ 33.240	\$ 23.670	\$ 32.919
[3]	Total Common Equity at Fiscal Year End 2013 (millions)	64.877 (4)		492.404	4,727.804	1,534.835	598.756	198.525	188.745	321.175	103.511	1,020.719
	Tot Equity Equity			₩.	₩	<del>∨</del>	<del>∨</del>	<del>∨</del>	₩	₩	<del>∨</del>	↔
[2]	Book Value per Share at Fiscal Year End 2013 (1)	NA		12.717	26.504	8.684	12.542	17.985	11.824	15.924	7.975	14.269
	Bool Shar Year			₩	↔	↔	↔	↔	↔	↔	↔	<del>∨</del>
[1]	Common Stock Shares Outstanding at Fiscal Year End 2013 (millions)	NA		38.721	178.379	176.751	47.741	11.038	15.963	20.169	12.979	62.718
	Exchange	NASDAQ		NYSE	NYSE	NYSE	NYSE	NASDAQ	NASDAQ	NYSE	NASDAQ	
	Company	Carolina Water Service, Inc. of NC	Proxy Group of Eight Water Companies	American States Water Co.	American Water Works Co., Inc.	Aqua America, Inc.	California Water Service Group	Connecticut Water Service, Inc.	Middlesex Water Company	SJW Corporation	York Water Company	Average

NA= Not Available

Notes: (1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 5 \* Column 3.
From Carolina Water Serivce Inc. of NC Annual Report to the North Carolina Utilities Commission for the year (4) ended December 31, 2013.

Source of Information: 2013 Annual Forms 10K

yahoo.finance.com